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THE RELATIONS BETWEEN CONSTRUAL LEVEL AND TIME ESTIMATION: THE EFFECTS OF INTENTIONALITY

MASTER THESIS

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I hereby declare that all information in this thesis has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work; otherwise I accept all legal responsibility.

Şeyma SEVGİCAN

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Tez geçse de her sevgide bin hatıra vardır.

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ABSTRACT

THE RELATIONS BETWEEN CONSTRUAL LEVEL AND TIME ESTIMATION: THE EFFECTS OF INTENTIONALITY

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In this thesis, it was aimed to examine the perception of time in the context of construal level and intentionality. Furthermore, subjective time perception of participants was evaluated in order to see whether it was related to duration estimation. Accordingly, three different experiments were conducted. In general, it was expected that time estimation will differ according to construal level and intentionality (having a goal in the task). The first study focused on predicting how much time the participant would need for completing the task. Besides, the second study focused on the duration estimation of the completed task of participants and the deviation between the time they actually completed the task and the time they estimated. Lastly, the third study was conducted to verify previous studies without intentionality condition. The research sample consisted of 105 students (85 female and 20 male) for the first experiment and 108 students (82 female and 26 male) for the second experiment, studying at Ankara Yıldırım Beyazıt University, a state university in Ankara. The third experiment conducted at Haliç University, a private university in Istanbul, with 44 students (21 female and 23 male). The time perception in the experiment was studied by verbal time estimation. Besides, mindset and intentionality were manipulated. Mann-Whitney U and ANOVA tests were used to test the difference between groups and Spearman's Correlation was used to test the relationship. According to the results, only the first hypothesis of the first experiment corresponded with the literature that different mindsets lead to differences in the estimation of time, but this was in the opposite direction of the hypothesis. Participants in the concrete mindset made longer estimates than those in abstract mindset did. Any of the other hypotheses were not supported. The possible variables, especially the universality of construal level theory and cultural factors, which are likely to affect the results, are presented and limitations of the study are discussed within the context of the related literature.

Keywords: Construal level theory, duration estimation, intentionality, time perception, subjective time

ÖZET

Zihin Kurgusu ve Amaçlılığın Zaman Algısındaki Rolü

Sevgican, Şeyma

Yüksek lisans, Psikoloji

Tez Yöneticisi: Dr. Öğr. Üyesi Gülten Ünal

Bu tezin amacı, zaman algısının zihin kurgusu ve amaçlılık bağlamında incelenmesidir. Yapılan araştırmalar, bireylerin görevleri tamamlamak için ihtiyaç duydukları süreyi hafife alma eğiliminde olduklarını göstermiştir. Zihin kurgusunun (somut ve soyut) ve verilen görevde amacın olup olmamasının süre tahmininde farklılık göstereceği beklenmektedir. Ayrıca, katılımcıların öznel zaman algıları da, süre tahmini ile ilişkisi olup olmadığını değerlendirmek için, ele alınmıştır. Genel olarak, soyut zihin yapısında ve amacı olan bireylerin görevi tamamlamak için ihtiyaç duydukları süreye daha gerçekçi tahminler yapacağı beklenmiştir. Bu doğrultuda, üç farklı deney yürütülmüştür. Birinci deneyde, katılımcının verilen görevi tamamlamak için ne kadar süreye ihtiyacı olacağını tahmin etmesi üzerine odaklanmıştır. İkinci deneyde ise katılımcıların tamamladıkları görevin süre tahmini ve gerçekte görevi tamamladıkları süre ile tahminleri arasındaki sapma üzerinde durulmuştur. Son olarak üçüncü deneyde, amaçlılık koşulu çalışmadan çıkarılmış, önceki çalışmaları doğrulamak için yapılmıştır. Araştırmanın örneklemi, Ankara'da bir devlet üniversitesi olan Ankara Yıldırım Beyazıt Üniversitesi'ndeki öğrencilerden oluşmuştur. Birinci deneye 105 öğrenci (85 kadın, 20 erkek), ikinci deneye ise 108 öğrenci (82 kadın ve 26 erkek) katılmıştır. Üçüncü deney, İstanbul'da özel bir üniversite olan Haliç Üniversitesi'nde 44 öğrenci (21 kadın, 23 erkek) ile yapılmıştır. Deneyde zaman algısı, süreyi sözel olarak tahmin etme yöntemi ile çalışılmıştır. Bununla birlikte, zihin kurgusu ve amaçlılık manipüle edilmiştir. Gruplar arasındaki farkı test etmek için, Mann-Whitney U ve ANOVA testleri kullanılmış ve ilişkiyi test etmek için ise Spearman’s Korelasyon analizi yapılmıştır. Sonuçlara göre, üç farklı deneyden sadece birinci deneyin ilk hipotezi doğrulanmıştır. Farklı zihin kurgusundaki bireylerin süre tahmininde farklılık göstereceği bulgusu literatür ile uyuşmaktadır. Ancak, elde edilen sonuç çalışma hipotezinin tersi yönündedir. Somut zihin yapısındaki bireyler, soyut zihin yapısındaki bireylere göre daha uzun süre tahmininde bulunmuşlardır. Üç farklı deney kapsamında oluşturulan diğer hipotezlerin hiçbiri desteklenmemiştir. Çalışmanın

sınırlılıkları ve sonuçlarını etkilediği düşünülen olası değişkenler, özellikle kurgu seviyesi kuramının evrenselliği ve sonuçları etkileyebilecek kültürel faktörler ilgili literatür kapsamında tartışılmıştır.

Anahtar Sözcükler: Kurgu seviyesi kuramı, süre tahmini, amaçlılık, zaman algısı, öznel zaman

LISTS OF ABBREVIATIONS

CLT: Construal Level Theory

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CHAPTER I

INTRODUCTION

1. GENERAL INTRODUCTION

> "We surely know what we mean when we speak of time. We also know what is meant when we hear someone else talking about it. What then is time? Provided that no one asks me, I know."
>
> Saint Augustine

As Augustinus said, we always talk about time, but we always have difficulties while explaining it. Time always play a central role in all aspects of life such as imaginary tales passed from generation to generation or in many scientist's studies such as Albert Einstein, Isaac Newton, Karl van Vierordt, and so on. Due to the existence of time in behavior and the importance of a temporal perspective in terms of living organisms and events, time-related studies are very common in psychology literature. The fact that time and temporal experiences cannot be clearly defined makes the subject more interesting.

There are different conceptual definitions of time and time perception. Time is defined as the time of movement while the perception of time is defined as a subjective evaluation of the time spent (Matell & Meck, 2000). The time perception, which includes calculating the intervals of given time with time-based awareness, verbally expressing it and evaluating the speed of transition, varies from individual to individual under different circumstances (Erdoğan, 2016).

Time perception is studied by using methods such as verbal estimation, reproducing the given time, creating time intervals and comparing the time interval (Gil & Droit-Volet, 2011). Regardless of the methodologies, there are several factors affecting time perception. According to the researches, the characteristics of individuals who perceive time, the behaviors related to time and the decision-making processes, the content of the given time and

the activities performed or to be performed within the time were found to be important factors affecting the perception of time (Block, 1990). Time perception, which is quite subjective, can be perceived fast for one person depending on the situation and slow for the other. Thus, the subjective time perception of the individual in any case may affect his evaluations, predictions, and behaviors. Besides, the factors such as attractiveness or richness of the situation, presence of music in the environment, stress, stimulation, emotion, mood, sleep, and drug use are among the factors that affect the time perception (Grondin, 2010). In addition, time perception is influenced by the mindsets of individuals (Kanten, 2011).

According to the mindset approach, the mind is defined as a two-pole axis, the ends of the axis are considered as concrete (low-level) and abstract (high-level) mindset. The main difference between these two axes is the detection of events. Individuals in the concrete mindset give importance to the concrete details of the events. These individuals break the event or situation into smaller pieces and question the concrete steps to carry out an action by focusing on the question "How?" (Hansen & Trope, 2013). However, individuals with abstract mindset look at the big picture, but not at the details. They focus on the central and main ideas of the situation or object. Their focus is on the question "Why?" and the general meaning of the action by questioning why it is done (Eyal & Liberman, 2012).

One of the differences between the two axes (i.e., abstract and concrete mindset) is that it focuses on either upper categories or sub-categories. While individuals in the concrete mindset focus on subcategories and emphasize specific examples of concepts, the individuals in the abstract mindset bring the upper level to the upper categories, the more abstract categories to which the concept belongs (Trope & Liberman, 2010).

The concrete and abstract mindsets are considered to be both a personality trait and a feature affected by context. According to Vallacher and Wegner (1987), while the abstract thinkers focus on why it is done, the concrete thinkers focus on how it is done and the difference is due to a difference in personality. Besides, the context has an influence on the mindset, as well.

According to Construal Level Theory, psychological distance affects the degree of thinking of an event, person or thought in high or low level (i.e., abstract or concrete mindset). The theory (Trope & Liberman, 2010), describes the relationship between psychological

distance and thoughts about the concrete or abstract occurrence of events or objects that individuals have. Individuals perceive events in terms of the temporal distance, spatial distance (physical space), social distance (interpersonal distances, distances between different or similar groups), and hypothetical distance (Trope & Liberman, 2010).

The aim of this thesis is to examine the role of concrete and abstract mindset in predicting time. Previous studies have shown that individuals tend to underestimate the time they need to complete tasks (Kanten, 2011). This phenomenon, which is commonly called, planning fallacy, has been examined in different ways from a psychological point of view (Buehler, Griffin, & Ross, 1994). There are several studies in the literature such as furniture assembly (Byram, 1997), Christmas shopping (Buehler & Griffin, 2003), large-scale software projects (Moløkken-Østvold, Jørgensen, Tanilkan, Gallis, Lien, & Hove, 2004), academic projects (Newby-Clark, Ross, Buehler, Koehler, & Griffin, 2000) and so on.

Excessively optimistic time estimations are largely due to the cognitive characteristics about how individuals create scenarios (Kahneman & Lovallo, 1993). Individuals tend to design planning scenarios that determine the steps necessary to bring the current state to the desired final state without considering past experiences, potential cuts (obstacles) or barriers, etc. (Buehler et al., 1994). Even if past experience is taken into account, past experience has not improved the estimation of both recalled and predicted duty periods (Roy & Christenfeld, 2008). However, studies which focus on construal level and time estimation show effective results. According to Hansen and Trope (2013), the perception of time differs according to the construal levels of individuals. The participants in the concrete mindset perceive the time as faster than the participants in the abstract mindset do. Furthermore, it is seen that taking a given task seriously is effective in completing the task assigned to the individual. The motivational reasoning or any incentive given to the individual constitutes a sense of responsibility in the individual and affects the participant's plans and completion process (Buehler, Griffin, & Macdonald, 1997).

When all these variables are taken into consideration, it is planned to examine the perception of time in the context of construal level and intentionality. Accordingly, three different experiments were conducted in this thesis to investigate the role of construal level and intentionality. The first study focused on how long the participants will complete the task, while the second study focused on the duration participants completed the task and the deviation between the time they actually completed the task and the time they estimated.

Lastly, third study is conducted to verify previous studies without intentionality condition. In addition to these, the effects of subjective time perception on time estimation were evaluated in all experiments.

In this context, firstly, various concepts used in the study, especially Construal Level Theory, will be presented as a comprehensive literature. Next, the sample of the study, the methods used, procedures and hypotheses will be presented and the results of the statistical analyzes will be presented and discussed. Finally, the thesis will be finalized with a general discussion and conclusion section.

2. TIME PERCEPTION

There is difficulty in defining the time in general, since it is defined by reference to a relative point and changing from individual to individual. It is one of these difficulties that time is intertwined with human life (Avcı, 2008). There are different conceptual definitions of time and time perception. The concept of time is expressed by the Turkish Language Association (TDK, 2019) as the duration in which an event passed or passes through, a certain part of this period and a defined period of time. Besides, the perception of time is defined as a subjective evaluation of the time spent (Matell & Meck, 2000).

The time perception might be changing in accordance with individuals who are in same contexts but in different conditions. In such a way that, time perception is being characterized by its subjective meaning and might change from situation to situation. When people perceive the time according to the references created by their position, the perceived psychological time varies from individual to individual. While a person who has a bad day may complain that the day is not over, a person who has a good day may mention how fast the day is (Edwards, 2002). Because psychological time is subjective, external determinants such as clock and calendar cannot determine the period of time.

Internal and cognitive factors constitute the time perception (Reockelein, 2000). Savickas (1991) describes the perception of time as a mental interpretation of the past, present and future, emphasizing personal experiences, although it does not refer to the concept of psychological time. It is emphasized that the past, present, and future concepts are subjectively subject to the loaded meaning and that “today is the yesterday of tomorrow and the tomorrow of yesterday.” (Seginer, 2009, p. 6).

2.1.Subjective Time Perception

Since ancient times, the concept of time has been discussed. From these discussions, it is seen that there is more than one-time concept for a living. In addition to objective time, which is expressed by numbers and applies to everyone, there are subjective times that are shaped by the perception of each individual and influenced by both internal and external factors. Zherebin, Vershınskaia, and Markhrova (2015) discuss the concept of subjective time in detail and mentioned that there might be separate time perceptions that are unique not only to individuals but also to societies, nations, or families. They classified the objective time as physical time. Objective time or physical time is the kind of time that occurs in every part of the world in the same way and the result of cosmic processes independent of individuals. However, the subjective perception of time refers to the perception of time, which is shaped by the plans, goals, social structure, or events that one individual or more people have.

The objective time itself is not a structure that divides into sections such as months, years, days, and proceeds in the flow. In modern physics, it is suggested that time is not in a flow and that there is a static section in space time integrity (Davies, 2002). However, in order to make the distinction between past, present, and future, people have scaled the time in a flow from small to large. This is because the human mind needs such a scaling in order to perceive the time (Droit-Volet, 2013). This is the cause for perceptual illusion that time is in a flow (Block & Gruber, 2014). In order for the perception of time to occur, events must take place at certain time intervals. Studies have shown that the time interval between the two events differs for auditory, tactile, and visual stimuli. An individual' perception of events in a stream and evaluation of these events based on a scaling in the form of time periods create the subjective time. Subjective time perception may be of much different length than objective time or similar length at milliseconds (Droit-Volet, 2013). This differentiation between the time that people perceive and the real time takes place due to internal and external factors. External factors are the properties of the stimulus or environmental distractors; internal factors are circadian rhythm, body temperature, attention and memory processes, decision making process, impulsivity, and awareness. Studies in the field show that all these factors affect the time estimation in assigned tasks and cause time perception to differentiate among individuals (Luce, 1984).

2.2.Time Estimation

Even there are objective time periods, people make time estimations subjectively. Time estimation method is used in almost all studies in order to understand how time perception processes work and how people perceive the duration of events of different lengths. In this method, people are provided with tasks that show stimuli with specific criteria and questions are asked about how many seconds the stimulus lasts. Research shows that there are more than one physiological, biological, and environmental factors affecting time estimation (Block & Zakay, 1996). However, there is no conclusive evidence as to why and how the perception of time varies according to these factors.

Block and Gruber (2014) stated in their review article that the individuals' time judgments related to a particular event may vary considerably depending on the type of cognitive load, the method of measurement of the time estimation, and how long after the event is estimated. However, it has been discussed for many years that the internal clock system (which is claimed that the perception of time depends on the internal mechanisms and the presence of an internal clock mechanism in the perception of time) plays a role in the formation of time perception (Treisman, Faulkner, Naish, & Brogan, 1990). Furthermore, in recent years, studies suggesting that emotion, motivational reasoning (Buehler et al., 1997), and mindset approach (Siddiqui, May, & Monga, 2014) have a significant effect on time perception are presented (Droit-Volet & Meck, 2007). All these differentiations in the results and interpretations are still left unanswered by the question of what is the basis of time perception and how it works.

2.3.Time Perception Paradigms

Two basic paradigms are generally used in time perception studies. These are the prospective timing and the retrospective timing paradigms. Prospective timing paradigm is used in deciding the duration of the event that requires attention to the time of an event in the present time. However, in determining the duration of an event occurring in the past, which does not contain any information about time attention, the retrospective timing paradigm is used (Grondin, 2010).

Prospective timing depends on the process requiring attention due to the coexistence of temporal and non-temporal information processing. Prospective timing includes two task conditions. In this model, it is necessary to divide the person's attention into the temporal and non-temporal information processes. The individual also uses the resources needed to pay attention to the time for processing the non-temporal information at the same time. Therefore, while prospective timing paradigm is associated with attention, retrospective timing paradigm is associated with memory processes, as it requires the recall of the time interval of an event that take place in the past (Zakay & Block, 2004). In addition, when these paradigms are compared in terms of time periods, prospective timing paradigm tasks use shorter times between milliseconds and a few seconds, while longer-term times such as seconds, minutes, and hours are used for retrospective timing paradigm (Brown, 1997).

2.4.Time Perception Methods

Although prospective timing and retrospective timing paradigms have been studied from different perspectives, four basic methods are used for time estimation studies. These methods mostly used to examine the difference of time estimation by using image, sound, and facial expressions as an arousal. These are verbal estimation method, reproduction method, production method, and interval comparison method (Droit-Volet, Brunot, & Niedenthal, 2004; Gil & Droit-Volet, 2011).

The method of verbal estimation of time is studied via verbally expressing the duration of the target time interval. The method of reproducing the time interval is based on a recreation of the duration of the stimulus after that stimulus time presented. The method of reproducing the time interval is the creation of a specific target range within the temporal units. The time interval comparison method is the comparison of the two temporal ranges presented, which is longer or shorter than each other (Block & Zakay, 1996; Effron, Niedenthal, Gil, & Droit-Volet, 2006). The verbal estimation method, used in this thesis and time interval reproduction method are among the effective methods used in time perception studies because they allow to estimate the length of the different time intervals and to examine the differences due to temporal attention and general excitability level (Gil & Droit-Volet, 2012; Effron et al., 2006).

2.5.Factors Affecting Time Perception

People have the ability to accurately process and detect time intervals in milliseconds at multiple timing intervals, such as seconds, minutes, and days. However, there are differences between physical and psychological time and the sources of these differences (physiological and psychological factors) might affect the perception of time. While examples of physiological factors include body temperature, drug and substance use, drug-induced neurotransmitter changes, alcohol and smoking, examples of psychological factors could be given as attention, general arousal, memory, and emotion (Grondin, 2010; Allman & Meck, 2012).

Cognitive processes such as attention, general level of stimulation, memory, and emotion may cause acceleration and deceleration in time perception and may incline the deviation between time perception and real (objective) time. The ability to predict physical time is a constant and regular function. Differences in this function may also be caused by psychiatric disorders (such as mood disorders, depression, schizophrenia, anxiety disorder, attention deficit and hyperactivity disorder, autism, etc.), Parkinson disease, and drug and substance use (Bahadırlı, Tutuğ, Ceviz, & Çalıyurt, 2013; Droit-Volet, 2007).

In addition to these factors, construal level also play important role in time perception. Recent studies showed that mindset (abstract or concrete) which is effected by psychological distance effectively changes individual's perception of time (Liberman & Trope, 2010).

The ability to perceive time directly related to behavior plays an important role in decision-making in information processing, evaluating stimuli from the environment and developing successful behavioral strategies. Explaining the underlying psychological mechanisms of differences in time perception will contribute to understanding the behaviors and studies about disorders related to time perception (Block & Gruber 2014; Droit-Volet & Meck, 2007).

3. CONSTRUAL LEVEL THEORY

Individuals have thoughts about actions, situations, objects, persons, or events outside their own experience. In other words, people are thinkers about near or future time, near or distant places, perceptions or experiences of other individuals or hypothetical events rather than actual events. At the same time they make plans, make decisions, and choices that are influenced by or on the basis of these ideas (Liberman & Trope, 2008).

Construal level theory is a broad theory that allows the process of abstraction to direct individuals to thoughts, actions, objects, situations, incidents or people out of their direct experiences (Trope & Liberman, 2010). Although the purpose of an individual's thoughts may be action, object, person, event or situation, the literature of construal level theory often uses objects or events to simplify the discussion. Construal level theory defines mental representations as structures and separates these structures according to their degree of abstraction. Abstraction is the process of extracting the basic meaning and a central aspect of what is thought, seeing the more environmental and less important aspects of the object of thought. To what extent abstraction is used according to the theory depends on the extent to which thoughts are directly influenced by the individual's own experience. The mental representation that arises as a result of the thought object or thought must also affect the person's predictions, evaluations, and actions (Liberman & Trope, 2010). The construal level theory provides for these individuals to gain a deeper understanding of predictive considerations, specific recommendations on how preferences and actions are affected, intuitive processes of decision-making, and bias.

Studies on construal level theory started in 1998 and gained momentum in 2006. The theory of construal provides a comprehensive framework for decision making, evaluation, and judgment (Fiedler, 2007). According to construal level theory, the individual shifts his/her thoughts from now and here to pay attention to the experiences of other individuals or to take into account the hypothetical phenomena, to create a transition between temporal, spatial, social, and hypothetical. The advocates of the theory argue that human capacity for abstract processing of knowledge allows individuals to change temporal, spatial, social, and hypothetical distance. The theory also suggests that social, temporal, spatial, and hypothetical distance form four interrelated, spatial manifestos on a single basic structure called as "psychological distance". Accordingly, these distances are called four dimensions of the psychological distance (Liberman, Trope, McCrea, & Sherman, 2007). Psychological distance

refers to the perception of when and where an event is occurring and whether it is occurring or not (Trope & Liberman, 2010).

The cognitive process of abstraction, which operates according to the four dimensions of psychological distance, leads to the mental representation of abstraction in varying degrees depending on the magnitude of the psychological distance. In other words, as the object of a person's thoughts moves away from the current position and time in relation to the dimensions of the psychological distance, the object will be presented as abstract. Moreover, the relationship between mental representation and psychological distance is twofold. This means that abstract mental structures lead individuals to consider objects as psychologically distant (Liberman & Förster, 2009b).

In addition, the construal level theory posits that the level of construal is expanded when the distance increases. Individuals continue to form high-level structures of distant events, even in the absence of the possibility of changing low-level structures over distance (Liberman & Trope, 2008). According to the studies, not only the distance directs individuals to high-level construal but also high-level construction of an event may lead individuals to further distance estimates (Stephan, Liberman, & Trope, 2010).

High-level construal provides a wider mental perspective as it provides more distance than low-level construal does. The activation of high-level construal is related to optically distancing the picture and to focusing on the big picture. According to this account, Liberman and Förster (2009a) have found that induction of distance causes more rapid perception of global characteristics and slower perception of local features. High-level construal is associated with simple mind models with accessible information. They are general, schematic and context-independent representations that underline the general superficial meanings of events. Low-level construal is rich, complex, and context-dependent representation. It covers subcategories and small details of events (Liberman & Förster, 2009a).

3.1.Indicators of Construal Level

3.1.1. Central vs. Peripheral Features

According to Trope and Liberman (2000), construal level has effect on consumer's decisions while purchasing. Considering an individual who is buying an object (e.g., radio), in the decision-making process, the individuals in the abstract mindset give more importance to the core, central features (e.g., to emphasize the sound quality of the radio). However, it is

seen that the individuals in the concrete mindset take the decision by giving importance to the more detailed and environmental features (e.g. the aesthetic image of digital display of the radio). In another study, it is seen that individuals in the abstract mindset decide more on the main idea and make decisions based on memory in the decision-making process, but the ones in the concrete mindset stick to the excess of information (Fukukura, Ferguson, & Fujita, 2013).

3.1.2. Desirability vs. Feasibility

In a study conducted by Fujita and Sasota (2011), priming different mindsets may have effect on individual's interpretation of a goal. The abstract (high-level) mindset focuses on a goal and desirability of the target, however, concrete (low-level) mindset individuals focus on feasibility, more concrete details and how to achieve the goal (Fujita & Sasota, 2011).

3.1.3. Power vs. Strength (Powerlessness)

According to Smith, Wigboldus, and Dijksterhuis (2008), high-level, abstract mindset individuals experience more subjective power and more control of their environment than those in the concrete mindsets. Interestingly, the opposite was found in relation to this matter. Therefore, the relationship between these two is mutual. In a study, it was found that the participants who had been promoted to power considered more irrelevant information as more abstract (Smith & Trope, 2006).

3.1.4. Consistency vs. Elasticity

Individuals tend to be more coherent when they are in the abstract mindset, whereas they tend to be more flexible in the concrete mindset. It has been observed that abstract mindsets are largely consistent in attitudes and lead to a more structured self (Ledgerwood, Trope, & Liberman, 2010).

3.1.5. Category vs. Examples

The abstract mindset is related to use of more categories than exemplar. Individuals with an abstract mindset focus on normative knowledge and seem to be more compatible with group norms in the abstract mindset (Ledgerwood & Callahan, 2012).

3.1.6. Global vs. Local Information Processing

The change in mindset affects not only how knowledge is brought into mind, but also how perceived knowledge is dealt with. Participants are quicker to see and report spherical letters while in abstract mindset. However, in the concrete (low-level) mindset, the speed of knowing and recognizing local letters is higher (Liberman & Förster, 2009a).

3.2.Determinants of Mindset

3.2.1. Individual Differences

The mindset could be effected by more than one factor in any given time. These factors are contextual components and individual characteristics. The methods used to trigger individuals to a concrete or abstract mindset temporarily are contextual factors (e.g. mindset priming, categorization, psychological distance). Besides, individual differences may also have effect on the mindset. Some people tend to see the larger picture, while others tend to focus more on the details. Vallacher and Wegner's (1989) Behavioral Identification Form (BIF) assesses how individuals construct the world as concrete or abstract. For example, the behavior of individuals who used to have high-level of construal is more likely to focus on the more abstract characteristics of events or objects than individuals who used to have low-level construal. The differences between abstract and concrete mindset individuals could be seen in Table 1.

Table 1. Characteristics of abstract and concrete mindset individuals (Soderberg, Callahan, Kochersberger, Amit, & Ledgerwood, 2015)

	Abstract Mindset Individuals	**Concrete Mindset Individuals**
Think of	Why they act	How they act
Behavior	Consistent and stable	Less consistent and stable
Activities	Expertise	Some degree of skills
Self-understanding	High	Low
Self-representation	Structured and invariant	Unstructured and variant
Self-view	Positive	Less positive
Self-control		

Self-affirmation	High	Low
Concentrate on	High	Low
Depend-on	Meaning of action	Details of action
Mind process	Global assessment	Local assessment
Enactment time of activity	Less fluent	Fluent
	Distant future	Near future
Completion time of activity	Long	Short
	Very polite	Less polite
Politeness	Optimistic and assured	Less optimistic and assured
Optimism and confidence		

3.2.2. Mindset Priming

In addition to individual differences, there are various contextual factors affecting the mindset. The first and perhaps the most important one is to prime the abstract and concrete mindset in individuals and to attract them to high or low construal levels. For this purpose, Freitas, Gollwitzer, and Trope (2004) developed a method by focusing on the way people think about reaching different goals. If the individual focuses on the importance of the "why" factor while reaching a goal, it will be primed into the abstract mindset; however, if the individual focuses on the question "how", a more concrete, process-oriented, and low-level construal will be primed.

Another task used to draw participants into the concrete or abstract mindset is the word categorization task. In this task, participants are given an item. Then, they are either asked to make a sub-dimension of that item or to create an upper category for that item (Fujita, Trope, Liberman, & Lewin-Sagi, 2006). While creating examples of the given item triggers details that are more concrete and a low-level of construal, categorizing that item triggers a higher level of construal which reaches more abstract representations. In other words, while creating an example of the given item primes individual to the concrete mindset, creating a category of the given item primes individual to the abstract mindset.

Besides, Navon Letter Task (Navon, 1977, see Figure 1) and Kimchi-Palmer Figure Task (Kimchi & Palmer, 1982, see Figure 2) are among the tasks used for inducing abstract or

concrete mindsets. Asking the participants the global letter or shape triggers the abstract mindset, while asking the local letter or shape triggers the concrete mindset (Smith et al., 2008).

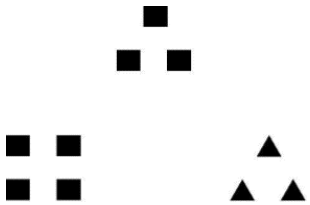


Figure 1. Kimchi-Palmer figure task



Figure 2. Navon letter task

3.2.3. Sensory Experience

Experience of stimulant through proximal sensations such as touch or taste trigger a more concrete mindset than experiencing distal senses (Shpizaizen & Liberman, 2013). Changes in the visual perspective also lead to changes in the mindset. Looking at events from the perspective of primary or tertiary person also affects interpretation by either creating an abstract or a concrete mindset (Libby, Shaeffer, & Eibach, 2009).

3.2.4. Psychological Distance

The theoretical framework for the structure of the concept of psychological distance is defined within the boundaries of Construal Level Theory. According to the Construal Level Theory, the mental representation of a person or an object differs according to abstract or concrete characteristic, depending on how psychologically it is perceived as being far or near (Liberman & Trope, 1998; Trope & Liberman, 2003). In this context, any stimulant that is not included in the time and space of the individual is considered psychologically distant (Stephan et al., 2010).

Any stimulus that is psychologically distant belongs to the past or future. It takes place in a different (further) location and not experienced by individual's themselves. While distant objects are depicted in a small number of basic attributes, close objects are the products of detailed, contextual information (Trope, Liberman, & Wakslak, 2007). High-level construal is abstract, schematic, and context-independent mind representations that convey the essence of the matter from available knowledge. This construal level model focuses on the upper meanings, bypassing random, small, and insignificant details that have little effect on the meaning of events. Low-level construal is concrete representations of the context in which the incidental and minor points of events are also taken into account. Process-oriented ideas based on secondary features and applicability of objects form the basis of low-level constructs (See Table 2) (Liberman & Trope, 1998; Trope & Liberman, 2003).

Table 2. The relationship between psychological distance and construal level (Trope & Liberman, 2003)

Psychological Distance
Proximate < ---------- > Distant

Construal Level (Abstractness of mental representation) Low < ---------- > High	
Low- level construal • Concrete • Complex • Unstructured, incoherent • Contextualized • Secondary, surface • Subordinate • Goal irrelevant	High- level construal • Abstract • Simple • Structured, coherent • Decontextualized • Primary, core • Superordinate • Goal relevant

Features such as the self-centered structure and the abutment of experiences now and here have made the psychological distance observable in many dimensions. Psychological distance can be social distance (individual himself - someone else; self-other), temporal distance (now - past / future), spatial distance (here - elsewhere), or hypothetical distance (likely - low probability situations (unlikely)). Construal level theorists argue that all types of distance are gathered under the psychological distance framework to create a sense of meaning (Trope & Liberman, 2003).

Different types of psychological distance could be used interchangeably for construal level manipulations (Bar-Anan, Liberman, & Trope, 2006; Henderson, Wakslak, Fujita, & Rohrbach, 2011). In addition, the effectiveness of psychological distance manipulations is more effective when the dependent variable is not interrelated with the manipulation method (Bruchman, 2013). Maglio and Trope (2012) found that if any dimension of psychological distance is apparent, our mind reduces the sensitivity to other dimensions of psychological distance. In other words, if any type of psychological distance is significant, the others are not evaluated much.

Social Distance

Social distance is closely related to perceived importance and significance in interpersonal relationships (Bar-Anan, Liberman, Trope, & Algom, 2007; Trope & Liberman, 2003). Research has shown that individuals are more prone to develop more abstract construal related to their acquaintances than others (Idson & Mischel, 2001). When the resemblance between an individual and another person increases, they will get close to each other and their information about one another will be more concrete and detailed. Idson and Mischel (2001) stated that as the familiarity of the individual to another individual increased, individual begins to construct specific and concrete features based on that individual's personality and behavior. Furthermore, group studies also support this finding. While evaluating out-groups as homogenous and describing them using more abstract terms, people make attributions unique to their in-groups (Jones, Wood, & Quattrone, 1981).

Temporal Distance

The distance between the time that the individual is in and the perception of a particular past or future is defined as the temporal distance (Bar-Anan et al., 2007; Trope & Liberman, 2003). Liberman and Trope (1998) stated that the actions in the near future are

interpreted for relatively insignificant purposes ("how"), while the distant future actions are expressed in line with purposeful and abstract objectives ("why").

Spatial Distance

Spatial distance is related to how far away a physically perceived object depending on its location (Bar-Anan et al., 2007). When an individual thinks about an event that takes place close to where that individual lives, the mental representation of that event is concrete. However, a mental representation of a distant event is abstract. The results of experimental studies confirmed this idea (Fujita et al., 2006).

Hypothetical Distance

Hypothetical distance is closely related to the likelihood of occurrence of an event. According to the theory, the imaginary, abstract state is described as more distant than the actual (real) situation (Liberman & Trope, 2008).

Table 3. Overview of the construal level (Trope & Liberman, 2003)

*Subjective perception about the degree to which an

- Object
- Person
- Event/situation

} The "object" or thought-target

is removed from

- The "self" in the "here" and "now" or
- Actuality

in terms of

- Temporal distance
- Spatial distance
- Social distance or
- Hypotheticality

} 4 Dimensions of Psychological Distance

3.2.5. Studies on Construal Level

The construal level approach could be applied to almost any situation. Psychological distance have frequently studied by researchers as a topic of perceptual processes (Vilches-Montero & Spence, 2015), interpersonal interactions (Norman, Tjomsland, & Huegel, 2016; McCrea, Wieber, &Myers, 2012), moral judgments (Winterich, Mittal, & Morales, 2014), values (Mårtensson, 2017), consumer behaviors (Liberman, Trope, & Wakslak, 2007), group adaptation processes (Wilson, Crisp, & Mortensen, 2013), risk taking behavior (Lermer, Streicher, Sachs, Raue, & Frey, 2015) and time perception (Kanten, 2011; Siddiqui et al., 2014).

A large number of studies point to an important feature of psychological distance. Depending on distance, the way individuals perceive social violations is changing. Social violations are situations in which people experience discomfort when they meet or experience these situations. It has been observed that psychological distance has an effect on the perception of threat created by these disturbing events. Increased distance reduces the disturbing sensations from the threat situations, making the situation lighter and more ordinary (Williams & Bargh, 2008). When a negative event happens to someone else (social distance), elsewhere (spatial distance), in a remote time frame (temporal distance), or based on hypothetical assumptions, our perception of threat for this event is reduced (Huddy, Feldman, & Weber, 2007). For example, during the attacks on the World Trade Center (New York, USA) on September 11, 2001, people with distant locations felt less anxiety and post-traumatic stress than those people in close proximity to each other (Huddy, Feldman, Taber, & Lahav, 2005).

Parallel findings were obtained in a study examining the psychological distance's relationship between affect and shame. In this study, where the spatial distance was examined by a shame story, it was observed that the participants in the far-distance group enjoyed the story more than the participants in the near-distance group and those in the near-distance group felt more disturbing emotions (Williams & Bargh, 2008). In addition, the research showed that this mitigating effect of psychological distance in the face of adverse situations is such that it can transform a disaster into humor (McGraw & Warren, 2010; McGraw,

Williams, & Warren, 2013). Similarly, comedians often talked about the power of distance to make negative experiences fun (McGraw & Warren, 2010). In the literature, some of the concise words about humor are mentioned by referring to the temporal effect of humor ("Comedy is formed by adding time to the tragedy") and social distance ("It is a tragedy that cut my finger but it is a comedy that dies in a ditch.") (Tatlıcıoğlu, 2015). This aspect of the psychological distance can be interpreted as a process for adapting to oneself into daily life and to preserve the integrity of the self.

Furthermore, in the case of studies on the effects of construal level on morality, it appears that moral judgments and behaviors of individuals differ according to construal levels (high-level/low-level) (Gong & Medin, 2012; Winterich et al., 2014). It is seen that levels of construal will be effective in moral judgment and behavior when moral principles are taken into consideration as concrete, detailed, situational or abstract, and universal characteristics (Eyal, Lieberman, & Trope, 2008).

Lastly, there are also studies on the effects of construal level on time perception. In their study, Hansen & Trope (2013) to investigate the effect of concrete and abstract mindset on time perception. As a result, it was found out that the perception of time differs according to the construal levels of individuals. The participants in the concrete mindset perceived the time as faster than the participants in the abstract mindset did. As well as the Hansen and Trope's study, Kanten's study (2011) also resulted in the same direction. Time estimations increases in accordance with individual's mindset. Besides, Kanten (2011) also asked participants to draw a line in order to measure the length of an hour. The results showed that the individuals in the high-level condition draw the line shorter than individuals in the low-level condition.

1. PLANNING FALLACY

When people make predictions about time, they focus on plan-based scenarios rather than experiences. Nevertheless, looking at the history of grand construction projects, it is full of optimistic or unrealistic estimates (Hall, 1980). Although individuals know that the majority of previous or similar projects were too late, the tendency to believe that their project will proceed as planned is called "planning fallacy" (Kahneman & Tversky, 1979). The most interesting aspect of this phenomenon is the belief that individuals have already two competing conflicts and they continue to keep them. Individuals, on the one hand, believe that their current estimates are realistic, although their previous prediction was overly optimistic. According to the studies, individuals make predictions that are more realistic when they take their experiences into consideration. However, this situation cannot prevent them from the optimistic time estimations. Individuals tend to focus now, even if they know about the past (Buehler et al., 1994).

According to the study of Buehler et al. (1994) while making prediction for duration of an activity, participants rarely took care of their personal characteristics, others' experiences, and the deadline. Thus, if time estimation is studied by tasks include daily activities, it would be better to get more information about the planning process. Planning fallacy is an important subject for both practical and theoretical reasons. Inaccurate time estimations may cause economic, social, and personal costs.

2. INTENTIONALITY

In this thesis, intentionality is defined as the purpose of the task given to the participants. While participants are planning or completing a task, any reason given to the participants might affect the duration estimation and actual completion of the task. In that, participants take the task seriously. The reason or any incentive might make participants aware of their responsibility. If individuals do not have internal motivations for a given task, there is a risk of not taking the task seriously. According to Buehler et al. (1997), the incentives reveal the model of cognitive processes (focusing on plan-based scenarios rather than focusing on past or other's experiences) that create the planning fallacy. That means incentives could help participants to focus on the task. Furthermore, according to Bayram (2018), in order to create a sense of responsibility and motivation, emphasizing the importance of the participants' participation in the study could have effects on the results of the study. The results showed that emphasizing the importance of the participants' participation in the study had significant effects on the groups: the motivated group thought more about the task and spent more time on the task.

CHAPTER 2

METHOD

1. STUDY I

This study is conducted to examine whether the mindset and intentionality lead to differences in the estimation of the duration of an activity. While the independent variables of this study are the mindset and intentionality, the dependent variable is time estimation. The time perception was studied via verbal time estimation. Besides, mindset and intentionality were manipulated. The participants did not actually complete the task itself. They are asked to imagine the task and asked to predict how much time they would need for completing the task.

1.1.Participants

The research sample consisted of 120 university students studying at Ankara Yıldırım Beyazıt University. Students who participated in the study were given extra credits for their courses. Usage of psychiatric medication and sleeping pills, and having psychological disorders are evaluated as exclusion criteria. In total, statistical analyses were performed with 105 participants (85 female and 20 male).

1.2.Materials

In this experiment, a demographic information form, a subjective time perception form, a mindset manipulation form, a verbal time estimation task, and control questions were used.

1.2.1. Demographic Information Form

At the beginning of the study, a form including questions about age, gender, socio-economic status, education of parents, financial satisfaction of households, whether participants have any psychological disorder, usage of psychiatric and sleeping pill, and general sleep patterns of the participant was used.

1.2.2. Subjective Time Perception

This method, used to evaluate the subjective time perception of the participants, was taken from the study of Kanten (2011)'s perception of time by the permission of the

researchers and translated into Turkish by Şeyma Sevgican. In this form, the participants were informed that the perception of time is subjective and could change from individual to individual. They were also informed that that one hour was perceived as longer for one individual and it could be perceived as shorter for the other. Then participants were asked to mark the length of one hour on a 14-cm-line. Participants were informed that the line was not a scale or unit of measurement and no length criterion was given on the line. The point marked on the 14-cm-line was evaluated as the subjective time perception of the participant.

1.2.3. Mindset Manipulation

The mindset was manipulated in order to create either an abstract or a concrete mindset. A possible way to create a concrete or an abstract mindset is to direct people to focus on the high-level, targeted abstract characteristics of a particular activity or to the lower-level, concrete target characteristics. Concrete and abstract mindsets differ depending on how and why actions take place (Liberman & Trope, 1998). The reason why an individual expresses a behavior is because of encouraging him to initiate temporarily higher thinking (the abstract mindset), however, an individual's expression of how he/she actualize the behavior reveals that temporarily low-level thoughts (the concrete mindset) (Wakslak & Trope, 2009).

In the case of an abstract mindset, participants were given the expression as “Improve and protect your health”. And, they are asked to create high-level goals in the four-digit diagram by directing the question “Why?” (see Figure 3). In the case of the concrete mindset (low-level), participants were asked to create sub-targets in the four-digit diagram by directing the question “How?” for the same action (see Figure 4). The participants' responses to each step in the diagram attracted them to a concrete or abstract mindset.

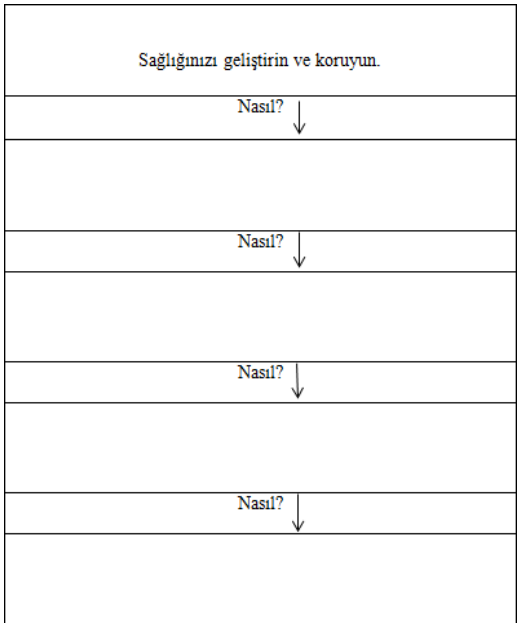


Figure 3. Concrete mindset manipulation

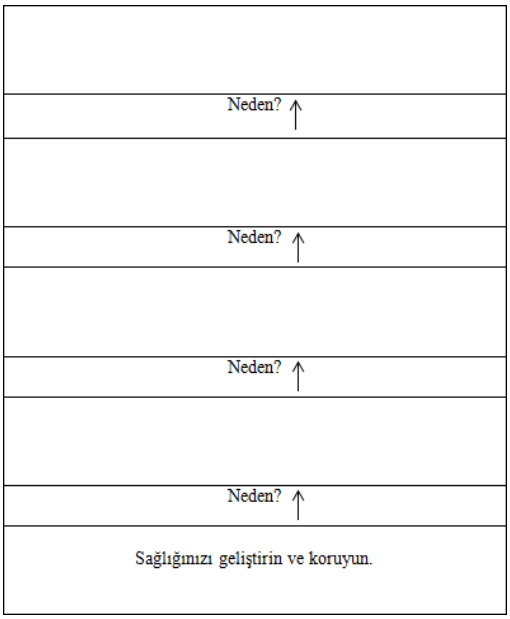


Figure 4. Abstract mindset manipulation

1.2.4. Verbal Time Estimation

The time perception of the participants was evaluated by verbal estimation of the duration for a given task. The scenario in the task condition included the explanation that "Imagine, it is planned that a project will be carried out in Ankara Yıldırım Beyazıt University, and this project will be shaped by the activities that could be done in order to spend the day efficiently. For this purpose, different professional groups are asked about what

could be done to spend the day efficiently. In addition to the professional groups, students' ideas also object of curiosity. As a student, you are asked to consider writing activities that can be done to spend a day efficiently.". The participants were asked to imagine/think about writing their ideas. After the task scenario, the participants were asked to estimate the duration of the task by answering the question "How long do you think it will take you to complete the task you have read?". Participants' responses to the question created the dependent variable that is duration estimation for the activity.

1.2.5. Control Questions

There are many extraneous variables affecting time perception. The complexity of the task (Siddique et al., 2014), primary goal, motivational focus, task difficulty, the confidence of estimation and attention (Kanten, 2011) are the variables effective in the duration estimation for a task. Any of these variables might change the outcome. For example, in a study conducted by Siddique et al. (2014), for simple tasks, the duration estimations were longer for the abstract mindsets than for participants in the concrete mindset. However, for complex tasks, the results were reversed. Estimates were longer for the participants in the concrete mindset than for the participants in the abstract mindset. Therefore, in this experiment, participants' thoughts about the study, the difficulty of the task, participants' confidence in their estimations, and how many hours participants have slept the day that experiment conducted were controlled. Extraneous variables complicate the interpretation of results (Fraenkel, Wallen, & Hyun, 2011). To minimize the effects of extraneous variables, a questionnaire including a number of questions about participants' thoughts about the study, the difficulty of the task, participants' confidence in their estimations, and how many hours they have slept that day were given to the participants to rate on a 7-point likert scale.

1.3.Procedure

The experiment was carried out in the interview room of the Department of Psychology at AYBU. Participants were included in the study one by one. The participants were randomly assigned to the experimental conditions. Experimental conditions were intentionality-concrete mindset condition, intentionality-abstract mindset condition, control-concrete mindset condition, and control-abstract mindset condition. Before the study, an informed consent form was given to the participants that the study was related to construal level and habits of staying healthy. Participants who accepted to participate in the study were asked to fill out the demographic information form first. Then, they were given a form to

evaluate the subjective perception of time. The form included the 14-cm-line and an explanation that *"The perception of time is subjective and might change from individual to individual. One hour can be perceived as long for one individual and it could be perceived as shorter for the other."* With regard to explanation, participants were asked to mark the length of one hour for them on a 14-cm-line. The explanation of subjective time perception and the 14-cm-line were presented on separate papers. The procedure until here was carried out in the same way for all experimental conditions. Then, the participants were manipulated with either a concrete or an abstract mindset according to their conditions. After this point, participants were given to the scenarios and asked to estimate the duration of the task. The intentionality condition of the experiment was given to the participants in the scenario. In the intentionality condition, the scenario included an extra explanation as *"Your opinions about what kind of activities that can be done in order to spend the day efficiently will be used in the project."*. In the control condition, there was no explanation about whether the participant's opinion will be used in the project.

In the abstract mindset-intentionality condition, participants were given the expression as *"Improve and protect your health".* And they are asked to create high-level goals in the four-digit diagram by directing the question "Why?". Afterward, the participants were given the scenario which includes the explanation that *"Your opinions about what kind of activities that can be done in order to spend the day efficiently will be used in the project.".* After the scenario, the participants were asked to imagine/think about writing their ideas. And then, the participants were asked about *"How long do you think it will take you to complete the task you have read?"* to estimate the duration of the task.

In the concrete mindset-intentionality condition, participants were asked to create sub-targets in the four-digit diagram by directing the question "How?" for the same action. Afterward, the participants were given the scenario which includes the explanation that *"Your opinions about what kind of activities that can be done in order to spend the day efficiently will be used in the project.".* After the scenario, the participants were asked to imagine/think about writing their ideas. And then, the participants were asked about *"How long do you think it will take you to complete the task you have read?"* to estimate the duration of the task.

In the abstract mindset-control condition, participants were given the expression as *"Improve and protect your health".* And they are asked to create high-level goals in the four-digit diagram by directing the question "Why?". Afterward, the participants were given the scenario. However, there was no explanation about whether the participant's opinions will be used in the project. After the scenario, the participants were asked to imagine/think about writing their ideas. And then, the participants were asked about *"How long do you think it will take you to complete the task you have read?"* to estimate the duration of the task.

In the concrete mindset-control condition, participants were asked to create sub-targets in the four-digit diagram by directing the question "How?" for the same action. Afterward, the participants were given the scenario. There was no explanation about whether the participant's opinions will be used in the project. After the scenario, the participants were asked to imagine/think about writing their ideas. And then, the participants were asked about *"How long do you think it will take you to complete the task you have read?"* to estimate the duration of the task.

Finally, the participants have given the control questions for all conditions. At the end of the study, the participants were thanked and a participant information form was given. The students participating in the experiment got extra credits for various lectures.

1.4.Statistical Analysis

After the data collection was finished, the normality test performed in the database and the data did not provide normal distribution ($p < .05$). Therefore, a non-parametric test was performed. Mann-Whitney U test was used to test the difference between groups. However, since it was not possible to perform a non-parametric test with multiple independent variables, ANOVA was used to test the interaction effect. Furthermore, to test the relationship between subjective time perception and duration estimation of the activity, Spearman's correlation test was performed.

1.5.Hypotheses

There are four main hypotheses in this experiment.

H1: The estimation of the duration of the activity should differ according to the mindset. Individuals in the concrete mindset should predict a shorter time period than the individuals in the abstract mindset.

H2: The estimation of the duration of the activity should differ according to the intentionality in the task. Individuals with the intentionality condition should make longer predictions than individuals in the control condition.

H3: It is expected that the mindset and intentionality factors should have an interaction effect in the estimation of the duration of the activity.

H4: There should be a relationship between subjective time perception and the estimation of duration of the activity.

2. STUDY II

It is more a complex and comprehensive process to estimate the time in a task that is just planned or has not been completed. Individuals focus on more factors when they are making duration estimation (potential obstacles, situations they may encounter when completing the task, others' performances, etc.). However, time estimation for a completed task is simpler and less biased. Estimating the duration of the task may cause over or underestimation, while estimating the completion time of the task often reveals the underestimation (Roy, Christenfeld, & McKenzie, 2005). In line with this information, it is planned to examine how actualizing a task, following the mindset and intentionality, will affect the estimation process. In this experiment, it is aimed to examine whether the mindset and intentionality lead to a difference in the duration estimation of the completed task. Furthermore, the deviation between the time estimation and real duration of the task was evaluated as a dependent variable. As known, the participants in the abstract mindset make more realistic duration estimations than the participants in the concrete mindset do (Kanten, 2011). Therefore, it was examined that the deviation between the time estimation and real duration of the task might be lower for the participants in the abstract mindset than the participants in the concrete mindset. The materials and experimental procedure were the same as Study I. However, the task was not hypothetical in this experiment. The participants were asked to actualize the task in the experiment. The researcher used a chronometer, while participants were completing the task. The participants were asked to estimate the duration of the task they completed after completion of the task.

2.1.Participants

The research sample consisted of 120 university students studying at Ankara Yıldırım Beyazıt University. Usage of psychiatric medication and sleeping pills, and having psychological disorders are evaluated as exclusion criteria. In total, statistical analyses were performed with 108 participants (82 female and 26 male).

2.2.Materials

In this study, a demographic information form, a subjective time perception form, a mindset manipulation form, a verbal time estimation task, and control questions were used. Except for verbal time estimation task, all materials were the same as in Study I.

2.2.1. Verbal Time Estimation

The time perception of the participants was tested by verbal estimation of the duration for a given task. The scenario in the task condition included the explanation that "*It is planned that a project will be carried out in Ankara Yıldırım Beyazıt University, and this project will be shaped by the activities that could be done in order to spend the day efficiently. For this purpose, different professional groups are asked what could be done to spend the day efficiently. In addition to the professional groups, students' ideas also object of curiosity.* ***As a student, you are asked to write activities that can be done to spend a day efficiently."*** The participants were asked to write their ideas. After completing the task, the participants were asked to estimate the duration of the task by answering the question "How long do you think it took you to complete the task?".

2.3.Procedure

In study II, the same procedure was used as in the Study I. However, in the current study, the participants were asked to complete the task during the study. The experiment was carried out in the interview room of the Department of Psychology at AYBU. Participants were included in the study one by one. The participants were randomly assigned to the experimental conditions. Experimental conditions were intentionality-concrete mindset condition, intentionality-abstract mindset condition, control-concrete mindset condition, and control-abstract mindset condition. Before the study, an informed consent form was given to the participants that the study was related to construal level and habits of staying healthy. Participants who accepted to participate in the study were asked to fill out the demographic information form first. They were then given the form to evaluate the subjective perception of time. The procedure up to here was carried out in the same way for all experimental conditions. Then, the participants were manipulated with either a concrete or an abstract mindset according to their conditions. And then, participants were given to the scenarios and asked to estimate the duration of the task. The intentionality condition of the experiment was given to the participants in the scenario. In the intentionality condition, the scenario included an extra explanation as *"Your opinions about what kind of activities that can be done in order to spend the day efficiently will be used in the project."* In the control condition, there was no explanation about whether the participant's opinions will be used in the project. The scenario given to the participants is changed as "*It is planned that a project will be carried out in Ankara Yıldırım Beyazıt University, and this project will be shaped by the activities that can*

be done in order to spend the day efficiently. For this purpose, different professional groups are asked what can be done to spend the day efficiently. In addition to the professional groups, students' ideas also object of curiosity. ***As a student, you are asked to write activities that can be done to spend a day efficiently.".*** After the scenario, the participants were asked to write their ideas during the study. The researcher used a chronometer for keeping the record of the duration of the task, while participants were writing their ideas. The participants were informed that they should say that the task is over after completion of the task, in order that the experimenter stopped the chronometer. Then, they were asked to estimate the duration of the task by answering the question *"How long do you think it took you to complete the task?".* Finally, the participants were given the control questions. At the end of the study, participants were thanked and a participant information form was given. The students participating in the experiment got extra credits for various lectures.

2.4.Statistical Analysis

After the data collection was finished, the normality test performed in the database and the data did not provide normal distribution ($p <. 05$). Therefore, a non-parametric test was performed. Mann-Whitney U test was used to test the difference between groups. However, since it was not possible to perform a non-parametric test with multiple independent variables, ANOVA was used to test the interaction effect. Furthermore, to test the relationships between subjective time perception, duration estimation of the activity, and the deviation between the time estimation and real duration of the task, Spearman's correlation test was performed.

2.5.Hypotheses

There are eight main hypotheses in this experiment.

H1: The estimation of the duration of the completed activity should differ according to the mindset.

H2: The estimation of the duration of the completed activity should differ according to the intentionality in the task.

H3: It is expected that the mindset and intentionality factors should have an interaction effect in the estimation of the duration of the completed activity.

H4: There should be a relationship between subjective time perception and the estimation of the duration of the completed activity.

H5: The deviation between the time estimation and real duration of the task should differ according to the mindset.

H6: The deviation between the time estimation and real duration of the task should differ according to the intentionality in the task

H7: It is expected that the mindset and intentionality should have an interaction effect in the deviation between the time estimation and real duration of the task

H8: There should be a relationship between subjective time perception and the deviation between the time estimation and the real duration of the task.

3. STUDY III

This experiment was conducted to verify previous studies without intentionality condition. In this experiment, it was aimed to examine whether the mindset leads to any difference in the duration estimation for an activity. Furthermore, for the mindset manipulation, a manipulation check was carried out, as well. The materials and experimental procedure were the same as in Study I. Participants were asked to imagine the task and to predict how much time they would need to complete the task. Besides, this experiment was conducted at Haliç University, a private university in Istanbul. Thereby, the part of the scenario that "*a project will be carried out in Ankara Yıldırım Beyazıt University*" was changed to "*a project will be carried out in Haliç University*".

3.1.Participants

The research sample consisted of 60 university students studying at Haliç University. Usage of psychiatric medication and sleeping pills, and having psychological disorders are evaluated as exclusion criteria. In total, statistical analyses were performed with 44 participants (21 female and 23 male).

3.2.Materials

In this study, a demographic information form, a subjective time perception form, a mindset manipulation form, a verbal time estimation task, and control questions were used. Except for verbal time estimation task, all materials were the same as in Study I.

3.2.1. Verbal Time Estimation

The time perception of the participants was tested by verbal estimation of the duration for a given task. The scenario in the task condition included the explanation that *"Imagine, it is planned that a project will be carried out in* ***Haliç University****, and this project will be shaped by the activities that could be done in order to spend the day efficiently. For this purpose, different professional groups are asked what could be done to spend the day efficiently. In addition to the professional groups, students' ideas also object of curiosity. As a student, you are asked to consider writing activities that could be done to spend a day efficiently."*. The participants were asked to imagine/think about writing their ideas. After the task scenario, the participants were asked to estimate the duration of the task by answering the question *"How long do you think it will take you to complete the task you have read"*.

3.3.Procedure

In study III, the same procedure was used as in the Study I. However, intentionality condition was not included in the scenario. Participation in the experiment was based on voluntariness. The experiment was carried out in a classroom at Haliç University. Participants were included in the study one by one. The participants were randomly assigned to the experimental conditions. Before the study, an informed consent form was given to the participants that the study was related to construal level and habits of staying healthy. Participants who accepted to participate in the study were asked to fill out the demographic information form first. They were then given a form to evaluate the subjective perception of time. Then, the participants were manipulated with either a concrete or an abstract mindset according to their conditions. Next, they were given to the scenarios and asked to estimate the duration of the task. Finally, the participants have given the control questions for all conditions. At the end of the study, the participants were thanked and a participant information form was given.

3.3.1. Manipulation Check

For manipulation checks, the two blinded judges scored each participant' answers based on the abstractness of their responses to the manipulation of the construal level. In terms of its sub-categories (concrete mindset), the judges coded participants' answers to the explanation (improve and protect your health) as -1 point for each step of the diagram. However, in the case of abstract mindset (creating superordinate to the explanation), the answers of the participants are coded as +1 for each step of the diagram. Participants received 0 points if the answer did not provide any criteria for both abstract and concrete mindset. Then, the encodings of the responses of each participant in the four-digit diagram were gathered to create an index of construal level in the range of -4 to +4. High scores expressed an abstract mindset, while low scores expressed a concrete mindset (Fujita et al., 2006).

3.4.Statistical Analysis

After the data collection was finished, the normality test performed in the database and the data did not provide normal distribution ($p < .05$). Therefore, a non-parametric test was performed. Mann-Whitney U test was used to test the difference between groups.

Furthermore, to test the relationship between subjective time perception and duration estimation of the activity, Spearman's correlation test was performed.

3.5.Hypotheses

There are two main hypotheses in this experiment.

H1: The estimation of the duration of the activity should differ according to the mindset. Individuals in the concrete mindset should predict a shorter time period than the individuals in the abstract mindset.

H2: There should be a relationship between subjective time perception and the estimation of duration of the activity.

CHAPTER 3

RESULTS

1. STUDY I

1.1. Demographic Characteristics of Participants

Prior to the major analyses, descriptive statistics were conducted. Based on the demographic information form, age, gender, socio-economic status, education of parents, financial satisfaction of households, whether participants have any psychological disorder, usage of psychiatric and sleeping pill, and general sleep patterns of the participant were evaluated.

In total, statistical analyses were performed with 105 participants. The ages of the participants ranged from 19 to 29 and the mean age was 21.31 years (*SD* = 1.56). The demographic information of the participants showed that the gender distribution of the sample is 81% female (*N* = 85) and 19% male (*N* = 20). The mean of the general sleeping time of the participants was 7.48 (*SD* = 1.06) and the mean of sleeping time on the day they participated in the study was 6.85 (*SD* = 1.56). The father's educational status of the participants was 1.9% literate, 22.9% in elementary school, 17.1% in secondary school, 25.7% in high school, 9.5% in Vocational/technical school (2 years), 21% in Bachelor's degree, and 1.9% in Master degree. The mother's educational status of the participants was 2.9% illiterate, 3.8% in literate, %35.2 in elementary school, 11.4% in secondary school, 27.6% in high school, 5.7% in Vocational/technical school (2 years), 10.5% in Bachelor's degree, and 2.9% in Master degree. The participants reported their socioeconomic status as 3.8% low, 85.7% middle, and 10.5% high. The information about the sample group is given below in Tables 4, 5, 6, 7, and 8.

Table 4. Demographic variables (gender)

	N	*%*
Woman	85	81
Man	20	19
Total	105	100

Table 5. Demographic variables (education level of mother)

	N	*%*
Illiterate	3	2.9
Literate	4	3.8
Primary School	37	35.2
Secondary School	12	11.4
High School	29	27.6
Vocational/technical school (2 years)	6	5.7
Bachelor's degree	11	10.5
Master's degree	3	2.9
Total	105	100

Table 6. Demographic variables (education level of father)

	N	*%*
Literate	2	1.9
Primary School	24	22.9
Secondary School	18	17.1
High School	27	25.7
Vocational/technical school (2 years)	10	9.5
Bachelor's degree	22	21.0

Master's degree	2	1.9
Total	105	100

Table 7. Demographic variables (socioeconomic status)

	N	*%*
Low	4	3.8
Middle	90	85.7
High	11	10.5
Total	105	100.0

Table 8. Demographic variables

	N	*Mean*	*SD*	*Min.*	*Max.*
Age	105	21.31	1.56	19	29
Financial Satisfaction	105	6.14	1.65	2	10
General Sleeping Hour	105	7.48	1.06	4.30	10
Daily sleeping hour	105	6.85	1.56	0	10

1.2. Time Estimation Results According to Construal Level

To test whether there is a significant difference between the abstract mindset and concrete mindset on the estimation of the duration of an activity, the Mann-Whitney U test was performed. The results showed that there was a statistically significant difference between the concrete mindset and abstract mindset, $U = 1022$, $p = .022$. The results of the analysis did not support the hypotheses in the context of this experiment. As opposite to hypothesis, it is seen that individuals with a concrete mindset have longer predictions compared to those of abstract mindset. The results of the analysis are given below in Table 9.

Table 9. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Abstract Mindset	51	46.04	2348	1022	-2.286	.022*
Concrete Mindset	54	59.57	3217			
Total	105					

* $p<.05$

1.3. Time Estimation Results According to the Intentionality

To test whether there is a significant difference between the intentionality and the control condition on the estimation of the duration of an activity, the Mann-Whitney U test was performed. The results showed that intentionality and control conditions did not show any differences significantly, $U=1213.5$, $p = .298$. The hypothesis was rejected. The results of the analysis are given below in Table 10.

Table 10. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Intentionality	50	56.23	2811.50	1213.50	-1.041	.298
Control	55	50.06	2753.50			
Total	105					

1.4. Time Estimation Results According to Construal Level and Intentionality

The estimation of the duration of activity was analyzed with a 2 (mindset: concrete vs. abstract) x 2 (intentionality vs. control) ANOVA. According to the results, the main effect of intentionality was not found. There was no significant difference between individuals in the intentionality condition (M = 211.45) and control conditions (M = 84.51), $F_{(1\text{-}101)}$ = 1.921, p=.169. Accordingly, no significant main effect of construal level was observed on the duration estimation of an activity. It was found that there was no significant difference according to the concrete mindset (M = 212.57) and abstract mindset (M = 83.40), $F_{(1\text{-}101)}$ = 1.988, p= .162. Finally, the interaction effect between construal level and Intentionality was not significant, $F_{(1\text{-}101)}$ =. 204, p= .652. Thereby, the hypothesis was rejected. The results of the analysis are given below in Tables 11 and 12.

Table 11. ANOVA results for time estimation

	Intentionality			Control			Total		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
Abstract Mindset	24	126.16	303.44	27	40.64	58.05	51	80.88	214.39
Concrete Mindset	26	296.75	844.02	28	128.39	282.74	54	209.45	619.64
Total	50	214.87	643.50	55	85.31	208.69	105	147.10	471.10

Table 12. ANOVA results for time estimation

	df	*Mean square*	*F*	η^2
Intentionality	1	421617.03	1.921	.019
Construal Level	1	436534.60	1.988	.019
Intentionality*Construal Level	1	44878.54	.204	.002
Error	101	219534.91		

1.5. Correlation between Subjective Time Perception and Time Estimation

To test the relationship between subjective time perception and estimation of the duration of an activity, a Spearman's correlation test was performed. The results showed that there was no significant relationship between the subjective time perception and the time estimation, p=.940, r = .007. The last hypothesis of this experiment was also rejected. The results of the analysis are given below in Table 13.

Table 13. The Results for Spearman's Correlation

	1.	*2.*
1.Time Estimation	1	.007
2. Subjective Time Perception		1

1.6. Results of the Control Questions

At the end of the study, participants rated their attention to the study, enjoyment of the study, how difficult the study, the importance of the intention and reliability of their estimations on a 7-point likert scale. High scores indicated boringness and difficulty of the study, participants' attention, reliability of their estimation, and the importance of the intention. The information about the descriptive results is given below table in 14.

Table 14. Descriptive results of control questions

	N	*Mean*	*SD*	*Min.(1)*	*Max.(7)*
Enjoyment	105	5,14	.96	3	7
Difficulty	105	3,46	1.58	1	7
Attention	105	6,11	.77	3	7
Reliability of estimation	105	5,05	1.09	2	7
Importance of the intention	50	5,18	1.72	1	7

The analysis of attention, difficulty, the importance of the intention and reliability of estimations did not show any differences between primed conditions, $p > .05$. However, enjoyment of the study showed significant differences between abstract and concrete mindset, $p = .017$. Individuals in the abstract mindset (M =5.37, SD = 1.04) found task more boring than individuals in the concrete mindset (M = 4.92, SD = .84).

Overall, in this experiment, none of the hypotheses were supported. Only the result of the first hypothesis was statistically significant as the opposite direction. To minimize the effects of extraneous variables, some variables (see Table 14) were controlled. However, the enjoyment of the task was differed according to the construal level. The results and limitations of this experiment will be presented in the discussion section.

2. STUDY II

2.1. Demographic Characteristics of Participants

Prior to the major analyses, descriptive statistics were conducted. Based on the demographic information form, age, gender, socio-economic status, education of parents, financial satisfaction of households, whether participants have any psychological disorder, usage of psychiatric and sleeping pill, and general sleep patterns of the participant were evaluated.

In total, statistical analyses were performed with 108 participants. The ages of the participants ranged from 19 to 29 and the mean age was 21.36 years (*SD* =1.56). The demographic information of the participants showed that the gender distribution of the sample is 75.9 % female (*N* =82) and 24.1% male (*N* =26). The mean of the general sleeping time of the participants was7.43 (*SD* =1.06) and the mean of sleeping time on the day they participated in the study was 6.75 (*SD* =1.80). The father's educational status of the participants was 3.7% literate, 20.4% in elementary school, 20.4% in secondary school, 21.3% in high school, 9.3% in Vocational/technical school (2 years), 18.5% in Bachelor's degree, 12.8% in Master degree and 3.7% in Doctoral degree. The mother's educational status of the participants was 2.8% illiterate, 3.7% in literate, 38% in elementary school, 20.4% in secondary school, 25% in high school, 2.8 % in Vocational/technical school (2 years), and 7.4% in Bachelor's degree. The participants reported their socioeconomic status as 5.6% low, 80.6% middle, and 13.9% high. The information about the sample group is given below in Tables 15, 16, 17, 18, and 19.

Table 15. Demographic variables (gender)

	N	*%*
Woman	82	75.9
Man	26	24.1
Total	108	100

Table 16. Demographic variables (education level of mother)

	N	*%*
Illiterate	3	2.8
Literate	4	3.7
Primary School	41	38
Secondary School	22	20.4
High School	27	25
Vocational/technical school (2 years)	3	2.8
Bachelor's degree	8	7.4
Total	108	100

Table 17. Demographic variables (education level of father)

	N	*%*
Literate	4	3.7
Primary School	22	20.4
Secondary School	22	20.4
High School	23	21.3
Vocational/technical school (2 years)	10	9.3
Bachelor's degree	20	18.5
Master's degree	3	2.8
Doctoral degree	4	3.7
Total	108	100

Table 18. Demographic variables (socioeconomic status)

	N	*%*
Low	6	5.6
Middle	87	80.6
High	15	13.9
Total	108	100

Table 19. Demographic variables

	N	*Mean*	*SD*	*Min.*	*Max.*
Age	108	21.36	1.56	19	29
Financial Satisfaction	108	6.25	1.78	1	10
General Sleeping Hour	108	7.43	1.06	5	11
Daily sleeping hour	108	6.75	1.80	0	11

2.2. Time Estimation Results According to the Construal Level

To test whether there is a significant difference between the abstract mindset and concrete mindset on the duration estimation of the completed task, a Mann-Whitney U test was performed. The results showed that there was no statistically significant difference between the concrete mindset and abstract mindset, U=1394, p=.702. The results of the analysis did not support the hypotheses in the context of this experiment. The results of the analysis are given below in Table 20.

Table 20. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Abstract Mindset	56	55.61	3114	1394	-.383	.702
Concrete Mindset	52	53.31	2772			
Total	108					

2.3. Time Estimation Results According to the Intentionality

To test whether there is a significant difference between the intentionality and the control condition on the duration estimation of the completed task, a Mann-Whitney U test performed. The results showed that intentionality and control conditions did not show any

differences significantly, *U*=1382.5, *p*=.643. Thereby, the hypothesis was rejected. The results of the analysis are given below in Table 21.

Table 21. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Intentionality	55	53.14	2922.5	1382.5	-.463	.643
Control	53	55.92	2963.50			
Total	108					

2.4. Time Estimation Results According to the Construal Level and Intentionality

The duration estimation of the completed task was analyzed with a 2 (mindset: concrete vs. abstract) x 2 (intentionality vs. control) ANOVA. According to the results, the main effect of intentionality was not found. There was no significant difference between individuals in the intentionality condition (*M*= 8.64) and control conditions (*M*=10.15), $F_{(1-104)}$ =1.235, *p*=.269. Accordingly, no significant main effect of construal level was observed on duration estimation of the completed task. It was found that there was no significant difference according to the concrete mindset (*M*=8.97) and abstract mindset (*M*=9.81), $F_{(1-104)}$ =.382, *p*=.538. Finally, the interaction effect between construal level and intentionality was not significant, $F_{(1-104)}$ =2.549, *p*=.113. The results of the analysis did not support the hypotheses in the context of this experiment. The results of the analysis are given below in Tables 22 and 23.

Table 22. ANOVA results for duration estimation

	Intentionality			Control			Total		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
Abstract Mindset	29	7.98	4.05	27	11.65	10.87	56	9.75	8.22
Concrete Mindset	26	9.30	4.63	26	8.65	6.56	52	8.97	5.63
Total	55	8.60	4.35	53	10.18	9.06	108	9.37	7.07

Table 23. ANOVA results for duration estimation

	df	*Mean square*	*F*	η^2
Intentionality	1	61.161	1.235	.012
Construal Level	1	18.905	.382	.004
Intentionality*Construal Level	1	126.217	2.549	.024
Error	104			

2.5. Deviation Results According to Construal Level

To test whether there is a significant difference between the abstract mindset and concrete mindset on the deviation between the time estimation and real duration of the task, a Mann-Whitney U test was performed. The results showed that there was no statistically significant difference between the concrete mindset and abstract mindset, U=1321.50, p=.408. Thereby, the hypothesis was rejected. The results of the analysis are given below in Table 24.

Table 24. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Abstract Mindset	56	52.10	2917.50	1321.50	-.827	.408
Concrete Mindset	52	57.09	2968.50			
Total	108					

2.6. Deviation Results According to the Intentionality

To test whether there is a significant difference between the intentionality and control condition on the deviation between the time estimation and real duration of the task, a Mann-Whitney U test was performed. It was found that intentionality and control conditions did not show any significant differences U=1336.5, p=.457. The results of the analysis did not support any of the hypotheses in the context of this experiment. The results of the analysis are given below in Table 25.

Table 25. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Intentionality	55	56.70	3118.50	1336.50	-.744	.457
Control	53	52.22	2767.50			
Total	108					

2.7. Deviation Results According to Construal Level and Intentionality

The deviation between the time estimation and real duration of the task were analyzed with a 2 (mindset: concrete vs. abstract) x 2 (intentionality vs. control) ANOVA. According to the results, the main effect of intentionality was not found. There was no significant difference between individuals in the intentionality condition (*M*= -4.63) and control conditions (*M*=-6.59), $F_{(1-104)}$ =2.068, *p*=.153. Accordingly, no significant main effect of construal level was observed on the deviation between the time estimation and real duration of the task. It was found that there was no significant difference according to the concrete mindset (*M*=-4.99) and abstract mindset (*M*=-6.22), $F_{(1-104)}$ = .815, *p*=.369. Finally, the interaction effect between construal level and intentionality was not significant $F_{(1-104)}$ = 2.154, *p*=.145. Thereby, the third hypothesis of this experiment was rejected. The results of the analysis are given below in Tables 26 and 27.

Table 26. ANOVA results for deviation

	Intentionality			Control			Total		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
Abstract Mindset	29	-4.24	4.61	27	-8.21	10.73	56	-6.15	8.32
Concrete Mindset	26	-5.01	4.76	26	-4.97	6.54	52	-4.99	5.66
Total	55	-4.60	4.65	53	-6.62	8.99	108	-5.59	7.16

Table 27. ANOVA results for deviation

	df	*Mean square*	*F*	η^2
Intentionality	1	104.07	2.068	.020

Construal Level	1	40.99	.815	.008
Intentionality*Construal Level	1	108.40	2.154	.020
Error	104	50.31		

2.8. The Results for Correlations

To test the relationship between subjective time perception and the duration estimation of the completed task, a Spearman's correlation test was performed. The results showed that there was no significant relationship between the subjective time perception and the duration estimation p=.248, r = -.112. Besides, there was no significant relationship between the subjective time perception and the deviation between the time estimation and real duration of the task p=.611, r= .050. Furthermore, there was a significant relationship between the deviation between the time estimation and real duration of the task and the time estimation p=.047, r= -886. According to the results, none of the hypotheses were supported. The results of the analysis are given below in Table 28.

Table 28. The Results for Spearman's Correlations

	1.	2.	3.
1.Time Estimation	1	-.112	-.886**
2. Subjective Time Perception		1	.050
3. Deviation between the time estimation and real duration			1

*p<.05, ** p<.01

2.9. Results for the Control Questions

To minimize the effects of extraneous variables, some variables (see Table 29) were

controlled. Therefore, at the end of the study, participants rated their attention to the study, enjoyment of the study, how difficult the study, importance of the intention, and reliability of their estimations on a 7-point Likert scale. High scores indicated boringness and difficulty of the study, participants' attention, reliability of their estimation, and the importance of the intention. The information about the descriptive results is given below table in 29.

Table 29. Descriptive results for the control questions

	N	*Mean*	*SD*	*Min. (1)*	*Max.(7)*
Enjoyment	108	5.38	.93	3	7
Difficulty	108	2.39	1.49	1	7
Attention	107	5.97	.89	3	7
Reliability of estimation	107	5.10	1.03	1	7
Importance of the intention	53	5.71	1.27	1	7

According to analysis of attention, difficulty, the importance of the intention and reliability of estimations did not show any differences between primed conditions, $p > .05$. Overall, in this experiment, none of the hypotheses were supported. The results and limitations of this experiment will be presented in the discussion section.

3. STUDY III

3.1. Demographic Characteristics of Participants

Prior to the major analyses, a manipulation check was tested. The correlation between the judges' coding was significant, p=.000, r=.95. Then, descriptive statistics were conducted. Based on the demographic information form, age, gender, socio-economic status, education of parents, financial satisfaction of households, whether participants have any psychological disorder, usage of psychiatric and sleeping pill, and general sleep patterns of the participant were evaluated.

In total, statistical analyses were performed with 44 participants. The ages of the participants ranged from 19 to 27 and the mean age was 22.20 years (*SD* =1.73). The demographic information of the participants showed that the gender distribution of the sample is 47.7 % female (*N* =21) and 52.3% male (*N* =23). The mean of the general sleeping time of the participants was 7.61 (*SD* =1.51) and the mean of sleeping time on the day they participated in the study was 7.07 (*SD* =2.07). The father's educational status of the participants was 2.3% literate, 36.4% in elementary school, 25% in secondary school, 34.1% in high school, and 2.3% in Doctoral degree. The mother's educational status of the participants was 6.8% illiterate, 6.8% in literate, 27.3% in elementary school, 20.5% in secondary school, 34.1% in high school, 2.3% in Vocational/technical school (2 years), and 2.3% in Bachelor's degree. The participants reported their socioeconomic status as 4.5% low, 63.6% middle, 22.7 % high and 9.1% very high. The information about the sample group is given below in Tables 30, 31, 32, 33, and 34.

Table 30. Demographic variables (gender)

	N	*%*
Woman	21	47.7
Man	23	52.3
Total	44	100

Table 31. Demographic variables (education level of mother)

	N	*%*
Illiterate	3	6.8
Literate	3	6.8
Primary School	12	27.3
Secondary School	9	20.5
High School	15	34.1
Vocational/technical school (2 years)	1	2.3
Bachelor's degree	1	2.3
Total	44	100

Table 32. Demographic variables (education level of father)

	N	*%*
Literate	1	2.3
Primary School	16	36.4
Secondary School	11	25
High School	15	34.1
Doctoral degree	1	2.3
Total	44	100

Table 33. Demographic variables (socioeconomic status)

	N	*%*
Low	2	4.5
Middle	28	63.6
High	10	22.7
Very high	4	9.1
Total	44	100

Table 34. Demographic variables

	N	*Mean*	*SD*	*Min.*	*Max.*
Age	44	22.20	1.73	19	27
Financial Satisfaction	44	6.65	1.99	1	10
General Sleeping Hour	44	7.61	1.51	4	12
Daily sleeping hour	44	7.07	2.07	3	14

3.2. Time Estimation Results According to Construal Level

To test whether there is a significant difference between the abstract mindset and concrete mindset on the estimation of the duration of an activity, a Mann-Whitney U test was performed. The results showed that there was no statistically significant difference between the concrete mindset and abstract mindset, $U = 183$, $p = .178$. Thereby, the main hypothesis of this experiment was rejected. The results of the analysis are given below in Table 35.

Table 35. Mann-Whitney U results

	N	*Mean Rank*	*Sum of Ranks*	*U*	*Z*	*p*
Abstract Mindset	20	25.35	507	183	-1.346	.178
Concrete Mindset	24	20.13	483			
Total	44					

3.3. Correlation between Subjective Time Perception and Time Estimation

To test the relationship between subjective time perception and estimation of duration of an activity, a Spearman's correlation test was performed. The results showed that there was no significant relationship between the subjective time perception and the time estimation, p=.392, r = -.132. The results of the analysis are given below in Table 36.

Table 36. The Results for Spearman's Correlations

	1.	2.
1.Time Estimation	1	-.132
2. Subjective Time Perception		1

3.4. Results for the Control Questions

To minimize the effects of extraneous variables, some variables (see Table 37) were controlled. Accordingly, at the end of the study, participants rated their attention to the study, enjoyment of the study, how difficult the study, the importance of the intention and reliability of their estimations on a 7-point Likert scale. High scores indicated the boringness and difficulty of the study, participants' attention, and reliability of their estimation. The information about the descriptive results is given below table in 37.

Table 37. Descriptive results of control questions

	N	*Mean*	*SD*	*Min.(1)*	*Max.(7)*
Enjoyment	44	2.54	1.42	1	6
Difficulty	44	2.72	1.33	1	5
Attention	44	6.11	1.16	1	7
Reliability of estimation	44	5.34	1.27	2	7

According to analysis, attention, difficulty, the importance of the intention and reliability of estimations did not show any differences between primed conditions, p > .05. Overall, in

this experiment, none of the hypotheses were supported. The results and limitations of this experiment will be presented in the discussion section.

CHAPTER 4

DISCUSSION

In this thesis, it was planned to examine the perception of time in the context of construal level and intentionality. Furthermore, subjective time perception of participants was evaluated whether it was related to duration estimation. Accordingly, three different experiments were conducted to investigate the role of construal level and intentionality. The first study focused on how long the participants will complete the task. The importance of the first study was the contributions of the planning fallacy. The planning fallacy is an important subject for both practical and theoretical reasons. Studies showed that the duration estimation of the planning is mainly due to the cognitive characteristics of how individuals form the scenarios (Kahneman & Lovallo, 1993). There are studies showing that mindset and the purpose or incentives given in the task, which are called in this thesis as intentionality, are effective in the duration estimation for an activity that individuals make in their planning processes (Buehler et al., 1997; Bayram, 2018). However, the results of this experiment did not support any of the hypotheses.

Besides, the second study focused on the duration estimation of the completed task of participants and the deviation between the time they actually completed the task and the time they estimated. It is a more complex and comprehensive process to estimate the time in a task that is just planned or has not been completed. However, time estimation for a completed task is simpler and less biased. Estimating the duration of the task may cause over or underestimation, while estimating the completion time of the task often reveals the underestimation (Roy et al., 2005). Based on this information, it was aimed to examine whether the mindset and intentionality lead to a difference in the duration estimation of the completed task and the deviation between the time estimation and real duration of the task. However, none of the hypotheses were supported.

Lastly, the third study is conducted to verify previous studies without intentionality condition. It was aimed to examine whether the mindset leads to any difference in the duration estimation for an activity. However, the results of this experiment did not support any of the hypotheses. For each study, the discussion sections and the possible variables that are likely to

affect the results are presented below.

1. Study I

This study was conducted to examine whether the mindset and intentionality lead to differences in the estimation of the duration of an activity. It was predicted that an abstract mindset would increase the duration estimation for an activity and the individuals who are given the intentionality would make more realistic time estimation. Besides, it was expected that mindset and intentionality would have an interaction effect in the estimation of the duration of an activity. In addition, it was expected that subjective time perception of individuals would be related to duration estimation. However, the results of the analysis did not support any of the hypotheses in the context of this experiment.

The first hypothesis of this experiment was that individuals in the concrete mindset should predict a shorter time period than the individuals in the abstract mindset. It was concluded that different mindsets lead to differences in the estimation of duration of the activity, but this was in the opposite direction of the hypothesis. Participants in the concrete mindset made longer estimates than those in abstract mindset. Although the finding that differences in the mindset differed in the estimation of duration of the activity was consistent with the literature, previous studies showed that participants in the abstract mindset perceived the time as larger and superficial (Siddiqui et al., 2014). Besides, participants in the abstract mindset made more realistic time estimates. However, the participants in the concrete mindset showed that they focus only on the task assigned and that they often ignore potential obstacles, experiences, or real-life conditions. Thereby, they often fall into planning fallacy (Kanten, 2011).

Although there are many different approaches and studies on Construal Level Theory, few studies showed that mindset is universal (Messervey, 2008). According to the studies, there are cultural differences in mindset (Yates, Lee, Shinotsuka, Patalano, & Sieck, 1998). The fact that Eastern cultures are more context-oriented than Western cultures, that they have dependent self-construal and past and future-time orientations showed that they have differences in their mindsets (Nisbett, Peng, Choi, & Norenzayan, 2001). There are strong theoretical reasons that show that CLT cannot be generalized in Eastern Asia, especially for the Chinese. For example, studies related to person representation on the construal level indicated that Eastern Asians think less abstract than Westerners do (Maass, Karasawa, Politi, & Suga, 2006). In a study which individuals were asked to define a target group or an individual, the answers of the participants were classified as from the least abstract to the

more abstract according to the Linguistic Categorization Model. According to the results, it was concluded that Italians used more abstract words than Japanese while making inferences about the target group or an individual. Also, in another study, Americans made more spontaneous interpretations while making inferences about the target group or individual (Newman, 1991). As a result, individuals' self-construal, temporal orientations, and their focus on context are affected by their culture. Therefore, considering the temporal, social, and spatial dimensions of the Construal Level Theory, it is thought that cultural variables should be taken into consideration when designing the studies related to CLT. Western and Eastern cultures differ in many social psychological aspects especially as being intracultural and intercultural. In fact, intercultural differences are greater than differences within cultures (Choi, Nisbett, & Norenzayan, 1999). It is thought that the result of this experiment is consistent with the literature but the opposite result may be due to cultural differences.

In addition to cultural differences, the results may be due the manipulation method of construal level. There are different methods using mindset manipulation such as word categorization task, category exampler task or dimensions of psychological distance. It is thought that using different methods might show different results. It is also suggested that, studies conducted with different dimensions of psychological distance should be deeply investigated.

The second hypothesis of this experiment was that the participants who have the purpose in task would take the task more seriously, would be more motivated and take more realistic steps for the project. So, it was expected that they would make more realistic duration estimates for the activity than the control group does. However, the hypothesis was rejected. According to the results of the control questions for the importance of the intentionality, the intentionality was important for the participants, but it did not show a sufficiently effective result for the duration estimation for the activity. According to Bayram (2018), in order to create a sense of responsibility and motivation, emphasizing the importance of the participants' participation in the study could have effects on the results of the study. The results showed that emphasizing the importance of participation in the study, the motivated group thought more about the task and spent more time on the task. However, the hypothesis of this experiment did not show consistent results with the literature.

According to Buehler et al. (1994), planning fallacy has motivational and cognitive resources. Any incentives related to the task given to the participant are one of the motivational factors. Motivational factors lead participants to have more optimistic thinking.

Thus, participants tend to ignore potential obstacles. In a study conducted by Buehler et al. (1997), motivation given to the participants for the duration estimation for an activity, lead them to make shorter time estimates than those participants not given any motivation. As a result, the motivational factors given to the participants either may create a sense of responsibility or create wishful thinking in order to reach the incentive as soon as possible. Therefore, it is important to make this distinction more salient for participants.

The third hypothesis of this experiment was that the mindset and intentionality would have interaction on time estimation. However, according to the results, there was no interaction effect between mindset and intentionality. Lastly, there was no relationship between subjective time perception and the estimation of the duration of the activity. Thereby, the hypotheses were rejected.

Individuals perceive, interpret, and understand their social worlds by developing mental arrangements in which information goes beyond knowledge and fills in the gaps. Thus, the same situation can be understood in many ways. In studies related to time, the perception of time, the importance of deadline, and the temporal orientation are evaluated with multiple variables. However, it is seen that different variables cause different results in different cultures. In Western cultures, time is perceived more linearly and as a process with specific a beginning and an ending point (Messervey, 2008). In other words, in Western cultures, individuals are guided by their lives, especially when planning, through goals, milestones, and deadlines. However, in Eastern cultures, time is perceived as more cyclical and infinite. Therefore, it is important to do the work in a more accurate and flawless harmony rather than on time (Brislin & Kim, 2003). With reference to this information, it is inevitable that cultural differences shown in the temporal perspective will be effective in the planning process.

Since ancient times, the concept of time has been discussed. From these discussions, it has been seen that there is more than a one-time concept for a living. Zherebin, et al. (2015) discuss the concept of subjective time in detail and mentioned that there might be separate time perceptions that are not unique only to individuals but also to societies, nations, and families. Time perception is fictional and historical. Each period and each culture has its own understanding of time (Öztürk, 2011). Especially in Turkish culture, there are two different concepts which are "zaman" and "vakit", used to describe time. "Zaman" expresses the time measured, on the other hand, "vakit" is used to describe a particular moment and experience (Önalan, 2016) whereas translation of both words into English language is "time".

While taking the previous paragraph into consideration, during the process of making

plans, it is crucial to check whether completing the task on time is important for individuals, as much as cognitive factors and strategies. Furthermore, the concept of time should be clearly defined in order to help individuals with the process of making plans. It is thought that due to ignoring these factors which are differences in time perception, the importance of deadline and the definition of time, the hypotheses of this experiment were rejected.

Besides the topics discussed above, present, past, and future time-oriented cultures are clearly distinguished. Present-oriented cultures focus on the day rather than what happened in the past or what will happen in the future. While past-oriented cultures are traditional and tend to be dependent on their family traditions, future-oriented cultures focus on strategies and future successes. Research shows that East Asian and Westerners have different understandings and perceptions of time. For example, the Chinese have the belief that time is cyclical, that every end is a new beginning. Moreover, the Chinese give more importance to the past and the future than to the Westerners do. However, there is a tendency for Westerners to see time linearly and progressively (Ji, Guo, Zhang, & Messervey, 2007). Considering of the temporal orientations of cultures, the claim of the temporal distance, which is that the distant future is perceived as abstract and the near future is perceived as concrete (Bar-Anan et al., 2007), becomes controversial. According to Trope and Liberman (2010), different types of psychological distance could be used interchangeably. Therefore, the interchangeability of these dimensions should be re-evaluated. Overall, it is thought that the impact of cultural differences on the variables used in this experiment may be effective in the hypotheses not being supported.

There are many extraneous variables affecting the perception of time, as well as the variables in this experiment. As known from the previous studies, the complexity of the task (Siddique et al., 2014), primary goal, motivational focus, task difficulty, the confidence of estimation and attention (Kanten, 2011) are the variables effective in the duration estimation for a task. Any of these variables might change the results or the direction of the hypothesis. Therefore, in this experiment, participants' thoughts about the study, the difficulty of the task, participants' confidence in their estimations, and how many hours the participants have slept the day that experiment conducted were controlled. The analysis of attention, difficulty, importance of the intention and reliability of estimations did not show any differences between primed conditions. However, the enjoyment of the study showed significant differences between abstract and concrete mindset. This suggests that the enjoyment of the study may have affected the results as an external variable.

2. Study II

This study focused on how actualizing a task, following the mindset and intentionality, will affect the estimation process. Studies on time perception are generally carried out as duration estimation for a given task or project. However, it is a more complex and comprehensive process to estimate time in a planned or uncompleted task. According to studies, time estimation for a completed job is simpler and less biased. Estimating the duration of a given task may have consequences such as overestimation or underestimation. However, the duration estimation of a completed task usually results in underestimation (Roy et al., 2005). Therefore, this study was conducted to examine whether the mindset and intentionality lead to differences in the duration estimation of the completed task. Besides, the deviation between the time estimation and the real duration of the task was also examined. It was predicted that the mindset and intentionality lead to differences in the deviation between the time estimation and real duration of the task. In addition, it was expected that mindset and intentionality would have an interaction effect in the duration estimation of the completed task and the deviation between the time estimation and real duration of the task. However, the results of the analysis did not support any of the hypotheses in the context of this experiment.

In the literature, as far as is known, there was no study investigating the role of construal level and intentionality in estimating the duration of the completed task. Therefore, the results of this study are thought to shed light on the literature. The hypothesis of this study has been formed based on the studies conducted on duration estimation for an activity. However, the time estimation of the completed task did not differ according to the mindset and intentionality. In addition, there was no interaction effect between the mindset and intentionality in the duration estimation of the completed task. To conclude, none of the hypotheses were supported.

As the results of the previous studies suggest, the participants in the abstract mindset make more realistic duration estimations than the participants in the concrete mindset do (Kanten, 2011). Therefore, it was expected that the deviation between the time estimation and real duration of the task would be lower for the participants in the abstract mindset than the participants in the concrete mindset. However, there was no significant difference between concrete and abstract mindsets. Although all the materials used in this experiment were the same as the Study I, the reason why there was no difference in the mindset in this study could be because of the fact that the effect of the manipulation would be weakened as the

participants completed the task before the estimation. Besides, even though the intentionality has importance for the participants as in the previous study, it did not show any difference in duration estimation and in the deviation between the time estimation and real duration of the task.

Furthermore, it was expected that the mindset and intentionality would have interaction on the deviation between the time estimation and the real duration of the task. However, according to the results, there was no interaction effect between mindset and intentionality. Lastly, the subjective time perception was not related to both the duration estimation and the deviation between the time estimation and the real duration of the task. To conclude, none of the hypotheses were supported.

In order to control of the extraneous variables, participants rated their attention to the study, enjoyment of the study, the difficulty level of the study, the importance of the intention, and reliability of their estimations. According to analysis, attention, difficulty, the importance of the intention and reliability of estimations did not show any differences between primed conditions

The temporal distance, which is one of the types of psychological distance, leads individuals to produce abstract future representations that do not contain low-level information. CLT states that individuals who adopt a distal temporal perspective tend to see more abstract and less contextual information than individuals who adopt a proximal temporal perspective (Trope & Liberman, 2010). However, CLT studies on the subject were largely limited to the Western sample. In other words, the larger temporal distance leads to more abstract thinking of the Westerners and this result is accepted. Since temporary perspectives are influenced by culture, it is important to test clearly whether CLT could be applied to non-Westerners. In particular, it is not clear whether CLT is equally valid for the Chinese as well for Westerners (Messervey, 2008).

Construal Level Theory supports the idea that some cultures represent the distant future more abstract than the near future. However, studies on culture and time perception show that the Chinese tend to see the past and the future closer to date than Canadians do (Ji et al., 2007). When considered in terms of temporal distance, the Chinese may have a weaker time effect than the Canadians have. The Chinese may more likely to perceive the near and distant information as similar. Hence, it is seen that mindset is not very generalizable especially from a temporal distance perspective (Messervey, 2008). According to the theory, the fact that one dimension of psychological distance is active would be sufficient to trigger

concrete and abstract mindsets. In other words, different types of psychological distance could be used interchangeably for construal level manipulations (Bar-Anan et al., 2006). However, the fact that past, future, and present time distinctions are very close to or dependent on each other in some cultures suggest that the functionality of temporal distance is controversial. In addition, it is thought that the relatedness of the four dimensions of the psychological distance should be re-evaluated.

3. Study III

This experiment was conducted to verify previous studies without intentionality condition. Even if intentionality was important for the participants in the previous studies, it did not show sufficiently effective results. Therefore, in this experiment, the intentionality variable was removed from the study. This experiment was designed as similar to the previous studies to verify the results. Because, considering the previous two studies, it is seen that mindset showed different results in the first two experiments. It was predicted that the concrete and abstract mindsets will differ in the duration estimation for the activity. However, no significant differences were found between concrete and abstract mindset. The results were not consistent with the literature and the results of the first experiment. Although the methodology was the same as in the first study, it is thought that the different results were found because of the different sample or the difference of the room where the experiment was carried out. In order to control of the extraneous variables, participants' attention to the study, enjoyment of the study, the difficulty level of the study, the importance of the intention, and reliability of their estimations were evaluated. According to analysis, attention, difficulty, the importance of the intention and reliability of estimations did not show any differences between primed conditions.

The sample of this study, unlike the other two studies, consisted of students from Istanbul Haliç University. It is a private university and participation in the study was based on voluntariness. Although the sample consisted of university students as in previous studies and students' have similar demographic structures, the evaluation of the socioeconomic background is thought to be effective in understanding the results.

In addition to the previous two experiments, a manipulation check for the mindset was carried out. By reason of different results of the hypotheses, that mindset will lead to differences in the duration estimation; it was thought that it is necessary to check manipulation. Since, the hypotheses which are based on the mindsets' effect on the duration estimation showed different results. In the results of the first experiment, different mindsets

lead to differences in the estimation of duration of the activity, but this was in the opposite direction of the hypothesis. Furthermore, in the results of the second experiment, different mindsets didn't lead to differences in the duration estimation of the completed task and the deviation between the time estimation and real duration of the task.

Mindset priming method, which is one of the most commonly used and most effective manipulations (Fujita & Roberts, 2010) in the literature, was used in all three experiments. However, the lack of significant results in two of the three experiments performed by the same manipulation method may indicate that the method of manipulation may not be strong enough, due to the different results within the same study and sensitivity to environmental factors (e.g. sample, culture, distance, etc.). Besides, it is suggested that studies conducted with different manipulation methods should be deeply investigated.

CONCLUSION

In recent years, Construal Level Theory has become a center of interest in the context of social cognitive studies. However, studies on this subject in Turkey are indeed very limited. Therefore, it is thought that this thesis could be considered as a quite important study with Turkish sample. It is thought that studies on Construal Level Theory in Turkish culture should be increased.

In this research, there are some findings that are thought to contribute significantly to both mindset and time perception literature, especially planning fallacy. The planning fallacy is an important subject for both practical and theoretical reasons. Inaccurate time estimates may cause economic, social, and personal costs. The results correspond with the literature that different mindsets lead to differences in the estimation of time, albeit only in one experiment. It is thought that more comprehensive studies will shed light on the subject. Furthermore, the mindset manipulation methods should be deeply studied in order to see whether these are sufficiently effective for Turkish culture.

In addition, the findings of the study did not coincide with the findings that the intentionality was effective in minimizing the error in the planning fallacy. It is thought that motivational reasons given to the participants should be considered more extensively and individuals should be presented with generalizable objectives.

However, there are some limitations of the research. The first two of the experiments were conducted at AYBU and the third at Istanbul Haliç University. The first two experiments were conducted at the state university and the participants were given additional points in one of their classes as they participated in the study. The third study was conducted in a private university and based on voluntariness. The third study was conducted to verify the previous studies. However, it is considered that conducting an experiment in a different context could affect the results. Due to the school's facilities, the third study was carried out in a classroom, not in a laboratory environment. This is thought to be a limitation that may affect the results of the third study.

In the previous studies, it was found that familiarity of the task to the participants was influential in the estimation of the duration for an activity (Hansen & Trope, 2013). Therefore, the task given to the participants was presented as an academic project. However, since the

academic motivation of each student may not be the same, it is inevitable that the intentionality factor is not effective for the duration estimation. Therefore, if the intentionality given to the participants will be an academic incentive (e.g. the course achievement or academic motivation), the underlying motivational factors should be considered.

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APPENDICES

APPENDIX A

BİLGİLENDİRİLMİŞ ONAM FORMU

Değerli katılımcı, bu çalışma Ankara Yıldırım Beyazıt Üniversitesi Psikoloji Bölümünde Yrd. Doç. Dr. Gülten Ünal danışmanlığında yüksek lisans yapmakta olan Şeyma Sevgican tarafından yürütülen bir tez çalışmasıdır. Çalışmanın amacı bireylerin bilişsel yorumlama düzeyleri ve sağlıklı kalma alışkanlıkları hakkında bilgi toplamaktır. Araştırmanın süresi 15-25 dakika arasında değişmektedir.

Çalışmaya katılım tamamıyla gönüllülük esasında olmalıdır. Çalışmada size rahatsızlık verecek hiçbir bilgi bulunmamakta ve kimlik belirleyici hiçbir bilgi istenmemektedir. Bunun yanı sıra, bu çalışmaya katılmak sizin için hiçbir risk barındırmamaktadır. Ancak, çalışma sırasında herhangi bir nedenden dolayı kendinizi rahatsız hissederseniz çalışmadan ayrılmakta serbestsiniz. Böyle bir durumda, araştırmacıya çalışmayı tamamlamak istemediğinizi söylemeniz yeterli olacaktır.

Bu çalışmadan elde edilecek bilgiler tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilerek bilimsel yayınlarda kullanılacaktır. Çalışma sonunda çalışma ile ilgili sormak istediğiniz sorular cevaplanacaktır. Çalışmaya katılımınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak Psikoloji Bölümü öğretim üyesi Yrd. Doç. Dr. Gülten Ünal (Tel: +90 312 906 1456; e-posta: gunal@ybu.edu.tr) ve Psikoloji Bölümü yüksek lisans öğrencisi (e-posta: seymasevgican@gmail.com) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

Tarih İmza

___/___/_____

APPENDIX B

Demografik Bilgi Formu

1- Cinsiyetiniz? Kadın ☐ Erkek ☐ Diğer ☐

2- Doğum yılınız? _____

3- Babanızın eğitim durumu nedir?

☐ Okur-yazar değil
☐ Okur-yazar
☐ İlkokul mezunu
☐ Ortaokul mezunu
☐ Lise mezunu
☐ Yüksekokul mezunu (2 yıllık)
☐ Üniversite mezunu
☐ Yüksek lisans derecesi
☐ Doktora derecesi

4- Annenizin eğitim durumu nedir?

☐ Okur-yazar değil
☐ Okur-yazar
☐ İlkokul mezunu
☐ Ortaokul mezunu
☐ Lise mezunu
☐ Yüksekokul mezunu (2 yıllık)
☐ Üniversite mezunu
☐ Yüksek lisans derecesi
☐ Doktora derecesi

5- Sizce aşağıdaki seçeneklerden hangisi sosyoekonomik düzeyinizi en iyi ifade etmektedir?

☐ Çok düşük
☐ Düşük
☐ Orta
☐ Yüksek
☐ Çok yüksek

6- Hanenizin maddi durumunu ne kadar tatmin edici buluyorsunuz? (*Seçtiğiniz rakamı yuvarlak içine alınız*):

1	2	3	4	5	6	7	8	9	10
Hiç tatmin edici değil									**Son derece tatmin edici**

7- Herhangi bir psikolojik rahatsızlığınız var mı?

Evet ☐ Hayır ☐

8- Genel olarak uyku düzeninizi ele aldığınızda, günde kaç saat uyuyorsunuz? _____

9- Herhangi bir psikiyatrik ilaç kullanıyor musunuz?

Evet ☐ Hayır ☐

10- Uyku ilacı kullanıyor musunuz?

Evet ☐ Hayır ☐

APPENDIX C

Öznel Zaman Algısının Değerlendirilmesi

Zaman algısı özneldir ve kişiden kişiye değişebilir. 1 saatlik süre, bir kişi için kısa iken diğeri için uzun olabilmektedir. Süre, genellikle zaman çizgileri kullanılarak gösterilmektedir. Aşağıda soldan sağa doğru uzanan, ancak belirli bir ölçek veya ölçüm birimi olmayan bir zaman çizgisi bulunmaktadır. Sizden, aşağıdaki çizgiyi temel alarak, size göre bir saatlik sürenin uzunluğunu göstermeniz istenmektedir. Çizgi üzerinde bir saatlik zaman dilimini gösteren doğru veya yanlış bir nokta bulunmamaktadır. Sizden sadece 1 saatlik sürenin sizin için denk geldiği noktayı işaretlemeniz istenmektedir.

APPENDIX D

ZİHİN KURGUSU MANİPÜLASYONU

Neden?

Bu formda sizden bu kutuların her bir basamağını cevaplamanız istenmektedir. İlk adımda "Sağlığınızı geliştirin ve bu durumu koruyun" ifadesine neden sorusunu sorarak cevaplamanız beklenmektedir. Kutular arasında sorulan "Neden?" sorusu, verdiğiniz cevaba yönelik sorulmaktadır. Yani ilk kutudaki soruyu cevapladıktan sonra, verdiğiniz cevaba tekrar "Neden?" sorusunu sormanız ve cevabını bir sonraki kutuya yazmanız beklenmektedir. Her bir basamak için bu işlemi tamamlamanız istenmektedir.

Örneğin: Ders çalışmak yönergesi için izlenecek ilk adım "Neden ders çalışırız?" sorusunu sormaktır. "Başarılı olmak için." cevabını veren bir katılımcı 2. basamak için "Neden başarılı oluruz?" sorusunu soracaktır. Katılımcı verdiği cevaplara neden sorularını sorarak 4 basamağı da tamamlayacaktır.

Neden? ^
Neden? ^
Neden? ^
Neden? ^
Sağlığınızı geliştirin ve koruyun.

Nasıl?

Bu formda sizden bu kutuların her bir basamağını cevaplamanız istenmektedir. “Sağlığınızı geliştirin ve bu durumu koruyun” ifadesine “Nasıl?” sorusunu sorarak cevaplamanız beklenmektedir. Kutular arasında sorulan “Nasıl?” sorusu, verdiğiniz cevaba yönelik sorulmaktadır. Yani ilk kutudaki soruyu cevapladıktan sonra, verdiğiniz cevaba tekrar “Nasıl?” sorusunu sormanız ve cevabını bir sonraki kutuya yazmanız beklenmektedir. Her bir basamak için bu işlemi tamamlamanız istenmektedir.

Örneğin: “Ders çalışmak” yönergesi için izlenecek ilk adım “Nasıl ders çalışırız?” sorusunu sormaktır. “Özet çıkararak.” cevabını veren bir katılımcı 2. basamak için “Nasıl özet çıkarırız?” sorusunu soracaktır. Katılımcı verdiği cevaplara nasıl sorularını sorarak 4 basamağı da tamamlayacaktır.

Sağlığınızı geliştirin ve koruyun.
Nasıl? ↓
Nasıl? ↓
Nasıl? ↓
Nasıl? ↓

APPENDIX E

STUDY I

1. Amaçlı Görev

Düşünün ki, Ankara Yıldırım Beyazıt Üniversitesi, Psikoloji Bölümü'nde bir proje yürütülmesi planlanmaktadır. Bu proje, günü verimli geçirmek adına yapılabilecek aktiviteler üzerinden şekillenecektir. Bu amaç doğrultusunda farklı meslek gruplarına günü verimli geçirmek için neler yapılabileceği sorulmaktadır. Meslek gruplarının yanı sıra öğrencilerin fikirleri de merak edilmektedir. Sizden, bir öğrenci olarak, bir günü verimli geçirmek adına yapılabilecek aktiviteleri yazmayı düşünmeniz istenmektedir. Düşünmeniz esnasında **fikirlerinizin bu projede kullanılacağını** göz önünde bulundurunuz. (Bu sadece bir düşünce görevidir. Fikirlerinizi yazmanız beklenmemektedir.)

***Yukarıda okumuş olduğunuz görevi tamamlamanız sizce ne kadar sürer? Yazınız.**

_____

2. Amaçsız Görev

Düşünün ki, Ankara Yıldırım Beyazıt Üniversitesi, Psikoloji Bölümü'nde bir proje yürütülmesi planlanmaktadır. Bu proje, günü verimli geçirmek adına yapılabilecek aktiviteler üzerinden şekillenecektir. Bu amaç doğrultusunda farklı meslek gruplarına günü verimli geçirmek için neler yapılabileceği sorulmaktadır. Meslek gruplarının yanı sıra öğrencilerin fikirleri de merak edilmektedir. Sizden, bir öğrenci olarak, bir günü verimli geçirmek adına yapılabilecek aktiviteleri yazmayı düşünmeniz istenmektedir. (Bu sadece bir düşünce görevidir. Fikirlerinizi yazmanız beklenmemektedir.)

***Yukarıda okumuş olduğunuz görevi tamamlamanız sizce ne kadar sürer? Yazınız.**

_____

STUDY II

1. Amaçlı Görev

Ankara Yıldırım Beyazıt Üniversitesi, Psikoloji Bölümü'nde bir proje yürütülmesi planlanmaktadır. Bu proje, günü verimli geçirmek adına yapılabilecek aktiviteler üzerinden şekillenecektir. Bu amaç doğrultusunda farklı meslek gruplarına günü verimli geçirmek için neler yapılabileceği sorulmaktadır. Meslek gruplarının yanı sıra öğrencilerin fikirleri de merak edilmektedir. Sizden, bir öğrenci olarak, bir günü verimli geçirmek adına yapılabilecek

aktiviteleri yazmanız istenmektedir. **Katılımcılar olarak sizlerin fikirleri bu projede kullanılacaktır.**

*** Bir günü verimli geçirmek adına yapılabilecek aktiviteleri lütfen aşağıya yazınız.**

Az önce proje ile ilgili tamamladığınız görev sizce ne kadar sürmüştür? Yazınız.

_____

2. Amaçsız Görev

Ankara Yıldırım Beyazıt Üniversitesi, Psikoloji Bölümü'nde bir proje yürütülmesi planlanmaktadır. Bu proje, günü verimli geçirmek adına yapılabilecek aktiviteler üzerinden şekillenecektir. Bu amaç doğrultusunda farklı meslek gruplarına günü verimli geçirmek için neler yapılabileceği sorulmaktadır. Meslek gruplarının yanı sıra öğrencilerin fikirleri de merak edilmektedir. Sizden, bir öğrenci olarak, bir günü verimli geçirmek adına yapılabilecek aktiviteleri yazmanız istenmektedir.

*** Bir günü verimli geçirmek adına yapılabilecek aktiviteleri lütfen aşağıya yazınız.**

Az önce proje ile ilgili tamamladığınız görev sizce ne kadar sürmüştür? Yazınız.

_____

STUDY III

Düşünün ki, Haliç Üniversitesi, Psikoloji Bölümü'nde bir proje yürütülmesi planlanmaktadır. Bu proje, günü verimli geçirmek adına yapılabilecek aktiviteler üzerinden şekillenecektir. Bu amaç doğrultusunda farklı meslek gruplarına günü verimli geçirmek için neler yapılabileceği sorulmaktadır. Meslek gruplarının yanı sıra öğrencilerin fikirleri de merak edilmektedir. Sizden, bir öğrenci olarak, bir günü verimli geçirmek adına yapılabilecek aktiviteleri yazmayı düşünmeniz istenmektedir. (Bu sadece bir düşünce görevidir. Fikirlerinizi yazmanız beklenmemektedir.)

***Yukarıda okumuş olduğunuz görevi tamamlamanız sizce ne kadar sürer? Yazınız.**

_____

APPENDIX F
KONTROL SORULARI

1. Study I

Amaçlı-Kurgusal Görev

1- Çalışmayı nasıl buldunuz?

1	2	3	4	5	6	7
Oldukça keyifli			**Kararsız**			**Oldukça sıkıcı**

2- Senaryoyu hayal etmek ne kadar zordu?

1	2	3	4	5	6	7
Oldukça zordu			**Kararsız**			**Oldukça kolaydı**

3- Yaptığınız tahmine ne kadar güveniyorsunuz?

1	2	3	4	5	6	7
Hiç güvenmiyorum			**Kararsız**			**Çok güveniyorum**

4- Bugün kaç saat uyudunuz? _____

Amaçsız-Kurgusal Görev

1- Çalışmayı nasıl buldunuz?

1	2	3	4	5	6	7
Oldukça keyifli			**Kararsız**			**Oldukça sıkıcı**

2- Senaryoyu hayal etmek ne kadar zordu?

1	2	3	4	5	6	7
Oldukça zordu			**Kararsız**			**Oldukça kolaydı**

3- Yaptığınız tahmine ne kadar güveniyorsunuz?

1	2	3	4	5	6	7
Hiç güvenmiyorum			**Kararsız**			**Çok güveniyorum**

4- Bugün kaç saat uyudunuz? _____

2. Study II

Amaçlı-Gerçek Görev

1- Çalışmayı nasıl buldunuz?

1	2	3	4	5	6	7
Oldukça keyifli			**Kararsız**			**Oldukça sıkıcı**

2- Yaptığınız iş sizin için ne kadar zordu?

1	2	3	4	5	6	7
Oldukça kolaydı			**Kararsız**			**Oldukça zordu**

3- Yaptığınız tahmine ne kadar güveniyorsunuz?

1	2	3	4	5	6	7
Hiç güvenmiyorum			**Kararsız**			**Çok güveniyorum**

4- Bugün kaç saat uyudunuz? _____

Amaçsız-Gerçek Görev

1- Çalışmayı nasıl buldunuz?

1	2	3	4	5	6	7
Oldukça keyifli			**Kararsız**			**Oldukça sıkıcı**

2- Yaptığınız iş sizin için ne kadar zordu?

1	2	3	4	5	6	7
Oldukça kolaydı			**Kararsız**			**Oldukça zordu**

3- Yaptığınız tahmine ne kadar güveniyorsunuz?

1	2	3	4	5	6	7
Hiç güvenmiyorum			**Kararsız**			**Çok güveniyorum**

4- Bugün kaç saat uyudunuz? _____

3. Study III

Lütfen, sizi en iyi ifade eden seçeneği yuvarlak içine alınız.

1- Çalışmayı nasıl buldunuz?

1	2	3	4	5	6	7
Oldukça keyifli			**Kararsızım**			**Oldukça sıkıcı**

2- Senaryoyu hayal etmek ne kadar zordu?

1	2	3	4	5	6	7
Hiç zor değildi						**Oldukça zordu**

3- Çalışmaya ne kadar dikkatinizi verdiniz?

1	2	3	4	5	6	7
Hiç dikkatimi vermedim			**Kararsızım**			**Oldukça dikkatliydim**

4- Yaptığınız tahmine ne kadar güveniyorsunuz?

1	2	3	4	5	6	7
Hiç güvenmiyorum			**Kararsızım**			**Oldukça güveniyorum**

5- Bugün kaç saat uyudunuz? _____