Something old, something new: when people favor novelty over familiarity and how novelty affects creative processes
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CHAPTER 1
General Introduction

“Nothing is constant except change.”
Heraclitus, c.535 BC - 475 BC
I used to live in a small, expensive apartment across the street from five bars. I paid way too much, had no outside space, and could hardly get any sleep in the weekends. Then, after having been on a waiting list for 6 years, I got offered another apartment. It was about twice the size of the old one, and about a third cheaper. It was situated in a quiet street, and had a balcony. Easy choice, right? It was, but nevertheless I was hesitant, although I could not really figure out why. Looking back now, the only thing that kept me from immediately making the easy choice was that the new apartment was new, and the old one was familiar. Although there were plenty positive attributes of the new apartment, and plenty negative ones of the familiar one, the pure fact that it was novel made me feel a bit aloof. Although the familiar apartment was far from ideal, it was ‘safe’ and comfortable, and something new never immediately feels like that. Moreover, I had yet to discover whether the new apartment was indeed as amazing as it seemed. Luckily, I was surrounded by people calling me crazy for not immediately taking it, and I have now happily been living in the ‘new apartment’ for 2.5 years.

On the other hand, I also often experience a profound longing for something novel. For instance, most of the (familiar) shoes I own are pretty comfortable due to regular wear. I have a modest collection of several kinds and colors of shoes, as to always have shoes to match with my mood and/or outfit. However, sometimes when strolling in the city, a brand new pair catches my eye. Because of the simple fact that they are new and I do not own them yet, I must buy these shoes. I usually do. My familiar shoes seem boring and it is evident to me that I definitely need these new shoes. However, I often come to regret my decision. While my old shoes fit perfectly and can be worn for hours at a time, the new shoes often proof to be more pretty than comfortable, causing me to try and wear them in and around the house, or walk around with blisters and/or a tormented smirk on my face. Oh, how I long for my old, familiar shoes at those times.

I have often thought about the apartment-decision and the 'must-have new shoes' phenomenon when working on my dissertation. The former is one of many examples illustrating the power that the familiar can hold over us, and the opportunities that the novel can offer. The
shoe-example on the other hand illustrates how the comfortable, familiar, can suddenly become boring, while the new can appear so appealing and desirable. In this dissertation, I aimed to show when novelty appeals to us, and the familiar gets boring instead of comfortable, and how we can profit from these opportunities offered by the unknown.

Novelty has been defined in terms of different characteristics, including unexpectedness, complexity, atypicality, obscurity, innovativeness, uncertainty, and ambiguity (see Berlyne, 1960, and the Oxford English Dictionary). The word novelty originates from the term ‘novel’, which is defined by the Oxford English Dictionary as ‘interestingly new or unusual’ and originates from the Latin word ‘novellus’, which comes from ‘novus’, which simply means ‘new’. In this dissertation, I define novelty as ‘not previously experienced’ or ‘lack of experience’ (Förster, Marguc, & Gillebaart, 2010; Zajonc, 1998). I also propose that novelty can both be objective, as well as a subjective construal. Although novelty and familiarity can be objectively manipulated within, for instance, the mere exposure paradigm (see Chapters 2 and 3), novelty is not necessarily constrained by features of the event, situation, object, or person itself. In fact, subjective construal processes such as framing and priming (see Chapter 4), categorization, and motivational orientations may influence the perception and evaluation of novelty (Förster, Liberman, & Shapira, 2009; Förster, Marguc, & Gillebaart, 2010).

Characteristics of a stimulus itself can objectively contribute to it being experienced as novel or familiar. For instance, when an event or object carries many similarities to events or objects that are familiar to us, it will be more familiar to us. In contrast, when an event or object carries many features that do not fit any of our mental categories, we will appraise it as being more novel. We can subjectively construe these similarities between stimuli, but stimuli can of course also be objectively more or less similar to things we know. For example, certain stimuli may show larger feature overlaps with existing knowledge structures than others. Furthermore, the frequency of exposure to certain stimuli objectively influences its novelty: Something that has never been seen is per definition more novel than something we have seen 10 or 100 times.
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Over the last 6 decades, numerous studies have used this way of manipulating novelty to for instance test and measure familiarity preference and affective evaluations of novel and familiar stimuli, something I will elaborate on further in Chapters 2 and 3 ( Förster, 2009a; Harmon-Jones & Allen, 2001; Kunst-Wilson & Zajonc, 1980; Rotteveel & Phaf, 2007; Zajonc, 1968; 1980; 2001).

However, taking a social cognitive psychological perspective, even though novelty may be inherent in a given stimulus, every event, person, object, or situation can be subjectively perceived as novel, as reflected in the aphorism by Heraclitus ‘you could not step twice into the same river; for other waters are ever flowing on to you’. If one attends to differences in angle, lighting, or distance, even the most familiar object may be experienced as relatively novel (Gati & Ben-Shakhar, 1990). Especially moving, complex, and changing stimuli may always be more or less ambiguous with respect how novel they are perceived, and may thus be prone to mental construal. Of course, we are surrounded by moving, complex, and changing stimuli on a daily basis. Mental construal can also cause anything to be experienced as familiar. One may for example adopt a ‘been there, seen that’ attitude and use extremely broad constructs to categorize even objectively novel events as familiar. Any person can for instance be identified as ‘just another person’, and such a perspective may lead to the impression that one knows something about a stranger or in other word that s/he looks rather familiar. Thus, although novelty can be objectively manipulated (e.g., by manipulating the frequency of exposure) and can be determined by features of a stimulus itself, the experience of something as either novel or familiar can also be subjectively construed and as other experiences can depend on several variables in oneself or the situation at hand.

Illustrating the aforementioned subjective nature of the experience of novelty, Förster et al. (2009) conducted a set of studies on the effects of framing on novelty-appraisal. Several psychological tasks were introduced to participants as either novel (e.g. ‘this is a new task you have never done before’) or familiar (e.g. ‘this is a task like many tasks you have done before’). Subsequently, participants in the familiarity framing condition were more likely to indicate they had indeed done similar
tasks before than participants in the novelty framing condition. Thus, a simple framing of the task led to differences in subsequent novelty-appraisal, consistent with a view of novelty as a subjective construal. To summarize then, novelty is a product of the stimulus, person and situation, and can be subjective as well as objective.

To provide you with a theoretical background to my empirical work, I will now continue by highlighting research and theorizing about novelty in several fields of psychology. Subsequently, I will explain our own theorizing on the subject through Novelty Categorization Theory (NCT; Förster, Marguc, & Gillebaart, 2010). Finally I will introduce the specific hypotheses I have derived from this theory and have tested in this dissertation.

**Novelty in Psychology**

**Novelty and Personality.** Personality research and theory has addressed the question what kinds of people approach rather than avoid novel events. One of the key traits in this regard is openness to novelty (Eysenck & Eysenck, 1985). It is a part of the Tridimensional Personality Questionnaire together with harm avoidance and reward dependence (Cloninger, 1987; Cloninger, Przybeck, & Švrakić, 1991), and is considered one of the Big Five personality characteristics (John & Srivastava, 1999; McCrae & Costa, 1999). Openness to novelty is characterized in personality questionnaires by idea generation, curiosity, imagination, artistic aesthetics, wide interests, excitableness, and unconventionality. As such, it is believed to correlate positively with intelligence (Ackerman & Heggestad, 1997; Austin et al., 2002; Furnham, Chamorro-Premuzic, & Moutafi, 2005; McCrae, 1994; Moutafi, Furnham, & Crump, 2006). In fact, early personality research has referred to the openness factor as ‘Intelect’ (Fiske, 1949; Goldberg, 1994; Saucier, 1994). A supposed explanation for this correlation could be that ‘open’ individuals tend to be more intellectually curious and behaviorally adaptive, resulting in more engagement in intellectual activities. On the other hand, individuals low
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in intelligence might not have sufficient resources to cope with novel events, and may be thus less inclined to be open to novelty or approach it. However, it must be noted that these correlations perhaps reflect test performance rather than intelligence, and one must thus be cautious in drawing strong conclusions (see also Moutafi et al., 2006).

Another personality trait related to the tendency to approach or avoid novel events is the construct of sensation seeking, a term coined by Marvin Zuckerman in the early seventies (Zuckerman, 1971; 1979; 1994). The Sensation Seeking Scale was developed to measure a generalized trait covering risk taking, sensation seeking, and intolerance of constancy. As such, it overlaps partly with Eysenck’s early work on extraversion as a trait (Eysenck, 1947; Zuckerman, 1979), with openness to novelty from the Big Five (Eysenck & Eysenck, 1985; John & Srivastava, 1999; McCrae & Costa, 1999), and the novelty seeking scale by Cloninger (1987; Cloninger, Przybeck, & Švrakić, 1991). Zuckerman defined sensation seeking as “a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences and the willingness to take physical, social, legal, and financial risks for the sake of such experiences” (p. 27), and sought to explain individual differences in susceptibility to boredom, risk taking, and reactions to sensory deprivation. Importantly, sensation seeking differs from theoretical constructs such as openness to novelty in that it tends to be completely focused on the sensory effects of external stimulation as a primary motivator. The term ‘sensation’ in sensation seeking is also used to illustrate a contrast with cognition. Sensation seeking as measured by Zuckerman’s scale is not incompatible with intellectual curiosity, but curiosity is neither covered by the Sensation Seeking Scale nor covered by the theory behind it. To sum up, personality research identified important stable trait variables related to the sensory and cognitive aspects of tendencies to approach or avoid novelty.

Curiosity and Interest. Although not measured by the Sensation Seeking Scale nor covered by the theory behind it, curiosity is of course related to sensation seeking and especially boredom. Curiosity, as well as interest, is heavily related to novelty. Throughout decades of psychological
research, curiosity has been thoroughly explored, yet consensus on an overarching theory or model has not been reached. Several theoretical perspectives appear at least partly valid: Theories that view curiosity as a drive, comparable to for instance primary drives as hunger or thirst, reflect its motivational force, and recognize that curiosity can be triggered by internal states such as boredom as well as by external stimuli (Dashiell, 1925; Hunt, 1963). In support of this notion, curiosity has been shown to lead to arousal, as do primary drives (Smith, Malmo, & Shagass, 1954; Wallerstein, 1954). Other theorists base their view on the human tendency to make sense of the world around us, and suppose that our curious behavior is fed by a ‘motive to know’ and serves to fill an undesirable ‘gap in our knowledge’ (Kagan, 1972). Curiosity has been defined as a desire for change and novelty (Berlyne, 1954), and can be triggered as well as satisfied by novel stimuli (Loewenstein, 1994).

Interest, being called by some the ‘curious emotion’ (Silvia, 2008), is closely related to curiosity, novelty, learning, and exploration. Like curiosity, it correlates with openness to experience (McCrae & Costa, 1999). Its function is believed to be to motivate learning behavior by for instance approaching new information, leading to development of knowledge, skills and experience (Silvia, 2008). This is illustrated by research showing that students tend to spend more time studying, develop better memory for the study material, and subsequently get better grades when they are interested as opposed to when they are not (Silvia, 2006). In fact, people seem to be aware of the value of being interested, as they tend to make boring tasks more interesting, for instance by making such tasks more challenging (Sansone & Thoman, 2005). So, interest can be trait-like as it is correlated to openness to experience, but it can also be a state, triggered by for instance context or situations. In fact, one of the most prominent causes of interest is novelty, besides complexity.

Summarizing, personality psychologists have defined and explored personality traits such as openness to novelty and sensation seeking, both of which are related to approaching novelty and a degree of boredom with the familiar. Social psychologists have further looked at curiosity
and interest, and concluded that novelty can both trigger and satisfy these traits, motivations, drives, or ‘emotions’. Now that I have provided you with somewhat of a theoretical background on the subject of novelty pointing mainly to personality research, I will focus on more basic processes of the affective evaluation of novelty. Research in the cognitive and emotion psychological domain addressed this more basic question of ‘do people like novelty?’, and tried to formulate answers to these questions that should hold across differences in personality. First, I will summarize this research, which in a nutshell suggests an appealing ‘warm glow of familiarity’, discussing lines of research on novelty that have focused on familiarity preference. Subsequently, I will introduce and elaborate on Novelty Categorization Theory (Förster et al., 2010) and introduce the studies I have conducted to answer this question myself.

**Familiarity’s ‘warm glow’**

While personality psychologists have focused on exploring openness to novelty, sensation seeking, curiosity and interest, cognitive and emotion psychologists have shed light upon the other side of the novelty coin. Many of their theories suggest, either implicitly or explicitly, that people generally hold a preference for familiarity over novelty, classically illustrated by the ‘warm glow of familiarity’ (James, 1892; Titchener, 1910). It is suggested that people carry this preference for familiarity because intrinsically, remembering is always accompanied by ‘a glow or warmth, a sense of ownership, a feeling of intimacy, a sense of being at home, a feeling of ease, a comfortable feeling’ (Titchener, 1910, p.408).

The mere exposure effect, entailing increased liking of previously presented stimuli over novel ones (Zajonc, 1968), is in line with this ‘warm glow of familiarity’ notion. A typical mere exposure study consists of several stimuli that participants are exposed to at different exposure frequencies (e.g., 0, 5, 15, and 40 times), followed by an affective evaluation task where participants indicate how much they like the previously presented stimuli. Classically, evaluations become more posi-
Perceptual fluency has frequently been proposed as an explanatory mechanism for the mere exposure effect (Kunst-Wilson & Zajonc, 1980; Seamon, Marsh, & Brody, 1984; Zajonc, 1968). Fluency refers to a feeling of ‘ease’ when processing a stimulus, as well as to efficient processing (marked by for instance high speed, low resource demands, and high accuracy). To illustrate, Winkielman, Schwarz, Fazendeiro and Reber (2003) suggested that fluency is intrinsically positively valenced and thus hedonically marked (see also Harmon-Jones & Allen, 2001; Phaf & Rotteveel, 2005; Reber, Winkielman, & Schwarz, 1998; Winkielman & Cacioppo, 2001). In general, high fluency is associated with a positive or safe state of the environment. In this state, information processing is not interrupted by problems or obstacles, and thus occurs rather effortlessly. Low fluency on the other hand, serves as a ‘something is wrong’-signal (see also Clore et al., 2001; Clore & Huntsinger, 2007; 2009; Clore & Palmer, 2009; Phaf & Rotteveel, 2005; Wyer, Clore, & Isbell, 1999, and see Briñol, Petty, & Tormala, 2006 for exceptions). Over time, fluency and affect have become connected so that processing ease may immediately feel good, whereas processing difficulty may feel bad (Phaf & Rotteveel, 2005).

Fluency may account for the effects of mere exposure, because familiarity is an important moderator of perceptual as well as processing fluency. Consistently, it has been shown that familiar stimuli are processed faster than novel stimuli (e.g., Haber & Hershenson, 1965; Jacoby & Dallas, 1981), elicit less attentional orienting (Desimone, Miller, Chelazzi, & Lueschow, 1995), and ‘mismatch’ less with our existing memories (Metcalfe, 1993), all of which result in higher processing fluency.

Through a learning process, a link between familiarity and positive affect may have developed so that one may elicit the other (e.g. Garcia Marques, Mackie, Claypool, & Garcia-Marques, 2004). Moreover, they may even co-occur in early information processing (Phaf & Rotteveel, 2005). Consistently, research expressed such a bi-directional link, demonstrating that repetition leads to diffuse positive affect (Garcia-Marques & Mackie, 2000; Harmon-Jones & Allen, 2001; Monahan, Murphy, & Zajonc, 2000), but that positive affect elicits a sense of fa-
miliarity as well (Garcia-Marques et al., 2004; Garcia-Marques, Mackie, & Garcia-Marques, 2001; Monin, 2003; Rotteveel & Phaf, 2007). On the other hand, negative affect can also cue a sense of novelty (Phaf & Rotteveel, 2005).

However, people cannot always fear the unknown, and cannot always prefer the old to the new, since exploring new situations is essential to learning as individuals and as a species. In a way, the discussed research on familiarity preference seems to be at odds with aforementioned research traditions suggesting that humans are a curious kind (Berlyne, 1954; Kagan, 1972; Loewenstein, 1994), that they are interested in novel objects, situations, and people (Silvia, 2006; Silvia, 2008), and that many of them seek out the novelty for its thrilling characteristics (Zuckerman, 1971; 1979; 1994) and learning opportunities (Cloninger, 1987; Eysenck & Eysenck, 1985; McCrae & Costa, 1999). On a more mundane level, we probably all know the feeling of wanting that one new mobile phone or television while there is nothing wrong with the old, familiar one. How to reconcile these two phenomena? In the following I will introduce and elaborate on Novelty Categorization Theory (Förster, Marguc, & Gillebaart, 2010), examining how people process novel information, and when they perceive something as novel or familiar. As such, I hope to integrate and merge these different viewpoints on people’s preferences for novelty and familiarity. Subsequently, I will introduce the empirical chapters, providing an outline for the rest of this dissertation.

**Novelty Categorization Theory**

While psychologists have looked at how we appraise and valence novelty by studying openness to novelty, sensation seeking, curiosity, interest, and familiarity preference, surprisingly, the basic cognitive antecedents and consequences of novelty have been somewhat under examined in the field of psychology. Novelty Categorization Theory (NCT; Förster, Marguc, & Gillebaart, 2010) was introduced to explain
and predict how novelty affects information processing, and when people perceive something as either novel or familiar. Basically, NCT states that events are perceived as novel when they cannot be integrated into existing categories, and that people generally want to understand novel events. Because global processing enhances understanding, a when-novel-then-process-globally routine may have developed where novelty leads to a more global processing style. A global processing style encompasses a focus on the forest rather than the trees, and the opening and use of broader, more inclusive mental categories; it is suggested that both would help one understand the novel event better. Moreover, NCT proposes that novelty is independent of valence. Novelty can lead to interest (Berlyne, 1960) and spark curiosity (Loewenstein, 1994), but can also be perceived as a threat because of its potential for carrying risk (Bornstein, 1989).

A first assumption of NCT (Förster et al., 2010) entails that new information needs to be integrated into existing mental categories (Rosch, 1978) and/or knowledge structures (Piaget, 1969). Assimilating something into an existing mental category may increase perceived similarity with either the category prototype or other category members. These similarities can provide information that may help us understand the novel situation or object, also rendering it more ‘likeable’. Excluding the new information may, in contrast, enhance perceived dissimilarity, leading to a feeling of a ‘new’ experience. For this assumption, several lines of research have provided indirect evidence.

The classic mere exposure effect entails increased liking of a stimulus following its repeated exposure (Zajonc, 1968). Gordon and Holyoak (1983) proposed that dynamics of the mere exposure effect might be similar to those of implicit rule induction. Previously unseen items should be rated more positively to the extent that they are similar, or follow the same rule system, to exposed stimuli. Indeed, they showed that positive affect caused by repeated exposure to stimuli generalized to previously unseen stimuli that appeared similar to the exposed stimuli. This result supports NCT’s notion that when novel information is in some way assimilated, it becomes more familiar, and thus more likeable.

Förster, Liberman, and Kuschel (2008) recently explored whether
changes in perceptual scope (global versus local processing) can indeed, as NCT suggest, change in- or exclusion of information, leading to assimilation versus contrast effects in social judgment. Processing styles are ways in which people can attend to the world around them. When using a global processing style, people attend to the forest rather than the trees, or the Gestalt of a stimulus set. A local processing style entails a focus on the trees rather than the forest, and on details rather than the whole (Förster & Dannenberg, 2010; Navon, 1977; Schooler, 2002). In general, people have a so-called ‘global dominance’, entailing a default focus on the forest, and not on the trees (Navon, 1977). As mentioned before, a processing style can be perceptual (literal forests and trees), and conceptual (e.g., mental categorization: ‘humans’ versus ‘blond-haired women of about 26 years old’). If one employs a global processing style, one would use broader, more general categories. Following NCTs reasoning, it would then be easier to include (novel) information into these existing categories. This would enable understanding of the novel information, and the information would be rendered less novel, or more familiar. On the other hand, if one employs a local processing style, one would use narrower, more specific categories. According to NCT, it would then be harder to include (novel) information into these categories. This would not enable understanding nor render the novel information as more familiar or similar to existing knowledge, rendering it less likeable.

In several experiments, Förster et al. (2008) induced a global versus local processing style in participants via perception, using the Navon-task (Navon, 1977). In this task, participants are asked to focus either on big letters consisting of smaller letters, or on small letters constituting big ones. Subsequently, participants estimated self-aspects such as their alcohol consumption following a comparison to either a high or low standard. Results demonstrated that global priming led to higher self-reported alcohol consumption when comparing oneself to a high rather than a low standard, reflecting an assimilation effect. Local priming however, led to a contrast effect: lower self-reported alcohol consumption following a comparison to a high rather than a low standard. Förster et al. (2008) suggested that global processing allows for inclu-
sion of both target and comparison standard in the same category. In contrast, local processing would sooner lead to the conclusion that target and comparison standard were belonging to separate categories. These results are consistent with the aforementioned idea that events included in the same category may appear more similar, leading to assimilation, while events in separate categories may look more dissimilar, leading to contrast.

Examining the link between global versus local perception and similarity versus dissimilarity search more directly, Förster (2009b) again primed participants with either global or local processing. Subsequently, he asked them to look at or think of two separate objects (e.g. two TV shows) and generate both similarities and dissimilarities between the two. Global priming led to more generated similarities than local priming, while local priming led to more dissimilarities. As a result, globally primed participants perceived the two targets as more similar to each other than locally primed participants. Furthermore, inclusion versus exclusion may render similarities or dissimilarities more accessible, and Förster et al. (2008) indeed found the effects of processing styles on assimilation/contrast to be mediated by accessibility of similar or dissimilar information. Consistently, Mussweiler (2001) and others have shown repeatedly that selective accessibility forms a psychological basis for assimilation/contrast effects in social judgment (see Corcoran & Mussweiler, 2009, for a review).

Results from Förster et al. (2008), and Förster (2009b) combined seem to confirm a link between global processing and breadth of categorization; if two items are processed globally, a similarity focus and inclusion into one common category result. This is in support of NCT’s notion that novel events included into existing categories may indeed be perceived as more similar to the category prototype or other category members, rendering an increase in familiarity.

In sum, these results suggest that enhanced liking after mere exposure can expand to items that appear similar to the exposed stimuli, and that broadening categories (through for instance global processing) can enhance a similarity focus. NCT proposes the following causal chain: When an event is encountered and included into an existing category,
a similarity search between the stimulus and category prototypes may start, rendering evidence for similarities between the two more accessible. The perception of similarity may then lead to the impression that the event is relatively familiar (see Gordon & Holyoak, 1983). However, if an event is excluded from the existing category, a dissimilarity search may start, rendering evidence for dissimilarity accessible. The perception of dissimilarity may then lead to the impression that the event is relatively novel.

NCT further suggests that people are generally curious and want to approach novel events based on a ‘motive to know’ (Kagan, 1972). Consequently, encountering or expecting novel events should lead to more global as opposed to local processing. This assumption, like the first one on categorization, leans on social cognition models of categorization (Fiske & Neuberg, 1990; Schwarz & Bless, 1992; 2007). Fiske and Neuberg predicted and showed that a newly encountered person is first categorized along general dimensions (age, gender, race, etc.) before we attend to more specific features (e.g. personal preferences).

NCT applies this notion to the encountering of novelty, suggesting that global processing is useful for integrating any form of new information. First, broader, more general categories are more inclusive, making it more likely that new information can be included into the category. Second, broader categories help capture the general meaning of a stimulus. Knowledge representation follows the subordination principle in the sense that the meaning of local features depends on global aspects more than vice versa (Liberman, Trope, & Stephan, 2007). For instance, the general meaning of a book and an instruction manual that are either a lot or a few pages does not depend on the local feature (how many pages it is) – books are used for reading and instruction manuals are meant to instruct you, regardless of how many pages they both have. Yet, the meaning of the local detail depends on the global feature: The fact that a book has little pages (e.g., its story cannot be comprehensive) carries a different meaning than the fact that an instruction manual has little pages (e.g. the appliance/software/etc cetera is easy to install). Thus, when encountering a novel event, encoding its global features
can help understand its general meaning. Finally, there are typically less features on the global than on the local level (Rosch, 1975), making it easier and more efficient to start by searching global categories.

Because of the beneficial effects of global processing for grasping meaning, a ‘when-novel-then-global’-routine may have developed in procedural memory (see also Liberman & Trope, 1998), entailing automatic elicitation of global processing upon encountering novel events. This of course does not mean local processing cannot be informative as well. Following global processing and grasping the general meaning of an event, people may start investigating on a more local level for more detailed information. In sum, NCT predicts a funnel sequence from global to local processing after encountering a novel event.

Several studies using diverse manipulations and measures of perceptual and conceptual scope have explored the assumption that novelty enhances global processing, while familiarity leads to local processing. For instance, Förster, Liberman, and Shapira (2009) framed tasks as novel or familiar. Although not disclosed to participants, these tasks were designed to measure global versus local conceptual and perceptual processing. In one of the studies the aforementioned Navon-task (Navon, 1977) was used not as a manipulation, but as a measure of global versus local perceptual processing. Participants were presented with large letters made up of smaller letters (e.g., Fs made of Ls and Ls made of Fs). They were asked whether a target letter appeared on the screen. The target letter could either be a large or a small letter. Framing this task as a novel task led to a relative processing advantage for global over local targets, compared to both a control and the familiar framing condition, as measured by reaction timing. In a subsequent study, participants performed the Gestalt Completion Task (GCT; Ekstrom, French, Harman, & Dermen, 1976; Kimchi, 1992; Schooler & Melcher, 1995), which measures perceptual integration. Participants performed best on the GCT when it was framed as novel, worse when no framing was used, and worst when the task was framed as familiar. Thus, attention to global features and perceptual integration are both enhanced when people prepare themselves for novel events.

Besides novelty’s effects on perceptual scope, Förster and col-
leagues (2009) also investigated the effects of novelty on conceptual processing styles, using Isen and Daubman’s (1984) breadth of categorization task. In this task, participants rate typicality of typical and atypical exemplars (e.g. camel) of a given category (e.g. vehicles). In line with the aforementioned work on perceptual scope, framing this task as novel led to higher typicality ratings of atypical exemplars, indicating a broadening of mental categories, than framing the task as familiar. Moreover, naturally abstract categories are broader than concrete ones (see Trope & Liberman, 2010). Consistently, novelty versus familiarity framing led to conceptually similar effects on the behavioral identification form (BIF, Vallacher & Wegner, 1989), presumably measuring abstract versus concrete action identification. While completing this form, participants had to decide whether a number of activities (e.g., ‘locking the door’) represented an inclusive, abstract activity (e.g., ‘securing the house’), or a concrete one (e.g. ‘putting a key in the lock’). Novelty framing led to more abstract choices than familiarity framing.

Summarizing, these studies all show that novelty framing tends to lead to global processing, while familiarity leads to local processing on both a conceptual and a perceptual level. Framing is highly relevant for several applied domains. However, compared to another experimental paradigm such as priming, it is also relatively sensitive to experimental demand and strategic effects (see Förster et al. 2009; for a detailed discussion). Therefore, all mentioned experiments using framing procedures were replicated using procedural priming techniques. To illustrate, participants were asked to imagine either a novel or a familiar situation (or nothing in the control condition), in a task allegedly unrelated to the test phase. Imagining a novel event that was content-wise entirely unrelated to the dependent variables led to a global advantage in the Navon-task, a better performance on the GCT, higher typicality ratings for atypical exemplars of given categories, and more abstract choices on the BIF, compared to imagining familiar or ‘neutral’ events.

The procedural priming studies by Förster et al. (2009) show that processing styles or processing shifts elicited in one task (imagination of novel versus familiar events) can indeed carry over to other, seemingly
unrelated tasks (Schooler, 2002; Schooler, Fiore, & Brandimonte, 1997). All reported effects seemed, moreover, to occur outside of participants’ awareness. However, one may wonder whether the ‘when-novel-then-global’-routine can also be elicited using even more subtle manipulations of novelty versus familiarity. This has been studied using mere exposure paradigms, where novelty is manipulated by subliminally exposing participants to stimuli with varying exposure frequencies (Zajonc, 1968).

Förster (2009a) subliminally presented participants with Hebrew letters for different exposure frequencies, in order to manipulate their objective novelty/familiarity. Subsequently, participants performed a Navon-based task, with big Hebrew letters made up of small Hebrew letters that were or were not presented before in the mere exposure paradigm. Results showed that attention to global features declined gradually with number of repetitions. In another study, participants were asked to assign meaning to Hebrew letters that they were or were not exposed to. Concreteness of assigned meaning increased with number of repetitions.

In sum, research has confirmed the hypothesis that novelty enhances global processing, whereas familiarity enhances local processing. Importantly, in all studies reported, when measured, novelty did not affect general motivation, perceived difficulty, expectancies of success or failure, or self-reported moods. Notably, the typical inverted U-shaped function between exposure frequency and evaluations was replicated (see Bornstein, 1989) in these studies, whereas local processing increased linearly with exposure frequency. Thus, effects on processing mode were independent from valence, illustrated also by an absent correlation between evaluation scores and abstractness.

Summarizing, Novelty Categorization Theory (NCT; Förster, Marguc, & Gillebaart, 2010) has provided us with a theoretical framework on how we mentally prepare for novel events, and how novelty affects basic cognitive processes. According to NTC novel events need to be integrated into existing categories or knowledge structures for us to be able to grasp their meaning. To enable this integration, we proceed to
process information more globally when we come across novelty (Lieberman et al., 2007, Förster et al., 2009), and turn to a more abstract way of thinking (Förster et al., 2009, Förster, 2009a). Other lines of research have shown that indeed, global processing can lead to inclusion rather than exclusion of information into existing categories (Förster, Lieberman, & Kuschel, 2008), and that global processing can lead to more perceived similarities (Förster, 2009b). One may suggest then that all these processes from novelty to global processing, broadening of and inclusion in mental categories, more abstract thinking, and more perceived similarities, may cause more perceived familiarity: if something appears similar to things we know, and fits into our knowledge structure, it is not that novel anymore, and maybe not that threatening either.

I have elaborated on NCT and its predictions for novelty’s effects on basic cognition. However, NCT starts by mentioning that basic cognitive processes such as breadth of categorization can change across situations. As a result, our perception and evaluation of novelty can change accordingly. The studies in this dissertation were inspired mainly by this important prediction derived from NCT, and were conducted to shed light on possible situational, motivational, and social variables that can affect our response to novelty. I will now proceed and give an overview of the Chapters.

Overview of the chapters

The studies in this dissertation are divided into three empirical chapters following this Introduction. In Chapter 2, three studies are reported exploring the effects of regulatory focus on the mere exposure effect (increased liking following repeated exposures, Zajonc, 1968). This set of studies developed from the idea that there must be situational aspects that co-determine whether we find either novelty or familiarity appealing. As mentioned, novelty can be appraised as interesting, but also as risky. There seems to be a general tendency for people to prefer familiarity because of the ‘warm glow’ it emits, but on the other hand we are a curious kind and can be led by our ‘motive to know’.
Regulatory focus theory (Higgins, 1997) distinguishes a promotion focus, entailing a focus on growth, and a prevention focus, entailing a focus on security. I propose that in a promotion focus, exploration motives become more salient and novelty is more goal-conducive than familiarity, leading to changes in the mere exposure effect. In a prevention focus however, people are concerned with security, and will find novelty too risky to approach. Familiarity will then glow warmly as it can help maintain or attain the sought-after security. This would lead to an amplification of the classic mere exposure effect. Moreover, and maybe more important with respect to the abovementioned theoretical framework, a promotion focus broadens mental categories (Friedman & Förster, 2000; 2001; Förster & Higgins, 2005), which according to my reasoning above should allow for easier inclusion of novel information into existing categories. In Chapter 2 I therefore predicted that novel stimuli would be more positively evaluated in a promotion focus than in a prevention focus, and that the opposite would occur for familiar stimuli.

In Chapter 3, I expand our notions on regulatory focus and evaluations of novelty and familiarity. I believe that the effects of regulatory focus on evaluations of novelty and familiarity stem from a broader focus on growth (in a promotion focus) versus security (in a prevention focus) concerns. I propose, based on feeling-as-information approaches (Schwarz, 1990; Schwarz & Clore, 2007), that subtle cues or mere reminders of growth versus security are sufficient to produce effects on evaluations of novel versus familiar stimuli. In Chapter 3, I replicate studies from Chapter 2 using power (Experiment 3.1) and color (Experiment 3.2) manipulations instead of regulatory focus. High power is often associated with growth, rewards and freedom, while low power is associated with security concerns and lack of control (Keltner, Gruenfeld, & Anderson, 2003). Therefore, I predict that high power will lead to more positive evaluations of novel stimuli and more negative evaluations of familiar stimuli compared to low power. Furthermore, recent research has shown associations between red and security avoidance, and between blue and tranquility and approach (Elliot et al., 2007; Elliot, Maier, Binser, Friedman, & Pekrun, 2009; Maier, Elliot, & Lichtenfeld, 2008;
Kaya & Epps, 2004; Mehta & Zhu, 2009). I suggest that while blue is associated with growth similar to promotion focus cues, red, signaling danger, will prime security concerns, similar to prevention focus cues. As such, I expected novel stimuli to be more appealing following a blue rather than a red cue, and familiar stimuli to be more appealing following a red rather than a blue cue.

In the final study of Chapter 3 (Experiment 3.3), I aimed to uncover part of an underlying cognitive mechanism in the effects of growth versus security cues on evaluations of novel and familiar stimuli, adding to the aforementioned motivational underpinnings. As mentioned, I believe changes in category breadth can account for at least part of the effects through, for instance, inclusion/exclusion processes. Breadth of categorization is associated with global versus local information processing (Förster & Dannenberg, 2010) and is influenced by all three variables that I think relate to growth versus security. While a promotion focus leads to broadening of mental categories, a prevention focus leads to narrowing of these categories (Förster & Higgins, 2005). Likewise, both high power and the color blue are associated with broader mental categories, while low power and the color red are associated with narrower mental categories (Elliot et al., 2007; Smith & Trope, 2006, for an overview see Friedman & Förster, 2010). In Experiment 3.3, I manipulated breadth of categorization directly and explored its effects on evaluations of novel and familiar stimuli in a mere exposure task that was content wise unrelated to the category priming task. I expected these effects to match studies on regulatory focus, power, and color: novel stimuli would be more positively evaluated after broad compared to narrow category priming, and familiar stimuli would be more negatively evaluated after broad compared to narrow category priming.

In a final empirical chapter, Chapter 4, I leave the mere exposure paradigm and the affective evaluation of familiar versus novel stimuli and turn to another implication of Novelty Categorization Theory. Specifically, we examine the production of novel ideas (Förster, Marguc, & Gillebaart, 2010). So, after looking at affective evaluation of novel and familiar stimuli, I will in Chapter 4 move our focus to consequences of novelty. In two
studies, I investigated the effects of novelty on creative performance. Creativity is defined as producing ideas, insights, solutions, or products that are original (new) as well as useful (feasible) (Amabile, 1983; Paulus & Nijstad, 2003). NCT suggests that novelty leads to more global information processing, and recent research has consistently shown that novelty tends to lead to more global processing, broader mental categorization, and more abstract thinking than familiarity (Förster, Liberman, & Shapira, 2009). Furthermore, studies have shown that global processing and broadening of mental categories increase creative performance (Ashby, Isen, & Turken, 1999; Friedman, Fishbach, Förster, and Werth, 2003; Förster, Friedman, & Liberman, 2004; Murray, Sujan, Hirt, & Sujan, 1990). For instance, Friedman et al. (2003) showed that perceptually priming participants with global compared to local processing led to more generated uses for a brick and more unusual category exemplars.

Combining these findings, one could argue that novelty should lead to creativity. However, I propose that this only holds for creativity for which divergent thinking is beneficial (e.g. ‘name as many things you can that move on wheels’), and that novelty actually inhibits creative performance when it leans more on convergent thinking (e.g. ‘what is the common association between wine/dark/cold’ (it’s cellar by the way)). I suggest that global processing and broadening of mental categories would enhance divergent thinking, but that convergent thinking actually profits more from local processing. Based on the idea that global processing and broadening of mental categories following a novelty prime would benefit a divergent thinking style, but not a convergent one, novelty-induced global processing should inhibit performance on a ‘convergent creativity’ task.
Final note

Chapters 2 and 3 were prepared as one journal article. As such, they are closely related and may have some theoretical overlap in their Introductions. Finally, following empirical chapters 2, 3, and 4, in Chapter 5 (General Discussion) I will discuss and integrate all findings and their meaning for both Novelty Categorization Theory and practical and applied domains.