

**The “Temporal-Processing-Fit effect”: The interplay between regulatory state,  
temporal distance, and construal levels**

RUNNING HEAD: Temporal-Processing-Fit

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temporal distance, and construal levels**

\* Yael Steinhart is a lecturer in the Graduate Management School at the University of Haifa, Israel. Phone: 972-4-8249582, Fax: 972-4-8249194. [ysteinhart@univ.haifa.ac.il](mailto:ysteinhart@univ.haifa.ac.il)

David Mazursky is Kmart Chair Professor of Marketing at the School of Business Administration, the Hebrew University of Jerusalem, Israel, and Bocconi University, Milan. Phone: 972-2-5883217, Fax: 972-2-5326266. [msmazur@huji.ac.il](mailto:msmazur@huji.ac.il)

Michael A. Kamins is Professor and Area Head of Marketing at the Harriman School of Business, Stony Brook University. Phone: 631-632-9095, Fax: 631-632-8181. [michael.kamins@stonybrook.edu](mailto:michael.kamins@stonybrook.edu)

Correspondence about the manuscript should be sent to Yael Steinhart, Department of Marketing, University of Haifa, Jacobs Bldg. Mt. Carmel, Haifa, 31905.

The current research proposes a moderator of the established effect of temporal construal on the weighting of abstract features versus more concrete features—that of the individual’s regulatory focus. The moderating effect relies on the presence or absence of a fit between regulatory focus and the time horizon for upcoming decisions (i.e., prevention focus/ near future or promotion focus/ distant future). Under a promotion (prevention) focus, construal levels are higher in the near (distant) than in the distant (near) future. Four experiments find support for this “temporal-processing-fit effect” and provide a perspective on its possible causes, showing that when “fit” is the present state, the event is perceived as more important, being locally processed and construed in a concrete manner, than in non-fit states. In the latter states, the event is processed in a global manner and construed abstractly because it is perceived as less important.

**Keywords:** construal level theory, regulatory focus, temporal distance.

**Article classification:** Research paper

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According to the classic construal level theory (CLT; Liberman & Trope, 2008), events and objects can be represented at different levels of construal. Events and objects that are more psychologically distant (e.g., spatially, temporally, socially, or probabilistically) are represented at higher construal levels (i.e. abstract, superordinate representations) (Trope & Liberman, 2010) than events and objects that are more psychologically close, which are represented at lower construal levels (i.e., concrete, subordinate representations).

The present research proposes that not all distant events are construed at higher levels and that not all close events are construed at lower levels. Specifically, we propose the level of construal derives from the individual’s regulatory focus. Regulatory focus theory (Higgins, 1997) distinguishes between two modes of motivational regulation: promotion and prevention focus. Promotion focus is defined as a focus on achieving personally important aspirations, ideals, and ambitions. By contrast, prevention focus is defined as a focus on fulfilling duties, obligations, and responsibilities.

In line with the classic CLT, under a prevention focus, individuals construe information at higher levels in the distant future than in the near future. By contrast, as an extension of CLT, we propose that under promotion focus, individuals construe information at higher levels in the near future than in the distant future.

This novel extension of CLT relies on fit and non-fit states between regulatory focus and time horizon (Mogliner, Aaker, & Pennington, 2008; Pennington & Roese, 2003). Under fit states, where the regulatory focus fits the temporal occurrence, the

events and objects are perceived as closer and more important and therefore elevate the local system of processing, which based on the GLOMO<sup>sys</sup> model, consists of more concrete processing (Förster & Dannenberg, 2010). On the other hand, under non-fit states, where the regulatory focus does not fit the temporal occurrence (Mogliner et al., 2008; Pennington & Roese, 2003), the events and objects are perceived as more distant and of lesser importance and therefore, as predicted by the GLOMO<sup>sys</sup> model, induce the global system, which comprises more abstract processing (Förster & Dannenberg, 2010).

Knowing when a fit or non-fit between regulatory focus and the timing of an upcoming event is present is critical, because the type of fit state regulates the detail to which individuals are likely to process information. This interplay between the type of fit state and construal levels has a significant impact on theory and practice, because providing the “right” information at the “right” degree of depth to the “right” individuals can lead to the success—versus failure—of a given promotional campaign.

In summary, we propose that the moderating role of regulatory focus on construal levels along the time horizon emerges naturally from the integration of four streams of research: temporal distance, construal level, regulatory focus, and processing style (global or local).

## **THEORETICAL BACKGROUND**

### *Mental construal and time horizon*

CLT (Liberman & Trope, 2008; Trope & Liberman, 2000) proposes people use more abstract schemas to represent distant-future situations than they use to represent near-future situations. The distant-future schemas are relatively coherent,

and consist of the general features of the objects or events. By contrast, the near-future schemas include more specific features of the objects or events. One of the ways to conceptualize the abstractness of these schemas is based on the breadth of the categories of the objects for future use (Crowe & Higgins, 1997; Friedman & Förster, 2001; Liberman et al., 2002). Liberman et al. (2002) found that individuals used fewer broader (more abstract) categories to classify objects that pertained to distant-future situations than to objects that pertained to near-future situations. They inferred the abstractness of categorical information simply by the level of inclusiveness or breadth. Abstract categories were more inclusive than concrete, subordinate categories.

The current research posits this view of the phenomenon is contingent on both the way the categories are constructed by the individual and the individual's promotion or prevention regulatory focus toward the upcoming event. In other words, the breadth and number of categories one creates while planning for a near- or distant-future event may be a function of the temporal horizon of the event, as well as the individual's processing style and regulatory focus in anticipating the event.

*Regulatory focus, mental construal, and processing style*

Recent research examined the relationship between regulatory focus and mental construal processes (Lee et al. 2010; Pennington & Roese, 2003; Semin et al., 2005; Zhu & Meyers-Levy, 2007). According to this line of research, under a prevention focus, individuals construe the information at low levels, using concrete representations and therefore a greater number of narrow categories. In contrast, under a promotion focus, individuals construe the information at high levels, using abstract representations and therefore a smaller number of broad categories (Förster & Higgins, 2005; Lee et al., 2010; Zhu & Meyers-Levy, 2007).

The linkage between promotion focus/abstract construals and prevention focus/concrete construals received additional support from a set of studies conducted by Kuschel, Förster, and Denzler (2010). These authors relied on the approach and avoidance motivations (Atkinson, 1964), which are refined in a recent model of regulatory focus (Förster, Grant, Idson, & Higgins, 2001; Higgins, 1997). They found that approach orientation (i.e., promotion focus) facilitates access to higher-order information, whereas avoidance orientation (i.e. prevention focus) impedes it.

Recent studies also pointed to the relation between regulatory focus and global or local processing (Friedman & Förster, 2001, Förster & Higgins, 2005), showing that those under promotion focus are more likely to engage in global processing than those under prevention focus, who are more likely to activate local processing. More precisely, the latter stream of research suggests promotion focus induces a global processing style, which generates more abstract than concrete construals. Alternatively, prevention focus is associated with local processing and leads to more concrete than abstract construals.

The current research extends existing research findings by further proposing that processing styles and abstraction levels are not only a function of regulatory focus but also of the time horizon in which the decision is expected to be made.

#### *Regulatory focus and time horizon*

A focus on the relationship between regulatory focus and time horizon has yielded evidence about the interplay between these constructs. Pennington and Roesch (2003), for example, propose that the promotion focus tends to dominate when one is contemplating temporally distant events, whereas prevention concerns as opposed to promotion concerns characterize proximal goals. In line with this stream of research,

Mogliner, Aaker, and Pennington (2008) demonstrated that individuals facing an immediate purchasing decision are willing to pay more for a prevention-framed product than a promotion-framed product. When ample time remains before the purchasing decision, individuals are willing to pay more for a product that is advertised as a means of obtaining the best possible outcome rather a means of preventing a worse outcome.

Following this line of research, the current research contends that knowledge-storage schemas are not only sensitive to regulatory focus, but also to time states. Hence, assessing the potential impact of variable time horizons on these specified effects is useful. The research therefore proposes a fit–non-fit explanation, which relies on the association between each of the regulatory states and temporal distance. It aims to examine the effect of the fit–non-fit states on the levels of product or event importance, and ultimately on the way individuals construe the information about the product or event.

#### *Local and global systems and construal levels*

Recent research has demonstrated the crucial role of local and global processing styles in estimates of psychological distance (e.g., temporal distance, spatial distance, and social distance) (Liberman & Förster, 2009). Specifically, studies have found a globally primed processing style is related to a larger temporal distance and therefore to abstract construal levels, whereas a locally primed processing style is associated with a smaller temporal distance and therefore to concrete construal levels.

More generally, the GLOMO<sup>sys</sup> developed by Förster and Dannenberg (2010) provides a comprehensive framework for the association between local and global processing styles and construal levels. According to the GLOMO<sup>sys</sup>, whenever events

and objects are novel, unfamiliar, ambiguous, complex, uncertain, distant, unclear, blurry, or vague, the global system is more pronounced than the local system. In these cases, the global system tries to make sense of the situation by integrating it into superordinate abstract construals and inclusive knowledge structures. By contrast, whenever events and objects are experienced as familiar, clear, close, or proximal, the local system is more likely to be activated than the global system. In these cases, the processing style relies on subordinated concrete construals and narrowed knowledge structures.

The current research utilizes the GLOMO<sup>sys</sup> as glue for integrating the three research streams related to regulatory focus, temporal distance, and construal levels.

*Research hypotheses: The “Temporal Processing Fit” effect*

We propose that the integration of these three streams of research via the GLOMO<sup>sys</sup> generates an intriguing interplay along the concrete-abstract continuum of the mental construal process. This integration is proposed to stem from the inherent association between regulatory focus and temporal distance, which eventually determines how the abstractive level of information is construed and ultimately processed.

We propose that under fit states—relative to non-fit states—the events and objects are more likely to be perceived as more relevant and more important to the individual. Our predictions stem from the regulatory-fit literature (see Freitas & Higgins, 2002; Freitas, Liberman, & Higgins, 2002; Higgins, 2000, 2005), which has indicated that under fit conditions, the engagement with the task is more elevated than under non-fit conditions (Camacho et al., 2003; Higgins, 2000; Shah et al., 1998; Spiegel, et al., 2004). For example, Higgins, Idson, et al. (2003) had participants

choose between a coffee mug and a pen of lesser quality in a way that either fit their regulatory focus (eager/promotion; vigilant/prevention) or did not (vigilant/promotion; eager/prevention), and found the perceived monetary value of the chosen object (all participants chose the mug) was substantially greater in the fit condition. Specifically, we propose that under fit states, which are close, relevant, and important to the individuals, the local processing style is dominant and thus individuals will construe the information at more concrete than abstract levels. On the other hand, under non-fit states, which are temporally distant and less relevant to the individuals, the global system takes over, and consequently the individual will construe the information at more abstract than concrete levels. Specifically, this research focuses on the following fit–non-fit states:

Under the prevention focus, the fit state refers to the combination of **prevention focus–near future**, whereas the non-fit state refers to the combination of **prevention focus–distant future**. This classification is based on the inherent association found between regulatory focus and temporal distance (Mogliner et al., 2008; Pennington & Roese, 2003). According to the prevention focus line of research, individuals' basic tendency is to focus more on their obligations and responsibilities than on their hopes and aspirations (Halamish, Liberman, Higgins, & Idson, 2008; Holler, Hoelzl, Kirchler, Leder, & Mannetti, 2008). In addition, prior research has demonstrated individuals pursue prevention goals faster because responsibilities have to be completed (Freitas et al., 2007; Shah & Higgins, 1997). Thus we expect individuals under a prevention focus to prefer to complete an event to which they are obligated, and therefore put it behind them, than to postpone its completion.

Based on the fit–non-fit explanation, when individuals learn the event will occur in the near future, which is proposed to be a fit state, engagement with the event

is elevated (Camacho et al., 2003; Higgins, 2000; Idson, Liberman, & Higgins, 2004; Shah et al., 1998). Thus they are expected to assign a high value to the event (Higgins, 2005) and to perceive it as closer to themselves, more relevant, and more important. They are therefore likely to utilize a local processing style (Förster & Dannenberg, 2010) and to construe the information in a concrete manner. However, when individuals learn the event will occur in the distant future, which is proposed to be a non-fit state, engagement with the event is diminished (Camacho et al., 2003; Higgins, 2000; Shah et al., 1998). Thus they are expected to experience global processing and to construe the information in less detail. Therefore, individuals in a prevention focus are expected to use a more abstract information scheme for contemplating distant- compared to near-future events. Hence, in a prevention focus, we expect to find a pattern of abstractness similar to the findings of prior research.

Under the promotion focus, the fit state refers to the combination of **promotion focus–distant future**, whereas the non-fit state refers to the combination of **promotion focus–near future**, based on the linkage found between regulatory focus and temporal distance (Mogliner et al., 2008; Pennington & Roese, 2003). In a promotion focus, we expect to find the opposite pattern of the mental construal process. That is, individuals under a promotion focus tend to be more oriented toward fulfilling their hopes and aspirations or ideals than their duties and obligations (Halamish et al., 2008; Holler et al., 2008), and are characterized as having an expanded conceptual scope (Friedman & Förster, 2001, 2005). Therefore, under the fit condition, when their engagement with the event is elevated (Camacho et al., 2003; Higgins, 2000; Shah et al., 1998) and the perceived value of the event is enhanced (Higgins, 2005), they are expected to find the event is close, relevant, and important. Thus they will activate a local processing style, which results in construing the

information in great detail rather than abstractly. Under the non-fit condition, the engagement with the event decreases (Camacho, et al., 2003; Higgins, 2000; Shah et al., 1998) and is perceived as relatively more distant and less relevant. Individuals therefore construe more general options involving less-detailed thinking.

Formally, we hypothesize the following:

- H1:** In a fit state (prevention focus/near future, promotion focus/distant future), individuals will generate a more concrete schema for events (using a greater number of categories) than in a non-fit state (prevention focus/distant future, promotion focus/near future).
- H2:** In a fit state, individuals will perceive the event as more important than in a non-fit state.
- H3:** In a fit state, individuals are more likely to engage in local processing than in a non-fit state

Four studies examine how the temporal distance of the decision and the type of regulatory focus influence the abstractness of thinking. The first study demonstrates the effect by focusing on the breadth of categories as an indicator of the mental construal process. It further explores the perceived importance of the event as a function of fit–non-fit states. The second study sheds light on the type of processing that takes place in each of the conditions. The third study examines the moderating effect of regulatory focus on the preferred type of information, contingent on the information’s level of abstractness. The final study considers the satisfaction one anticipates from purchasing products, as a function of product features, regulatory focus, and temporal distance.

## STUDY 1

The first study explores the moderating effect of regulatory focus on the breadth of categories, as a function of temporal distance. In this study, we induced the

prevention and promotion focuses independent of the event type. That is, the event was held constant (family time), and we placed participants into either a promotion or prevention focus. Participants received the list of items and were asked to group them into different categories and groups. Liberman et al. (2002) used this procedure as a way of controlling the categorization process in terms of the breadth of categories examined.

#### Method

*Participants.* One hundred and eighty-seven individuals participated in an online survey in exchange for approximately US\$3. We randomly assigned participants to each of the cells in a 2 x 2 between-subjects design. Specifically, the study manipulated two between-subjects factors, thus creating a two (near or distant future event) x two (prevention or promotion focus) matrix.

*Procedure.* Participants were informed they would be participating in two different studies. We presented the first study as a study on cognitive strategies, similar to a study conducted by Lockwood, Jordan, and Kunda (2002). In the promotion-prime condition, we asked participants to “think about positive outcomes that you might want to achieve” and to describe the strategies they could use “to successfully promote the occurrence of that outcome.” In the prevention-prime condition, we asked participants to “think about a negative outcome that you might want to avoid” and to describe the strategies they could use to “successfully prevent the occurrence of this outcome.” The goal of this manipulation was to induce participants’ prevention versus promotion focus.

Next, we asked participants to complete a questionnaire based on a similar procedure conducted by Liberman, Sagristano, and Trope (2002). We presented them

with a scenario—“spending a weekend with their family”—and the following instructions:

Imagine that you are planning to spend some time at the beach with your close family this coming weekend (or six months from now). For that purpose, you are required to purchase several items that are essential for spending time with your family at the beach.

The objects are: a swimming suit, shorts, watermelon, fishing rod, hat, ball, binoculars, a bottle of water, sun glasses, boomerang, diving fins, towel, sun umbrella, beach chair, suntan lotion, grapes, mat, picnic cooler, sandals, racquet, t-shirt, book, sandwiches, pail and shovel.

We then asked participants to

Take a look at the following items and place them into groups by writing the items that belong together next to each other on the right, and then circling the items that belong in the same group. Please make sure to include every item, even if you would not purchase it in reality. Additionally, please do not place an item into two groups; that is, place each item into only one unique group.

At the end of the second part of this study, participants used a 5-point scale (1=very low, 5=very high) to indicate the degree to which they perceived the event to be of personal importance to them, as well as the extent to which the strategy they described would help them avoid the outcome from occurring, the degree to which their strategy would successfully promote the achievement of this outcome, how much they would like to avoid this outcome, and finally, the extent to which they ascribed a positive meaning to the outcomes they described.

## Results

*Manipulation checks.* Participants in the prevention focus reported greater success than those in the promotion focus in using the proposed strategy to help them avoid the outcomes ( $M = 3.18$  vs.  $M = 2.44$ ,  $t_{(184)} = -3.03$ ,  $p < .005$ ). Participants in the promotion focus reported greater success than those in the prevention focus in making these outcomes happen ( $M = 3.51$  vs.  $M = 3.09$ ,  $t_{(184)} = -2.13$ ,  $p < .05$ ).

*Breadth of categories.* As in prior research, the dependent measure addressed the number of groups into which the participants classified the objects. A two-way ANOVA analysis with event occurrence and regulatory focus conditions as independent variables was performed on the number of categories. The two-way interaction effect was significant ( $F_{(1,183)} = 22.90$ ,  $p < .005$ ;  $\eta^2 = .11$ ). As H1 predicted, participants in the fit states created more categories for the event than those in the non-fit states ( $M_{\text{fit}} = 4.62$ ,  $SD = 1.05$  vs.  $M_{\text{nonfit}} = 3.78$ ,  $SD = 1.32$ ,  $t_{(185)} = 4.82$ ,  $p < .001$ ). Specifically, the number of categories was higher ( $M = 4.50$ ,  $SD = 1.02$ ) under the fit state of prevention focus and a near-future event, than in the non-fit state of prevention focus and a distant-future event ( $M = 3.70$ ,  $SD = 1.57$ ,  $F_{(1,183)} = 9.45$ ,  $p < .01$ ). In addition, the number of categories was higher ( $M = 4.72$ ,  $SD = 1.07$ ) in the fit state of promotion focus and a distant-future event than in the non-fit state of promotion focus and a near-future event ( $M = 3.84$ ,  $SD = 1.09$ ,  $F_{(1,183)} = 13.44$ ,  $p < .005$ ).

The number of categories as a function of regulatory focus, time horizon, and the nature of the event are presented in Figure 1.

<Insert Figure 1 about here>

*Content analysis.* A panel of two judges independently rated the categories formed across conditions along their level of abstractness, using a semantic differential scale in which 1 is an abstract category and 5 is a concrete one. The average score of abstractness was calculated for each condition. The judges agreed on 89% of the 2,228 categorical inferences in the experiment. A third judge resolved all conflicting classifications. A two-way ANOVA of the level of abstractness of the two events, as a function of the temporal distance and regulatory focus, provided additional support for our H1, ( $F_{(1,182)} = 14.09, p < .005; \eta^2 = .07$ ).

Under the non-fit state of promotion focus and a near-future event, participants rated the categories as broader (e.g., “food” and “leisure”) ( $M = 1.87, SD = .55$ ) than in the fit state of promotion focus and a distant-future event (e.g., “clothing and shoes,” “food for the beach,” “things for the seashore”) ( $M = 2.37, SD = .765, F_{(1,182)} = 15.54, p < .005$ ). Alternatively, under the fit state of prevention focus and a near-future event, participants rated the categories as marginally narrower ( $M = 2.13, SD = .63$ ) than in the non-fit state of prevention focus and a distant-future event ( $M = 1.88, SD = .60, F_{(1,182)} = 2.88, p < .09$ ).

*Perceived importance:* A 2 (near vs. distant future) x 2 (prevention vs. promotion focus) ANOVA conducted on the level of the event’s importance revealed a significant two-way interaction, ( $F_{(1,186)} = 29.38, p < .001; \eta^2 = .15$ ), which is in line with H2’s prediction of higher perceived importance under fit states than under non-fit states ( $M_{\text{fit}} = 4.77, SD = 1.10$  vs.  $M_{\text{nonfit}} = 3.89, SD = .94, t_{(186)} = 5.86, p < .001$ ). That is, under the fit state of prevention focus and a near-future event, participants perceived the event as more important than in the non-fit state of prevention focus and a distant-future event ( $M = 4.71, SD = 1.19$  vs.  $M = 3.87, SD = .97; t_{(84)} = 3.50, p < .001$ ). Additionally, under the fit state of promotion focus and in a distant-future

event, participants perceived the event as more important than in the non-fit state of promotion focus and a near-future event ( $M = 4.82$ ,  $SD = 1.01$  vs.  $M = 3.90$ ,  $SD = .93$ ;  $t_{(101)} = 4.78$ ,  $p < .001$ ).

*Mediation analysis.* Mediation analysis confirmed that an event's perceived importance mediates the joint effect of regulatory focus and temporal distance on the number of categories. Our analysis relied on the recommended bootstrapping mediation tests (e.g., Preacher & Hayes, 2004; Shrout & Bolger, 2002) with 5,000 replications. Results confirmed our expectations. The perceived importance of an event mediates the effect of regulatory focus and temporal distance on construal levels (95% CI: .66 to 1.78).

To summarize, our findings confirm that under a fit state, participants perceive an event as more important than under a non-fit state and that this perception mediates the interplay between regulatory focus and temporal distance in determining the way individuals construe the information.

## Study 2

The second study sheds more light on the linkage between an event's importance and the processing style used (local vs. global) under the fit and non-fit conditions. This study differs from the first one in that rather than providing participants with a prepared and identical list of items, we asked them to create their own lists and group those items together. Additionally, in this study, we also asked participants to self-report on their cognitive style of processing. Specifically, we asked them to indicate the extent to which they focused on the event as a whole as opposed to its details while making the list.

## Method

*Participants.* Seventy individuals participated in an online survey in exchange for approximately US\$1. As in study 1, we randomly assigned participants to each of the cells in a 2 (near or distant future event) x 2 (prevention or promotion focus) between-subjects design.

*Procedure.* Participants were informed they would be participating in two different studies. The first study was presented as a study on cognitive strategies, identical to the task used by Friedman and Förster (2001), which temporarily induced regulatory focus with a subtle manipulation. In the task, all participants completed a cartoon maze in which they were asked to either lead a mouse depicted in the center of the maze to a piece of cheese (promotion focus) or help the mouse escape an owl hovering above the maze (prevention focus).

Next, participants were presented with a scenario—“organizing a bachelor party for a close friend”—that would either take place next week or six months from today. We asked them to make a list of the required items for organizing such a party and place them into groups, by writing the name of the group and the items that belong together next to each other on the right.

At the end of the second part of this study, participants answered a set of questions about the perceived importance of the event (e.g., “the event is of high importance for me”) and about their focus of processing (e.g., “I planned this party in detail by considering all the possible small benefits of the event” and “I planned this party by focusing on each of its small pieces in order to maximize the fun derived from each part”).

## Results

*Breadth of categories.* As in study 1, the dependent measure addressed the number of groups into which the participants classified the objects. A two-way ANOVA analysis with event occurrence and regulatory focus conditions as independent variables was performed on the number of categories. The two-way interaction effect was significant ( $F_{(1,66)} = 9.13, p < .01; \eta^2 = .12$ ). As H1 predicted, participants in the fit state generated more categories than those in the non-fit state ( $M_{\text{fit}} = 4.59, SD = 1.53$  vs.  $M_{\text{non-fit}} = 3.66, SD = .92, t_{(68)} = 3.01, p < .005$ ). Specifically, participants in the prevention focus created more categories for the event in the near future ( $M = 4.66, SD = 1.37$ ) than for the one in the distant future ( $M = 3.88, SD = .92, t_{(33)} = 1.97, p = .057$ ). Alternatively, participants in the promotion focus created a larger number of categories for the event in the distant future ( $M = 4.52, SD = 1.71$ ) than for the one in the near future ( $M = 3.43, SD = .89, t_{(33)} = 2.29, p < .05$ ).

The number of categories as a function of regulatory focus, time horizon, and the nature of the event are presented in Figure 2.

<Insert Figure 2 about here>

*Perceived importance of the event:* A 2 (near vs. distant future) x 2 (prevention vs. promotion focus) ANOVA conducted on the perceived importance level of the event revealed a significant two-way interaction, ( $F_{(1,66)} = 4.41, p < .05; \eta^2 = .06$ ). As in study 1, and in line with H2, the perceived importance was higher under the fit state than the non-fit state ( $M_{\text{fit}} = 5.22, SD = 1.58$  vs.  $M_{\text{non-fit}} = 4.30, SD = 1.97, t_{(68)} = 2.14, p < .05$ ). Specifically, participants under the fit state of prevention focus and the near-future event reported a higher perceived importance than those under the non-fit state

of prevention focus and the distant-future condition ( $M = 5.22$ ,  $SD = 1.65$  vs.  $M = 4.24$ ,  $SD = 2.07$ ;  $t_{(33)} = 1.55$ ,  $p > .1$ ). Moreover, participants under the fit state of promotion focus and the distant-future event reported a higher perceived importance than those under the non-fit state of promotion focus and the near-future event ( $M = 5.21$ ,  $SD = 1.54$  vs.  $M = 4.38$ ,  $SD = 1.92$ ;  $t_{(33)} = 1.42$ ,  $p > .1$ ). Although the direction of means in the fit and non-fit states was as expected, the differences were not significant.

*Focusing on the trees (rather than the forest).* A 2 (near vs. distant future) x 2 (prevention vs. promotion focus) ANOVA conducted on the extent to which participants engaged in a local processing style. The ANOVA analysis revealed a significant two-way interaction, ( $F_{(1,66)} = 18.87$ ,  $p < .005$ ;  $\eta^2 = .20$ ). As H3 predicted, participants under the fit state reported on engaging more in local processing than those under the non-fit state ( $M_{\text{fit}} = 4.79$ ,  $SD = 1.45$  vs.  $M_{\text{non-fit}} = 3.36$ ,  $SD = 1.50$ ,  $t_{(68)} = 4.04$ ,  $p < .001$ ). Specifically, participants under the fit state of prevention focus and the near-future event engaged more in local processing than those under the non-fit state of prevention focus and the distant-future event ( $M = 5.16$ ,  $SD = 1.22$  vs.  $M = 3.58$ ,  $SD = 1.63$ ;  $t_{(33)} = 2.47$ ,  $p < .025$ ). Furthermore, participants under the fit state of promotion focus and the distant-future event reported greater reliance on local processing than those under the non-fit state of promotion focus and the near future ( $M = 4.44$ ,  $SD = 1.60$  vs.  $M = 3.15$ ,  $SD = 1.37$ ;  $t_{(33)} = 2.34$ ,  $p < .05$ ).

*Moderation mediation analysis.* Moderation mediation analyses, using the recommended bootstrapping mediation tests (e.g. Preacher, Rucker, & Hayes, 2007) with 5,000 replications, provided more insights about the possible association between event importance and processing style. In the model, where the regulatory focus moderates the temporal distance effect on the event's importance and the style

of processing constitutes a mediator, we found the following: The temporal distance was positively mediated by local processing style under a promotion focus (95% CI: .14 to 1.38), suggesting more local processing in the distant future than in the near future. In contrast, the temporal distance was negatively mediated by local processing style under a prevention focus (95% CI: -1.61 to -.19), pointing toward more local processing in the near rather than the distant future. In summary, the second study replicated and extended the results of the first study. It not only confirmed that events are perceived as more important in the fit state as opposed to the non-fit state, but also demonstrated that under the fit state, local processing is more likely to occur. The latter findings are in line with the GLOMO<sup>sys</sup> predictions (Förster & Dannenberg, 2010), under which local processing style relies on more concrete than abstract construals.

The third study demonstrates the moderating effect of regulatory focus on preference for the item as a function of its abstraction level.

### **STUDY 3**

This third study was designed to investigate the implications of the fit and non-fit between regulatory focus and temporal distance when exposing individuals to marketing materials (e.g., product descriptions, catalogues, and/or brochures). It is in line with Semin et al. (2005), who examined the impact of abstractly and concretely worded messages on the behavioral intentions of chronically prevention- and promotion-oriented individuals. Semin and colleagues found support for the hypothesis that behavioral intentions to engage in specific activities are stronger when a fit between message wording and regulatory focus is present than when it is not. Accordingly, we anticipate that individuals in a promotion (prevention) focus who

engage in a decision process concerning a purchase they expect to take place in the distant- rather than in the near-future should prefer items that are described in a more (less) detailed manner. Thus we expect individuals to favor marketing materials that are congruent with their content and knowledge-structure preferences discussed earlier. Specifically, we hypothesize the following:

- H4:** Individuals in a fit state (prevention focus/near future, promotion focus/distant future) will prefer concrete items over abstract ones more than individuals in a non-fit state (prevention focus/distant future, promotion focus/near future).

#### Method

*Participants.* One hundred individuals participated in an online experiment in exchange for approximately US\$3. We randomly assigned participants to each of the cells in a 2 x 2 between-subjects design. Specifically, the study manipulated two between subjects factors, thus creating a 2 (near- or distant-future event) x 2 (prevention or promotion focus) matrix.

*Procedure.* We presented the study as a general survey about individuals' perceptions. The first task was similar to the task performed in the first study to prime a prevention or promotion focus. All participants were then presented with a shopping list. The list comprised the most common items mentioned in a pre-test among 79 participants (who were asked to prepare a shopping list of products they typically buy in a supermarket). The shopping list consisted of 24 specific items, which were divided equally into the following six product categories: milk products, vegetables, fruits, beverages, baked goods, and miscellaneous. In an additional pre-test among 30 participants, each of the items was rated in terms of their abstractness level, on a scale from 1 (*highly concrete*) to 7 (*highly abstract*). Use of a median split among the 24 items resulted in the assignment of 12 items into more-concrete categories, and 12 items into less-concrete categories. For example, participants rated the item "Milky,"

which is a specific brand of yogurt, as more concrete ( $M = 2.23$ ) than the general item “yellow cheese,” which is more of a category description ( $M = 3.73$ ,  $t_{(30)} = 2.68$   $p < .05$ ).

We asked participants to choose their preferred items in the given shopping list. Specifically, they were instructed to choose their favorite item from each of the six food subcategories (i.e., milk products, vegetables, etc.). The dependent measure consisted of the number of abstract items selected divided by the number of concrete items selected, and therefore reflected the relative tendency toward abstractness over concreteness.

## Results

A 2 (regulatory focus)  $\times$  2 (time) ANOVA on the ratio of selected abstract and concrete items from each category revealed a significant interaction,  $F_{(1,96)} = 10.13$ ,  $p < .01$ ;  $\eta^2 = .09$ . As H4 predicted, participants in a fit state preferred a lower number of abstract rather than concrete items than those in the non-fit state ( $M_{\text{fit}} = .96$ ,  $SD = .13$  vs.  $M_{\text{non-fit}} = 1.04$ ,  $SD = .13$ ,  $t_{(105)} = 2.81$ ,  $p < .01$ ). Specifically, participants under the fit state of prevention focus and the near future event preferred a lower number of abstract rather than concrete items in the distant future condition ( $M = .94$ ,  $SD = .13$ ) relative to participants under the non-fit state of prevention focus and the distant future condition ( $M = 1.05$ ,  $SD = .14$ ;  $t_{(45)} = 2.43$ ,  $p < .025$ ). In addition, participants in the fit state of promotion focus and the distant future condition preferred a lower number of abstract rather than concrete items ( $M = .97$ ,  $SD = .12$ ) relative to participants under the non-fit state of promotion focus and the near-future condition ( $M = 1.04$ ,  $SD = .13$   $t_{(51)} = 2.03$ ,  $p < .05$ ). Thus the time horizon of the decision as well as the regulatory focus status seems to dictate the form in which individuals prefer information above and beyond the content of that information.

Specifically, for a decision or event that will occur in the more-distant future, those under the prevention focus preferred abstract information, whereas those under the promotion focus preferred more concrete information. These findings have important implications for those who wish to convey information to others either by word of mouth or through promotional goals that extend well beyond marketing applications into the realm of communication.

#### **STUDY 4**

This final study aimed to replicate and extend the abstractness of mental construal in the context of product evaluation and preference. Therefore, we examined the effect of the “Temporal-Processing-Fit effect” on the evaluation of products with multiple features. According to Higgins (2005), a fit condition makes people “feel right” about whatever they are doing and thus broadly influences judgments and decision making, attitude and behavior change, and task performance. We therefore expected product evaluations and preferences to be driven by the interplay between regulatory focus and temporal distance, which will determine the weight individuals give to the high- (central) and low-level (peripheral) attributes of the product.

Following Liberman and Trope’s (2000) reasoning, we expected features that are relevant to the product’s intended goal to be more central than goal-irrelevant features, and therefore to constitute a higher level of construal. Therefore, we used the authors’ procedure involving someone interested in buying a radio to listen to music and news. In one scenario, the individual gets a radio that has good sound but a poor display of a built-in clock, that is, good quality for a high-level feature and bad quality for a low-level feature. In the other scenario, the individual gets a radio that has poor sound but a good clock display, that is, bad quality for a high-level feature and good

quality for a low-level feature. Liberman and Trope assumed that when considering a purchase in the distant future, individuals will rely mainly on high-level attributes when evaluating the products, whereas those considering a purchase in the near future will consider low-level attributes. Following this reasoning, they found that in the distant future, the difference in evaluations of the two types of radio (superior high-level attribute [i.e., sound quality] and inferior low-level attribute [i.e., clock display] vs. inferior high-level attribute and superior low-level attribute) will be higher than in the near future. In the current research, we anticipated this pattern of product evaluation would take place under a prevention focus, where individuals are expected to use higher levels of construal for future than for proximate events. However, under a promotion focus, where individuals are expected to construe proximate events at higher levels than distant events, we predicted the opposite pattern of preferences. That is, we expected the difference in preferences between the radio that has good sound quality and a bad clock display and the radio that has poor sound quality and a good clock display to be higher in the near future than in the distant future.

In sum, we expected a lower difference in evaluation of the two radios under the fit state (prevention focus/near future, promotion focus/distant future) than under the non-fit state (prevention focus/distant future, promotion focus/near future).

## Method

*Participants.* We recruited 180 participants for an online survey and randomly assigned them to each of the cells in a 2 x 2 x 2 between-subjects design. Specifically, the study manipulated three between-subjects factors, thus creating a 2 (near- or distant-future event that differed in form as indicated below) x 2 (prevention or promotion focus) x 2 (type of radio: high-quality sound and bad clock display or good clock display and low-quality sound) matrix.

*Procedure.* Participants were informed they would be participating in two different studies. The first study was presented as a study on cognitive strategies in order to effectively induce either the promotion or prevention focus, as in studies 1 and 3. Next, as in Liberman and Trope (2000), participants in the *high-quality sound and bad clock display* condition read the following description:

Imagine that you will buy a radio tomorrow. You need a simple radio in the kitchen to listen to morning programs and music when you get up. When you arrive home after you purchase it, you discover that it fits just great in the place you wanted to put it, and the sound is really good. However, the clock that is built into it turns out to be pretty useless. The digits are too small and can hardly be seen unless you stand right in front of it.

Participants in the *good clock display and low-quality sound* condition read this alternative description:

Imagine that you will buy a radio tomorrow. You need a simple radio in the kitchen to listen to morning programs and music when you get up. When you arrive home after you purchase it, you discover that if you put it in the place you wanted, the reception is bad, and to get reasonable reception you have to put it in a rather inconvenient place. However, the clock that is built into it turns out to be pretty useful. It has large clear digits which can be easily seen from anywhere in the kitchen.

In the distant-future condition, “tomorrow” was replaced with “a year from now.” After reading the scenarios, participants indicated on a 7-point scale (1=*not at all satisfied*, 7=*very satisfied*) the extent to which they would be satisfied with their purchase. At the end of the experiment, they were thanked for their participation.

## Results

*Anticipated satisfaction from their purchases.* A 2 (regulatory focus)  $\times$  2 (time)  $\times$  2 (type of product) ANOVA on the satisfaction ratings revealed a main effect of type of product ( $F_{(1,172)} = 10.46, p < .005; \eta^2 = .06$ ), indicating that overall, participants preferred the good radio with a bad clock ( $M = 5.02, SD = 1.37$ ) over the bad radio with a good clock ( $M = 4.24, SD = 1.68$ ). This finding confirmed our assumption that the quality of the radio was generally more central for subjects than the quality of the built-in clock. A significant three-way interaction of promotion and prevention focus  $\times$  time  $\times$  type of product,  $F_{(1, 172)} = 5.05, p < .05; \eta^2 = .03$ , indicated the difference in this preference over time varied between promotion and prevention focuses. Under the prevention focus, the difference in preference was stronger in the non-fit state than in the fit state. Specifically, in the distant future condition, the difference between the good and bad radio was significant ( $M = 5.00, SD = 1.53$  vs.  $M = 3.91, SD = 1.70; t_{(39)} = 2.11, p < .05$ ), whereas in the near future condition, we found no difference between satisfaction evaluations ( $M = 4.65, SD = 1.08$  vs.  $M = 4.44, SD = 1.32; t_{(43)} < 1$ ). Under the promotion focus, the difference in preference was significant in the near future condition, which is the non-fit state ( $M = 5.40, SD = 1.11$  vs.  $M = 3.84, SD = 1.97; t_{(48)} = 3.44, p < .0025$ ). In the distant future condition, which is the fit state, we observed no significance ( $M = 4.83, SD = 1.79$  vs.  $M = 4.52, SD = 1.70; t_{(39)} < 1$ ). The anticipated satisfaction as a function of regulatory focus, time horizon, and the nature of the product features is presented in Figure 3.

<Insert Figure 3 about here>

In conclusion, the fourth study replicates prior findings related to our first hypothesis in terms of individuals' satisfaction under the prevention focus (Liberman & Trope, 2000). Alternatively, under the promotion focus, the results of product satisfaction are reversed. Because individuals construed the information in a more concrete manner in the distant as opposed to near future, they considered both the low- and high-level attributes of the radio in the former time frame. Therefore, the difference in satisfaction between the two options is smaller than in the near future, where their main focus was on the high-level attribute (i.e., sound quality).

### **GENERAL DISCUSSION**

Individuals under a promotion focus employ an abstract processing style for an event in the near future, whereas those under a prevention focus employ the same strategy in the more distant future. Moreover, those under a promotion focus use a more concrete way of thinking about an event in the distant future, whereas those under a prevention focus use a similar concrete strategy in the near future.

This effect is a product of the fit–non-fit interplay between regulatory focus and temporal distance. Prior research has provided evidence that fit conditions enhance individuals' attitudes and evaluations, such as feelings toward the event (Cesario, Grant, & Higgins, 2004), persuasion (Vaughn, Hesse, Petkova, & Trudeau, 2009), outcome anticipation (Idson, et al., 2004), or perceived value of the event (Higgins, 2000). The current research further revealed that fit conditions impact the processing style (global vs. local) and the way the event is construed.

The classification of the fit–non-fit conditions relied on the existing association between regulatory focus and temporal distance (Mogliner et al., 2008; Pennington & Roese, 2003). The present research showed that under the fit state (i.e.,

promotion focus/distant future, prevention focus/near future) participants perceived the event as more important, and therefore local processing was more likely to occur, which resulted in construing the information in more detail relative to the non-fit state. For individuals in a prevention focus, the current study generated a pattern of results similar to that obtained in prior research (Liberman et al., 2002; Trope & Liberman, 2000). However, importantly, the current research demonstrates the reverse effect for individuals in a promotion focus. Specifically, prior research indicates that individuals generate less-abstract (more-concrete) categories for an event in the near future compared to an event in the distant future. Although we found this effect under a prevention focus, it was not replicated in the promotion condition. One possible explanation is that previous studies may have unintentionally primed an obligated mindset in individuals. For example, Trope and Liberman (2000) introduced their study (Study 2) to participants as a survey the Psychology Department at Columbia University was conducting on students' preferences for the different work-study jobs the department offered. This situation might have led participants to think about their duties and responsibilities in the context of finding a job and therefore may have influenced their knowledge structures.

Förster and Liberman (2008) state the theoretical importance of testing the interplay between prevention and promotion motivations, temporal distance and goal achievement. For example, they propose that prevention focused individuals are expected to be more sensitive to the necessity of achieving a goal than promotion focused individuals, and therefore may be more motivated to achieve proximate goals than distant ones. This research provides initial insights to the interplay between the motivational strength and the temporal distance of goals. In line with Förster and Liberman's predictions, prevention focused individuals found proximate events to be

more important than remote events. In contrast, promotion focused individuals perceived remote events as more important than proximate one.

Our research also adds a temporal perspective to the work of Lee et al. (2010) and others (Crowe & Higgins, 1997; Semin, 2005; Zhu & Meyers-Levy, 2007), who focused on proximal judgments and evaluations and showed that promotion-focused individuals create more abstract (broader) categories than prevention-focused individuals. This research extends the time frame and also considers events in the distant future. By doing so, it demonstrates that an opposite pattern of construal levels exist when individuals focus on the distant future.

The current research contributes to the literature by clearly demonstrating the counter-intuitive interplay between regulatory focus and temporal distance and its impact on global/abstract versus local/concrete information processing. Thus individuals with a promotion focus may engage in local processing and use concrete construals when thinking about an event in the distant future, whereas individuals with a prevention focus may rely on local processing and use concrete construals when thinking about an event occurring in the near future.

In future research could further investigate the process underlying the fit–non-fit interplay. For example, one could examine response time as a proxy measure of effort, and potentially show the interactive effect of regulatory state and temporal distance on the time spent on the task. Moreover, events in the near or in the distant future may require different levels of readiness. Therefore, an examination of the differences in how individuals in a promotion versus prevention focus prepare for events in the near versus more distant future would be interesting. For example, prevention-focused individuals prefer vigilant strategies; the system regulates more effectively when vigilance is sustained. Focusing on relatively concrete features may

be one way to heighten vigilance for a near-future event. In contrast, promotion-focused individuals prefer to anticipate events. The system regulates more effectively when eagerness is sustained. Focusing on relatively abstract features may be one way to heighten eagerness for a near-future event (i.e., keeping the big picture in mind). When events are in the distant future, what supports eagerness and vigilance may differ, and promotion-focused individuals may focus on concrete features for the distant future because doing so promotes savoring, which boosts eagerness. Prevention-focused individuals may focus on abstract features for the distant future because doing so heightens vigilance over a long time horizon by keeping core, central elements in mind.

Additional future research directions may be to better specify the conditions under which a fit condition generates a higher likelihood of engaging in local processing and detailed construals. Cases may exist in which forming an abstract representation requires effort similar to or even more than that required for forming a concrete representation. For instance, as suggested by Liberman et al. (2002), abstracting rules or theories from raw data may require more effort than construing low levels of information. Finally, future research should also examine other dimensions of psychological distance. The current research focused on temporal distance; however, an investigation of the fit–non-fit interplay under social and/or geographical distance would be interesting, for example, whether prevention-focused individuals construe in a more detailed manner information about events that take place in their own town versus a faraway one, whereas promotion-focused individuals construe the nearby events more abstractly than faraway events.

As previously stated, the moderating effect of regulatory focus on construal levels as a function of temporal distance has significant managerial implications.

These implications refer to the extent of detail marketers and communicators in general should provide as a function of individuals' and consumers' mindset. Specifically, our results also have implications for the desired degree of abstractness of product descriptions, which were shown to be a function of individuals' levels of anticipation for the product, and/or the time frame of the impending event, because such factors impact the way information is categorized.

Consider a couple planning their wedding, or an individual anticipating the new model year of her favorite car. In these cases, our research suggests individuals favor less-concrete categories as the wedding or the launch of the new model draws near. This finding implies that an effective promotion-oriented strategy should offer these consumers information that can be categorized in increasingly broader terms as the event draws closer. The way of conveying the information is particularly more impactful for events that have a fixed timing and hence occur at the same time for everyone year in and year out (e.g., Valentine's Day, Thanksgiving, New Year's Eve).

For example, talking about the different types and quantity of roses one could buy for his/her significant other in the weeks preceding Valentine's Day would be appropriate. Other gifts, including candy and various articles of clothing, may also be proposed. However, as the event draws nearer, the need for any gift whatsoever seems to prevail, as the individual cannot ignore the date without suffering dire consequences. Hence the strategy should evolve from one that allows the individual to fantasize about "50 ways to please your lover" (with apologies to Simon and Garfunkel) to a focus on the purchase of a gift...any gift.

The implication is different for individuals in a prevention focus or for products that are not highly anticipated. For such cases, as the time of the product experience approaches, individuals seem to develop a tendency to classify items more narrowly

using less-abstract categories. Therefore, it seems reasonable to try to position the relevant products via narrow, well-defined categories as purchase time draws near, so they fall into one or more classifications in which individuals are interested. For example, the famous slogan for Certs (“a breath mint and also a candy mint”) illustrates this strategy. Similarly, motivating high school seniors to apply for military service might be best accomplished if the military could be associated with broad constructs such as honor or freedom. However, after graduation, when the decision to join the army becomes more relevant, a promotion-oriented device for promoting enlistment might be the dramatization of an average soldier’s day as a series of exciting responsibilities (e.g., 9 a.m.: flying a mission, 3 p.m.: scaling a mountain, 7 p.m.: relaxing with friends). Not surprisingly, the results presented here support the old adage that “timing is everything.”

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