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Preparing for Novel Versus Familiar Events: Shifts in Global and Local Processing

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Six experiments examined whether novelty versus familiarity influences global versus local processing styles. Novelty and familiarity were manipulated by either framing a task as new versus familiar or by asking participants to reflect upon novel versus familiar events prior to the task (i.e., procedural priming). In Experiments 1–3, global perception was enhanced after novelty priming or framing, whereas familiarity priming facilitated local perception relative to a control group. In Experiment 4, participants used more inclusive categories under novelty priming and narrower categories under familiarity priming. In Experiments 5–6, participants construed actions and products more abstractly when these were framed as novel as compared to familiar. These results support the construal level theory (N. Liberman & Y. Trope, 2008; Y. Trope & N. Liberman, 2003) contention that having less direct experience is associated with using higher construal levels. Implications of the findings for research on mood, processing styles, stereotypes, and consumer research are discussed.

Keywords: novelty, procedural priming, processing styles, construal level, conceptual scope

What cognitive processes are set in motion when people expect to encounter a novel stimulus, as opposed to an old, familiar stimulus? For example, how do people mentally prepare to see a film that promises to present a new cinematic genre (as opposed to an old, familiar film) or to examine a cell phone that is advertised as representing a new generation in telephony (as opposed to a slightly renewed version of a commonly used model)? We suggest that expecting novelty induces global processing that favors perception of gestalts and broad categories (and impedes perception of details and the use of narrow categories). We suggest that global processing is adopted when one expects novelty because it is better suited to include unknown and potentially unusual stimuli. For example, the broad category *a work of art* is more likely to apply to a stimulus than the narrower category *a sculpture* and therefore is more likely to be activated when one expects to attend a new exhibition rather than a familiar one.

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Novelty in Psychology

Across disciplines, psychologists have studied how novelty affects psychological processes. To illustrate, emotion researchers have wondered whether people are interested in or are afraid of new information (see Berlyne, 1960, 1971; Silvia, 2005) and have studied the circumstances under which novelty causes approach versus avoidance reactions (see Bradley, Lang, & Cuthbert, 1993). Learning and developmental theorists have studied conditions that facilitate integration of new information (see Crockenberg & Leerkes, 2004; Richards, 1997; Rovee-Collier, Bhatt, & Chazin, 1996). Recent psychobiological research has attempted to identify both physiological reactions to novelty (see Tuinstra, Kobelens, Lubbers, Verheij, & Cools, 2002) and brain regions that help process novel events (see Burns, Annett, Kelly, Everitt, & Robbins, 1996). Evolutionary psychologists have argued that the ability to integrate novel events and cope with them was crucial for the development of human intelligence (see Kanazawa, 2004). Personality psychologists have studied personal dispositions that facilitate integration of new information (see Cloninger, 1991; Eysenck & Eysenck, 1985). Social psychologists have examined the circumstances under which people prefer new over familiar objects and experiences (see Liberman, Idson, Camacho, & Higgins, 1999), whether exposure or reoccurrence increases or decreases liking (see Bornstein, 1989; Zajonc, 1968), and how people integrate social information that appears new to them (see Fiske & Taylor, 1991). Last but not least, consumer psychologists have examined how framing products as new influences consumer attitudes and buying behavior (Bianchi, 1998; Hekkert, Snelders, & van Wieringen, 2003; Urban & Hauser, 1993). Our research question is simple and basic: How does novelty affect processing style?

What Is Novelty?

In the literature, novelty has been defined in different ways, including unexpectedness, complexity, atypicality, obscurity, un-

certainty, and ambiguity (see Berlyne, 1960). In the present article, we focus on novelty as lack of experience and familiarity. We also think that the experience of novelty is often not entirely constrained by the features of the stimulus itself but rather may be influenced by processes of subjective construal (e.g., framing). In some sense, any event can be perceived as novel, as reflected by the famous aphorism of Heraclitus (trans. 1987), "you could not step twice into the same river; for other waters are ever flowing on to you." That is, even a stimulus that is presented repeatedly may be experienced as novel if one attends to slight differences in its angle, lighting, or distance (see Gati & Ben-Shakhar, 1990). On the other hand, almost anything can be experienced as old if one adopts the "been there, seen that" attitude and uses sufficiently broad constructs. For example, any new person one meets can be classified as just another person, and anything one considers buying might be classified as just another product. In some of our experiments, we instructed participants to think of the very same event or task as old in some conditions and as novel in other conditions, and we examined how such framing affects processing.

While some researchers suggested that, generally, familiar events are less frightening than novel ones (see Bornstein, 1989), in many mundane situations novel events are perceived as interesting. For example, if a detergent is advertised as having a new formula and its box color is changed, people will not typically experience fear but might rather feel curious. More generally, some novel stimuli carry no potential for harm or are embedded in social settings that reduce the possibility of danger (e.g., one can assume that in restaurants, even if the food looks exotic, it is not dangerous). Following Scherer (2001), we assume that novelty and valence evaluations are independent. That is, evaluation of stimuli starts with a novelty check that guides the decision whether to attend further to the stimulus or not. Independently, an implicit pleasantness check guides the decision whether to approach the stimulus or avoid it.

We predict that only nonthreatening novel stimuli would induce global processing. This is because negative arousal, which accompanies threatening novelty, tends to have an opposite effect, namely, to induce local processing (Gasper & Clore, 2002; see Friedman & Förster, 2008). We expect the effect of threatening novelty to operate via negative arousal and the effect of nonthreatening novelty to operate in a different way and to be independent of mood. In one of our studies, we manipulated valence of novelty, and in others, we measured mood and control for its effects. We predict that independent of the effects of moods on processing style, there would be a link between nonthreatening novelty and a global processing style.

What Is a Global Processing Style, and Why Is It Related to Novelty?

A processing style is the way people look at or attend to information. For example, when looking at scenery, one might attend to the trees (local processing) or perceive the entire forest (global processing; Navon, 1977). Beyond perception, a similar distinction between global and local processing might apply. For example, people can think about the same action (e.g., watering plants) in abstract, global terms (e.g., designing the room) or in more concrete, local terms (e.g., getting the water in the can and pouring it over the plants; Liberman & Trope, 1998; Vallacher & Wegner, 1989).

We would like to propose that expecting novel events would lead to more global (as opposed to local) processing, both perceptual and conceptual. This prediction relies on two models of categorization: Schwarz and Bless's (1992, 2007) inclusion/exclusion model and Fiske and Neuberg's (1990) impression formation model. The inclusion/exclusion model predicts that categories may be broadened or narrowed as a consequence of chronic or situational factors. In this model, broader categories enhance inclusion of a stimulus. Fiske and Neuberg's model predicts that when one encounters a new person, one first categorizes him or her along general categories (gender, age, race, status, etc.) and only later attends to more specific features (e.g., that he or she likes sailing and car races). Our prediction regarding the effect of novelty on processing style is directly related to these two models.

We suggest that new information needs to be integrated into existing knowledge structures to be understood. For example, when seeing a preview of a new film, one might wonder whether it is a drama or a documentary before considering specifics of the plot. Two features of global processing make it advantageous for integrating new information. First, more abstract categories are broader and naturally more inclusive. They are more likely candidates to include a novel object, for which, by definition, an existing knowledge structure has yet to be found. For example, if one is told, "Mary is going to see a new animal," the categories *mammal* and *reptile* are more likely to be useful than *dog* and *iguana.*

Second, global processing helps capture the general meaning of the stimulus. Local details are often subordinated to global features, in the sense that the meaning of local features depends on global aspects more than vice versa. For example, consider a table and a bowl that are made of wood or of plastic. The meaning of the local detail (what is it made of?) depends on the global feature (what is it?): The fact that a table is made of plastic (e.g., it is relatively light) carries a different meaning than the fact that a bowl is made of plastic (e.g., one cannot put it in the microwave). However, the meaning of the global aspect does not depend on the local feature—tables are used for dining and bowls are used to serve food, regardless of their material (see Liberman, Trope, & Stephan, 2007, for a further discussion of subordination). As a result, when encountering a novel event, it may be useful to first encode its gross features to understand its general meaning. Only later is it time to examine the concrete information, by adopting a more local processing style. Moreover, subordination of categories means that there are typically fewer features on the global than on the local level (Rosch, 1975), making it easier and more efficient to first search global categories. In sum, novelty should favor global processing both because global processing increases the chances of inclusion of the target in existing knowledge structures and because it provides basic, superordinate information about the target's meaning.

It is also interesting to examine the relations between novelty and psychological distance, as conceptualized within construal level theory (CLT; Liberman & Trope, 1998; for reviews, see Liberman & Trope, 2008; Liberman et al., 2007; Trope & Liberman, 2003). CLT defines the psychological distance of an object as its distance in time, space, social distance, or hypotheticality from the directly experienced *me,* here and now. CLT further contends

that the greater the psychological distance, the more likely the object will be construed on a higher level (i.e., in more abstract and general terms). To explain the effect of distance on level of construal, CLT suggests that typically, distance alters concrete aspects of stimuli more than abstract aspects and that people have learned (probably implicitly) that it is advantageous to attend to global, less variable aspects of distal events. For example, the abstract category *party,* compared to the more concrete category *best friend's wedding,* is more likely to apply to events that are distal temporally, spatially, and socially and to apply to as-yet not experienced, hypothetical events. The tendency to construe more distal objects in more abstract terms evolved as a generalized heuristic, giving rise to an automatic association between psychological distance and level of construal (Bar-Anan, Liberman, & Trope, 2006).

In an extensive research program, Liberman and Trope (Liberman et al., 2007; Liberman & Trope, 1998, 2008; Trope & Liberman, 2003) demonstrated the effect of psychological distance on construal. For example, Liberman, Sagristano, and Trope (2002) showed that temporal distance from a situation enhanced the breadth of categories that participants used to classify objects that were relevant to that situation. Förster, Friedman, and Liberman (2004) showed that temporal distance enhanced performance in the Gestalt Completion Task (GCT), which is facilitated by attention to the gestalt rather than to details. Liberman and Trope (1998) showed that actions were construed on a higher level, using abstract *why* terms rather than concrete *how* terms (see Strack, Schwarz, & Gschneidinger, 1985) when they pertained to the more distant future. For example, "reading a book" was described as "getting entertained" when it pertained to the distant future but as "flipping pages" when it pertained to the near future. Conceptually similar effects have also been demonstrated with other dimensions of psychological distance—spatial distance (Fujita, Henderson, Eng, Trope, & Liberman, 2006; Henderson, Fujita, Trope, & Liberman, 2006), hypotheticality (Wakslak, Trope, Liberman, & Alony, 2006), and social distance (Stephan, Liberman, & Trope, 2007; see also Idson & Mischel, 2001).

Obviously, novelty is related to hypotheticality (novel objects, just like hypothetical objects, have not yet been experienced) yet cannot be reduced to it. Objects and events can be unlikely (i.e., distant on the hypotheticality dimension) without being novel, and objects may be novel and likely (and even certain) at the same time. Perhaps more importantly for CLT, our definition of novelty as lack of past experience makes it closely related to the common denominator of all psychological distances. According to CLT anything that is not presently experienced by *me,* here and now, is psychologically distant and leads to more global processing. In that sense, examining the effect of novelty on level of construal tests the assumption of CLT that lack of direct experience, which is common to all psychological distances, enhances level of construal.

Overview of the Experiments

We tested whether novelty induces a global processing style by manipulating novelty versus oldness and gauging performance on a variety of tasks posited to assess global versus local perceptual processing (Experiments 1–3), breadth of categorization (Experiment 4), level of action identification (Experiment 5), and weighting of feasibility versus desirability in consumer decision making (Experiment 6). In some experiments (Experiments 1a, 2, 3a, 4b, and 5a), we manipulated novelty by framing the task as either new or old. In other experiments (Experiments 1b, 3b, 4a, and 5b), we primed participants with novelty or oldness by asking them to imagine a novel situation or a familiar situation and then administering an ostensibly unrelated task that examined global versus local processing. In Experiment 2 (see also Experiment 4a), we also tested valence as a boundary condition for our effect by introducing both threatening and nonthreatening novelty. We predicted that only nonthreatening novelty would induce global processing.

Experiments 1a and 1b: Novelty and Global Versus Local Perception in the Navon Task

The present experiment looked at the effect of novelty framing (Experiment 1a) and novelty priming (Experiment 1b) on local versus global perception (Navon, 1977). We examined the hypothesis that relative to a control group, framing or priming of novelty would facilitate perception of global letters and impede the perception of local letters, whereas priming and framing of oldness would have the opposite effect.

Method

Participants

For Experiment 1a, 48 undergraduate students (26 women, 22 men; University of Bremen, Bremen, Germany) were recruited for an experimental session consisting of "a number of diverse psychological tests." For Experiment 1b, another 48 participants (24 women, 24 men) were recruited. Gender as an independent variable produced no significant effects in these experiments and in any other experiment reported in this article and thus is not further discussed. Sessions lasted approximately 2 hr. Participants were paid €16 (approximately $21 U.S.) for participation. Data of 3 participants from Experiment 1a were not recorded due to a computer error. In both studies and in all other studies reported in this article, participants were randomly assigned to experimental conditions. Also, in all our experiments, the experimenters were masked to the hypotheses and to the conditions.

Procedure

Upon arrival, participants were asked to complete a variety of unrelated personality questionnaires for about 70 min. In Experiment 1a, participants completed the global/local reaction time measure. The instructions for this task were different for the novelty, oldness and control conditions. In the novelty condition, the instructions were, "The task that you will be doing is completing a test that you have never done before, it has been newly invented. Thus, you will do this test for the first time. The test will be easy." In the oldness group, the instructions were, "The task that you will be doing is a test like a lot of psychological tests. You have probably answered questionnaires before, this is not any different, it is like most of the questionnaires you know. The test will be easy." Participants in the control condition were told only that the task "would be easy"; this information was given in all conditions to reduce the potential threat of a novel task. The details of the task were then explained to the participants. We also gauged mood, expectancy, value, importance, and difficulty. Specifically,

on scales ranging from 1 to 9, participants reported their current mood ("How do you feel right now?": 1 = *very bad,* 9 = *very good*), expectations regarding task performance ("How well will you perform on the following task?": 1 = *very poorly,* 9 = *very well*), liking of the task ("How much would you like to solve the following task right now?": 1 = *not at all,* 9 = *very much*), importance ("How important is task performance to you?": 1 = *not at all,* 9 = *very much*), and expected difficulty ("How difficult do you expect the task to be?": 1 = *very easy,* 9 = *very difficult*).

After subjective ratings were completed, the Navon task was administered. Specifically, participants were presented with a series of global letters (approximately 2.1 in. × 2.1 in.) made up of local letters (approximately 0.4 in. × 0.4 in.) on the computer monitor. The horizontal and vertical lines composing each global letter were formed of five closely spaced local letters. In Experiment 1a, on each trial, participants were first presented with a fixation cross (+) in the center of the screen for 500 ms. Then, one of eight global composite letters was randomly presented for a maximum time of 60 s, and participants were instructed to press a blue response key if a given stimulus contained the letter *L* and to press a red response key if a given stimulus contained the letter *H.* They were asked to respond as quickly as possible. Four of the composite letters included global targets (an *H* made of *F*s, an *H* made of *T*s, an *L* made of *T*s, and an *L* made of *F*s), and four included local targets (an *F* made of *H*s, an *F* made of *L*s, a *T* made of *H*s, and a *T* made of *L*s). Overall, in Experiment 1a, eight local and eight global trials were presented, with 12 practice trials that were not analyzed. After the Navon task, participants answered a manipulation check question ("How often did you do similar tasks in the past?": 1 = *never,* 9 = *very often*) and completed additional, posttask measures of mood, task difficulty, and liking of the task. These measures were similar to the pretask measures.

For Experiment 1b, instead of framing the task as new or old, we primed participants with an unrelated task, which was introduced as a study on perspective taking. They were asked to imagine and describe for 5 min something that would happen to them the next day. In the novelty condition, they were asked to describe something that had never happened to them, whereas, in the oldness condition, they were asked to describe an event that had already happened in the past. The control group was told to just write down their plans for the next day. All participants then proceeded with the Navon task.

In addition to the same pretask and posttask measures as Experiment 1a, participants rated the novelty of the task ("How new was this task for you?": 1 = *not new at all,* 9 = *very new*) and answered a manipulation check question. Specifically, at the end of the experiment, participants were reminded of the perspective-taking task and were asked, "How new or old was the event you imagined?" (1 = *not new at all,* 9 = *very new*), "How positive or negative was the event you imagined?" (1 = *very negative,* 9 = *very positive*), and "How difficult was it to imagine the event?" (1 = *very easy,* 9 = *very difficult*).

A few changes in the Navon task were meant to accommodate potential alternative explanations. Mainly, it could be argued that the procedure of Experiment 1a left participants sufficient time to engage in effortful and reflective processing strategies, as the stimuli remained on the screen until the participant responded. We examined whether similar effects would emerge without much processing, as would be expected if participants efficiently applied a general heuristic. To demonstrate the efficiency of the suggested processes, in Experiment 1b, we reduced presentation time and added a surprise recognition test to measure participants' encoding of global and local letters. We expected that priming of a novel event would facilitate memory for global letters more than for local letters and that priming of a familiar event would have the opposite effect on memory. If obtained, these findings would further suggest that priming novelty versus oldness affects encoding of global and local letters, respectively, rather than affecting only strategic responding.

Thus, in Experiment 1b, we increased the number of trials to 20 local and 20 global trials and presented trials for 100 ms only. The task began with a 20-trial training session. A 500-ms sign (****) announced the beginning of each trial. The sign was followed by a 100-ms black screen, followed by a 100-ms presentation of one of the items. A 1-s intertrial interval (ITI) followed a response or after 2 s if no response occurred.

In Experiment 1b we used two sets of items, which constituted an additional between-participants factor (which did not yield any effects). Within a set, a letter appeared either as a global or as a local letter. For example, if a letter (*F*) was a global letter in Set 1, it never appeared as a local letter in this set, but it constituted a local letter and never a global letter in Set 2. In this way, we could test participants' recognition memory for the letters. After presentation of the Navon task, we asked participants to fill out a yes–no recognition task in which the 10 targets were presented intermixed with 10 distractors (letters that were not presented to the participant). By the logic of signal detection theory (Green & Swets, 1966), accurate memory under these limited encoding conditions should reflect better encoding.

In both experiments, after the entire experimental session was completed, participants were probed for suspicions, debriefed, paid, and released. No suspicions regarding the connection between the framing or the priming and the Navon task and no expectations of a memory test (Experiment 1b) were voiced. In sum, the design for Experiment 1a was a 3 (framing: novelty, oldness, control) × 2 (processing style: global vs. local) design, with only the first factor manipulated between participants. In Experiment 1b, priming (novelty, oldness, control) replaced framing. The difference between reaction times for global versus local decision was used as the main dependent variable. Typically, this paradigm yields a global dominance effect, whereby global letters are processed faster than local letters (Navon, 1977). We predicted that the global dominance effect would be stronger in the novelty conditions and would be attenuated in the oldness conditions.

Results and Discussion

Experiment 1a

Navon task. We followed the guidelines of Fazio (1990) for analyzing reaction time data and log-transformed all response times. For clarity, however, we report untransformed means in milliseconds.[1] We also excluded incorrect responses (1% of the sample) and outlying responses (±3 *SD*s from the mean for each stimulus; 2.5% of the sample). The number of exclusions did not vary by condition. The data were analyzed using an analysis of variance (ANOVA) for mixed designs (see Table 1). Consistent with Navon (1977) we found overall faster responses for global

[1] Analyses using raw means did not change overall result patterns. This is true for all studies with reaction times as the dependent measure.

Table 1
Experiment 1a: Mean Reaction Times in Milliseconds for Global and Local Letters in the Navon Task by Condition (Standard Deviations in Parentheses)

	Framing		
Measure	Novelty	Control	Oldness
Global letters	668 (70)	698 (123)	756 (156)
Local letters	912 (112)	816 (103)	775 (139)

letters ($M = 707$, $SD = 125$) than for local letters ($M = 834$, $SD = 130$), $F(1, 42) = 47.62$, $p < .001$, $p\eta^2 = .53$. As predicted, however, this difference was strongest in the novelty framing condition ($M_{local} = 911$, $SD = 112$; $M_{global} = 668$, $SD = 70$) and almost nonexistent in the oldness framing condition ($M_{local} = 775$, $SD = 139$; $M_{global} = 756$, $SD = 156$), with the control condition falling between ($M_{local} = 816$, $SD = 103$; $M_{global} = 698$, $SD = 123$). Supporting our hypothesis, the Framing × Processing Style interaction was significant, $F(2, 42) = 11.07$, $p < .001$, $p\eta^2 = .35$. The main effect of framing was not significant ($F < 1$).

Mood, expectancy, liking, importance, difficulty, and novelty. One-way analyses with framing as an independent variable revealed no significant effects on mood, expected or experienced difficulty, liking, expectancy of success, and importance measured either before the task or after it (all Fs < 1). The only significant difference was found, as expected, in the manipulation check. Specifically, participants rated the frequency with which they had done a similar task before as lower in the novelty framing condition ($M = 1.13$, $SD = 1.51$) than in the control condition ($M = 3.07$, $SD = 2.37$) or in the oldness condition ($M = 4.67$, $SD = 1.71$), $F(2, 42) = 12.98$, $p < .001$, $p\eta^2 = .38$; for all contrasts, $t(42)$s > 2.30, $p < .03$. We entered rated novelty as a covariate into the analyses of the response times for global versus local letters and found no effect for the covariate. Also, the interaction effect remained highly significant, indicating that rated novelty of the task did not mediate the effect. Thus, it seems that although the framing manipulation affected perceived novelty of the task, such perception was not a necessary condition to produce effects on processing.

Experiment 1b

Navon task. Due to the increased time pressure compared to Experiment 1a, there were more errors ($M = 7\%$). Hence, we decided to analyze error rates, too.

Errors. There were fewer errors in identifying global letters ($M = 0.44$, $SD = 0.97$) than local letters ($M = 0.98$, $SD = 1.08$), $F(1, 45) = 5.82$, $p < .02$, $p\eta^2 = .12$, for the main effect of processing level. As would be expected, this difference was strongest in the novelty framing condition ($M_{global} = 0.19$, $SD = 0.40$; $M_{local} = 1.38$, $SD = 1.31$). It was slightly reversed in the oldness framing condition ($M_{global} = 0.81$, $SD = 1.52$; $M_{local} = 0.56$, $SD = 0.89$), with the control group falling between ($M_{global} = 0.31$, $SD = 0.48$; $M_{local} = 1.00$, $SD = 0.90$), $F(2, 45) = 3.52$, $p < .04$, $p\eta^2 = .14$, for the interaction. The main effect of priming was not significant ($F < 1$).

Reaction times. After excluding incorrect responses, the data were analyzed using an ANOVA for mixed designs (see Table 2). There was a general processing advantage across priming conditions for global letters ($M = 526$, $SD = 99$) compared to local letters ($M = 596$, $SD = 54$), $F(1, 45) = 49.24$, $p < .001$, $p\eta^2 = .52$, for the main effect of processing level. As predicted and as found before, this difference was strongest in the novelty condition ($M_{local} = 631$, $SD = 86$; $M_{global} = 469$, $SD = 78$) and was eliminated in the oldness condition ($M_{local} = 583$, $SD = 77$; $M_{global} = 582$, $SD = 104$), with the control group falling between ($M_{local} = 596$, $SD = 54$; $M_{global} = 526$, $SD = 86$), $F(2, 45) = 16.22$, $p < .001$, $p\eta^2 = .42$, for the interaction. The main effect of priming was not significant ($F < 1.2$).

Recognition. We used a signal detection analysis that best suits small samples as suggested by two-high-threshold theory (Snodgrass & Corwin, 1988). This analysis makes it possible to measure accuracy at encoding (*PR*) independently of bias at retrieval (*BR*). We computed *PR* as a measure of accuracy (hits − false alarms) and *BR* as a measure of bias (false alarms/[1 − hits + false alarms]) separately for global letters and local letters. As predicted, participants' accuracy (*PR*) differed as a function of priming (see Table 2). Discrimination of global items was better for participants primed with novelty ($M = .78$, $SD = .20$) than for participants in the control condition ($M = .56$, $SD = .26$) and those in the oldness condition ($M = .43$, $SD = .20$). Discrimination for local items was better when participants were primed with old events ($M = .56$, $SD = .27$), followed by the control condition ($M = .41$, $SD = .25$) and the novelty condition ($M = .33$, $SD = .23$). The interaction between the two factors was significant, $F(1, 45) = 12.95$, $p < .001$, $p\eta^2 = .37$. There was also a main effect of processing level, indicating that participants better remembered global letters ($M = .59$, $SD = .26$) than local letters ($M = .41$, $SD = .27$), $F(1, 45) = 10.99$, $p < .001$, $p\eta^2 = .20$. The main effect of priming was not significant ($F < 1$). There were no effects on the bias measure (*BR*).

Mood, expectancy, liking, importance, difficulty, and novelty. One-way ANOVAs revealed no significant differences in any of these variables as a function of priming (all Fs < 1). Note that the rated novelty of the Navon task did not differ across conditions (Fs < 1).

Table 2
Experiment 1b: Mean Reaction Times, Errors, and Memory Accuracy for Global and Local Letters in the Navon Task by Condition (Standard Deviations in Parentheses)

	Priming		
Measure	Novelty	Control	Oldness
Reaction times (in ms)			
Global letters	496 (78)	526 (86)	582 (104)
Local letters	631 (86)	596 (54)	583 (77)
Mean number of errors			
Global letters	0.19 (0.40)	0.31 (0.48)	0.81 (1.52)
Local letters	1.38 (1.31)	1.00 (0.89)	0.56 (0.89)
Recognition accuracy (*PR*)			
Global letters	.78 (.20)	.56 (.26)	.43 (.20)
Local letters	.33 (.23)	.41 (.25)	.56 (.27)

Note. *PR* = accuracy at encoding.

Manipulation check of the priming phase. Participants in the novelty condition indicated having imagined newer events ($M = 7.13$, $SD = 2.33$) than did those in the control condition ($M = 4.56$, $SD = 2.83$) or those in the oldness condition ($M = 2.69$, $SD = 2.02$), $F(2, 45) = 13.58$, $p < .001$, $p\eta^2 = .38$; $t(45) > 2.19$, $p < .04$, for all contrasts. Participants' reports of the valence or the difficulty of the priming task did not differ by condition ($F < 1$).

In sum, the results of Experiment 1a are consistent with our proposal that global processing is facilitated by novelty framing and local processing is facilitated by oldness framing. Furthermore, in Experiment 1b, merely thinking about a new event elicited global processing that was carried over to the ostensibly unrelated Navon task. Moreover, these effects occurred even under speeded responding, which is a characteristic of habitual and proceduralized actions (Bargh, 1994). The findings on recognition memory further suggest that priming of novelty versus oldness affects encoding of global versus local letters rather than just strategic responding. Importantly, participants did not expect a recognition test when they worked on the Navon task. Note also that in the recognition task, participants were not asked to distinguish between global and local letters and that no bias at the time of retrieval was found. Altogether, the data suggest that the effects of novelty did not affect processing by giving rise to a conscious and effortful process.

Because this experiment showed that framing and priming procedures lead to convergent results, for the following experiments we used them interchangeably. Both procedures have advantages and disadvantages. Whereas framing is highly relevant for applied domains, priming controls better for experimental demand and strategic effects.

One criticism of the Navon task has been that it confounds global versus local processing with conspicuity or different sizes of local versus global letters (Kimchi, 1992; Love, Rouder, & Wisniewski, 1999). In Experiment 2, we avoided this potential confound by using a modified task that varied the size of the global and the local stimuli (Kimchi, 1992).

In Experiment 2, we also tested the case of threatening novelty to see whether aversive arousal that may accompany threatening novel events would lead to the opposite effect, that is, inhibiting global processing and increasing local processing. It has been suggested that the affective tension associated with avoidance motivational states constricts the span of perceptual attention, promoting focus upon local as opposed to global details in visual space (see, e.g., Burke, Heuer, & Reisberg, 1992; Cacioppo, Berntson, & Crites, 1996; Easterbrook, 1959). Tucker and his colleagues extended this hypothesis to positive affect, suggesting that appetitive arousal states broaden perceptual scope (e.g., Tucker & Williamson, 1984; see also Derryberry & Reed, 1998; for a review, see Friedman & Förster, 2008). Two recent studies (Gasper, 2004; Gasper & Clore, 2002) demonstrated that individuals induced to feel happy (i.e., elated arousal) were more likely to categorize complex figures based on their global structure, whereas individuals induced to feel sad (negative arousal) were more likely to categorize them based on their local components.

We do not doubt that affect can influence processing styles or that novelty can sometimes be threatening. The fact that in our first experiments, novelty did not induce aversive arousal may be due to the fact that participants generally trust researchers to have selected relatively safe procedures. Would similar effects emerge with threatening stimuli? Experiment 2 attempted to answer that question.

Experiment 2: Framing a Variant of the Navon Task

Experiment 2 used Gasper's (2004) task to assess global versus local processing. Figure 1 presents a sample item from the task. In this task, participants decide as quickly as possible which of two sample figures looks more like a target figure. The target is a figure (e.g., a square) made of other small figures (e.g., triangles) and the samples are large figures made of the same figures (e.g., a triangle made of triangles and a square made of squares). Importantly, the size of the figures and the number of the small figures that make up the large figure vary. In this way, the task avoids confounding of globality with size (Kimchi, 1992). Samples were presented for a very short duration of 100 ms (see Experiment 1b).

We added two variants of the novelty condition. In the novelty-only condition, we did not tell participants that the new task would be easy. In the novelty-threatening condition, we informed participants that the task was "a novel task with unknown psychological consequences." We thought that in the novelty-only condition, participants would assume that novelty was generally safe and would apply global processing. Contrary to that, in the novelty-threatening condition, we expected the evoked threat to eliminate the global processing that is typical for novel situations.

Method

Participants

Eighty undergraduate students (46 women, 34 men; University of Bremen) participated in an experimental session consisting of a number of psychological tests. They were run individually in 2-hr sessions and received €14 ($18 U.S.) for participation. Three participants were excluded from the analysis because they did not fill out all the questionnaires.

Procedure

Upon arrival, participants were told that they would take part in a perception task. Some participants were told that the task was new (without mentioning that it was easy), some participants were told that the task was familiar, some did not receive any informa-

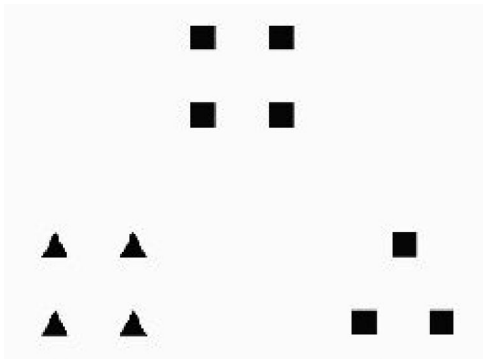

Figure 1. Example for the global/local task as used in Experiment 2.

tion on novelty, and a fourth group, assigned to the novelty-threatening condition, received the following instructions:

> The task that you will be doing is completing a test that you never did before, it has been newly invented. Thus, you will do this test for the first time. We do not know what psychological consequences this task might have and therefore we need to warn you. We do not think that a test like this one could cause harm or threaten your health, but we do not have any experience with it and there is always a slight likelihood that it could damage your health, your self-esteem, or something else. If you do not want to do the task, please quit now.

After the framing instructions, the same questions as described in Experiment 1a were administered with an additional, more detailed mood questionnaire. In addition to general mood, participants rated the extent to which they felt happy, worried, scared, relaxed, anxious, nervous, sad, disappointed, joyous, calm, tense, depressed, afraid, excited, aroused, and relieved on scales ranging from 1 (*not at all*) to 9 (*extremely*). We added also another question on novelty: "How often have you done similar tasks before?", with a scale ranging from 1 (*not at all*) to 9 (*very often*). The two novelty scales were highly correlated in this and the following framing studies (rs from $-.51$ to $-.79$) and were thus combined.

The global/local task was then introduced as a visual matching task on the computer. Participants were asked to decide as quickly as possible, by pressing one of two designated keys, which of two displayed samples was more similar to a target. The target was a figure (e.g., a square) made of other small figures (e.g., triangles), and the samples were large figures made of the same figures (e.g., Sample 1: a triangle made of triangles; Sample 2: a square made of squares; see Figure 1). This task revealed whether people perceived a target as more similar to a sample that shared with it local but not global features or to a sample that shared with it global but not local features. We had three sets of trials. In all of them, the global form was either a square or a triangle sized 58 mm × 58 mm. The local elements were also either squares or triangles, but their size and number varied. One set contained local elements sized 20 mm × 20 mm. Three elements were arranged to form a single triangle and four to form a square. The second set contained local elements sized 10 mm × 10 mm, with three elements forming triangles and four elements forming a square. The third set also contained local elements sized 10 mm × 10 mm, but six of them were used to form a triangle and nine to form a square. Within each set, there were four possible targets (square of squares, triangles of squares, squares of triangles, and triangles of triangles). Sets did not affect any of our results. Each of these targets was presented four times, and whether the local or global match was on the left or the right was counterbalanced. Overall, we created 48 trials, with an additional 10 training trials. A 500-ms sign (****) announced the beginning of each trial and was followed by a 100-ms black screen, after which a target figure appeared together with the samples for 100 ms. A 1-s ITI followed a response. A trial was terminated after 2 s if no response was made. The percentage of global choices out of the 48 trials was the dependent measure.

After performing the global/local task, participants filled out the mood measures again and the same measures used in Experiment 1 to assess motivation, difficulty, importance of the task, and experienced novelty. At the end of the session, thorough debriefing took place; no participant suspected any relation between the framing and performance on the global/local task.

Results and Discussion

Global Matches

Missing responses, which did not differ as a function of framing, constituted less than 1% of responses and were excluded. Consistent with our predictions, participants in the novelty-only condition selected more global matches ($M = 68\%$, $SD = 15\%$) than those in the control condition ($M = 54\%$, $SD = 11.5\%$) and the oldness condition ($M = 44\%$, $SD = 8\%$). Thus, novelty enhanced global processing. However, when novelty was threatening, participants selected fewer global matches ($M = 46\%$, $SD = 17\%$) than participants in the novelty-only condition. The overall main effect of framing was significant, $F(3, 44) = 12.49$, $p < .001$, $p\eta^2 = .34$. Simple contrast analyses revealed that all the comparisons were significant, with two exceptions: The novelty-threatening condition differed only marginally from the control condition, $t(73) = 1.94$, $p < .06$, and did not differ from the oldness condition ($t < 1$).

It seems that merely framing a task as novel, without mentioning that it is easy, led to more global processing compared to framing the same task as familiar. However, when novelty was threatening, it led to an increase in local choices compared to both the novelty-only condition and the control condition. Was the effect of threatening novelty, unlike that of novelty only, mediated by aversive arousal?

Mood, Expectancy, Liking, Importance, Difficulty, Novelty, and Motivation

A one-way ANOVA revealed no significant differences in general mood, expected difficulty (measured before the task), liking, expectancy of success, importance, and motivation (all Fs < 1.80, all ps $> .15$). Significant differences emerged in the rated novelty of the task, $F(3, 73) = 28.70$, $p < .001$, $p\eta^2 = .54$, indicating that in the two novelty conditions, the task was rated as more novel ($M_{\text{novelty-threatening}} = 7.27$, $SD = 0.81$; $M_{\text{novelty-only}} = 7.39$, $SD = 0.84$; $t < 1$, for the difference between these two conditions) than in the oldness condition ($M = 4.50$, $SD = 1.53$), $t(73) = 8.02$, $p < .001$, and in the control condition ($M = 6.06$, $SD = 1.20$), $t(73) = 3.49$, $p < .001$.

We found no significant differences between conditions in ratings of specific emotions (Fs < 1.01, ps $> .39$), except for the negative arousal emotions: anxious, $F(3, 73) = 10.44$, $p < .001$; nervous, $F(3, 73) = 16.07$, $p < .001$; worried, $F(3, 73) = 49.89$, $p < .001$; afraid, $F(3, 73) = 6.62$, $p < .001$; tense, $F(3, 73) = 4.07$, $p < .01$; and (negatively) aroused, $F(3, 73) = 22.17$, $p < .001$. Because all these emotions were highly correlated (Cronbach's $\alpha = .81$), we averaged them into an index of negative arousal. The novelty-threatening condition evoked much higher negative arousal ($M = 6.64$, $SD = 0.86$) than the novelty-only condition ($M = 4.44$, $SD = 0.17$), the oldness condition ($M = 4.58$, $SD = 0.69$), and the control condition ($M = 4.83$, $SD = 0.58$), which did not differ from each other, $F(3, 73) = 40.80$, $p < .001$, $p\eta^2 = .63$, for the contrast between the novelty-threatening condition and the other conditions.

Arousal and number of global matches were correlated in the novelty-threatening condition, $r(22) = -.86$, $p < .001$, but not in the other conditions: novelty-only, $r(22) = -.02$, *ns*; oldness,

$r(20) = -.30$, $p = .19$; and control, $r(16) = .09$, *ns*. Thus, negative arousal predicted more local processing when novelty was threatening. Consistent with our prediction, nonthreatening novelty increased global processing independent of arousal.

In sum, three studies using variants of global/local processing tasks (Experiments 1a, 1b, and 2) showed a global processing advantage when participants thought of novel events. These effects seem to be independent of mood or valence and size of the items (i.e., conspicuity; see Experiment 2), number of elements, or time pressure. Experiment 2 also showed that mere novelty does not influence mood, even if not explicitly introduced in a nonthreatening way. However, when novelty is presented as threatening, then it may produce unpleasant arousal, which, in turn, leads to local processing.

In the next set of studies, we looked at how novelty affected performance in a German variant of the GCT (Ekstrom, French, Harman, & Dermen, 1976), in which participants are asked to name a series of fragmented pictures of familiar objects (i.e., to close a gestalt). Although GCT and Navon task scores are correlated (Förster, 2008a), there is an important difference between the tasks: Whereas, in the Navon task, participants merely detect global or local letters, in the GCT, they have to integrate, restructure, and put together disconnected pieces of information in a meaningful way (Kimchi, 1992; Schooler & Melcher, 1995). Performance on the GCT should be impeded by local processing, which focuses on disconnected details and prevents integration.

Experiments 3a and 3b: Priming and Framing the Gestalt Completion Task

Method

Participants

In Experiment 3a, 42 undergraduates (22 women, 20 men; University of Bremen) and, in Experiment 3b, another 53 undergraduates (33 women, 20 men; University of Bremen) participated in a study on several perception and concentration tasks. Participants were run individually in 2-hr sessions and received €14 ($18 U.S.) for participation.

Procedure

In both experiments, participants received a booklet, where general instructions explained that for economic reasons, we added several different tasks within a single study. Participants completed personality questionnaires for an unrelated experiment for about 30 min. Afterward, participants in Experiment 3a were introduced to the GCT, which was described either as a completely newly developed test or as a test that was similar to psychological tests one had done before, as in Experiment 1a. In Experiment 3b, we primed participants with novelty versus oldness by asking them to think about a new event or about an event that had happened before, as in Experiment 1b. The control group did not undergo priming. Before the GCT, participants reported their mood, expectations, liking of the task, and its importance, as in Experiment 1a. We then administered the first 10 items of the GCT (Ekstrom et al., 1976; see Friedman & Förster, 2000), which were printed on two pages. Participants had 2 min to complete the task, which was timed by the experimenters with a stopwatch. In Experiment 3b, participants were also asked to answer 10 general knowledge questions, which were taken from the Graduate Record Examination (GRE; Friedman & Förster, 2000). They had 2 min to answer these questions. Performance on the latter test should not be influenced by global versus local processing styles, as it merely requires retrieving facts from long-term memory (e.g., "What is the capital of Brazil?"). These questions were included to rule out the possibility that novelty simply influences motivation to work on a subsequent task. The GRE and the GCT tasks were given in counterbalanced order, which had no effects on any reported results.

After the tasks, participants filled out the same questionnaire as in Experiment 1, with an additional question on motivation ("How motivated were you to perform well in the task?": 1 = *I was not motivated at all,* 9 = *I was highly motivated*). In Experiment 3b, participants answered similar questions about both the GCT and the GRE tasks.

At the end of the entire session, participants were debriefed, probed for suspicions, paid, and released. None of the participants reported any suspicions regarding a connection between the novelty framings or priming and task performance. In Experiment 3a, the design was a three (framing: novelty, oldness, control) between-participants unifactorial. In Experiment 3b, framing was replaced with priming.

Results and Discussion

Experiment 3a

GCT scores. GCT scores were computed by counting the pictures (out of 10) correctly identified. A one-way ANOVA compared the scores in the novelty, oldness, and control conditions. Consistent with our predictions, participants in the novelty condition scored higher ($M = 8.8$, $SD = 0.08$) than those in the control condition ($M = 7.5$, $SD = 1.2$). Scores in the oldness condition ($M = 6.5$, $SD = 1.9$) were even lower, $F(2, 39) = 10.61$, $p < .001$, $p\eta^2 = .35$. All the contrasts were significant, $t(39) > 2.04$, $p < .05$.

Mood, expectancy, liking, importance, difficulty, novelty, and motivation. There were no significant differences between conditions in mood, expected difficulty, liking, expectancy of success, importance, and motivation (all Fs < 2.4, all ps $> .10$). However, replicating the findings of Experiments 1a and 2a, participants in the novelty framing condition rated the task as more novel ($M = 8.53$, $SD = 0.17$) than participants in the control condition ($M = 7.14$, $SD = 1.56$) and in the oldness framing condition ($M = 6.32$, $SD = 1.20$), $F(2, 39) = 12.27$, $p < .001$, $p\eta^2 = .39$. All contrasts between the groups were (marginally) significant, $t(39) > 1.82$, $p < .08$. We entered this variable as covariate into the ANOVA of the GCT scores. No significant effect for the covariate was found, and the effect of condition remained statistically significant; thus, there was no indication for mediation.

Is it possible that novelty motivated participants? As in our other studies, we did not find any effect of framing on reported motivation. However, to examine this possibility more closely, in Experiment 3b we added a general knowledge task, which should not be affected by processing styles but may be affected by motivation.

Experiment 3b

GCT and general knowledge scores. Replicating Experiment 3a, participants in the novelty condition scored higher on the GCT ($M = 8.6$, $SD = 0.11$) than those in the control condition ($M = 7.5$,

SD = 0.11) and in the oldness condition (*M* = 6.3, *SD* = 0.24), $F(2, 50) = 8.65$, $p < .001$, $p\eta^2 = .26$. All contrasts were significant, $t(50) > 2.01$, $p < .05$.

In contrast, no differences between groups emerged in the general knowledge task (novelty condition: *M* = 5.5, *SD* = 2.4; oldness condition: *M* = 5.1, *SD* = 0.15; control condition: *M* = 5.8, *SD* = 0.20; $F < 1$). On the basis of this pattern of results, we conclude that general motivation was not responsible for the better performance in the GCT after novelty priming. Instead, we suggest that priming of novelty affected performance in the GCT by facilitating global processing.

Mood, expectancy, liking, importance, difficulty, novelty, and motivation. There were no significant differences between conditions in mood, expected or experienced difficulty, liking, expectancy of success, importance, and motivation (all Fs < 1). Moreover, ratings of reported novelty did not differ between conditions (Fs < 1).

Manipulation check of priming. Participants in the novelty condition indicated having imagined newer events (*M* = 4.83, *SD* = 1.51) than participants in the control condition (*M* = 4.00, *SD* = 1.19) and in the oldness condition (*M* = 2.06, *SD* = 0.80), $F(2, 50) = 24.95$, $p < .001$, $p\eta^2 = .50$; all the contrasts were significant, $t(50) > 2.04$, $p < .05$. However, the stories did not differ in valence or in difficulty of imagining them (Fs < 1).

The experiments presented so far demonstrate, using both framing and priming and a diversity of perceptual tasks, that thinking of novelty enhances global processing, whereas thinking of familiar events reduces it. Experiments 3a and 3b further indicate that novelty enhances perceptual integration processes. We think that one basic mechanism that may drive integration is the use of broad categories (Schwarz & Bless, 1992). We suggest that when people anticipate a novel stimulus, they not only prepare their perception in a way that suits integration but also activate more general, abstract categories that help integration. The opposite happens when they anticipate a familiar stimulus.

In Experiment 4, we tested this hypothesis with Isen and Daubman's (1984; see Rosch, 1975) breadth of categorization task, in which participants rate the typicality to a category (e.g., *vehicle*) of atypical exemplars (e.g., *foot*). We predicted that novelty priming (Experiment 4a) and framing (Experiment 4b) would lead to higher typicality ratings of atypical exemplars, whereas oldness framing and priming would have an opposite effect. Experiment 4a also manipulated valence of the prime to explore whether mild inductions of valence would affect mood and thus also affect global processing, in addition to (and perhaps independent of) novelty. We based this prediction on Isen and Daubman's original study, in which positive mood produced a higher acceptance to categories of atypical (but not moderately typical or highly typical) exemplars.

Experiments 4a and 4b: Priming, Framing, and Breadth of Categorization

Method

Participants

For Experiment 4a, 72 undergraduates (42 women, 30 men; University of Bremen) participated in a study on unrelated psychological tasks. They completed the study individually in 2-hr sessions and received €14 ($18 U.S.) for participation. For Experiment 4b, 38 first-year undergraduate students (16 men, 22 women; University of Bremen) participated. They completed the study during class demonstrations of experimental methodology. Two students did not wish to participate.

Procedure

In Experiment 4a, participants worked on unrelated personality measures for the first 45 min. They were then introduced to a 5-min perspective-taking task in which they imagined a situation that would happen the next day, which was either positive (a boat trip) or negative (an unpleasant job interview). Participants in the control group did not receive any further instructions. Participants in the novelty condition were asked to imagine that this was the first time they experienced the situation, whereas participants in the oldness condition were asked to imagine that they had already experienced this situation several times. Participants were asked to write down their thoughts. Then, participants performed the categorization task, which was allegedly unrelated to the perspective-taking task and was thus printed in a different font and a different format. A pretask questionnaire similar to that of Experiment 1b followed instructions. The tasks itself consisted of four category names (*furniture, vehicle, vegetable,* and *clothing*), each followed by nine items. Three of these items were good exemplars of the category. As in Isen and Daubman (1984), three good and three moderately good exemplars were also included (although the effect was expected for the poor examples) to rule out a simple response bias. Participants were asked to rate the goodness of fit of each exemplar to the respective category ("How typical is *X* for the category of *Y*?") on a 10-point scale (0 = *not typical,* 9 = *very typical*). After completing the categorization task, participants filled out a posttask questionnaire similar to Experiment 1b and were asked about possible relations between the two tasks. No hypothesis-consistent suspicions were expressed on this open-ended probe.

In Experiment 4b, framing replaced priming. Specifically, as in Experiment 1a, participants were told that the task they were going to do was new and easy, old and easy, or just easy (in the control condition). Because the experiment was conducted in a social psychology class, it was emphasized that anybody could choose not to participate or could quit at any point. Questionnaires similar to Experiment 1a preceded and followed the task. We also assessed participants' hypotheses about the study. No relevant hypotheses were raised. Following completion, participants were debriefed and thanked. In Experiment 4a, the experimental design was a bifactorial 3 (priming novelty: novelty, oldness, control) × 2 (priming valence: positive, negative), both varied between participants. In Experiment 4b, the design was a between-participants unifactorial with three conditions of framing: novelty, oldness and control.

Results and Discussion

Experiment 4a

Goodness-of-fit ratings. We hypothesized that participants in the novelty conditions would rate atypical exemplars as better

category members than participants in the control condition and that participants in the oldness condition would give even lower ratings. We calculated the average goodness-of-fit ratings for the 12 atypical (i.e., poor) exemplars and for the 24 typical (i.e., good and moderately good) exemplars (see Table 3) and submitted them to a 3 (novelty of priming) × 2 (valence of priming) ANOVA. Consistent with this prediction, participants in the novelty condition rated the atypical exemplars as better members of their respective categories ($M = 3.14$, $SD = 0.80$) than did participants in the control group ($M = 2.59$, $SD = 0.43$), and participants in the oldness condition rated them as even worse members of their categories ($M = 2.00$, $SD = 0.60$), $F(2, 66) = 20.44$, $p < .001$, $p\eta^2 = .38$; all contrasts were significant, $t(69) > 3.10$, $p < .01$. Valence of priming (pleasant boat trip vs. unpleasant job interview) did not have a main effect or an interaction (Fs < 1.4).

Consistent with other research using this task (Friedman & Förster, 2000, 2001; Isen & Daubman, 1984), the goodness-of-fit ratings of highly typical and moderately typical exemplars (analyzed either separately or together) revealed no significant differences between conditions (all ts < 1.1). This suggests that the framing effects on atypical exemplar ratings did not reflect a simple response shift, lending support to our contention that priming of novelty produces more inclusive categorization.

Mood, expectancy, value, importance, difficulty, novelty, and motivation. Participants' mood was influenced by the valence of the priming task. Specifically, in the positive conditions ($M_{novelty} = 6.67$, $SD = 1.61$; $M_{control} = 7.00$, $SD = 1.28$; $M_{oldness} = 6.50$, $SD = 1.24$), participants felt significantly better than in the negative conditions ($M_{novelty} = 5.01$, $SD = 2.02$; $M_{control} = 4.83$, $SD = 1.12$; $M_{oldness} = 4.67$, $SD = 1.07$), $F(1, 66) = 30.50$, $p < .001$, $p\eta^2 = .32$, for the effect of priming valence. There were no other main effects or interactions with mood (all Fs < 1). There were no significant differences in the ratings of specific emotions (Fs < 1.5). None of the other variables were influenced by the two factors (Fs < 1).

A significant correlation between self-reported mood and the goodness-of-fit rating of atypical exemplars was found in the total sample (across conditions)—the better a participant's mood, the higher was his or her acceptance of atypical exemplars as members in the respective category, $r(72) = .31$, $p < .01$. The correlation between typicality ratings of the moderate and good exemplars and mood was also positive, yet not significant, $r(72) = .19$, $p = .12$. This result replicates findings by Mikulincer, Kedem, and Paz (1990; see also Mikulincer, Paz, & Kedem, 1990), who found that both trait and state anxiety were positively associated with the tendency to reject exemplars from categories. Thus, it seems that bad mood leads to narrow conceptual scope (see also Gasper & Clore, 2002).

Table 3
Experiment 4a: Mean Typicality Ratings for Poor and Good Exemplars in the Isen Categorization Task by Condition (Standard Deviations in Parentheses)

Measure	Priming		
	Novelty	Control	Oldness
Atypical exemplars			
Positive valence	3.33 (0.99)	2.48 (0.36)	2.08 (0.76)
Negative valence	2.95 (0.49)	2.70 (0.49)	1.91 (0.35)
Typical exemplars			
Positive valence	6.91 (0.55)	7.03 (0.51)	7.12 (0.65)
Negative valence	7.29 (0.31)	6.95 (0.53)	7.07 (0.41)

Our results show an effect of mood on processing style that is independent of the effect of prime novelty. Thus, although our manipulation of prime valence affected mood and although mood was related to categorization of atypical exemplars, the manipulation of prime valence failed to affect categorization. Possibly, our inductions were simply too mild. Indeed, in a recent meta-analysis, Baas, De Dreu, and Nijstad (2008) showed that mood effects on category breadth emerge only with high (positive or negative) arousal.

Manipulation check of priming. Self-reports indicated that participants in the novelty condition ($M = 6.58$, $SD = 1.86$) rated the priming story as more novel than did participants in the control condition ($M = 4.21$, $SD = 2.23$) and in the oldness condition ($M = 2.75$, $SD = 1.36$), $F(2, 66) = 25.33$, $p < .001$, $p\eta^2 = .43$. Negative events were clearly more negative ($M = 2.64$, $SD = 1.29$) than positive events ($M = 7.00$, $SD = 1.72$), $F(1, 66) = 143.50$, $p < .001$, $p\eta^2 = .69$. Self-reported novelty and valence of priming, however, did not mediate the reported effect of priming on categorization, which remained unchanged when rated novelty and valence were entered separately as covariates to the ANOVA.

Experiment 4b

Goodness-of-fit ratings. Participants in the novelty condition ($M = 2.74$, $SD = 0.26$) rated the atypical exemplars as more typical members of their respective categories than did participants in the control group ($M = 2.44$, $SD = 0.22$), whereas participants in the oldness condition ($M = 2.19$, $SD = 0.47$) gave the lowest ratings (see Table 4), $F(2, 33) = 7.92$, $p < .01$, $p\eta^2 = .32$. Contrasts revealed that the difference between the novelty and oldness conditions was significant, $t(33) = 3.98$, $p < .001$, as was the difference between the novelty and control conditions, $t(33) = 2.14$, $p < .04$. The difference between the oldness and the control conditions was only marginally significant, $t(33) = 1.84$, $p = .08$. A similar analysis on the ratings of the highly typical or moderately typical exemplars revealed no significant differences (all ts < 1), ruling out the possibility of an overall response bias.

Mood, expectancy, liking, importance, difficulty, and novelty. There were no significant differences between the conditions in mood, expected or experienced difficulty (measured before or after the task), liking, expectancy of success, and importance (all Fs < 1). As expected, ratings of the task's novelty were higher in the novelty condition ($M = 6.38$, $SD = 1.38$) than in the oldness condition ($M = 3.00$, $SD = 1.07$), with the control group falling between ($M = 4.88$, $SD = 1.09$), $F(2, 33) = 24.29$, $p < .001$, $p\eta^2 = .60$. All contrasts were significant, $t(33) > 3.09$, $p < .001$. As in previous studies, however, when rated novelty was entered as covariate, the effect of manipulated novelty remained significant, revealing no evidence for mediation.

In sum, Experiments 4a and 4b demonstrated an effect of novelty on breadth of categorization of objects. Experiment 5 extended this effect to categorization of activities.

Table 4
Experiment 4b: Mean Typicality Ratings for Poor and Good Exemplars in the Isen Categorization Task by Condition (Standard Deviations in Parentheses)

	Framing		
Measure	Novelty	Control	Oldness
Atypical exemplars	2.74 (0.26)	2.44 (0.22)	2.19 (0.47)
Typical exemplars	6.66 (0.31)	6.71 (0.22)	6.75 (0.21)

Experiment 5a and 5b: Framing and Priming Level of Action Identification

Experiments 5a and 5b used Vallacher and Wegner's (1989) Behavior Identification Form (BIF). The BIF presents activities, each followed by two restatements, one corresponding to the concrete *how* aspect of the behavior (low-level construal) and the other corresponding to the more abstract *why* aspect of the behavior (high-level construal). For example, "locking a door" was followed by the alternative restatements (a) "putting a key in the lock" and (b) "securing the house." Although the BIF was originally designed as a personality test, recent studies show that manipulated psychological distance may affect responses on this measure. As described above, Liberman and Trope (1998) found that temporal distance enhanced choice of abstract behavior identifications. Similar effects emerged with social distance (Liviatan, Trope, & Liberman, 2008), spatial distance (Fujita et al., 2006), and hypotheticality (Wakslak et al., 2006). We predicted that novelty would also promote a more abstract construal of behaviors.

Method

Participants

For Experiment 5a, 64 undergraduates (45 women, 19 men; Jacobs University Bremen, Bremen, Germany) originating in 40 countries participated in the study which took place during a lecture in an Introduction to Social Psychology class. In Experiment 5b, another 44 undergraduate (31 women, 13 men; Jacobs University Bremen) from 21 countries participated in similar conditions a year later. Four participants in Experiment 5a and 2 participants in Experiment 5b chose to forego the opportunity to participate in the study.

Procedure

Similar to Experiment 4b, the instructor announced a class demonstration of an experiment on how people think about certain actions in everyday life. The declared aims of the study were both to test a scientific hypothesis and to familiarize students with the logic of experimentation. Each participant received the BIF. In Experiment 5a, we framed novelty in the same way as in Experiment 1a. In Experiment 5b, we asked participants to imagine having a boat trip the next day and to imagine either that this was the first time they had taken such trip (novelty condition) or that they had been on similar trips before (oldness condition). Participants in the control condition did not receive any instructions about the novelty of the trip. This imagination task was allegedly unrelated to the next task (i.e., the BIF). Before and after participants answered the BIF, we administered the same measures as in Experiments 1a and 1b; we also measured emotions, as in Experiment 2a. At the end of the experiment, participants received the same questionnaires as in Experiments 1a and 1b. In addition, we probed for suspicion. None of the students mentioned that they were suspicious or thought they had been influenced by the framing or the priming. In a class discussion that followed the experiment, most students indicated that they would be surprised if the predicted results would be obtained. The experimental design included a single between-participants factor of framing (Experiment 5a) or three priming (Experiment 5b), with three levels: novelty, oldness, and control.

Results and Discussion

Experiment 5a

BIF scores. Each high-level behavior construal was scored as 1, and each low-level behavior construal was scored as −1. Mean scores, computed for each participant, ranged from −1 to 1. Construal level was higher in the novelty condition ($M = .25$, $SD = .20$) than in the oldness condition ($M = .02$, $SD = .23$), with the control condition falling between ($M = .13$, $SD = .22$), $F(2, 57) = 6.56$, $p < .01$, $p\eta^2 = .19$. Contrast analyses revealed that the difference between novelty and control conditions was marginally significant, $t(57) = -1.95$, $p = .056$, as was the difference between the oldness and the control conditions, $t(57) = -1.67$, $p = .10$. The difference between the novelty and oldness conditions was significant, $t(57) = -3.62$, $p < .001$.

Mood, expectancy, value, importance, difficulty, novelty, and motivation. There were no effects of framing on any of these variables (including specific emotions), except for perceived novelty (all Fs < 2.01, all ps $> .13$). As in Experiment 1a, participants rated the task as more novel when it was introduced as new ($M = 8.25$, $SD = 0.84$) compared to when it was introduced as old ($M = 6.25$, $SD = 2.27$), with the control group falling between ($M = 6.85$, $SD = 1.20$), $F(2, 57) = 8.64$, $p < .01$, $p\eta^2 = .23$. Contrast analyses showed that the novelty framing group differed significantly from the control condition, $t(57) = 2.84$, $p < .01$, and from the oldness condition, $t(57) = 4.05$, $p < .001$. The latter two did not differ significantly from one another, $t(57) = 1.22$, $p = .23$. When novelty was entered as covariate, the effect of manipulated novelty on BIF scores remained significant, thus showing no evidence for mediation.

Experiment 5b

BIF scores. Construal level was higher in the novelty condition ($M = .29$, $SD = .18$) than in the oldness priming condition ($M = .00$, $SD = .19$), with the control condition falling between ($M = .14$, $SD = .18$), $F(2, 39) = 8.63$, $p < .001$, $p\eta^2 = .31$. All contrasts were significant, $t(39) > 2.08$, $p < .05$.

Mood, expectancy, value, importance, difficulty, novelty, and motivation. Priming of novelty did not affect any of these variables (all Fs < 1).

Manipulation check of priming phase. Participants reported having imagined a newer event when they were asked to imagine the event as new ($M = 6.79$, $SD = 2.67$), as compared to when

they were asked to imagine it as old ($M = 3.00$, $SD = 1.96$), with the control condition falling between ($M = 5.07$, $SD = 2.16$), $F(2, 39) = 9.65$, $p < .001$, $p\eta^2 = .33$. All contrast analyses were significant, $t(39) > 1.99$, $p = .05$. There were no significant differences between conditions in valence of imagined events, nor did participants' rating of the subsequent task's novelty vary as a function of priming (all Fs < 1). When each of these variables was entered separately as covariates into the analyses, the effect of manipulated novelty remained significant.

Experiments 5a and 5b demonstrated an influence of novelty versus oldness framing and priming on level of behavior construal. Novelty framing and priming led participants to describe activities in more abstract *why* terms, whereas oldness framing and priming led participants to describe the same activities in more concrete *how* terms. Our last experiment tested an applied implication of these effects for consumer decision making.

Experiment 6: Framing Novelty and the Subjective Importance of Desirability Versus Feasibility Consideration in Consumer Decisions

Experiment 6 examined the effect of novelty on the subjective importance of desirability and feasibility considerations in consumer decisions. On the basis of prior research (Liberman & Trope, 1998), we assume that desirability (*why*) features, which are related to the product's main purpose (e.g., quality, advanced functions, reliability), are more abstract, whereas feasibility (*how*) features, which are more relevant to the comfort and ease of purchasing and using the product, are more concrete. Consistent with CLT, Liberman and Trope (1998, Study 3) found that temporal distance from decisions increased the importance people assigned to desirability considerations relative to feasibility considerations. Liviatan et al. (2008) found a similar effect of social distance. We expected similar effects for a novelty versus oldness framing in that, when participants are considering novel objects, they try to abstract general meaning from them. Activation of abstract and broad categories then leads to a focus on the main purpose (why) rather than the more concrete aspects of how to use the novel object.

Participants read descriptions of four products, allegedly about to be released to the market. Two of the products were described as new (novelty condition) and the other two as improved versions of existing products (oldness condition). For each product, participants rated the importance of four features of the product for the decision whether to purchase it, two of which were pretested to represent desirability considerations and two of which were pretested to represent feasibility considerations. We expected that framing a product as novel would increase the subjective importance of desirability features relative to feasibility features, as compared to framing it as old.

Method

Participants

Forty-eight Tel Aviv University (Tel Aviv, Israel) undergraduate students (25 women, 23 men) participated in an experiment on "consumer behavior."

Procedure

Participants filled out a questionnaire containing descriptions of four products (a Nokia mobile phone, an IBM laptop computer, a SONY DVD player, and a Renault private car). Two of the products were presented as new (novelty condition), whereas the other two were presented as improved versions of an existing product (oldness condition). For example, the description of the mobile phone in the novelty condition was as follows: "Nokia is about to release the next generation of mobile phones. It is a new product, based on technologies never implemented before. It is not an improvement of existing models, but a different, new device." The description of the mobile phone in the oldness condition was as follows: "Nokia is about to release an upgraded version of the existing model of mobile phones, 6085. It is another version of the model marketed during the last years."

Each participant received one of two versions of the questionnaire; in the first, the mobile phone and the car were presented as new and the DVD player and laptop computer as improved versions, whereas the opposite was true for the second version. After reading each description, participants were asked to rate the importance of four features of the product, if they were to buy it, on a scale ranging from 1 (*not important at all*) to 7 (*very important*). We conducted a pretest to select two desirability and two feasibility features for each product. In the pretest, 15 psychology undergraduates were asked to rate, for a number of features of each product, the extent to which it was related to the product's quality (representing desirability), as opposed to the comfort of using the product (representing feasibility). The rating scale ranged from 1 (*comfort*) to 7 (*quality*). They were also asked to generate, for each product, two to three features related to the comfort of using it and two to three features related to its quality or to improvements and advanced functions. Features rated as poorly related to both feasibility and desirability (ratings ranging from 2.5 to 5.5 points) were replaced by features suggested repeatedly in the open-ended part. To give an example of the features used in the final questionnaire, the desirability features of a mobile phone included "enables sending photos" and "provides internet access," whereas the feasibility features were "allows for automatic word completion in text messages" and "has Hebrew menus."

To summarize, the design was 2 (abstractness of consideration: desirability vs. feasibility) × 2 (framing: novelty vs. oldness) × 2 (version: mobile phone and car novel vs. DVD player and laptop computer novel). Only the last variable was manipulated between participants.

Results and Discussion

We normalized importance rating within each feature to cancel out effects of the specific content of the feature and of specific products. We then computed four indexes per participant: novelty-desirability, novelty-feasibility, oldness-desirability and oldness-feasibility, by averaging the importance ratings of the relevant features. Next, we analyzed these indexes using a Consideration × Framing × Version mixed ANOVA. No significant main or interaction effects were found for version, and this factor was removed from further analyses. As expected, the analysis yielded a significant Consideration × Framing interaction, $F(1, 46) = 15.68$, $p < .001$, $p\eta^2 = .25$. Simple effects analyses revealed that participants

rated the product's desirability features as more important when it was described as new ($M = .20$, $SD = .49$), than when it was described as an improvement of an existing product ($M = -.20$, $SD = .71$), $t(47) = 3.52$, $p < .001$. The opposite was found for feasibility features, which were rated as more important when the product was described as an improvement of an existing product ($M = .16$, $SD = .50$) as compared to when it was described as new ($M = -.16$, $SD = .66$), $t(47) = 3.52$, $p = .003$ (see Table 5). There were no other significant effects in the ANOVA (all Fs < 1).

In sum, Experiment 6 extended the demonstrated effects of novelty from perception and categorization to decision making and consumer choice. Confirming our expectations, framing a product as novel increased the importance participants assigned to its abstract, desirability features, whereas framing it as an improvement of an existing product increased the importance participants assigned to its concrete, feasibility features.

The applied significance of these findings for marketing and advertising is readily apparent. They suggest that, when marketing a product (e.g., a car), companies should take into consideration its novelty status. If it is a new product, they are advised to highlight its desirability features (e.g., the car's reliability, its speed, or its efficiency), which are expected to be relatively prominent in the consumers' considerations in this case. Conversely, if it is only an improvement of an existing product, they are advised to highlight its feasibility features (e.g., the car seats' comfort, its air-conditioning system's power), which are expected to have higher consumer priorities in this case. Moreover, companies are advised to take into account the construable nature of novelty. As the line between a novel product and an improvement of an existing product is often thin, companies can suit the presentation of products to their stronger sides. If the product's strength lies in its quality, reliability, and advanced functions (desirability features), it may be advantageous to introduce it as a completely new product. Conversely, if the product's strength lies in its comfort and ease of use (feasibility features), introducing it as an improvement of an existing product may be more beneficial.

General Discussion

The present experiments have shown that novelty and familiarity affect processing style, such that relative to a control group, expecting a novel event or stimulus enhances global processing, whereas expecting a familiar event or stimulus enhances local processing. More specifically, Experiments 1–3 showed facilitative effects of novelty on global perception and of oldness on local perception, Experiment 4 showed more inclusive categorization when people think of novelty compared to oldness, and Experiment 5 demonstrated similar effects with abstract versus concrete construals of activities. Finally, Experiment 6 showed novelty effects on the subjective importance of abstract (desirability) versus concrete (feasibility) considerations in consumer decision making. These effects occurred even under processing constraints (Experiments 1b and 2) and were not mediated by self-reported mood, emotions, valence of priming, expected or perceived task difficulty, expectancies of success, perceived task importance, or liking of the task.

Table 5
Experiment 6: Mean Importance Ratings for Desirability and Feasibility Features by Condition (Standard Deviations in Parentheses)

	Framing	
Consideration	Novelty	Oldness
Desirability features	.20 (.49)	−.20 (.71)
Feasibility features	−.16 (.66)	.16 (.50)

Interestingly, the effects of novelty emerged regardless of whether participants consciously experienced the task as novel. When the task was framed as novel (vs. old; Experiments 1a, 2, 3a, 4b, and 5a), participants perceived it as such, but this perception did not mediate the effect of novelty on performance. When only primed with novelty (vs. oldness; Experiments 1b, 3b, 4a, and 5b). the tasks assessing processing styles were not even perceived as more novel, yet priming affected processing. The latter series of experiments reflect the cognitive nature of the effects. A processing style elicited in one phase of the experiment carried over to an unrelated subsequent task, a phenomenon Schooler and colleagues (Schooler, 2002; Schooler, Fiore, & Brandimonte, 1997; Schooler, Ohlsson, & Brooks, 1993; see also Förster & Liberman, 2007) named *processing shift.* Such processing shifts have been found in other domains, such as when a local processing style elicited in one phase of an experiment undermined recognition of faces in an unrelated subsequent phase (Macrae & Lewis, 2002).

Our findings show similar results with perception, categorization, and higher level reasoning. One may then wonder whether global versus local perception mediates effects on higher cognitive levels. This view is consistent with prominent embodiment views in cognitive psychology, which suggest that high-level cognition is fundamentally based on perception (Barsalou, 1999; Finke, 1985; Gilbert, 1991; Masson, 1995). Furthermore, many cognitive and social psychological theorists (Anderson & Spellman, 1995; Derryberry & Reed, 1998; Förster, 2009; Friedman & Förster, 2008; Neill & Westberry, 1987; Neumann & DeSchepper, 1992; Posner, 1987) have suggested that the attentional selection mechanism utilized on a perceptual level (e.g., to visually focus upon Percept X, while excluding Percepts Y and Z) is correlated with the attentional mechanism utilized to select conceptual nodes within the semantic network (i.e., to regulate the extensiveness of spreading activation). To illustrate, when viewing a forest, attention may be directed to its entire gestalt or to the trees. Likewise, when the concept of *forest* is semantically primed, conceptual attention may be directed narrowly (e.g., allocating activation to the concepts of *trees, wood,* and their close associates) or broadly (e.g., collectively allocating activation to the concepts *trees, nature, animals,* and *flowers* and to remote associates such as *tooth sticks* or *Pinocchio*). Priming global versus local perception, Friedman, Fishbach, Förster, and Werth (2003) showed facilitating effects of global perception on tasks reflecting breadth of attention, such as creative generation and search for similarities (Förster, 2009; Förster, Liberman, & Kuschel, 2008). It is possible that in our studies assessing conceptual breadth and reasoning (Experiments 4–6), novelty increased global perception, which further increased breadth of conceptual attention. More research is needed showing mediation and moderation of perceptual scope on conceptual scope.

Boundary Conditions: Mood, Valence, Approach Versus Avoidance, Distance, and Expectancies

Mood, valence, approach versus avoidance, distance, and expectancies have been found to affect global versus local processing. We now examine our results in view of these relations, all of which suggest potential boundary conditions to our findings.

Mood and Valence

Novelty can be both exciting and interesting as well as threatening and aversive (Berlyne, 1971; Scherer, 2001). It was the case of nonthreatening novelty that we examined in most of our studies, removing any implications of threat by telling participants that the task would be easy (Experiments, 1a, 3a, 4b, and 5a). Experiment 2b showed, in addition, that explicit reference to ease was not necessary, as novelty increased global processing even without it. When novelty was framed as threatening, however, it produced negative arousal, which in turn increased local processing (see Gasper, 2004).

In all our studies, measures of mood, of specific emotions, and of task valence did not mediate the effect of nonthreatening novelty on global versus local processing. In Experiments 1a, 1b, 3a, 3b, 4b, 5a, and 5b, our manipulation of novelty versus oldness did not affect mood, emotions, or valence. In Experiment 4a, we manipulated valence of the priming event, which caused, expectedly, significant changes in mood. In all conditions of that study, we found a positive correlation between self-reported mood and acceptance of atypical exemplars (i.e., global processing), which is again in line with research on mood and scope of attention (for a summary, see Friedman & Förster, 2008). However, this effect was independent from our novelty priming effect, for which no mediation of mood was found. In sum, the data suggest that two factors, novelty and mood, can independently influence processing styles.

Approach Versus Avoidance

Recent theorizing has suggested that approach versus avoidance actions, which do not necessarily affect mood, may affect processing style (see Förster, Friedman, Özelsel, & Denzler, 2006; Förster & Higgins, 2005; Friedman & Förster, 2008). For example, Förster et al. (2006) asked participants to complete a maze in which a mouse was either escaping from an owl or had to be shown the way to a piece of cheese. The owl maze presumably would activate avoidance motivation, whereas the cheese maze would activate approach motivation. Afterward, participants performed a Navon task, similar to that in our Experiment 1. The study found global processing to be enhanced in the approach condition relative to the avoidance condition. These effects were independent from self-reported mood. Future research should examine whether nonthreatening novelty can induce an approach motivation that then leads to global processing.

Distance

Recently, Gable and Harmon-Jones (2008) showed that as people come closer to a goal, the global processing style changes into a more local one, even when people are approaching desired end states. It seems that distance to the goal changes processing styles independent of valence. Notably, these findings support a CLT assumption of distance decreasing local processing independent of valence (Liberman et al., 2007). In our experiments, as mentioned before, it is possible that nonthreatening novelty induced approach behavior. More generally, as mentioned in the introduction, we suggest that novelty is related to distance but is not the same. For example, novel events can be spatially or temporarily close or distant. It is then possible that high proximity of a novel event leads to more local processing. Future research should examine the relations between distance and novelty more closely.

Expectancy

Some research has suggested that violations of expectancies produce a shift toward more local processing. To give one prominent example, research on the linguistic intergroup bias (LIB) has documented that people encode undesirable outgroup behaviors and desirable ingroup behaviors on a higher level of abstractness than undesirable ingroup behaviors and desirable outgroup behaviors (e.g., Maass, Salvi, Arcuri, & Semin, 1989). To the extent that the general expectancy is for an ingroup member to perform positive behaviors and for an outgroup member to perform negative behaviors, positive behavior of an outgroup member and negative behavior of an ingroup member can be conceptualized as expectancy violations. In this case, the findings of LIB would reflect local processing of unexpected information. If novelty is conceptualized as unexpectedness, then the findings of LIB show a pattern opposite to the results found in our studies.

Note, however, that in our experiments, people did not have expectations, and thus, no violation of expectancies took place. Moreover, in the case of LIB, expectancy violation is most likely experienced as a threat to subjectively correct models of the world (see Förster, Higgins, & Strack, 2000; Förster, Higgins, & Werth, 2004). This experience may lead to thorough investigation of the violating information. It is possible that only negative violations of expectancy, not neutral or positive violations, produce local processing. Obviously, more research is needed to disentangle effects of expectancy violations and effects of valence.

To sum up, there might be important boundary conditions for our effects that demand further investigation. Interestingly, negative valence, avoidance motivation, proximity, and (negative) violation of expectancies can render novelty negative. In all of those cases, local processing may be expected, especially if negative arousal is strong. In Experiment 4a, we showed that subtle manipulations of valence are not sufficient to induce processing styles, and a recent meta-analysis by Baas et al. (2008) confirmed the suggestion that especially active and strong, but not weak, arousal states change the way to process information.

One important factor that we failed to investigate is length of exposure to novel events, that is, the case when people familiarize with novel events. Our model suggests that when encountering a novel stimulus, processing proceeds from global to local, as a function of decreasing novelty. Interestingly, a reverse sequence—from local to global—is not suggested for familiar stimuli. Future research may examine this asymmetry in change of processing styles.

Other Correlates of Global Versus Local Processing

Global versus local processing styles have been found to be related to a diversity of tasks. Which tasks may be further affected by novelty versus oldness? To give an example, in a recent experiment, participants were primed with either global or local processing by the Navon task (Macrae & Lewis, 2002). When later asked to recognize a face from a video they had watched before priming, participants primed with global processing outperformed those primed with local processing. Applying Schooler's (2002) processing shift logic, the authors argued that the primed processing style carried over to the recognition of faces, which tend to be perceived in a global, holistic way (see McKone, 2004; Tanaka & Farah, 1993). On the basis of this finding and its interpretation, we predict that novelty would enhance face recognition. Initial results support this prediction (Förster, 2008b).

Global processing and local processing have also been related to right versus left hemisphere activation. Right (vs. left) hemisphere activation has been characterized as involving an expanded scope of attention on the perceptual and conceptual levels (see, e.g., Beeman, 1998; Burgess & Simpson, 1988; Friedman & Förster, 2005). Similarly, metaphor comprehension, which demands broadened conceptual attention to nonliteral (and thereby nondominant) word meanings (Beeman, 1998), has also been found to be related to right hemispheric activation, as well as creative thought (Fiore & Schooler, 1998). Would novelty also relate to right hemispheric activation?

Creative (as opposed to analytic) thinking has been found to be enhanced by global (vs. local) processing (see Friedman et al., 2003). Förster and Friedman (2008) found enhanced creative generation after global priming using the Navon task and enhanced analytic thinking after local Navon priming (see also Friedman et al., 2003). Notably, the mental processes involved in the GCT we used in Experiments 3a and 3b are related to creative generation and insight (Schooler & Melcher, 1995; see Friedman & Förster, 2000, 2001). On the basis of these findings, we have already started to examine the influence of novelty priming on metaphor understanding, creative insight, creative generation, and analytic thinking, as well as the relation between performance in these tasks and right hemisphere activation.

In the social domain, the distinction between processing styles taps into the distinction between traits versus behavioral information and stereotypes versus piecemeal information, with the former concepts considered more global than the latter ones (Fiske & Neuberg, 1990). Would introducing a person as new (e.g., a new colleague, a stranger at the conference, a new singer) make others perceive him or her in abstract trait terms (as opposed to more specific behavioral terms)? Perhaps more importantly, would it enhance stereotyping? We hope that our research triggers many more research questions of this kind.

Concluding Remarks

We examined the influence of novelty and familiarity on processing styles, thus adding to the growing literature on variables that affect processing styles. We showed that when people anticipate a nonthreatening novel stimulus, they adopt a global processing style, whereas when they anticipate an old stimulus, they apply the opposite mental strategy. We believe this effect of novelty is a basic process that enables assimilating novel information and that therefore lies at the heart of human learning (Piaget, 1952, 1980). We also believe that this effect of novelty has many implications for creativity, decision making, and person perception. Only some of these effects have been demonstrated in the present article, and we hope that others will be explored in future research.

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