

PSYCHOLOGICAL DISTANCE TO THE (UN)FAMILIAR



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Psychological Distance to the (Un)Familiar

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## DECLARATION OF ORIGINALITY

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## ABSTRACT

### Psychological Distance to the (Un)Familiar

Objects or events can be represented on different construal levels depending on the degree to which they are removed from the now and here. Construal level theory (CLT) states that psychologically distal entities are mentally construed on a higher, more abstract level than proximal ones are. Building on the original premise of CLT, this study proposes that individuals' accumulated experience with an entity or an event changes the way they perceive and process them, and that high-level familiarity with an entity evokes abstraction in its construal.

In four experimental studies, we examine how individuals' previous exposure to an entity influences evaluation, construal, and psychological distance. The empirical findings suggest that individuals' familiarity with an entity affects its construal; and a match between construal mindset and knowledge level makes individuals perceive the target event or object closer (study 1). The second finding is that high-level familiarity increases the salience of ends-related, core features of entities and makes superordinate features more relevant to the decision-makers compared to means-related, peripheral features (study 2). The following studies (study 3 and 4) reveal that the evaluation process and the nature of the construed entity are important as well.

This study establishes familiarity and subjective knowledge as critical factors, which can reverse the typical relationship between construal level and psychological distance in several occasions. We also underline other potential factors, such as self-esteem, that may have an influence on the construal process.

## ÖZET

### Bilin(mey)ene Olan Psikolojik Uzaklık

Varlıklar ya da olaylar şimdi ve buradan olan uzaklıklarına göre farklı kurgusal düzeylerde tasvir edilebilir. Kurgusal düzey teorisine (KDT) göre psikolojik olarak uzak olan ögeler yakın olan ögelere kıyasla daha yüksek ve soyut düzeyde temsil edilirler. KDT'nin bu temel öncülüne dayanarak, bu çalışma, bireyin bir varlık ya da olay hakkındaki geçmiş deneyimlerine göre tasvir edilen ögeyi farklı bir şekilde algılayacağını ve fazla aşinalığın ögenin tasvirinde soyutluk uyandıracığını savunmaktadır.

Dört deneysel çalışmayla bireyin ögeyle olan geçmiş ilişkisinin, ögenin tasvirindeki kurgusal düzeyi, ögenin değerlendirilmesini, ve ögeye olan psikolojik uzaklığı nasıl etkilediği araştırılmıştır. Ampirik bulgular göstermektedir ki bireyin ögeye aşinalığı, ögenin kurgusal tasvirini etkilemekte, ve kurgusal zihniyet ile bilgi seviyesi arasındaki uyum ögenin daha yakın olarak algılanmasına neden olmaktadır (çalışma 1). İkinci bulgu ise fazla aşinalığın ögenin temel özelliklerini bireyin karar verme mekanizmasında ögenin dolaylı, periferik özelliklere göre daha da belirginleştirmesidir (çalışma 2). Takip eden çalışmalar (çalışma 3 ve 4) değerlendirme sürecinin ve tasvir edilen ögenin niteliğinin de bu süreçte önemli olduğunu vurgulamıştır.

Bu çalışma kurgusal düzey ve psikolojik uzaklık arasındaki tipik ilişkinin tersine çevrilebilir olduğunu ve aşinalık ile sübjektif bilgi seviyesinin bu ilişkiyi etkileyen temel faktörler olduğunu göstermiştir. Bu temel faktörlerin yanı sıra özsaygı gibi diğer potansiyel etkenlerin de tasvir sürecine etkisi vurgulanmıştır.

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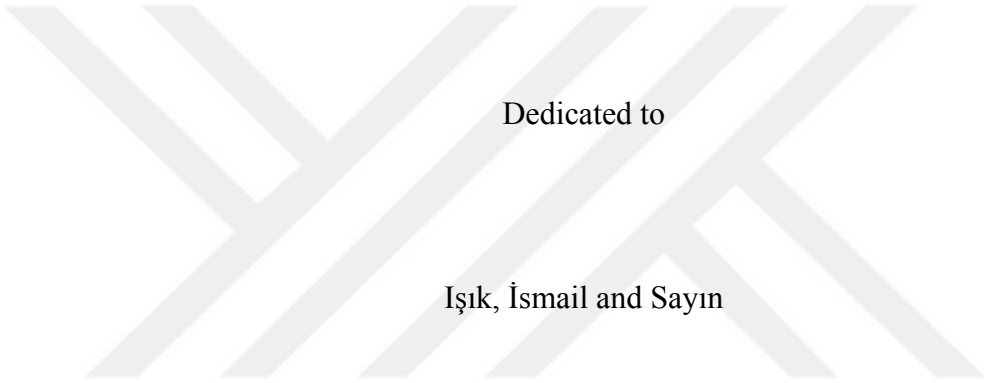
Although only my name appears on this thesis, I owe my gratitude to all those who have made it possible and because of whom my graduate experience has been one that I will cherish forever.

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Dedicated to

Işık, İsmail and Sayın



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## CHAPTER 1

### INTRODUCTION

*“Perhaps it might be said rightly that there are three times: a time present of things past; a time present of things present; and a time present of things future. For these three do coexist somehow in the soul, for otherwise I could not see them. The time present of things past is memory; the time present of things present is direct experience; the time present of things future is expectation. (...) So that neither the future nor the past is said to exist now.”*

*–Augustine, Confessions, Book XI, Chapter XX*

Now includes nothing but now and it applies to individuals in a certain place, at a certain time, in a specific way. We can experience being and meaning without any distance only here and now. The beyond is subject to measures and distances, which all confine us to an island in the ocean of time. Notwithstanding the physical imprisonment at the current moment, the cognitive present has no fences, and we can always dream sailing through the same ocean by which we are detained. Humans, in that regard, are gifted with this almost unique ability.

Different from animals, the evolutionary ability to populate our minds with alternatives to now and here is unique and the most advanced (Buckner & Carroll, 2006). Creating cognitive distances of different kinds and of different extents has been a significant contribution to the progress, which we have made as human beings (Lieberman & Trope, 2008). The ability to calculate future rewards, for example, is an advantage that differentiates us from other species, even from our closest relatives (Suddendorf & Corballis, 2007).

Abstraction is one of the critical characteristics of human mind. The ability to operate on an abstract level allows us to construe events or entities that are distant in time, place, perspective, and probability. Thanks to this ability, we can plan ahead

and consider alternatives to the now and here. Through abstraction, we can see what is behind shallow, concrete details of entities, and can relate different concepts in our minds. We form structures and schemas based on concrete attributes and move on to higher levels of reasoning. And again through abstraction we put meaning into our lives. Religion or the idea of something greater than us is one of the few examples of how abstract our minds can get. Our ability to anticipate the future reward or in this case an eternal -heavenly- one is a far-fetched yet an omnipresent instance across different cultures.

Objects or events can be represented on different levels depending on the degree to which they are removed from the now and here. Individuals can transcend from the now and here to one year later, to another place, or to an alternative reality. This mental escape or travel allows individuals to make plans, recall memories, and daydream things. In this cognitive travel, we displace time, and other time-relevant dimensions backward and forward. Alternatives to the immediate reality can be built by shifts in time, place, perspective, and probability. However, as we can physically experience nothing but the present moment, this shift also creates an implicit distance between the self and mentally construed entities.

Although there are several ways, on which one can depart from reality, for abstraction to increase, one should cognitively increase the distance from the now and here. The distance can be as short as construing yourself reading a book tomorrow at the comfort of your home, or can be as great as imagining yourself walking the stairway to heaven, a transcendent place of immanence. Whether it is a mundane or an eternal representation; abstraction, to a degree, characterizes almost every aspect of our lives.

Considering the fact that almost everything is construed and represented in a way that is different than it is in the actual world has some serious implications, and to better understand the nature of human behavior from the perspective of psychological distance, it is crucial to address the role of construal level on our perceptions, attitudes, and evaluations. We form judgments, make choices, and set preferences not based on the entities themselves, but on our construals of the entities (Trope & Liberman, 2010). For instance, when we plan a vacation and pick a destination, we do not decide on the destination itself, but rather on our construal of that destination. Our choices, preferences, and judgments about any object or event that is not part of our direct experience here and now, is therefore subject to the way we construe these entities in our minds. Depending on the degree of abstractness, one may find herself interested more in core features, such as having fun or spending quality time, or in more peripheral and concrete attributes, such as sea surface temperature or proximity to beach. Again, depending on the construal level, attitudes and judgments can get more extreme. In the case of moral transgression, for example, Eyal et al. (2008) found that morally offensive actions, which are thought to happen in the distant future (temporal distance) or considered from a third person perspective (social distance), are judged more severely than those that are thought to happen in the near future or from a first person perspective. On a higher construal level, individuals tend to evaluate outcomes and make judgments based on the central aspect of entity or action. When judging near actions or entities, on the other hand, individuals allow contextual factors to enter into their consideration, leading to a more moderate evaluation than a distant one.

Based on the action identification theory, an action or an object can be represented in different ways without distorting its meaning (Vallacher & Wegner, 1989). For example, depending on individuals' mental representation level, locking a door can either be regarded as putting a key into the lock (concrete, low-level) or as securing the house (abstract, high-level). As the meaning of peripheral features depend more on the central features than the other way around, there will be less variation in an action or an entity if it is construed in more abstract terms (Trope & Liberman, 2010). Therefore, for distant actions, it makes more sense for individuals to construe entities or actions on a higher, more abstract level.

Consider the example of a French lady taking a flight. An Air France-KLM flight from London to Paris yesterday: On the proximal, concrete level, she is expected to describe her experience with profound details such as the sound of a crying baby, the shaky feeling during the turbulence, or the delicious smell of a strong cup of coffee. However, when this experience is removed on one of the distance dimensions, she tends to disregard these secondary aspects of the service and focuses more on the primary features, i.e. the flight itself. Imagine a flight next month from Istanbul to Tokyo with Turkish Airlines. With increasing levels of distance, individuals tend to use more abstract words to define entities or events. In this case, the French lady is expected to describe the construed flight as safe, joyful, or irritating as the event is removed in time and place. As you may infer from this example, abstraction called by higher level construals, not only involve the secondary, concrete aspects of the event, but also override those and give a new and overarching meaning to the experience.

Although distance is an important factor influencing individuals' construal preferences, there may be several other factors changing the way individuals

represent objects or events in their minds. Other than psychological distance dimensions, which includes temporal, spatial, perspective, and hypothetical distances, there is not an enough number of studies exploring the antecedents of construal level preference. Although there have been some recent sparks, for example, the effect of the medium on construal level, research on construal level is scattered and lacks the necessary ports, to which it can be linked up other theories and practices. In this study, focusing on the subjective relationship between individuals and objects or events, we focus on the role of familiarity on construal level.

Drawing on literature, this study proposes that our accumulated experience with an entity or an event changes the way we perceive and process them. As individuals get more familiar with an entity, in order to reduce the required cognitive effort, decision-making becomes more automatic. Familiarity with an entity increases the level of knowledge and expertise related to the entity. In this process, individuals tend to chunk knowledge to form more inclusive and abstract structures so that they can process information in a more efficient way. Therefore, increasing levels of knowledge, and in most of the cases, familiarity evokes abstraction, a higher level of construal. The role of familiarity on the construal level is twofold: (1) Knowledge-mediated effect, and (2) direct effect. The former effect includes several constructs, for some of which there is no consensus on their definition, such as knowledge. The effect of familiarity on knowledge structures is intricate as well, involving both the perceptual and cognitive processes. Based on the power of the knowledge-mediated effect and its relation with the direct effect of familiarity on construal level, we test the proposed associations among construal level, familiarity, and knowledge.

## CHAPTER 2

### PLAN OF THE THESIS

In this study, we first discuss the critical role of abstraction and then discover what is level of construal and how it relates to the concept of psychological distance along with its dimensions. We review several studies investigating the role of various dimensions, and underline their potential influence on this study. After covering the relevant literature, we focus on how individuals' accumulated experience and expertise with an entity or an event can change preference for construal level. The relationship between familiarity and abstraction is intricate and literature is equivocal about the nature of the relationship. Therefore, this study provides a review of several related concepts to reconcile different interpretations. The critical concepts on which this study tries to explore the relationship between familiarity and construal level are knowledge, mere exposure effect, regulatory fit, elaboration, and self-confidence. Considering the depth and the significance of knowledge construct, knowledge structures and types are given a special interest and an in-depth review of the literature in connection to construal level is provided as well.

In the section following the literature review, we propose a conceptual framework depicting and defining the nature of these relations along with respective hypotheses. In the last section, hypotheses are empirically tested with four experimental studies. In the last part of the thesis, the results of the study are discussed, their theoretical and managerial implications are evaluated, and further research questions are proposed.



## CHAPTER 3

### THEORETICAL BACKGROUND

We always converge to now, and there is, therefore, always a distance between individuals and entities. To form judgments and make evaluations, individuals use abstraction and construe entities in their minds. Construal level theory (CLT) states that distal entities are mentally construed on a higher, more abstract level than proximal ones are (Liberman, Trope, & Stephan, 2007). As individuals do not always experience things in immediate reality, the lack of now-experience defines the relationship between psychological distance and level of construal on several occasions (Förster, 2009).

#### 3.1 Action Identification Theory

How an individual identifies actions and on which level she represents them have been a crucial research question long before the construal level theory (CLT). Action Identification Theory (AIT) provides a measure of abstraction in everyday activities of individuals (Vallacher & Wegner, 1987; Vallacher & Wegner, 1989). AIT demonstrated that individuals identify actions either in terms of ends-related goals or means-related, peripheral features. Ends-related goals underline the question of “why?”, whereas for means-related ones the question becomes “how?” Individuals who tend to describe actions in terms of their ends-related, superordinate goals tend to use abstract terms compared to the concrete terms used by individuals who focus more on the peripheral features. In order to measure whether an individual has a concrete or abstract mindset, Vallacher and Wegner (1989) developed a questionnaire, which grasps the current mindset of individuals. Behavior

Identification Form (BIF) measures individuals' degree of abstraction by asking participants to identify a series of 25 actions in terms of either their purposes or their means. For instance, depending on the mindset, an individual may identify "joining the army" as either "helping the nation's defense" -abstract level - or "signing up" - concrete level- (Vallacher & Wegner, 1989). Liberman & Trope (1998) used an adapted version of levels of personal agency forced choice items to test the temporal construal theory and found that when participants were asked to imagine the action in the distant future, they tend to choose the ends-related goals over means-related peripheral ones. The reverse of this relationship, in which abstract and superordinate goals calls for a distant future, is also viable (Liberman & Trope, 1998). Throughout the experimental studies, in measuring individuals' general tendency to think in abstract or concrete terms, we used the well-established items of BIF, which was developed by Vallacher and Wegner (1989).

### 3.2 Construal Level Theory

Construal level theory went beyond what was stated in the action identification theory and proposed that the way we construe entities depends on psychological distance to these entities. Individuals through abstraction transcend the here and now to consider entities or actions that are to take place in a distant time or a place, from a different perspective or with a different level of probability. Construal level theory (CLT) proposes that individuals tend to rely on higher levels of abstractness as the psychological distance increases (Liberman, Trope, & Stephan, 2007). In this construal process, events, objects, or individuals can be represented in different forms, which alter the salient dimension of target entities (Rim, Amit, Fujita, Trope, Halbeisen, & Algom, 2014). For instance, writing a letter can be described as

expressing thoughts, which emphasizes the ends and abstract dimensions of writing or as putting the pen on the paper, which highlights the means and concrete aspects of writing. Psychologically distant (proximal) entities are generally represented by the former (latter) definition. These examples can be reproduced for each and every activity. The degree to which an individual's descriptions involve abstractions and embellishments depend on several factors, among them psychological distance dimensions have been the most studied ones. CLT, in that sense, is a recent yet a principal theory linking abstraction to psychological distance and on the most basic level, defines construal level as a function of psychological distance (Trope, Liberman, & Wakslak, 2007).

In their seminal paper Liberman and Trope proposed that temporal proximity of an entity or an event influences the level of construal (Liberman & Trope, 1998). Distal (proximal) entities or events are construed on a higher, more abstract (lower, more concrete) level. High-level construals are structured, schematic, and independent from the context, whereas low-level construals are unstructured and context-bounded. Proximal events or entities allow individuals to embed themselves more into contextual information and peripheral specifics, which all contribute to the saliency of secondary aspects (Trope, Liberman, & Wakslak, 2007). Abstraction, on the other hand, calls for the creation of schematic representation and decontextualization of events and entities. It has also been shown in several research that individuals tend to think in terms of more inclusive and broader categories when thinking about psychologically distant objects or events. For example, concerning the role of medium on construal level, researchers found that due to their inclusive semantic nature, verbal presentations promote abstraction, and as a result words lead

to broader categories compared to visual stimuli (Amit, Algom, & Trope, 2009; Rim, Amit, Fujita, Trope, Halbeisen, & Algom, 2014).

Although the majority of research has focused on the relation between temporal distance and construal level, other distance dimensions have been enumerated as well. For example, by using picture-word Stroop task, researchers demonstrated that individuals responded to a congruent option, featuring a spatially proximal (distant) arrow with psychologically close (distant) words, in a shorter period of time than they did to an incongruent one (Bar-Anan, Trope, Liberman, & Algom, 2007). Another study showed that students at New York University evaluated social events on a higher, more abstract level, when they were told that the event had happened in Florence compared to that in New York (Fujita, Henderson, Eng, Trope, & Liberman, 2006). Similar conclusions have been drawn for social distance and hypothetically as well (Williams & Bargh, 2008; Todorov, Goren, & Trope, 2007).

As a common process underlies these psychological distance dimensions, they are related to one another, and any increase in one of these may trigger an increase in the perceived distance on another dimension (Trope & Liberman, 2010). For instance, individuals perceive those using polite, formal words spatially and temporally distant compared to those who have an informal tone (Stephan, Liberman, & Trope, 2010).

The relationship between psychological distance dimensions and construal level is intricate and far from being one-way. Not only distance promotes abstraction, but also a higher construal increases the psychological distance to the action or the entity. For instance, “spending quality time with family” is likely to foster a greater distance than “having a family picnic” does. The bidirectional relationship between

construal level and psychological distance on several dimensions has been proven empirically with Implicit Association Test on the conceptual level as well (Bar-Anan, Liberman, & Trope, 2006).

Our ability to construe actions and entities combined with the role of psychological distance in this process has several implications. (1) Psychologically distant perspective, and thus a higher construal, allows individuals to see the big picture and allows them to focus on central, primary attributes free from any contextual influence. (2) Individuals can see the big picture by taking a step back, which also allows them to categorize objects or actions in broader, more inclusive terms. (3) As individuals focus more on the central attributes of the construed entities on higher levels of abstraction, they tend to give more weight to goals-related, desirability features than they do to means-related ones. Therefore, the relative weight of the value of an outcome is more important for a distant situation than it is for a near one.

### 3.3 Primary vs. secondary attributes

Construal level theory (CLT) states that primary, central features of entities constitute a higher-level construal than secondary, peripheral features do.

Considering the bi-directional relationship between construal level and psychological distance, any kind of distancing on any dimension should increase both the level of construal and the salience of primary, central features (Bar-Anan, Liberman, & Trope, 2006). In their seminal paper, Trope and Liberman (2000) looked into the effects of temporal construal on individuals' outcome evaluations and preferences. They found that individuals' preferences vary as a function of temporal distance. Distant entities are represented schematically in terms of their central features,

whereas proximal ones are construed in concrete terms. In all five studies, Trope and Liberman showed that in a distant future, the relative value of high level construal (central features) is greater than that of low-level construal (peripheral features) (Trope & Liberman, 2000).

In another study, for instance, participants were imagined to choose between two options, one of them featuring high desirability and low feasibility, and the other one featuring low desirability and high feasibility. The former condition makes the primary aspect more salient and attractive, the latter on the other hand makes the means and the secondary aspect more profound. Todorov et al. (2007) found that higher probability increases the weight of peripheral, secondary features relative to that of core, primary features. Similar findings concerning the relation between the saliency of primary vs. secondary attributes and construal level have been empirically shown in other studies as well. Other than that of temporal distance, the effect of social distance on the salient dimension of entities has been analyzed in several papers (Liviatan, Trope, & Liberman, 2008; Kray, 2000).

A higher-level construal increases the salience of ends-related, core features of entities and makes superordinate features more relevant to the decision-makers (Todorov, Goren, & Trope, 2007). On higher, more abstract levels, individuals not only pay more attention to the core features but also give new meanings to these entities or events (Liberman & Trope, 2008). Entity as a whole becomes more important than its constituent parts as an individual becomes more distant and gets higher on the construal level. The question of “why?”, ends-related features increase in importance compared to the question of “how?”, means-related features.

Familiarity with an entity can also make the “why?” aspect more important. It can decrease the elaboration, allow chunking, and lead to broader categories

involving embellishments. The process through which construal level and psychological distance affect our cognition and perception would, therefore, be much clearer by further looking into individuals' subjective relationship with entities.

### 3.4 Familiarity

Changes in cognitive structures are corresponded with changes in cognitive processes and outcomes (Marks & Olson, 1981). The process through which judgments are made and entities are perceived reflects the accumulated experience (familiarity) with the entity in question (Conover, 1982). Individuals, therefore, perceive and evaluate objects or events in different ways, as they tend to acquire familiarity and experience over time (Bettman, 1970). The cognitive structure account of familiarity proposes that pre-existing knowledge, if any, and the structure associated with the pre-existing knowledge are subject to change as individuals acquire new information and integrate those with the old (Conover, 1982). This integration is achieved by repeated exposure and acquisition of information. The sources of structural change operate on different levels of consciousness and processes. As familiarity relates to perception and cognition with two different courses, and is an important concept in understanding the nature of decision-making, it would not be a far-fetched idea to relate familiarity to the way individuals represent entities; namely construal level.

As individuals become familiar with an entity and its concrete details, they start forming general concepts, which sum several aspects of the entity in question (Marks & Olson, 1981). Individuals do so to decrease the cognitive effort, and make room for other processes. It is important to note that the sum is greater than what concrete shallow details would add up to. Individuals in this process while forming

general, more abstract concepts about an entity, also put an extra meaning into their representations (Marks & Olson, 1981). The overarching categories involving embellishments can be given as an example to the meaning augmentation.

There are several mechanisms, through which we can make sense of the relationship between familiarity and psychological distance. Abstraction is the first port, which is common in both concepts of familiarity and construal. Individuals tend to acquire knowledge and become expert as they get more familiar with the entity (Alba & Hutchinson, 1987). There are two types of attributes on which consumers get knowledgeable. These are concrete and abstract attributes. Concrete attributes are mostly based on the design and outlook of the entity at a specific time. At low levels of familiarity individuals can only have knowledge based on concrete attributes. Accumulated knowledge associated with concrete attributes is subject to a great variation as this kind of attributes are generally context specific and can change from one encounter to another. Abstract attributes, on the other hand, are deep and an individual can only build knowledge on these attributes, as she gets more familiar with the entity. Increasing levels of familiarity allows consumers to accumulate knowledge on both types of attributes. However, as inexperienced individuals do only have access to concrete attributes and the relevant information in their memory, the relative importance of abstract to concrete attributes increases, as consumers get more familiar with the entity in question (Bettman & Park, 1980; Sujan, 1985). Familiar consumers, as a result, tend to rely more on the abstract, deep attributes to evaluate products.

Consumers showing high-level familiarity also tend to look what is beyond the shallow features. When high-level and low-level consumers were asked to categorize products, it was shown that highly familiar consumers tend to give less



importance to the concrete attributes and employ more abstract thought mechanisms, resulting in broader more abstract categories (Alba & Hutchinson, 1987).

In order to better understand the relationship between familiarity and construal level, it is necessary to further look into the role of knowledge in this process.

### 3.5 Knowledge-mediated effect of familiarity on construal level

In this section, we first present you the construal level account of literature and then move on with the relevant literature on familiarity and knowledge. In that regard, similarities are discussed from three perspectives: (1) Categorization, (2) automaticity and task difficulty, and (3) structures and schemas.

#### 3.5.1 Categorization

Category breadth is an important measure of abstraction (Trope & Liberman, 2010). Broader (narrower) categories signal abstract (concrete) representations.

Novices and experts differ in their representation and categorization of concepts, objects, and problems. The way an expert approaches a problem involves abstractions and embellishments. Along with increasing abstraction it is expected that representations become richer and free from secondary attributes of objects or problems (Chi, Feltovich, & Glaser, 1981). In their seminal paper, Chi et al. (1981) found that experts classify physics problems based on the major and abstract physics principles, whereas novices rely on concrete and literal features of the problems in classifying them.

In these studies, novices lacked not only competence in categorizing problems based on the canonical and deep principles of physics, as a result of their

inability, they also failed to come up with abstract solution methods. Experts in that sense possess a unique semantic network, which streamlines the way they retrieve information (Garland & Barry, 1991; Chase & Simon, 1973). This effect has been empirically proven in several contexts; chess (Chase & Simon, 1973), bridge (Charness, 1979), and music (Bean, 1938). Both the perceptual and cognitive differences among individuals with different levels of knowledge can be attributed to schemas and structures.

### 3.5.2 Automaticity and task difficulty

Concrete representations increase the task difficulty and cause greater response latency than abstract representations do (Tsai & Thomas, 2011; Thomas & Tsai, 2012).

Individuals with greater knowledge store information in hierarchical structures, which also makes the retrieval more efficient compared to that of novices (Ericsson & Kintsch, 1995). Familiar individuals, based on these structures, make more confident decisions in a significantly much less time (Park & Lessig, 1981). In addition to the psychological basis, variance in response latency between novices and experts has neurophysiological underpinning as well. Novices significantly differ from familiar individuals in their neural process, which involves different parts of the brain compared to the process of familiar individuals (Reimann, Castaño, Zaichkowsky, & Bechara, 2012). In another study, researchers identified psychological distance as a significant factor influencing the feeling of difficulty in decision-making (Thomas & Tsai, 2012). Thomas and Tsai (2012) reported that individuals distancing themselves from stimuli find the task less difficult than those

who are closer to stimuli. Similarly, individuals, who have greater knowledge, find decision-making as less burdensome than novices (Park & Lessig, 1981).

### 3.5.3 Structures and schemas

High-level construals involve hierarchical structures and schema-based representations of entities (Liberman, Trope, & Stephan, 2007).

When an individual becomes more familiar with an entity, the quantity of accessible information in memory is expected to increase (Alba & Hutchinson, 1987). High-level previous exposure increases the quantity and the saliency of abstract features in memory (Wedel, Vriens, Bijmolt, Krijnen, & Leeftland, 1998). High-level exposure to entity, therefore, allows consumers to focus on the primary, core features of the entity. In a similar vein yet from a different perspective, CLT suggests that primary features become more salient when the psychological distance is greater and the construal is higher.

Familiarity can increase the level of knowledge in memory. It can also change the relative importance of the type of knowledge, on which evaluations are based. Familiarity, therefore, by influencing the available knowledge and the salient dimension of attributes concerning the entity, influences construal level. Considering the bidirectional relationship between psychological distance and construal level the degree of available knowledge in memory also influences psychological distance (Bar-Anan, Liberman, & Trope, 2006).

Depending on one's degree of expertise, schemas and structures change in their compositions as well (Chi, Feltovich, & Glaser, 1981). While novices indicate higher levels of declarative knowledge relative to procedural knowledge, this reliance reverses for experts.

When it comes to the role of knowledge on psychological distance and construal level, there is only one study, which has directly addressed the question. Kyung et al. (2014) analyzed the association between construal level and knowledge, and demonstrated that even though the generalized effect of construal level on psychological distance holds for individuals who are less knowledgeable, it is not the case for those with greater knowledge. The generalized relationship between construal level and temporal distance reversed with increasing levels of subjective knowledge, indicating that there are instances, in which the abstract seems temporally near and the concrete seems temporally distant (Kyung, Menon, & Trope, 2014). Although the hypothesis was tested on temporal distance, considering the interrelated nature of psychological distance dimensions, it would not be far-fetched to expect the same effect for other dimensions as well (Trope & Liberman, 2010).

### 3.6 Which knowledge?

Although knowledge has been examined from different angles and has been a long-recognized key concept, there are several types of knowledge among which the differentiation is necessary (Raju, Lonial, & Mangold, 1995; Bettman & Park, 1980; Sujan, 1985). Increased exposure to an entity is expected to accumulate knowledge in individuals (Alba & Hutchinson, 1987). However, what a person thinks she knows can be different from what actually she knows. The gap between subjective and objective knowledge generally exists, and there are several factors influencing this gap (Park, Gardner, & Thukral, 1988; Raju, Lonial, & Mangold, 1995). Research suggests that objective and subjective knowledge can be at the same level in the early phases of familiarity, in which an individual do not have any prior knowledge about the entity. Since it is knowledge of one's knowledge, which has a greater impact on

decision-making, it is important to make a distinction between those two types of knowledge.

It was argued that subjective knowledge is a combination of objective knowledge and self-confidence (Park & Lessig, 1981); therefore, its effects on perceptions and cognitive processes are expected to be different than those of objective knowledge. Usage experience, when regarded as another type of knowledge, can also interact with and increase both types of knowledge (Raju, Lonial, & Mangold, 1995). Repeated exposure to a stimulus, by decreasing the uncertainty associated with the task, can increase self-confidence, which mediates the relationship between familiarity and affect (Lee, 2001). Considering the feelings as information theory, and the role of fluency as a metacognitive feeling, repeated exposure is likely to increase subjective knowledge (Park & Lessig, 1981; Schwarz, 2011). Figure 1 shows the conceptual framework -the cycle of knowledge- demonstrating and summarizing the relevant literature on knowledge.

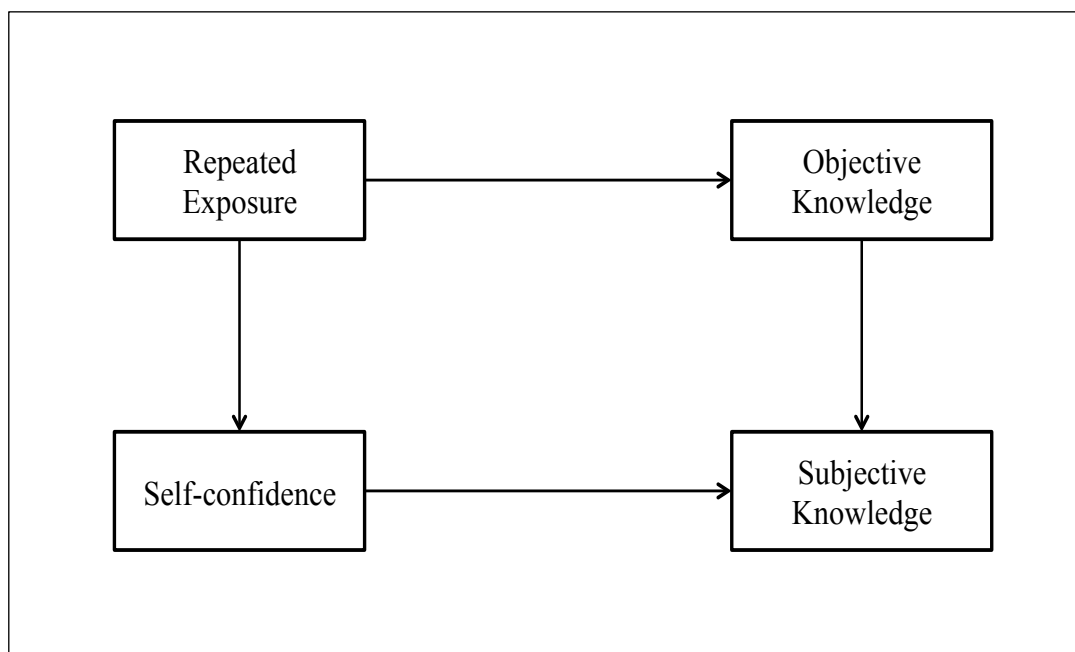


Figure 1. The cycle of knowledge

Illusion of knowledge is omnipresent in our lives, and in most cases, what we think we know matters more than what we actually know. Therefore, in measuring individuals' level of familiarity, it is important to take subjective knowledge into account along with other dimensions of familiarity (Kyung, Menon, & Trope, 2014).

### 3.7 Direct effect of familiarity on construal level

CLT proposes that as an object or an action gets more distant, our construal becomes more abstract. The lack of now experience, however, does not necessarily imply anything about individuals' past experiences with the entity in question. Although mere exposure effect, when interpreted as an input to decision-making and a facilitator of fluency, is present in constructs of self-confidence and subjective knowledge, it is also crucial to look at the direct effect of familiarity on construal level free from the influence of these constructs.

Förster (2009) looked into this relationship from the mere exposure perspective and analyzed the cognitive consequences of familiarity and novelty on construal level. In two experiments, Förster used mere exposure manipulation, and participants were exposed to some unknown letters, which have no meaningful content. The findings of the experiment support the initial hypothesis that increased exposure to a stimulus, in this case a letter, would linearly decrease the abstractness. However, familiarity, on the most basic level is defined as the number of object or action related experiences that an individual has accumulated over the course of her life (Alba & Hutchinson, 1987). Referring to this common definition of familiarity, the number or the frequency of exposure is only a single aspect of familiarity, and

experiences and knowledge that an individual has acquired may override the mere exposure effect of familiarity on construal level.

There are several explanations of mere exposure effect, and the majority of these explanations are based on the concept of fluency (Fang, Surendra, & Ahluwalia, 2007). Fluency models predict that frequent exposure to a stimulus would enhance perception and liking. Fluency serves as a source of information and increases the usability of ambiguous information along with polarized evaluations (Tsai & Thomas, 2011). In one study, researchers measured the effect of fluency across different construal levels and found that fluency affects individuals' evaluative judgments under the concrete condition but not under the abstract condition (Tsai & Thomas, 2011).

For example, in one experiment, participants were asked how much money they would donate if the researcher gave them \$10. It was made sure that participants understood the setting and that it was real. The amount of donation chosen by the subject was deducted from the original \$10 bonus. Tsai and Thomas (2011) found that fluency increases the amount of donation under the concrete mind-set; however, this relation reversed when subjects were primed to think in abstract terms, higher construal.

From another perspective, fluency when regarded as a source of information in the context of different mind-sets, its effects on individual decision-making is moderated by construal level (Novemsky, Dhar, Schwarz, & Simonson, 2007; Tsai & Thomas, 2011). On higher construal levels, individuals tend to consider central features more than they do peripheral features or contextual information (Liberman, Trope, & Stephan, 2007).

Individuals who think in more abstract terms and represent entities on a higher level give less importance to their feelings, which also includes fluency (Pham, 2008). Therefore, high-level construal allows individuals to construe objects or actions free from the effect of fluency.

### 3.8 Regulatory fit between subjective knowledge and construal level

There is a fit between individuals' prior knowledge and their preferences for construal level (Hong & Sternthal, 2010; Tsai & Thomas, 2011; Kyung, Menon, & Trope, 2014). Individuals with an extensive prior knowledge focus on primary goals, whereas those with a limited prior knowledge focus on secondary aspects. Following the reasoning of Construal Level Theory, there is a fit between construal level and prior knowledge (Liberian, Trope, & Stephan, 2007).

Regulatory fit, a match between individuals' goal orientation and the way they process information, can make their judgments more favorable (Avnet & Higgins, 2006). According to regulatory fit theory, individuals are more comfortable with their decisions and "feel right" if they process the information in a way that sustains their goal orientation (Avnet & Higgins, 2003). Favorable judgments, therefore, can be used as a proxy for greater fit between processing mode and goal orientation.

There are several studies linking regulatory fit theory to construal level. In one study researchers found that there is a match between regulatory focus and construal level, and demonstrated that promotion-focused individuals who are prone to construe entities at abstract level have more favorable attitudes when they are presented with a message involving higher construal (Lee, Keller, & Sternthal, 2010). In another study, consistent with the literature on regulatory fit and message



matching effects on judgments, Hong and Strenthal demonstrated that people with extensive prior knowledge evaluate objects or events more favorably if the message involves a high level, abstract construal, and the reverse holds true for those with limited knowledge. All of these findings support that there exists a conceptual relationship between knowledge and construal level, just like that between construal level and psychological distance.

### 3.9 Knowledge and construal level: An illusion of explanatory depth

In the earlier sections, drawing on the literature, the study argued that high-level familiarity allows individuals to accumulate knowledge on abstract attributes of objects or actions, and there exists a relationship between knowledge and construal level. Therefore, compared to unfamiliar and less knowledgeable individuals, those who are highly familiar are likely to categorize entities in broader categories, use abstract terms to define them, focus on ends-related purposes, and thus, construe them on a higher level. In this part, we try to shed light on the type of knowledge, which has more direct and greater influence on construal level. Knowledge about one's own knowledge is of more significance than objective knowledge, and the illusion of knowledge or illusion of explanatory depth is instrumental in showing how subjective knowledge relates to construal level better than objective knowledge does (Alter, Oppenheimer, & Zemla, 2010).

Individuals in general believe that they are more competent than they actually are, and although the poorest performers or the ones with less knowledge show more drastic differences in their evaluations of their abilities, almost everyone is subject to fallibility. The Illusion of Explanatory Depth (IOED) is one example. An IOED occurs in situations where individuals overestimate their abilities or mistakenly

attribute fluency to self-confidence and expertise (Rozenblit & Keil, 2002; Alter, Oppenheimer, & Zemla, 2010). One of the reasons of this illusion is individuals' confusion of higher with lower levels of analysis. For example, on a higher level, one can construe a computer abstractly and focus on its ends-related features or on a lower level in terms of its concrete aspects and focus on the parts rather than the whole. Individuals with abstract mindsets, in this case the ones who are focusing on the joy they would get, are more prone to overestimate their understanding of how a computer works and have a greater tendency to attribute the fluency to their expertise. This, in turn, increases the gap between subjective and objective levels of knowledge about computers. In several experimental studies, Alter et al. (2010) also demonstrated that this illusion happens due to individuals' inappropriate adoption of abstract construals when evaluating their understanding of concrete and peripheral features. For instance, an individual may be familiar with a ballpoint and the purpose it serves, while having a shallow understanding of how it actually works. Adopting a higher construal in this case would lead her to overestimate their abilities, leading to an IOED. Alter et al. (2010) concluded that inducing individuals to think in concrete terms diminishes this illusion.

As discussed earlier, individuals who show high levels of familiarity possess knowledge on both dimensions of attributes; namely concrete and abstract. However, the relative importance shifts from means-related attributes to end-related ones as an individual gets more familiar with the target object or event (Sujan, 1985; Wedel, Vriens, Bijmolt, Krijnen, & Leefland, 1998; Walker, Celsi, & Olson, 1987). This paper proposes that the dominant level of construal in forming judgments about an entity is set by subjective knowledge. And the false reliance on high-level, abstract construals in evaluating understanding of concrete aspects is mainly due to the gap

between subjective and objective levels of knowledge. This gap or the illusion of knowledge becomes profound especially when a person is familiar with an entity and there is a discrepancy between objective and subjective levels of knowledge.

### 3.10 Knowledge and construal level in the transcendental reality

This section expands the life space of human existence from a mundane time frame to a transcendental one from the perspective of construal level theory, and examines the proposed relations among familiarity, knowledge, and construal level accordingly.

Transcendental future allows individuals to construe objects, events, or experiences that are beyond their mundane lifetimes. Individuals generally expand their time space by dividing psychological future to pre-death and post-death time frames (Boyd & Zimbardo, 1997). The transcendental, post-death, frame involves individuals' goals and expectations associated with the time from physical death to infinity. Any action or object that lies beyond the mundane time frame, therefore, may be construed differently than those in the mundane time frame. We argue that objects, events, or outcomes that lie beyond the mundane time frame lack the characteristic through which individuals gain objective knowledge. Our construals of these entities, therefore, are greatly influenced by subjective knowledge, and the gap of knowledge is almost equal to the magnitude of subjective knowledge itself.

Following the reasoning of illusion of knowledge, individuals who rely on abstract features yet lack objective knowledge, tend to overestimate their understanding of concrete features. On the macro level, for instance, this effect could be conceptualized in the context of climate change in which the consequences are removed in time and therefore not part of the mundane experience, or in the context

of religious fanaticism, in which false reliance on abstract level construals increases confidence, and push individuals to extremes. Although construal level account of transcendental future is only one explanation of these cases, it provides a useful ground on which behaviors can be changed and challenged.

Figure 2 is instrumental in demonstrating the difference between mundane and transcendental entities clearer.

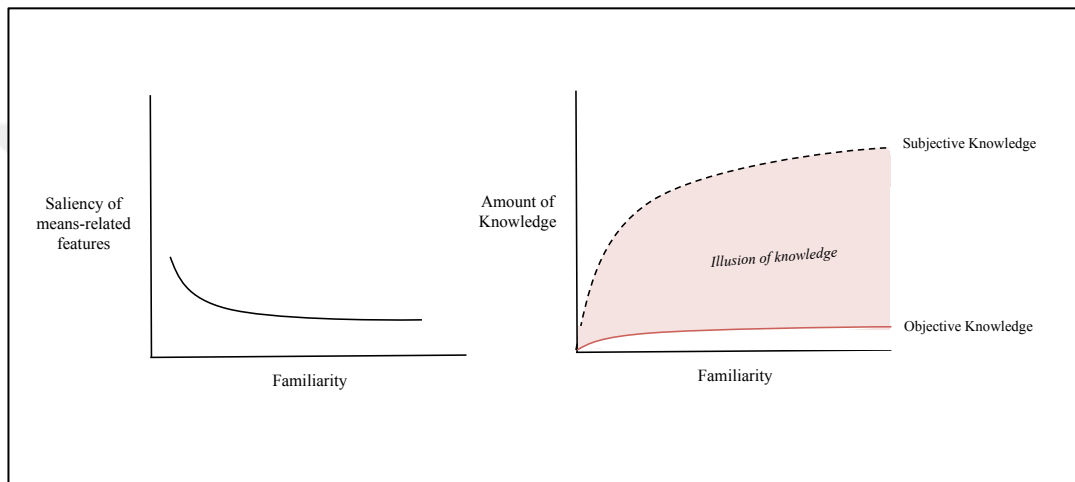


Figure 2. Illusion of knowledge for transcendental entities and actions

## CHAPTER 4

### CONCEPTUAL FRAMEWORK

Familiarity is a rich and intricate construct, and although there exists a certain level of agreement on what familiarity is or what it is not, there is no single definition, through which one can relate it to construal level. Therefore, by reviewing the relevant literature on mere exposure effect, fluency, categorization, knowledge structures, self-confidence, and regulatory fit in the earlier sections, we tried to shed light on familiarity's perceptual and cognitive implications, and analyze the potential ports to level of construal.

The framework shown in Figure 3 outlines the basic understanding of this paper on how to analyze the relationship between construal level and familiarity. It also delineates the relationship between knowledge types and construal level. The empirical evidence for the conceptual relations demonstrated in the framework is provided in the literature review part. In later sections, based on this framework, we derive hypotheses, empirically examine the proposed conjectures, and draw conclusions.

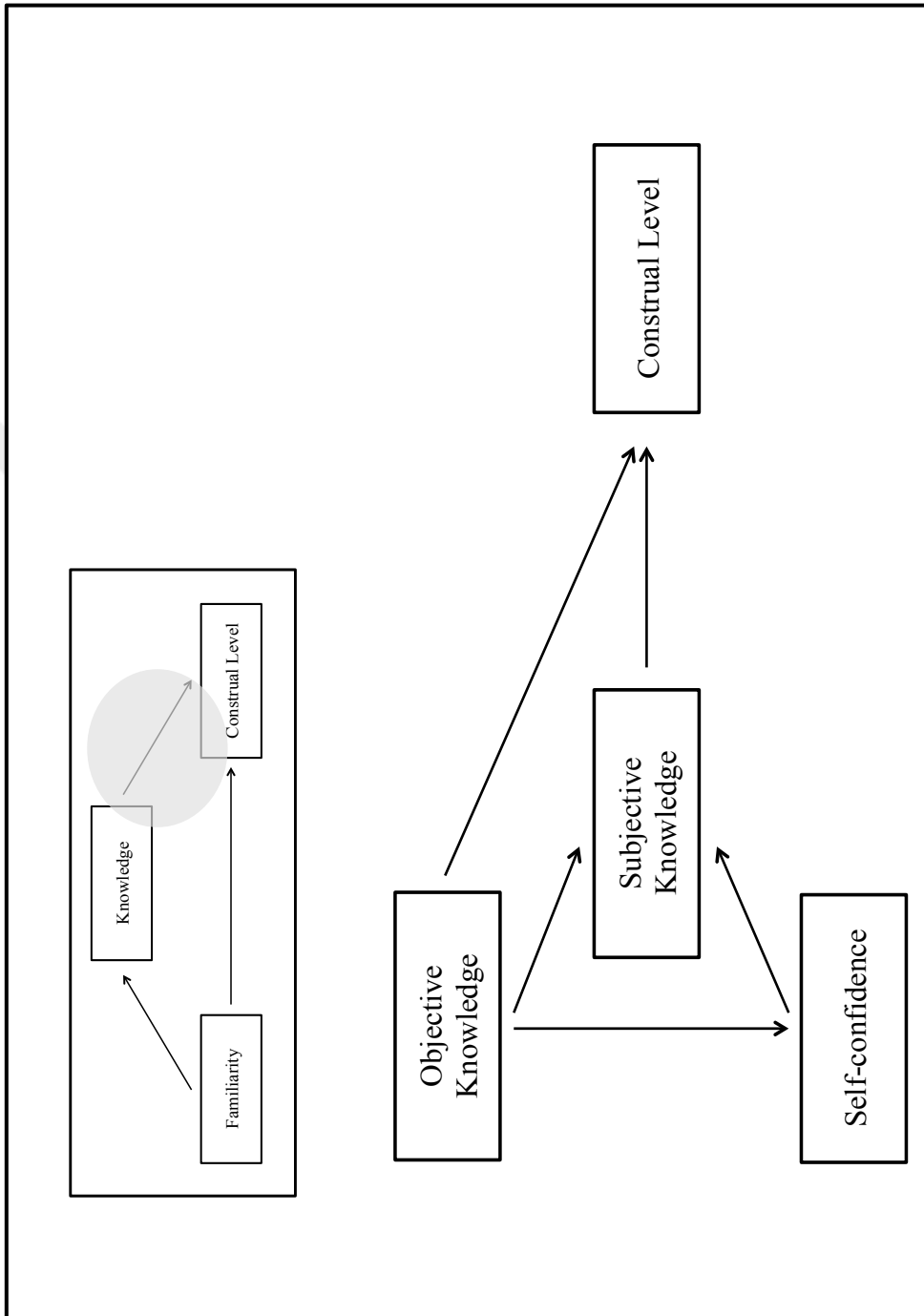


Figure 3. Conceptual framework

## CHAPTER 5

### HYPOTHESES

Drawing on literature and based on the conceptual framework proposed in the previous section, this study proposes the following set of hypotheses for empirical examination:

- H1. Individuals with extensive (limited) knowledge perceive entities to be closer when the information is presented in abstract (concrete) rather than in concrete (abstract) terms.
- H2. The relative importance of subjective knowledge objective knowledge is higher in the relationship between construal level and familiarity.
- H3. Individuals, who are more (less) familiar with an object or an event, tend to construe them on a higher, more abstract (lower, more concrete) level.
  - a. Individuals, who are more (less) familiar with an object or event, evaluate them more (less) favorably if the message involves a higher (lower) construal.
  - b. Familiar individuals evaluate “highly desirable, not feasible outcomes” more favorably than they do “not desirable, highly feasible outcomes”, and this preference reverses for those who are unfamiliar to the target object or event.
- H4. The greater the gap between subjective and objective knowledge, the more confident individuals will feel.
- H5. The gap between subjective and objective knowledge induces individuals to mistakenly adopt high-level construals.

## CHAPTER 6

### OVERVIEW OF STUDIES

#### 6.1 Study 1

CLT proposes that abstract, high-level construals evoke psychological distance, and vice versa (Trope & Liberman, 2010). The bi-directional relationship has been empirically shown in several articles (Bar-Anan, Trope, Liberman, & Algom, 2007). However, prior research demonstrated that when individuals look at their past this effect holds only true for individuals who are less knowledgeable about the target object, and perceive past events nearer in concrete mindset (Kyung, Menon, & Trope, 2014). Individuals with greater knowledge, on the other hand perceive past events nearer with an abstract mindset. This study tests the proposition that individuals' construal of future events or objects is also influenced by their familiarity with the target; and a match between construal mindset (concrete vs. abstract) and knowledge (low vs. high) makes individuals perceive the target event or object closer.

The study is a 2x2 between-subjects experimental design, in which construal mindset is manipulated and level of familiarity is measured. Students in an undergraduate research methods class at Bogazici University participated in the study in exchange for a one-course credit.

Consistent with the literature, familiarity was operationalized in three forms: objective knowledge, subjective knowledge, and the degree of exposure (Alba & Hutchinson, 1987). From the beginning of the class, four pop-up quizzes were administered and the results are used as a proxy to measure students' objective knowledge of the class material along with their midterm results. The results of



midterm exam and pop-up quizzes were not disclosed to the students until the end of the experimental sessions. In measuring subjective knowledge, we relied on students' self-reports on their knowledge of the subject matter. Individuals indicated their subjective knowledge on a 7-point Likert scale for several class related topics.

In manipulating construal mind-set, we adopted a well-established material from other studies (Fujita, Trope, Liberman, & Levin-Sagi, 2006; Kyung, Menon, & Trope, 2014). In this seemingly unrelated task, individuals were either asked to come up with an example to a category (concrete), or a category to an example (abstract). In the abstract condition, for example, participants were asked "an apple is an example of what?" In the concrete condition, this question became "an example of fruit is what?" These questions primed individuals to represent events in high and low-level construals, respectively. In the study, this task was preceded by self-reports on the degree of exposure and subjective knowledge.

In order to measure the effect of familiarity on the construal of future events, the dependent variable has to be a relevant future event that was fixed for each participant. Therefore, individuals' perception of temporal distance from now to the time, at which they were expected to deliver their research projects, was chosen as the dependent variable. Individuals' self-esteem, their involvement, and mood were measured as well in the study.

With the results of this study, familiarity was put into a spotlight as a crucial factor influencing individuals' construal of future events and these construals' relation to perceived temporal distance.

Participants: Eighty-three Boğaziçi University management students who were taking undergraduate research methodology class (36 female, 47 male,  $M_{age} = 22.63$ ,  $SD = 1.45$ ) participated in this study in exchange for one course credit.

Materials, design, procedure: Students' self-evaluation of their knowledge of the class material was used to measure their subjective knowledge. In total, fifteen questions, both general and topic-specific, were asked (for details see Appendix A). Topics were chosen according to the syllabus and the course book, *Marketing Research: An Applied Orientation*, (Malhotra, 2010). On a seven-point Likert scale students indicated whether they agree to such statements as "In general I feel knowledgeable about research methods" or "I am confident about my knowledge of causal research." These 15 items were averaged to form an overall subjective knowledge index for each individual ( $\alpha = .92$ ) (Please see Appendix A for the complete list of items). As we cannot rely on individuals' self-reports in measuring their objective knowledge of the course material, we used midterm exam results as a proxy. To prevent any biases, the results of four multiple-choice pop-up quizzes were also employed to measure objective knowledge. Individuals were divided into two groups by their Z-scores as high objective knowledge vs. low objective knowledge.

After indicating their subjective-knowledge, individuals were asked to complete a relatively unrelated task, in which they were asked to come up either with an example to a category or with a category to an example. The former primed individuals to a concrete mindset, whereas the latter primed them to an abstract one. There were twenty-eight questions such as "A monkey is an example of what?" or "An example of animal is what?" Once the students completed the task, they filled out the Rosenberg's self-esteem scale, and following that, they indicated their temporal distance to the project presentations, which were scheduled for the end of the term. In order to measure perceived temporal distance to the project presentations, following three questions were used: (1) Final research presentations are (very distant-very close); (2) We have (so little - so much) time until the final day

of the classes; (3) Final presentations seem (very close - very distant). These three items were averaged to form a temporal distance scale to measure individuals' perception of time ( $\alpha = .70$ ). Although the date they were expected to deliver their final research presentations was indicated in the syllabus and in class several times, in order to prevent any memory effect, we also included a note to the experiment instructions saying "Important note: Proposals are to be presented on April 12 and 13. Final research presentations are due by the second week of May (May 10–11)."

Results: The results from a two-way ANOVA with mindset (abstract vs. concrete) and subjective knowledge (low vs. high) as the independent variables revealed a significant two-way interaction ( $F(1,79) = 7.76, p < 10^{-2}$ ) as shown in Figure 4. There was a marginally significant main effect of subjective knowledge and this main effect qualified the mindset \*subjective knowledge interaction in a way that is consistent with our prediction ( $F(1,79) = 3.32, p = 0.072$ ).

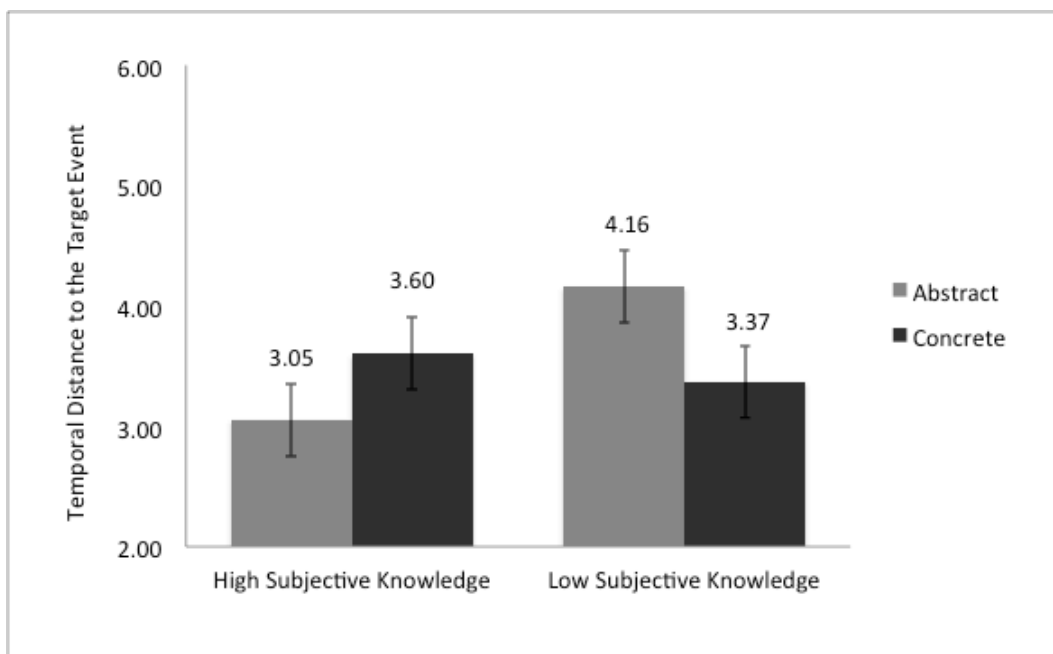


Figure 4. Two-way ANOVA with mindset and subjective knowledge

Individuals, who are highly knowledgeable about the subject matter when primed to think in abstract terms, perceive the target event closer compared to those in the concrete mindset. This relationship reversed for those, who feel they do not know enough about the course material. Mindset had no main effect in this two-way ANOVA ( $F(1,79) = 0.289, p = 0.592$ ).

When we test the simple effects of mindset within each level combination of knowledge, we found that the difference is significant in the low-subjective knowledge condition ( $F(1,79) = 4.99, p = .028$ ), yet not in the high-subjective knowledge condition ( $F(1,79) = 2.83, p = .096$ ). When we interpret this finding in the light of the previous studies, we can say that high-knowledge individuals accumulate knowledge on both ends of the spectrum, both concrete and abstract; thus leading to a more subtle temporal difference than a mismatch for a low-level knowledge does.

Although individuals' evaluation of their own knowledge is important, we also tested if objective knowledge had any influence on the perceived temporal distance to the target event. Figure 5 summarizes the results of this study. However, neither the interaction ( $F(1,79) = 2.30, p = .134$ ) nor the main effects were significant.

Objective knowledge, when measured by the results of pop-up quizzes, still showed no significant difference between the groups in terms of their mindsets and knowledge levels. Therefore, we conclude that objective knowledge failed to prove any relationship to the perceived temporal distance.

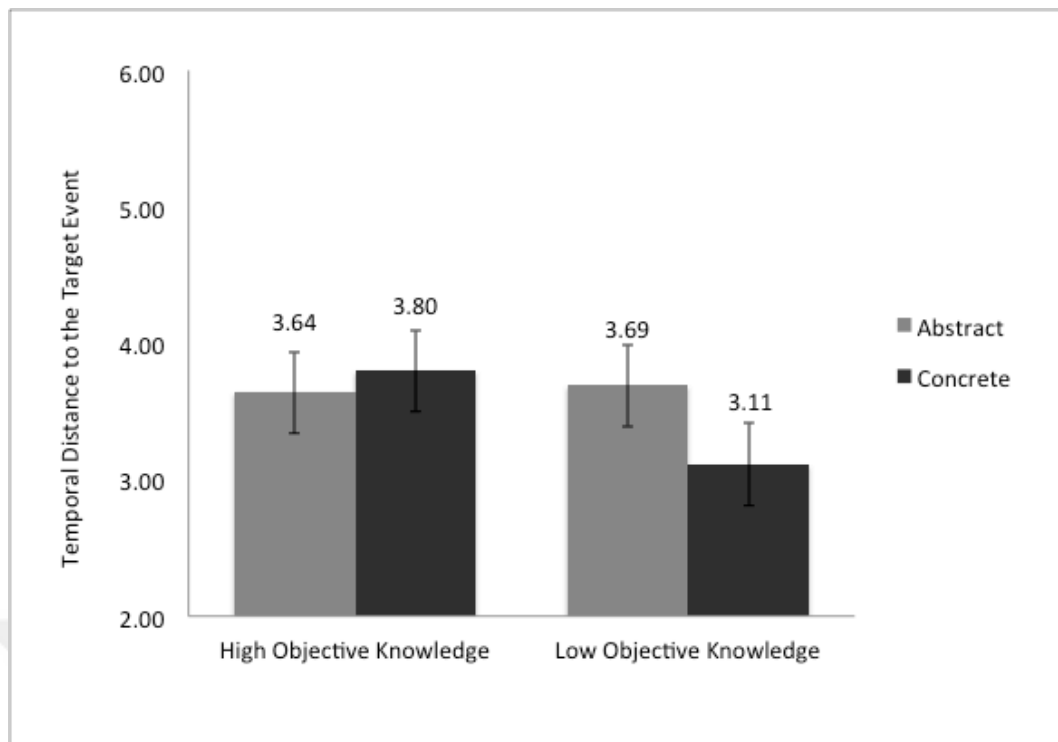


Figure 5. Two-way ANOVA with objective knowledge and mindset

There was also no interaction between self-esteem and mindset on perceived temporal distance ( $F(1,79)=2.49, p=.12$ ). However, one-way ANOVA results showed that students with high self-esteem perceived the project presentations closer than those with low self-esteem ( $M_{High-Esteem} = 3.33, SD_{High-Esteem} = 1.14$  vs.  $M_{Low-Esteem} = 3.92, SD_{Low-Esteem} = .97, F(1,81)=6.216, p < .05$ ).

Discussion: Familiarity is not a stand-alone construct (Alba & Hutchinson, 1987). It is surrounded by several concepts such as knowledge and the degree of exposure. In this study, we put the knowledge into the spotlight and tested several relevant hypotheses. The primary finding of this study is that individuals' subjective knowledge of the event or the entity plays a more significant role in their construal process than objective knowledge does. Students who indicated higher levels of subjective knowledge perceive the project presentations, which were fixed for everyone, closer than those with lower subjective knowledge.

Another crucial finding is that individuals' self-esteem, confidence in one's worth and abilities, was an important factor in their construal process. Higher levels of self-esteem in our case fostered individuals to perceive the fixed event closer than those with lower levels of self-esteem. It is also important to note that there was a significant relationship between level of self-esteem and subjective knowledge,  $X^2(2, n=83)=5.80, p < .05$ . Higher self-esteem was associated with higher subjective knowledge.

CLT proposes that concrete representations of an entity reduce the psychological distance to the entity. In this case, however, we showed that higher subjective knowledge about an event or an entity was congruent with an abstract mindset; and therefore familiar students perceived the event closer in the abstract mindset compared to those in the concrete mindset. This relationship reversed for unfamiliar students. This reversal provides the first evidence that the relationship between individuals and the construed entity is an important factor influencing the construal process. Although measured in different ways, we did not find any compelling evidence regarding the effect of objective knowledge on the construal process.

In this study, we found that familiarity not only increases the construal level but also reverses the relationship between construal level and psychological distance. That way we confirm hypotheses one and two.

## 6.2 Study 2

High-level previous exposure to an entity not only fosters more inclusive categories, but also increases the quantity and the saliency of abstract features in memory (Wedel, Vriens, Bijmolt, Krijnen, & Leeftland, 1998). There are two types of

attributes, for which individuals can acquire knowledge, concrete and abstract. Concrete attributes are based on the design and outlook of an entity at a specific time. Accumulated knowledge associated with concrete attributes is subject to a great variation as this kind of attributes are generally context specific and can change from one encounter to another (Alba & Hutchinson, 1987). Abstract attributes, on the other hand, are deep and one can build knowledge on these attributes only with exposure. Increasing levels of familiarity allows consumers to accumulate knowledge on both types of attributes (Walker, Celsi, & Olson, 1987). However, since inexperienced consumers only have access to concrete attributes, the relative importance of abstract to concrete attributes increases as consumers get more familiar with the entity (Bettman & Park, 1980; Sujan, 1985). Familiar consumers, as a result, tend to rely more on the abstract, deep attributes in their decision-making process.

A higher-level construal increases the salience of ends-related, core features of entities and makes superordinate features more relevant to the decision-makers (Todorov, Goren, & Trope, 2007). On higher, more abstract levels, individuals not only pay more attention to the core features but also give new meanings to these entities or events (Liberman & Trope, 2008). Consistent with the literature, we argue that at high levels of familiarity, consumers would focus more on what they are getting rather than how they are getting it.

We tested this proposition with a 2x2 between-subjects experimental design. Management students at Bogazici University participated in the study in exchange for one course credit. Degree of familiarity with the event is treated as a measured independent variable. For the other variable, two polar conditions were created by manipulating the attractiveness of the outcome (primary/what aspect) and the

difficulty of reaching that outcome (secondary/how aspect): (1) Highly attractive and highly difficult to get (HH) and (2) Less attractive and less difficult to get (LL). Students were presented with a scenario, telling them that they are entitled to a free ticket to a music festival, which features several artists. Different than the LL condition, HH offers a first-class ticket plus access to after parties with a VIP access to lounges, tours, and workshop sessions with the featured artists. Although the attractiveness of the outcome in the HH condition is higher compared to the LL condition, HH also increases the difficulty of the process through which students can get tickets. In order to get a free ticket, a student should travel a longer distance and have to participate in a three-hour in-depth interview and a focus group session with the event organizers in the HH condition. When these alternatives are presented together to a group of individuals, the ticket depicted in the HH condition is always preferred to the one in the LL condition, suggesting that the former one is more desirable than the latter one.

The dependent variables in the study are the attractiveness of the offer along with participants' willingness to attend the event. Participants indicated their evaluations and preferences on a 7-point likert scale.

Participants: 74 management students (29 Female, 45 Male,  $M_{age} = 22.49$ ,  $SD = 1.22$ ) at Boğazici University participated in this study in exchange for one course credit.

Materials, design, procedure: As familiarity was treated as a measured independent variable in this study, empirical examination of relevant hypotheses required the selection of an object that facilitated the variation in familiarity with the object. A pre-test conducted on 30 students revealed that a music festival featuring seven different artists would provide enough variance in the degree of familiarity.



Some students reported high levels of familiarity with almost all the artists, some others, on the other hand, had never heard of these artists and therefore had limited knowledge. In order to allow a greater range of variation in familiarity with the target event, several artists were included to form a diverse portfolio. Seven artists were featured and all their names were put on the event poster (see Appendix B, Figure 6). Consistent with the results of the pre-test, we picked Tom Odell, Hozier, Oscar and the Wolf, MO, Pauline Croze, Christopher, and Yael Naim.

In order to measure individuals' degree of familiarity with the target event, nine questions were grouped to form a familiarity index. These questions asked individuals to indicate their familiarity with all seven artists plus their general evaluations about their knowledge of the music festival (for details please see Appendix C, Tables 1–4). The familiarity scale was found to have strong internal consistency with a Cronbach's  $\alpha$  of .93. The familiarity score of each individual was normalized and then categorized as either low (if the z value of the score is less than zero) or high (if the z value of the score is greater than zero).

The dependent variable, favorableness of the target event was measured by averaging six different items ( $\alpha = .94$ ). At the end of the experiment, participants were asked to complete a short quiz measuring their objective knowledge of the artists featured in the event. In the first part they were shown the images of the artists and were asked to choose the right artist among several options. In the second part, they listened to songs and identified the song name and the artist. There were in total seven questions in the quiz.

Results: The results from a two-way ANOVA with message type and familiarity as the independent variables revealed a marginally significant two-way interaction ( $F(1,70) = 3.66, p=0.60$ ) as shown in Figure 7. This marginally significant interaction was qualified by the familiarity main effect ( $F(1,70) = 15.53, p < 10^{-3}$ ). Gender, age, and mood did not interact with the results.

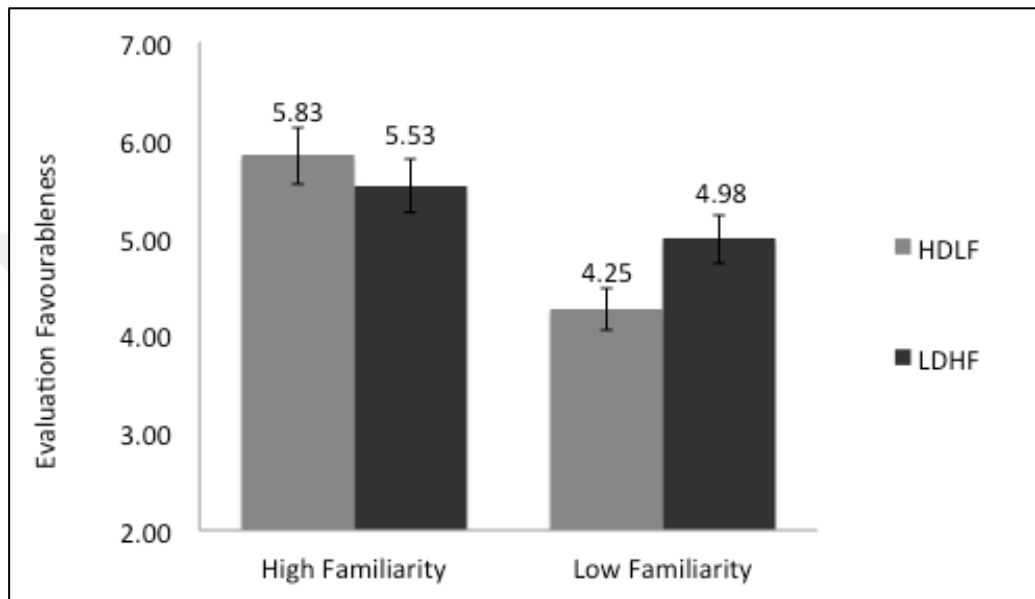


Figure 7. Two-way ANOVA with familiarity and ticket type

Objective knowledge did not interact with the message type and the degree of familiarity. However, one-way ANOVA results showed that students with high objective knowledge perceived the music festival more favorable than those with low objective knowledge ( $M_{High-knowledge} = 5.69, SD_{High-knowledge} = 1.04$  vs.  $M_{Low-knowledge} = 4.70, SD_{Low-knowledge} = 1.30, F(1,72) = 12.44, p < .05$ ). As expected, students with high objective knowledge also indicated higher levels of familiarity ( $M_{High-knowledge} = 4.14, SD_{High-knowledge} = 1.21$  vs.  $M_{Low-knowledge} = 1.96, SD_{Low-knowledge} = 1.09, F(1,72) = 65.36, p < .10^{-7}$ ).

Discussion: For individuals, who are familiar with an entity or an event, the relative weight of ends-related features to means-related ones is higher than for those who are unfamiliar. Similarly, the costs of obtaining the outcome become more relevant as the degree of familiarity decreases.

Different than the first study, however, we also see a significant evaluation difference between groups concerning their objective knowledge, which leads us to question whether the nature of the construed entity or event has any influence in the process or not. The results of two-way ANOVA with follow up simple effects analysis also revealed that means-related features were weighted in decisions of unfamiliar individuals but not in those of familiar ones.

The conclusion is that the familiarity with an entity or an event could change how the features of the outcome are weighted in decisions, and could lead to favorableness reversals at different levels of familiarity, which confirms the hypotheses 3a and 3b.

### 6.3 Study 3

Regulatory fit, a match between individuals' goal orientation and processing mode, can make judgments more favorable (Avnet & Higgins, 2006). According to regulatory fit theory, individuals are more comfortable with their decisions and "feel right" if they process the information in a way that sustains their goal orientation (Avnet & Higgins, 2003). This study tests the proposition that individuals, who are more (less) familiar with the language, evaluate them more (less) favorably if the message involves a higher (lower) construal.

The study employed a 2x2 between-subjects experimental design, in which message frame and language were manipulated. Different from the first two studies,

familiarity was manipulated as well. Management students at Bogazici University participated in the study in exchange for one course credit. Bogazici University (est. 1863) was the first American higher education institution established outside the United States, and the medium of instruction has been English for the last 150 years. Although the students are proficient in English, the level of exposure (familiarity) is lower than their native language, Turkish. As expected, a pre-test on 30 students ensured that students indeed think that they feel more comfortable and familiar with their native language.

Consistent with the literature and the above reasoning, this study tests the hypothesis that individuals would evaluate the message involving abstract terms more favorably in their native language than in English. Accordingly, concrete messages are to be evaluated more favorably in English than in Turkish.

Participants: Fifty-seven undergraduate management students at Boğaziçi University (30 female, 27 male,  $M_{age} = 23.42$ ,  $SD = 1.23$ ) participated in this study in exchange for one course credit.

Prior to the study, individuals were asked to indicate their native language and whether they are bilingual or not. Those whose native language is not Turkish and those who are bilingual (Turkish and English) were excluded from the study. Those who proceeded to the next section were then randomly assigned to one of the four conditions (Language: Turkish vs. English, and Message: Abstract vs. Concrete).

Materials, design, and procedure: This study employed a 2x2 between-subjects experimental design, in which message type and language were manipulated among groups. Message type was manipulated as concrete, underlining means-related features versus abstract, underlining ends-related features. As individuals were asked to form evaluations about a treadmill, in the abstract condition the

scenario emphasized things like weight loss, a fit body, etc. In the concrete condition, on the other hand, specific features of the treadmill were made more prominent such as web-based interface, apps, and customizability. In manipulating language, the study relied on translations provided by two experts who employed a combined forward-backward technique in translating the messages.

Participants read a scenario titled “Summer is approaching”, in which they were asked to imagine themselves evaluating a treadmill (for complete study materials, see Appendix A). Four items were averaged to form evaluation favorableness index. This aggregation was based on the observation that the scale was found to be unidimensional and internally consistent ( $\alpha = .93$ ). It is expected that individuals evaluate the abstract message featuring ends-related characteristics such as weight loss and a fit body more favorably in Turkish than in English. Consistent with our hypothesis, this relation is to reverse and the concrete message underlining the means-related features such as web-connected touch screen and workout apps should become more favorable in English than in Turkish.

Results: This study employed a 2 (Message: Abstract vs. Concrete) X 2 (Language: Turkish vs. English) between-subjects experimental design with evaluation favorableness as the dependent variable. The results from a two-way ANOVA with language and message type as independent variables revealed a significant two-way interaction ( $F(1,53) = 22.47, p < 10^{-4}$ ) as shown Figure 8. There was a significant main effect of language and this main effect qualified the Message\*Language interaction in a way that is consistent with our prediction ( $F(1,53) = 9.17, p < 0.01$ ). Message had no main effect in this two-way ANOVA ( $F(1,53) = 1.45, p = 0.23$ ) and neither gender nor age interacted with the results.

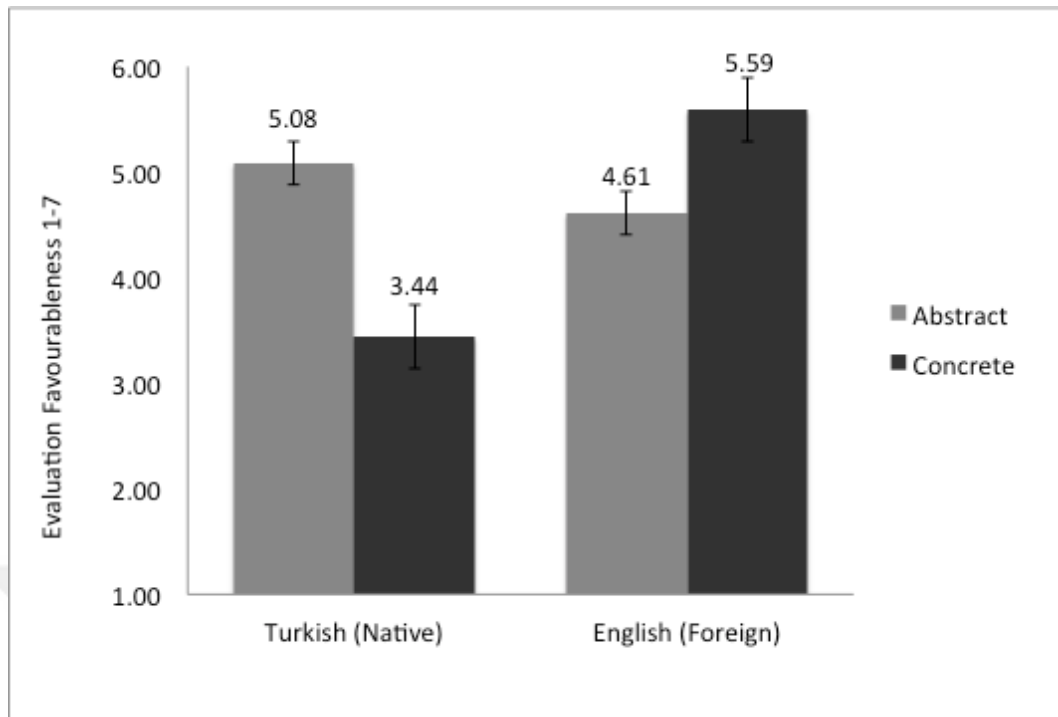


Figure 8. Two-way ANOVA with language and promotion type

Follow-up simple effects analyses revealed that language had a significant effect on favorableness in the concrete condition ( $F(1,27) = 32.539, p < 10^{-5}$ ), yet had an insignificant influence in the abstract condition ( $F(1,26) = 1.367, p = 0.253$ ).

Discussion: This study provided further evidence on the proposed relationship between familiarity and construal level from a different perspective. Drawing on the regulatory fit literature, we empirically showed that individuals value ends-related, abstract features more favorably in their native language than in other languages.

However, it is important to note that language is a complex concept, and one alternative explanation to our findings is that some languages are more abstract than others. Although we did not find any conclusive evidence on the abstractness of Turkish, in order to eliminate such alternative explanations, this study should be

tested in several other languages as well. Results of the study were in line with the study 2, and again we found support for the hypotheses 3a and 3b.

#### 6.4 Study 4

As noted earlier, familiarity is a rich construct intertwined with the concept of knowledge. Repeated exposure to an entity, in most cases, increases objective knowledge of the entity (Alba & Hutchinson, 1987). However, subjective knowledge, which is a combination of self-confidence and objective knowledge, is also influential in the way we process information and perceive our environment (Park & Lessig, 1981). As a matter of fact, what we think we know may matter more than what we actually know. Greater subjective knowledge, therefore, should be corresponded with higher levels of abstraction and previous studies supported this hypothesis

Only in few cases, individuals lack the ability to get acquainted with the entity. The opportunity is missing if a target entity belongs to a transcendental reality. For these entities, it is not possible for one to accumulate objective knowledge. Therefore, subjective knowledge, in this case, would greatly reflect individuals' self-confidence.

This study is an adapted version of a study from Alter et al. (2010). Students participated in the study in exchange for one course credit and were asked to indicate their understanding of after-life from several perspectives. Then they were asked to imagine a person, who has no knowledge of after-life or whatsoever. Students were requested to express their understanding of after-life in as much detail as possible. In the following section, they again rated their understanding of the concept of after-life, and the differences between two ratings were accounted as the illusion of knowledge. After completing the questionnaire, in order to measure the prevailing

mindset, individuals choose a description, either concrete or abstract, to define several everyday actions. The items were selected from Action Identification Theory (Vallacher & Wegner, 1987; Vallacher & Wegner, 1989).

Participants: Sixty-one undergraduate management students at Boğaziçi University (28 female, 33 male,  $M_{age} = 22.51$ ,  $SD = 1.23$ ) participated in this study in exchange for one course credit. The study employed a 2x2 between-subjects experimental design, in which the effects of self-esteem and mindset were measured on the gap of knowledge for two different concepts: (1) game theory and (2) heaven and hell.

Materials, design, and procedure: Participants were first asked to evaluate their knowledge of several concepts such as positioning, cognitive dissonance, and communism. Among those questions were hidden the concepts of heaven & hell and game theory. In the second part, students were asked to imagine themselves in the following scenario and were asked to describe several concepts in writing:

“You just met Anna from Curacao. She was an exchange student, studying history at Bogazici University. She had no knowledge about basic business and economics concepts, yet she was taking pricing strategy as an elective course. Her midterm is next week and she asked for your help to understand these concepts: game theory (economics), positioning (marketing).

Anna is a picky person who does not like Wikipedia or other sources you may find on the Internet to answer her question. She wants you to define these concepts in your "own" words. Anna has a plagiarism checker and will not accept any copy-pasted answer.”

Following that question they explained to Anna the concept of heaven and hell in response to the following question:



“While talking to Anna, you discovered that her homeland, Curacao is a very strange country in which the culture and the language lack several concepts that we take for granted here in Turkey. For example, she had no idea about the concept of heaven and hell.”

By asking individuals to describe these concepts in writing, we tried to make individuals aware of their actual knowledge. After these questions all participants completed the Behavior Identification Form (BIF, Vallacher & Wegner 1989) and according to their BIF score out of 25, they were divided into two groups by a median split. Participants who scored higher than sixteen were categorized as abstract thinkers, those who had sixteen or less were classified as concrete thinkers. Following BIF, they took a quiz on a relatively unrelated topic and completed the Rosenberg’s self-esteem scale. Finally, participants reassessed their knowledge on the same concepts. A final reassessment score was calculated for each concept by averaging two questions ( $\alpha=.75$  for heaven & hell, and  $\alpha=.85$  for game theory). The difference between the initial and the final score was used to measure the gap of knowledge for each subject. A negative score indicates an initial rating higher than a final one, suggesting an overestimation of knowledge and, similarly, a positive score suggests an underestimation of knowledge. The higher magnitudes on both ends implied a greater knowledge gap.

Results: The results from a two-way ANOVA on knowledge gap concerning game theory with mindset (concrete vs. abstract) and self-esteem (low vs. high) as the measured independent variables revealed a significant two-way interaction ( $F(1,57) = 4.206, p < .05$ ). This significant interaction was qualified by the main effect of self-esteem ( $F(1,57) = 11.546, p < 10^{-2}$ ). Gender, age, and mood did not interact with the results. Figure 9 illustrates the estimated marginal mean scores for each condition.

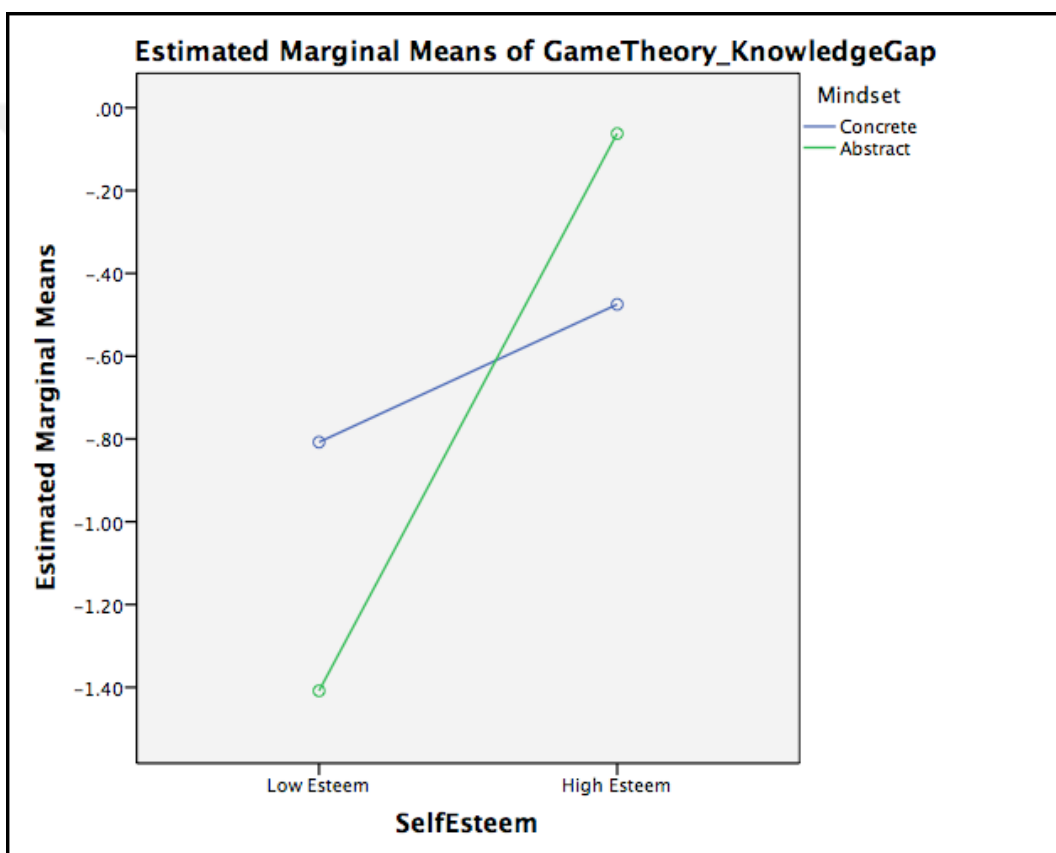


Figure 9. Two-way ANOVA with self-esteem and mindset

For the concept of heaven and hell on the other hand, a two-way ANOVA produced two significant main effects with no interaction ( $F(1,57) = 0.001, p=.974$ ). The graphical illustration of the significant main effects of self-esteem ( $F(1,57) = 8.095, p < 10^{-2}$ ) and mindset ( $F(1,57) = 6.859, p < .05$ ) can be seen in Figure 10.

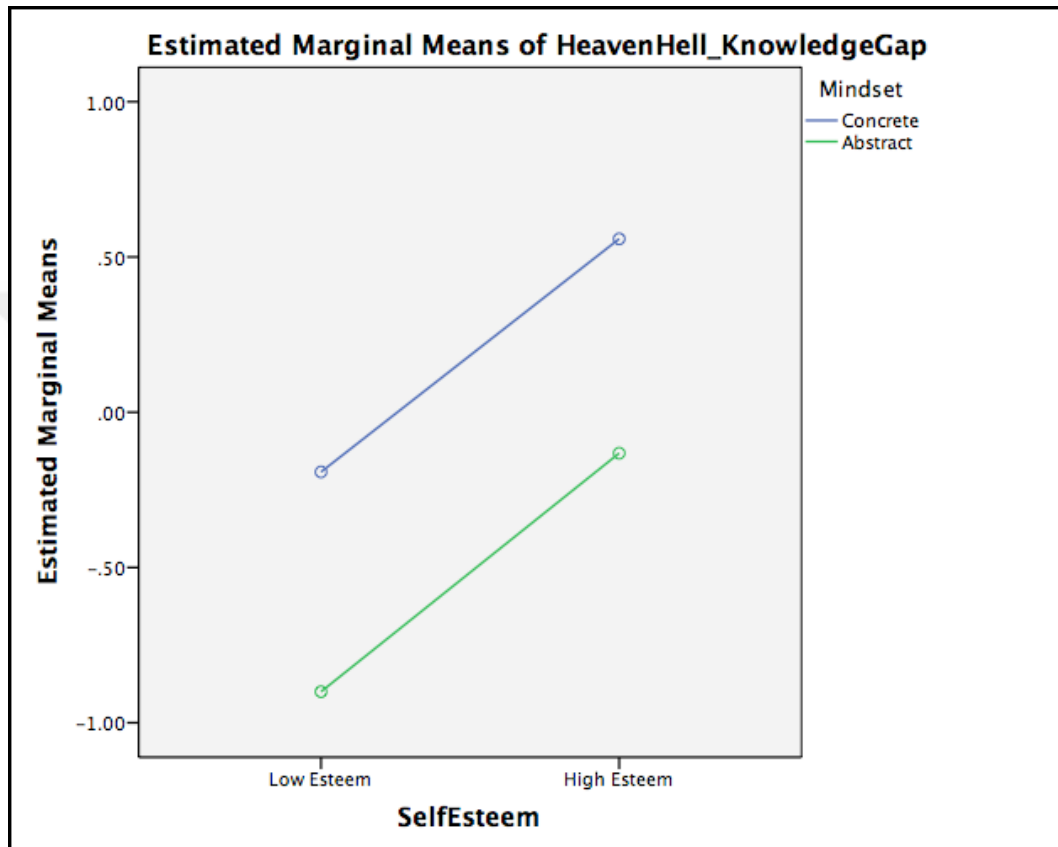


Figure 10. Two-way ANOVA with self-esteem and mindset

Concrete thinkers tended to underestimate their knowledge of transcendental concepts compared to abstract thinkers. Whereas for mundane topics, such as game theory, there was no significant difference between abstract and concrete mindset.

Discussion: The results of the first two studies raised the question of whether the nature of the construed entity is of importance or not. In order to test this hypothesis, we picked two polar concepts, game theory and heaven and hell, on which subjective knowledge can be measured. The results showed that in both of the concepts, higher self-esteem reduced the gap between initial and final knowledge assessment ratings. It might be the case that individuals with high-self esteem are more likely to be affected by anchoring, while those with low self-esteem are less likely to be affected.

As it can be seen from Figure 11, among high-esteem individuals, the magnitude of the knowledge gap in both cases was smaller for abstract thinkers than for concrete thinkers. Among low-esteem individuals, on the other hand, the magnitude of the gap was smaller for concrete thinkers. Although the valence of the gap in most cases was negative (overestimation of knowledge), interestingly concrete thinkers reported final ratings greater than their initial assessments for heaven & hell.

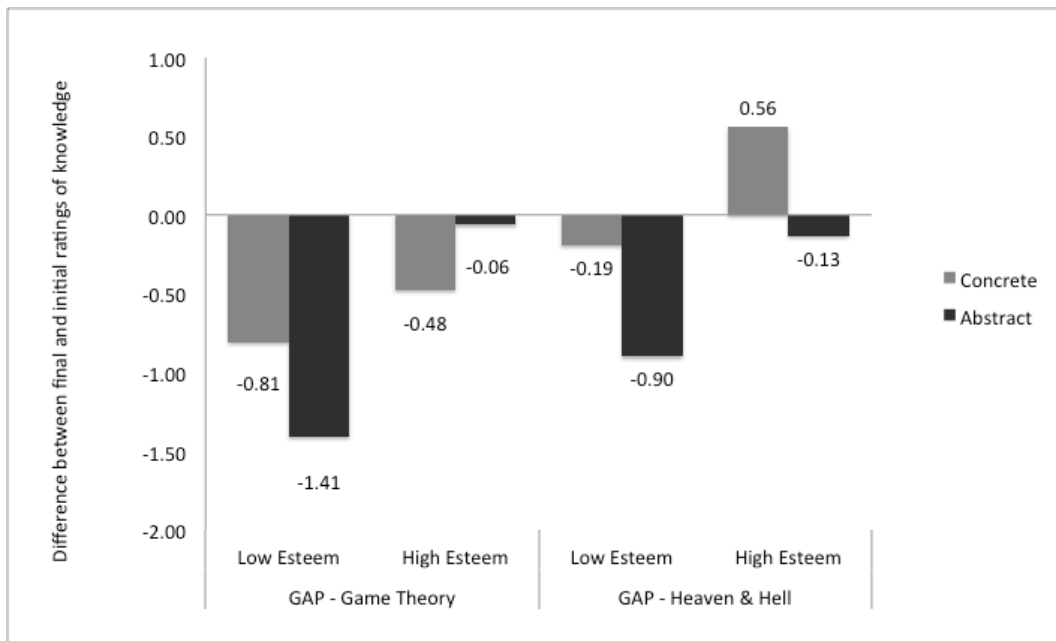


Figure 11. Mean differences between game theory and heaven and hell

Consistent with the literature on IOED and construal level, we demonstrated that especially for those with low self-esteem an abstract mindset fosters an illusion of knowledge. These findings partially support the hypotheses 4 and 5, and further studies are needed before drawing solid conclusions.



## CHAPTER 7

### GENERAL DISCUSSION

Our construal of entities depends not only on the psychological distance, but also on our unique relationship with the entity. On the most basic level, therefore, the function of construal should be extended to account for this subjective relationship. That way, familiarity, subjective knowledge, and objective knowledge along with individuals' confidence in their abilities can be accurately predicted and reflected in individuals' construal preferences. The basic premise of this paper is that perceptual and cognitive effects of familiarity moves individuals to a higher level of abstractness and, therefore, it is a crucial construct influencing the way we construe entities in our minds. Tied to this construal, at different levels of familiarity, psychological distance to the entity changes as well.

In four studies, we examined the role of familiarity on construal and psychological distance from different perspectives. Study 1 showed that individuals' perceived temporal distance to a fixed future event depends on their subjective knowledge, the major component of familiarity.

In the second study, we find that high-level familiarity increases the salience of ends-related, core features of entities and makes superordinate features more relevant to the decision-makers compared to means-related, peripheral features.

The third study we report herein suggests that prior knowledge also influences judgments through a different route. The processing fluency or in our case, the familiarity with a language changes the way we construe entities. In their native language, individuals evaluate the abstract descriptions more favorably than

they do concrete descriptions, and the reverse holds true when the message is presented in a foreign language.

In the last study, we further looked into the relationship between familiarity and construal level by taking the nature of the entity into account. We showed that among high self-esteem individuals those who are in the concrete mindset tend to report greater knowledge gaps than the other way around. We conclude that not only the relationship between the individual and the entity, but also the nature of the entity influences the construal process.

In sum, this study establishes familiarity and subjective knowledge as important factors, which can reverse the typical relationship between construal level and psychological distance in several contexts. We also underline some other potential factors that may have an influence on the construal process, such as self-esteem and the nature of an entity or an event.

Further research can investigate the role of emotions in the construal process and question its role as a moderator on the relationship between psychological distance and construal level. In order to draw more solid conclusions and identify familiarity as an indispensable variable in construal process, the role of contextual factors could be questioned as well. In the experimental studies, subject pool consisted of only student subjects; therefore, further studies can go beyond what was done in this study by analyzing the same hypotheses in a different social-demographic group.

APPENDIX A  
ITEMS USED IN STUDIES

SUBJECTIVE KNOWLEDGE ITEMS USED IN STUDY 1

1. In general I feel knowledgeable about research methods.
2. I am confident about my knowledge of research designs.
3. I know the difference between primary data and secondary data.
4. I am confident about my knowledge of in-depth interview technique.
5. I am confident about my knowledge of descriptive research.
6. I am confident about my knowledge of causal research.
7. I am confident about my knowledge of ethnography.
8. I am confident about my knowledge of natural observation.
9. I am confident about my knowledge of sampling basics.
10. I am confident about my knowledge of simple random sampling.
11. I can differentiate cluster sampling from stratified sampling.
12. I am confident about my knowledge of snowball sampling.
13. I know what netnography is.
14. I can design research without any difficulty.
15. I can conduct statistical analyses smoothly.



## CONSTRUAL MANIPULATION ITEMS USED IN STUDY 1

Abstract condition (28 items):

1. A monkey is an example of what?
2. A t-shirt is an example of what?
3. A brownie is an example of what?
4. An orange is an example of what?
5. A king is an example of what?
6. Istanbul is an example of what?
7. Soap is an example of what?
8. A chair is an example of what?
9. A diamond bracelet is an example of what?
10. A snake is an example of what?
11. A ship is an example of what?
12. Starbucks is an example of what?
13. A plane is an example of what?
14. A lipstick is an example of what?
15. ZARA is an example of what?
16. A magazine is an example of what?
17. A restaurant is an example of what?
18. An iPad is an example of what?
19. French is an example of what?
20. A bed is an example of what?
21. A whale is an example of what?
22. Rap is an example of what?
23. Euro is an example of what?

24. Coca-Cola is an example of what?
25. A bag is an example of what?
26. Mona Lisa (La Joconde) is an example of what?
27. A kidney is an example of what?
28. A pencil is an example of what?

Concrete condition (28 items):

1. An example of animal is what?
2. An example of clothes (apparel) is what?
3. An example of dessert is what?
4. An example of fruit is what?
5. An example of book is what?
6. An example of city is what?
7. An example of toiletries is what?
8. An example of furniture is what?
9. An example of jewelry is what?
10. An example of reptile is what?
11. An example of vehicle is what?
12. An example of coffeehouse chain is what?
13. An example of fast-food chain is what?
14. An example of make-up product is what?
15. An example of clothing brand is what?
16. An example of magazine is what?
17. An example of restaurant is what?
18. An example of tablet is what?
19. An example of language is what?

20. An example of bedroom furniture is what?

21. An example of marine mammal is what?

22. An example of music is what?

23. An example of currency is what?

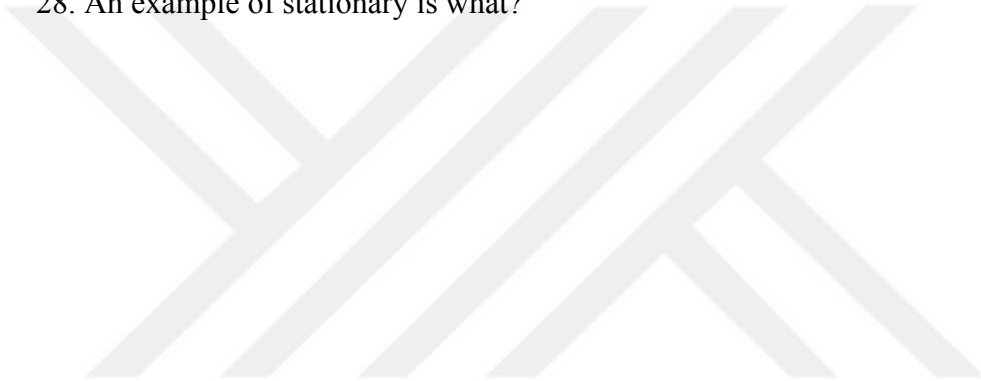
24. An example of cold beverage is what?

25. An example of planet is what?

26. An example of painting is what?

27. An example of organ is what?

28. An example of stationary is what?



#### FAMILIARITY ITEMS USED IN STUDY 2

1. I am familiar with the artists featured in the festival.
2. How familiar are you with Oscar and the Wolf?
3. How familiar are you with Yael Naim?
4. How familiar are you with Tom Odell?
5. How familiar are you with Christopher?
6. How familiar are you with Hozier?
7. How familiar are you with Pauline Croze?
8. How familiar are you with MØ?
9. I feel knowledgeable about the performers featured in the festival.

#### FAVORABILITY ITEMS USED IN STUDY 2

1. I find this event (Very Boring - Very Exciting).
2. I find the festival (Bad - Good).
3. I find the festival (Likeable - Dislikeable). (R)
4. I find the information about the festival (Negative - Positive).
5. I find the information about the festival (Unfavorable - Favorable).
6. I find the festival (Boring - Exciting).

SELF-ESTEEM SCALE (ROSENBERG, 1965)

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all. (R)
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of. (R)
6. I certainly feel useless at times. (R)
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself. (R)
9. All in all, I am inclined to feel that I am a failure. (R)
10. I take a positive attitude toward myself.

BEHAVIOR IDENTIFICATION FORM (VALLACHER & WEGNER, 1989)

1) Making a list

- a Getting organized\*
- b Writing things down

2) Reading

- a Following lines of print
- b Gaining knowledge\*

3) Joining the Army

- a Helping the Nation's defense\*
- b Signing up

4) Washing clothes

- a Removing odors from clothes\*
- b Putting clothes into the machine

5) Picking an apple

- a Getting something to eat\*
- b Pulling an apple off a branch

6) Chopping down a tree

- a Wielding an axe
- b Getting firewood\*

7) Measuring a room for carpeting

- a Getting ready to remodel\*
- b Using a yard stick

8) Cleaning the house

a Showing one's cleanliness\*

b Vacuuming the floor

9) Painting a room

a Applying brush strokes

b Making the room look fresh\*

10) Paying the rent

a Maintaining a place to live\*

b Writing a check

11) Caring for houseplants

a Watering plants

b Making the room look nice\*

12) Locking a door

a Putting a key in the lock

b Securing the house\*

13) Voting

a Influencing the election\*

b Marking a ballot

14) Climbing a tree

a Getting a good view\*

b Holding on to branches

15) Filling out a personality test

a Answering questions

b Revealing what you're like\*

- 16) Tooth brushing
  - a Preventing tooth decay\*
  - b Moving a brush around in one's mouth
- 17) Taking a test
  - a Answering questions
  - b Showing one's knowledge\*
- 18) Greeting someone
  - a Saying hello
  - b Showing friendliness\*
- 19) Resisting temptation
  - a Saying "no"
  - b Showing moral courage\*
- 20) Eating
  - a Getting nutrition\*
  - b Chewing and swallowing
- 21) Growing a garden
  - a Planting seeds
  - b Getting fresh vegetables\*
- 22) Traveling by car
  - a Following a map
  - b Seeing countryside\*
- 23) Having a cavity filled
  - a Protecting your teeth\*
  - b Going to the dentist



- 24) Talking to a child
  - a Teaching a child something\*
  - b Using simple words
- 25) Pushing a doorbell
  - a Moving a finger
  - b Seeing if someone's home\*

\* Indicates a higher level alternative.



APPENDIX B

VISUAL STIMULI USED IN STUDIES



Figure 6. Event poster used in Study 2

APPENDIX C

DESCRIPTIVE TABLES

Table 1. Descriptive Results for Study 1

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Attendance	83	2.00	12.00	9.4458	2.38006	-.910	.264
Quiz_Average	83	4.00	12.67	9.0221	1.75590	-.009	.264
Midterm	83	14.00	98.00	62.9699	17.78245	-.519	.264
Esteem_Score	83	17.00	40.00	32.6506	5.17365	-.802	.264
Subjective_Knowledge_Evaluation	83	2.20	6.80	4.8675	1.04550	-.667	.264
Mood_Score	83	1.00	7.00	4.6627	1.29988	-.641	.264
Time_Score_closeness	83	1.00	7.00	3.5884	1.10572	.264	.264
Valid N (listwise)	83						

Descriptive Statistics

	Kurtosis	
	Statistic	Std. Error
Attendance	.069	.523
Quiz_Average	.057	.523
Midterm	.172	.523
Esteem_Score	.289	.523
Subjective_Knowledge_Evaluation	.273	.523
Mood_Score	.621	.523
Time_Score_closeness	.627	.523
Valid N (listwise)		

Table 2. Descriptive Results for Study 2

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
GEN_Fam	74	1.00	7.00	3.6486	2.05695	.092	.279	-1.463
GEN_Know	74	1.00	7.00	3.1351	1.80808	.436	.279	-.813
F_Oscar	74	1.00	7.00	2.8919	2.04449	.743	.279	-.819
F_Yael	74	1.00	7.00	2.3514	1.62542	1.002	.279	-.058
F_Tom	74	1.00	7.00	3.4324	2.33544	.353	.279	-1.521
F_Christopher	74	1.00	7.00	2.1622	1.65544	1.354	.279	.666
F_Hozier	74	1.00	7.00	3.8378	2.43281	-.029	.279	-1.737
F_Pauline	74	1.00	6.00	2.0676	1.48353	1.201	.279	.328
F_MO	74	1.00	7.00	2.8514	2.32722	.828	.279	-.989
FAM_scale	74	1.00	6.33	2.9309	1.57626	.372	.279	-1.062
GEN_FAV	74	1.00	7.00	5.1216	1.60438	-.694	.279	.068
FAV_1	74	1.00	7.00	4.8378	1.72036	-.621	.279	-2.230
FAV_2	74	1.00	7.00	5.0811	1.52384	-.737	.279	.435
FAV_3	74	1.00	7.00	5.4459	1.45378	-1.512	.279	2.648
FAV_4	74	2.00	7.00	5.0541	1.27023	-.434	.279	.218
FAV_5	74	2.00	7.00	5.2973	1.13149	-.499	.279	.492
EVAL_FAV	74	1.33	7.00	5.1396	1.28805	-.587	.279	.275
Feasible	74	1.00	7.00	3.7568	2.11848	.027	.279	-1.431
Convenience	74	1.00	7.00	4.3919	1.86399	-.347	.279	-.935
Valid N (listwise)	74							

**Descriptive Statistics**

	Kurtosis
	Std. Error
GEN_Fam	.552
GEN_Know	.552
F_Oscar	.552
F_Yael	.552
F_Tom	.552
F_Christopher	.552
F_Hozier	.552
F_Pauline	.552
F_MO	.552
FAM_scale	.552
GEN_FAV	.552
FAV_1	.552
FAV_2	.552
FAV_3	.552
FAV_4	.552
FAV_5	.552
EVAL_FAV	.552
Feasible	.552
Convenience	.552
Valid N (listwise)	

Table 3. Descriptive Results for Study 3

Descriptive Statistics								
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
E1	57	2.00	7.00	4.8596	1.23112	-.497	.316	.050
E2	57	1.00	7.00	4.6491	1.51765	-.835	.316	.109
E3	57	1.00	7.00	4.5965	1.42503	-.854	.316	.239
E4	57	1.00	7.00	4.9123	1.44272	-.655	.316	.146
Evaluation	57	1.25	7.00	4.7544	1.27256	-.800	.316	.508
Valid N (listwise)	57							

Descriptive Statistics	
	Kurtosis
	Std. Error
E1	.623
E2	.623
E3	.623
E4	.623
Evaluation	.623
Valid N (listwise)	

Table 4. Descriptive Results for Study 4

Descriptive Statistics								
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Mindset Score	61	6.00	23.00	15.9508	4.36817	-.606	.306	-.188
Esteem Score	61	14.00	40.00	32.0656	5.37236	-.786	.306	.903
Heaven & Hell Gap	61	-2.25	3.88	-.1639	1.13343	1.224	.306	3.192
Game Theory Gap	61	-3.75	1.50	-.6537	1.06419	-.184	.306	.159
Valid N (listwise)	61							

Descriptive Statistics	
	Kurtosis
	Std. Error
Mindset Score	.604
Esteem Score	.604
Heaven & Hell Gap	.604
Game Theory Gap	.604
Valid N (listwise)	

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