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PRIMING EXPLORATION AND
ENERGY**

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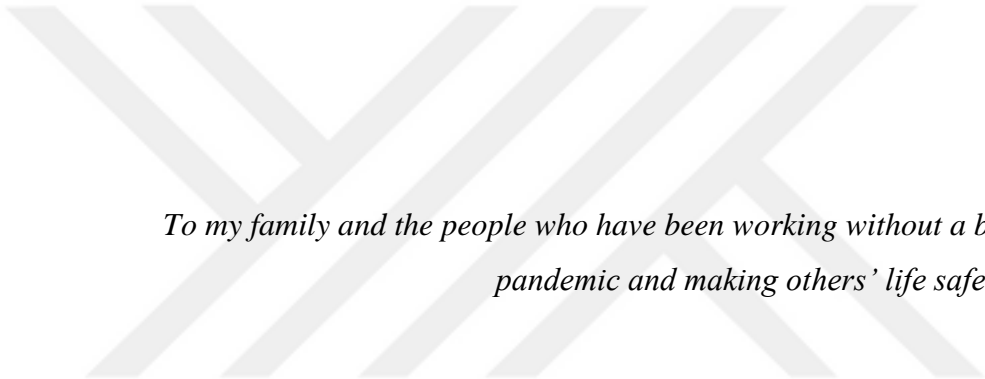
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Adar Cem Lağap

21/06/2022



*To my family and the people who have been working without a break since the
pandemic and making others' life safe and healthy...*

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ABSTRACT

In the current thesis, I directly (study a) and conceptually (study b) replicated the second study published by Luke, Sedikides, and Carnelly (2012) by using the experimental methodology, where they found a significant relationship between attachment security priming and the sense of energy and the exploration. I used convenience sampling to collect data online, and the samples across two studies ($N_{\text{StudyA}}=281$; $N_{\text{StudyB}}=195$) mainly consisted of undergraduate university students. According to the results, there was no empirical support for the mediator role of the energy in the association between secure relationship priming and the sense of exploration. Additionally, energy feeling resulting from the secure relationship priming procedure was not statistically higher than those in the control condition. However, results revealed that secure relationship priming increased people's self-reported sense of security and exploration feelings across two studies. I also found mixed findings regarding the moderator role of the attachment dimensions in the relationship between primings and the exploration measures. Finally, the clarity and vividness of participants' visualizations have significantly explained the variance in the self-report form of exploration. I concluded that I have partially replicated the original article findings' in my direct replication study. Similarly, I have observed partial support for my hypotheses in the conceptual replication. I discussed modifications I have made in the conceptual replication and their implications for attachment security priming studies. Then, I referred to the possible factors that might cause variances in replication studies in general. Lastly, I addressed the concerns related to the operational definitions of energy and the exploration of studies using similar methodologies.

Keywords: Security, Exploration, Energy, Attachment Priming, Direct Replication, Conceptual Replication, Open Science, Attachment Styles.

ÖZET

Yüksek lisans tezi kapsamında yapılan iki deneysel araştırmanın temel amacı Luke, Sedikides ve Carnelley (2012)'in makalesinde yer alan 2. çalışmanın bulgularını tekrarlanabilirlik prensibi açısından ele almaktır. İnsanlardan kendilerini güvende hissettikleri ilişkileri zihinlerinde canlandırmalarını istediklerinde Luke ve arkadaşları (2012) insanların anlamlı bir şekilde kendilerini daha güvende ve enerjik hissettiğini, çevresini keşfetmeye yönelik motivasyonlarının arttığını gözlemlemiştir. Ayrıca yine aynı çalışmada, enerjik hissetme duygularının güvenli bağlanma hazırlama etkisi ile keşif motivasyonu arasındaki ilişkide aracı değişken rolü üstlendiği gözlemlenmiştir. Bu yüksek lisans tezindeki çalışmaların her ikisinde de kolay ulaşılır örneklem metodu kullanılarak çoğunluğu üniversite öğrencilerinden oluşan bir katılımcı havuzundan veri toplanarak Luke ve arkadaşlarının (2012) yapmış olduğu 2. çalışmanın bulgularının tekrarlanabilirliği test edilmek istenmiştir. Katılımcılar iki deneye de Qualtrics isimli çevrimiçi veri toplama aracı yardımıyla katılmışlardır. Araştırma sonuçlarına göre tekrarlanabilirliği sınanan çalışmanın (Luke vd., 2012) bazı bulguları tekrar edilebilmiş, bazıları içinse anlamlı bir sonuç elde edilememiştir. Tezin son kısmında yer alan genel tartışma bölümünde çalışmanın zayıf noktaları, gelecek çalışmalar için sunulan iyileştirmeler ve güncel bulguların yetişkin bağlanma kuramı açısından önemi tartışılmıştır.

Anahtar sözcükler: Güvenli Bağlanma Hazırlama Etkisi, Yetişkin Bağlanma Kuramı, Güvende Hissetme, Enerjik Hissetme, Keşif Motivasyonu, Tekrarlanabilirlik, Açık Bilim.

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LIST OF SYMBOLS

α	Internal reliability score of a measure (i.e., scale, questionnaire)
%	Percentage
p	cut-off value to test the statistical significance of a test
n	sample size
M	sample mean
SD	sample standard deviation
r	correlation coefficient value
X^2	chi-squared
SE	standard error
CI	confidence interval
d	cohen's d (effect size)
η^2	eta squared (effect size)
β	standardized estimate
$1-\beta$	power of a statistical test
H_1	the alternative(research) hypothesis
H_0	the null hypothesis
BF_{10}	bayes factor (plausibility of H_1 compared to H_0)
BF_{01}	bayes factor (plausibility of H_0 compared to H_1)

LIST OF ACRONYMS AND ABBREVIATIONS

SDT: Spot the Differences Task



1. INTRODUCTION

Mysteries of human bonding have been discovered during the last century, and research has flourished mainly in previous decades. One of the most studied topics in human bonding is attachment theory and its' implications (Mikulincer & Shaver, 2016). The scope of the current thesis was to understand the attachment priming effect and its consequences in a different context. Henceforth, the main goal of the first study (study A) was to replicate Luke et al. (2012): second study in a Turkish sample by using the identical methodology (i.e., materials, procedure) as the replicated study. The goal of the second study (study B) was to make a behavioural operational definition of a sense of exploration and try to understand how people's attachment patterns (i.e., avoidance vs anxiety dimensions on attachment measure) might affect the relationship between the security priming and exploration feelings.

To this end, I conducted two preregistered experimental studies to see the effect of security priming on security, energy, and exploration feelings. Thus, the research question of study A was threefold. (i) to see whether people feel more secure, energetic, and motivated to explore after a secure relationship priming compared to a neutral condition, (ii) to examine the association between security feelings, energy, and exploration motivation, (iii), and lastly, energy feelings can indirectly play a role in the association between exploration motivations of people and secure relationship priming. The aim of study B was twofold. (i) to offer a behavioural operational definition of exploration motivations (ii) to understand how chronic attachment patterns of people (i.e., avoidance vs anxiety) interact with the link between secure relationship priming and exploration feelings, measured behaviourally and in a self-report form as in study A.

1.1. Roots of the Attachment Theory

Attachment studies have begun by observing mammalian animals. Harlow (1958) was the first person who reported that the need for love, in the form of safety and comfort, in mammals was essential for the organism's survival, and it is as crucial as food for them. In their famous work, Harlow (1958) and his colleagues observed newborn monkeys separated from their mothers as soon as they were born. To do that, they created an environment mimicking nature (Harlow, 1958). Then, they provided two types of fake mother monkeys to the newborns; one was covered with a soft cloth, and the other was wrapped by wire (Harlow, 1958). Soon after, they discovered that newborns preferred to spend much more time with a soft cloth mother than with a wired one, even in situations where the feeding was supplied by a wired fake mother (Harlow, 1958). These studies constituted preliminary findings pointing out the innate tendency in mammals to maintain a safe and close bond with a caregiver.

Later, Mary Ainsworth and John Bowlby conducted pioneering studies on humans. Thus, they are considered the founders of attachment theory today. After extensive observations on child-mother interactions, Ainsworth classified newborn babies as having two primary dimensions. On the one hand, some infants could safely rely on their mothers and whose mothers were consistently responsive and accessible in times of need (Ainsworth, 1979). On the other hand, some infants were not comfortable depending on their mothers in times of need and were anxious upon separation (Ainsworth, 1979). Therefore, Ainsworth concluded that some babies were securely attached to their mothers, whereas some were insecure (Ainsworth, 1979). Through careful investigations, Ainsworth defined attachment as: “the affectional bond or tie infant form between himself and his mother figure—a bond that tends to be enduring and independent of specific situations” (Ainsworth et al., 1978; p. 302). In addition, she observed that secure infants were likely to be soothed by physical touch in stressful situations. Yet, insecure babies either experience a problem with proximity to the caregiver (i.e., avoidant attachment) or need to keep prolonged physical contact (i.e., anxious attachment) more than secure babies after a stressful situation. (Ainsworth, 1979)., According to Ainsworth, some behaviours

such as eye contact, smiling, approaching, protesting, and proximity seeking with the primary caregiver are all included in the attachment behaviours, which is now considered a behavioural attachment system as a whole (Ainsworth et al., 1978; Gillath et al., 2016). In other words, Ainsworth et al. (1978) pointed out that those behaviours are systematic patterns and subdimensions of a whole behavioural system.

According to Gillath et al. (2016), those behaviours are important because they signal an existing bond between an infant and the caregiver and contribute to actively maintaining the relationship with the caregiver to meet needs. Therefore, a primary caregiver(s) not only provides tangible support to the infant, such as feeding but also constitutes a primary source of emotional support for them (Gillath et al., 2016).

1.2 Attachment Security and Exploration

Bowlby (1973) claimed that particular behaviours activating behavioural systems ultimately contribute to the survival of organisms. In other words, Bowlby claimed that these behaviours are the natural adaptations of organisms to the environment they live (Bowlby, 1973). For example, the sexual behavioural system is activated upon hormone levels increase, contributing to reproduction and gene transmission. On the other hand, caregiving contributes to offspring survival (Bowlby, 1973). In that sense, the behavioural attachment system has critical adaptive value for the organism since it activates the proximity needs towards attachment figure(s) in the environment so that one can protect themselves from dangers and be safe (Gillath et al., 2016). According to Ainsworth et al. (1978), the attachment system is terminated when physical contact with the primary caregiver is established. However, she observed that some toddlers older than 12 months were easily soothed by their mothers' appearance, whereas some were not. During the "Strange Situation Paradigm procedure," Ainsworth et al. (1978) observed an association between children's interest in toys and their attachment behaviour. Based on the systematic observations, she concluded that when children felt threatened, they searched for contact with the caregiver. She named this behavioural pattern "proximity seeking". After children felt safe, however, they started to explore the toys, which supported the secure base function of the attachment figures. That is to say, only if security feelings

provided by the primary caregiver allowed toddlers to discover their environment (Ainsworth et al., 1978; Ainsworth, 1979; Gillath et al., 2016). In other words, the presence of attachment figures gives confidence to the toddlers, and those attachment figures act as a secure base in which toddlers can safely explore their environment by knowing that they can quickly return to their caregivers in times of danger. A similar mechanism exists in adults as well. Adults can also turn to their significant others, such as their romantic partners, as they used to do in childhood, to relieve stress (Gillath et al., 2016). After they feel safe enough, an exploratory behavioural system is activated to enrich the knowledge of the outer world, marked by a concrete exploratory behaviour pattern (Gillath et al., 2016). In that case, adults can expand their knowledge by pushing their limits, thanks to the support they receive from their romantic partners or close friends.

Interestingly, cognitive representations of their attachment figures (i.e., romantic partners, close friends) might be enough for adults to feel secure and motivated to explore their environment. In their review article, Mikulincer and Shaver (2020) investigated the role of close relationships in different contexts; medicine to education, workplace to symbolic parts of life such as religion or group membership. They showed that having a supportive partner/advisor/mentor/boss facilitates a learning environment, decreases disease-related anxiety (in medicine), bolsters self-esteem (believing in God, being a fan of a sports team, etc.), accelerates the adaptation of students to the school environment, and increases the work-efficiency (Mikulincer & Shaver, 2020). In line with those findings, a recent review article also illustrated that mentalizing supportive figures increases positive affect and decreases negativity (Rowe et al., 2020). Consequently, it is neither unreasonable nor impossible to expect a positive link between attachment security and exploration behaviour.

Although the theoretical foundations between exploration and attachment security are well-established, studies empirically looking at this relationship are scarce. In their serial experiments, Elliot and Reis (2003) found supportive evidence that security feelings boosted the need for success and competency in adults. They explained this empirical finding by referring to the association between attachment security and exploration,

where the secure base function of the attachment bond provided a safe harbour for the person and enabled people to explore safely. Other studies also find similar patterns (Aspelmeier & Ken, 2003; Carnelley & Ruscher, 2000; Feeney & Trush, 2010; Green & Campbell, 2000; Heylen et al., 2019). For example, Feeney and Trush (2010) supported the idea that the availability and encouragement of attachment figures (i.e., romantic partners) established a secure base and fostered significantly more adult exploration behaviour in their experimental studies. However, these experimental studies do not directly investigate the effect of attachment security priming on the exploratory behavioural system.

Moreover, they did tackle the operational definition of exploration differently. Therefore, another limitation in the current literature diversity exists in the operational definition of exploration (Xu, 2015). In addition to that, existing studies hardly establish a solid connection between attachment and exploratory behavioural systems, particularly for the attachment security priming methodologies (Aspelmeier & Ken, 2003; Carnelley & Ruscher, 2000; Feeney & Thrush, 2010; Green & Campbell, 2000; Heylen et al., 2019).

As a consequence, one of the main goals of this thesis was to empirically test the relationship between these two behavioural systems, and provide support to one of the basic tenets of attachment theory by using social priming methodology, attachment security priming (Payne et al., 2016; Gillath & Karantzas, 2019).

1.3 Sense of Energy in the Association Between Attachment Security and Exploration

Another essential contribution of this thesis was to offer a third variable in the aforementioned behavioural systems in the light of Broaden and Build Theory (Fredrickson, 2004).

Broaden and Build Theory was developed by Fredrickson (2004) as an alternative proposition to understand the effects of positive emotions. According to the theory, positive emotions expand the capabilities of people and strengthen their psychological

and social resources (Fredrickson, 2004). Therefore, it is different from the role of negative emotions in life (anxiety, fear, disgust), which restrict personal resources (Fredrickson, 2004). Fredrickson (2004) claims that a safe love is one of the positive emotions (2004) people appreciate. He argues that our motivation to explore the environment increases when we sense unconditional love. According to him, love is a mixture of “joy”, “interest”, and “contentment” that broadens our capacity and increases the chance for novel experiences (Fredrickson, 2004). As a result, while negative emotions play a role in our life, such as giving quick and immediate responses to threats (Fredrickson, 2004), positive emotions play a role in self-growth in the long run by allowing people to learn novel skills and challenge self (Fredrickson, 2004).

Although being secure, therefore, can explain positive exploratory outcomes in humans, there is not much said about being vital until Ryan and Fredrick (1997) define the sense of energy as “subjective vitality” (p. 530). In this way, they conceptually differentiated vitality from objective measures of energy feelings, generally measured by caloric intake and indicated by blood glucose level (Stanton et al., 2014). They argued that it is a particular type of aliveness that can only be meaningful in the context of the person (Ryan & Fredrick, 1997). To illustrate, a student and a musician may get exhausted after studying for hours to finish their work. However, while the student might feel less vitality and aliveness, musicians can become even more alive and vital after completing their work. The reason is that a student might not find studying as likeable as a musician, and the student might perceive working as an obligation to get rewards like good grades. On the other hand, a musician might self-actualize themselves after finishing a work of art since they find a way to express their feelings and enjoy independence. As a result, the artist might subjectively evaluate this work of art as an energy-boosting activity, whereas the student could see it as an energy-draining one.

Nix et al. (1999) also tested this subjective conceptualization of energy by creating a task where autonomy feelings were manipulated. They concluded that people who were given volitional choices felt more vital and persistent on the given task than people who were obligated to do something (Nix et al., 1999).

Another important implication of autonomy and its' relation with subjective vitality is the situations where people's sense of agency is hindered. For example, people who experience intense pain or psychological problems such as depression or burn-out feel demotivated, and lack energy since their sense of agency is adversely affected by their situation (Ryan & Frederick, 1997). Put it differently, a person in chronic pain or depression tries to see that external factors control their behaviour, not themselves, where they start to suffer from a lack of autonomy and competency (Ryan & Frederick, 1997). All these rationalizations illustrate that feeling vital or vigorous is only experienced personally, cannot be generalized to every context, and might be intervened. For example, people might likely feel lower subjective vitality when their sense of autonomy, competency, or relatedness is violated (Ryan & Frederick, 1997).

Ryan and Bernstein (2004) also wrote a chapter on vitality in the book named "Character Strengths and Virtues; A Handbook and Classification" (Peterson & Seligman, 2004), where they also defined the concept of vitality and discussed the difference it from mere arousal like excitement, which lacks positivity. In a similar vein, the most precise explanation of vitality was made by Ryan and Deci (2008), who used the Self-Determination Theory to explain it. In that paper, they argued that feelings of aliveness could be enhanced when the need for "autonomy", "competency", and "relatedness" is boosted (Ryan & Deci, 2008).

As a result of these theoretical accounts, it seems that significant others might affect our subjective experience of energy feelings. However, there was not much evidence supporting the idea that a safe relationship could increase subjective vitality, except in the replicated study in this thesis (i.e., Luke et al., 2012). Therefore, another goal of this thesis was to test the possible role of the subjective experience of energy feelings in the relationship between attachment security and exploration motivation in adulthood. With this, I aimed to provide a theoretical explanation of the association between behavioural attachment system and exploration motivations.

In study A, I aimed to directly replicate the second study in Luke, Carnelley and Sedikides's (2012) paper to test the possible indirect role of energy in the link between

behavioural attachment system and exploration motivations. I expected that people's sense of security would lead to an increased subjective sense of energy, according to the Broaden and Build Theory (2004). This increased subjective vitality would lead to increased exploration motivations (Luke et al., 2012).

1.4 Attachment Security Priming

Exposing people to words, pictures or related stimuli for a short time and then measuring the outcome of this exposure is known as priming (Pashler et al., 2012). People respond significantly quicker if a word is given after they are primed with a semantically related word, known as perceptual priming. It is a robust finding due to repeated replications (Pashler et al., 2012). However, some studies argue that similar priming methodologies affect higher-order cognitive abilities such as problem-solving (Mikulincer & Shaver, 2011) or inter-group attitudes such as decreased out-group derogation (Mikulincer & Shaver, 2005). This type of priming methodology is known as the goal or social priming (Pashler et al., 2012).

Nevertheless, this form of priming has created a debate in psychology since some authors have recently claimed that they did not replicate the effects of previous studies. While Pashler et al. (2012) and Doyen et al. (2012) cautioned researchers about the existence of experimenter bias in such priming methodologies, Payne et al. (2016) suggested researchers studying priming should take a different methodological approach and argued that social/goal priming might work only under specific conditions (Doyen et al., 2012). As a consequence of these concerns related to social/goal priming in the literature, another fundamental aim of the current thesis was to test the effectiveness of attachment priming, which can be included in the category of social/goal priming, by conducting two pre-registered studies

Attachment priming is defined as mentally activating specific schemas for a short time and asking some questions upon this activation (Gillath et al., 2016). It works like a domino effect; once activated, it also triggers other associated models in mind about close relationships (Gillath et al., 2016). When it is activated, attachment priming eases

accessing cognitive constructs about relationships in our minds (Förster et al., 2007). The rationale behind this procedure is to temporarily arouse security feelings in people (Gillath et al., 2016). Although the primary rationale is simple, various methods exist (Gillath & Karantzas, 2019).

In some studies, people are primed subconsciously or consciously with the names of their primary attachment figure(s) or some words that are related to security feelings such as (compassion, affection, and safety) (Gillath & Karantzas, 2019). If they are primed consciously, first, the names of the attachment figures are asked. Next, they are directly shown to the participants (Gillath & Karantzas, 2019). It is called “supraliminal priming” (Gillath & Karantzas, 2019). Sometimes however, people are exposed to those stimuli unconsciously, during very brief moments during a puzzle or task in the background that may not be captured consciously; those methods are called “subliminal priming” (Mikulincer et al., 2011; Gokce & Harma, 2018). On the other hand, some methodologies differ from just exposing the names of attachment figures. Sometimes, researchers use some security evoking pictures, such as two people hugging each other or a person who is supporting the other one (Gillath & Karantzas, 2019). Apart from different priming methodologies, researchers may also use guided imagery, where people are asked to visualize a type of person or a relationship to activate some schemas related to typical representations of safe and supported relationships (Bartz & Lydon, 2004; Luke et al., 2012).

According to the internalized working models (Gillath et al., 2016; Gillath et al., 2008; Mikulincer & Shaver, 2016; Mikulincer & Shaver, 2020), people internalize some schemas based on the interactions with their primary caregiver (s) during the pre-verbal period (Gillath et al., 2016; Gillath et al., 2008; Mikulincer & Shaver, 2016; Mikulincer & Shaver, 2020). Those differences in schemas emerge during adulthood, and overall, those distinctions play a significant role in approaching adult relationships. Although people may modify schemas about relationships (Gillath et al., 2016; Gillath et al., 2008; Mikulincer & Shaver, 2016; Mikulincer & Shaver, 2020), they remain as fundamental blocks for perceiving relationships (Gillath et al., 2016; Gillath et al., 2008; Mikulincer & Shaver, 2016; Mikulincer & Shaver, 2020).

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The consequences of attachment priming are diverse. It lessens the importance of condom use by decreasing sexual health threats (Sakaluk & Gillath, 2016), mitigates intergroup discrimination (Mikulincer & Shaver, 2001), diminishes depressed mood and anxiety (Carnelley et al., 2015), decreases negative affect, and enhances positive affect (Rowe et al., 2020), facilitates positive value given to the self (Carnelley & Rowe, 2007), improves problem-solving skills (Mikulincer et al. 2011), accelerates energy and escalates exploration motivation (Luke et al., 2012), alleviates distress after viewing emotionally unpleasant and annoying pictures (Bryant & Chan, 2017), eases negative affect after a traumatic memory (Selcuk et al., 2012), boosts compassion, self-compassion, and pro-sociality (Mikulincer & Shaver, 2005; Mikulincer & Shaver, 2007; Mikulincer et al., 2005). Consequently, the implications of attachment security priming seem to be replicated according to recent reviews (Gillath & Karantzas, 2019; Mikulincer & Shaver, 2020a; Mikulincer & Shaver, 2020b; Row et al., 2020) and a recent meta-analysis (Gillath et al., 2022).

2. STUDY A (DIRECT REPLICATION: ROLE OF ENERGY IN ATTACHMENT SECURITY PRIMING)

Along with the literature, I tried to replicate the second experiment in Luke et al. (2012) paper, which included three experiments. I did not replicate the first experiment as they used attachment security, avoidance and anxiety primings and wanted to understand the effect of different attachment dimension primings (Luke et al., 2012), which was irrelevant considering my research question in the current study. The third experiment was also related to the distinct role of energy. The authors conducted a confirmatory factor analysis to show that the sense of energy significantly differed from the positive valence (Luke et al., 2012). However, in the second experiment, they found a significantly higher energy score among people primed with secure relationships than distant relationship priming (Luke et al., 2012). The results of this particular experiment were in line with my aim in the thesis. Therefore, I directly replicated the second experiment in Luke et al.'s (2012) study.

Another reason for choosing the second experiment was the indirect effect model Luke and her colleagues (2012) claimed related to the sense of energy. They found that the increased energy feelings partially affected the meaningful association between secure relationship priming and the sense of exploration. To the best of my knowledge, this was the first finding empirically explaining the underlying mechanism between security feelings and a sense of exploration by offering the role of energy in this association. Therefore, the findings of Luke et al. (2012): the second study were essential in filling the gap between two crucial behavioural mechanisms, namely attachment and exploration of behavioural systems.

The final reason for choosing to replicate Luke et al.'s (2012): the second experiment was the fact that this study has never been replicated before. Therefore, it increased my concerns about the generalizability of attachment priming methodologies, specifically guided imaginary techniques, in a different context. Published studies are more likely to

be replicated with original authors than by different researchers (Makel et al., 2012), and positivity bias still exists in most international peer-reviewed journals (Makel et al., 2012). Therefore I aimed to replicate the second experiment in Luke et al.'s (2012) paper. With this aim in mind, I also tried to contribute to the open science practices by pre-registering not only study A but also study B in line with the suggestions of Brand and his colleagues (2014) to increase the validity and reliability of replication attempts. (I first contacted with authors of the original article (Luke et al. 2012) and informed them about my replication attempt. The study materials and procedure were conducted following the package provided by Dr Michelle Anne Luke, the first author of the replicated article. Before the experiment, I translated all materials into Turkish (I used the back translation method and carefully checked the measures and manipulations after translation). I pre-registered the study (i.e., method, hypothesis, goal, and data treatment procedures) to the OSF (Open Science Framework before data collection (<https://osf.io/8e3fr/>)).

Hypotheses were identical of authors of the original paper in the second study (Luke et al. 2012), and our pre-registration forms are available at (<https://osf.io/8e3fr/>):

H₁: We hypothesised higher security scores (measured by the Felt Security Scale) among people in the secure relationship prime condition than in the distant relationship prime condition.

H₂: We hypothesised that people who get secure relationship prime would have higher energy and exploration scores than the distant relationship prime condition.

H₃: We hypothesised a significant positive correlation between felt security, energy, and exploration measures scores.

H₄: We hypothesised that the feelings of energy would partly mediate the effect of security on exploration.

3. METHOD

3.1 Participants

I calculated the sample size according to the method proposed by Simonsohn (2015), which Campbell and his colleagues also applied to their replication study when calculating the sample size (Campbell et al., 2018). The sample size in the original study is multiplied by 2.5 times in replication to reach .80 of power. As a result, multiplying the sample size of the second study in Luke et al. 2012 paper ($n=109$) by 2.5 resulted in roughly 273 people. I aimed to reach 300 people considering missing cases. Additionally, I tried to reach a sample as diverse as possible to meet the criteria set up in the discussion section of the original article (Luke et al., 2012). Nevertheless, I preferred convenience sampling, where most of the sample consisted of undergraduate students due to COVID-19 restrictions. The data for the current study were collected between May 2020 and December 2020. Consequently, I reached 566 responses, but only 281 did not include any major missing. Therefore, I have conducted descriptive and primary analyses on 281 responses. Similar to other studies in the literature (Hudson & Fraley, 2018; Selcuk et al., 2012), men ($n=39$) were greatly outnumbered by women ($n=238$; 84.7% women). ($M_{age}=23.640$, $SD_{age}=5.009$). Seventy-six people did not answer the age question (27 %). Most of the people resided in the two biggest cities of Turkey (75.6 %), with Istanbul (65.3 %) and Ankara (10.2 %).

3.2 Materials

3.2.1 Secure relationship and distant relationship primings

The primings used in the current study were the Turkish versions of the original ones in the second study of Luke et al.'s 2012 article. You can find the details of the initial measures in the original paper (Luke et al., 2012). However, you can also check the versions and lists I used in this study (<https://osf.io/8e3fr/>); please also see Appendix A.3

& A.4) For secure relationship priming (Bartz & Lydon, 2004; Luke et al., 2012), I asked participants to imagine and visualise a person they do not get any difficulty getting close to and whom they do not mind being dependent. For the distant relationship priming, I asked them to imagine and visualize a neutral relationship, a type of person they do not find very close (Kumashiro & Sedikides, 2005; Luke et al., 2012). Then, I gave participants identical instructions in the replicated study and wanted them to write a couple of sentences about these visualizations.

3.2.2 Felt security scale

This scale was created by Luke et al. (2012). I translated the scale and used it for my study. I asked participants to use ten items to report their feelings of security on a 6-point Likert-type scale ranging from 1 (not at all) to 6 (very much). Higher scores indicated more security feelings. The internal reliability score of the scale was satisfactory ($\alpha = .955$) (Please also see the appendix A.5 & A.6)

3.2.3 Energy scale

This scale was the modified version of the Subjective Vitality Scale (Ryan & Frederick, 1997). Luke et al. (2012) reported using the synonymous of the original items in their study. Therefore, my study used a Turkish translated version of the Luke et al. (2012) energy scale. I asked participants to use ten items to report how much they felt energetic on a 6-point Likert-type scale ranging from 1 (not at all) to 6 (very much). Higher scores indicated more energy. The internal reliability score of the scale was satisfactory ($\alpha = .962$) (Please see appendix A.7 & A.8).

3.2.4 Exploration index

The exploration index was created by Green and Campbell (2000). However, Luke et al. (2012) modified and used it in their study. I contacted Luke and her colleagues and requested the questionnaire since they had not given any details about the index in the paper. Then, I translated it into Turkish and used it for my study. I asked participants to rate some activities regarding the extent to which they would be motivated if they had experienced them on a 6-point scale ranging from 1 (*not at all*) to 6 (*very much*). Higher scores indicated more motivation to explore. The internal reliability score of the scale was satisfactory ($\alpha = .924$) (Please see Appendix A.9 & A.10).

3.3 Procedure

I distributed the link anonymously to the participants online by using Qualtrics. University students received a bonus point as an incentive for their participation in the study. In the survey, I first asked participants to fill out an online informed consent form. If they agreed to proceed, I asked them to answer demographical questions such as gender, age, and residence. Then, participants were randomly assigned to either secure relationship prime or distant relationship prime conditions. An identical procedural path was followed in the original study (Luke et al., 2012). I translated measures from English to Turkish by using the back-translation method. You can find the list of the questionnaires used in the study (<https://osf.io/8e3fr/>).

In line with the Luke et al. 2012 procedure about the time limit, I set 8 minutes time limit in the primings. Therefore, skipping the next page before 8 minutes was impossible. However, I allowed participants to stay on the priming page even if 8 minutes expired. After the primings, I asked them to report the closeness of the person they imaged (e.g., close friend, romantic partner, parent) during primings. I also asked them to report how long they had been in a relationship with that person. Finally, I gave them Turkish versions of the felt security, energy, and exploration index, precisely in the same order as the second experiment in the original study (Luke et al., 2012).

3.4 Analyses

I used SPSS Version 28.01 (IBM, 2021) for data treatment procedures. I calculated each participant's Z score on each outcome variable to detect univariate outliers. None of the participants' Z scores was out of the range of 3 and -3. To detect multivariate outliers, I checked Cook's distance scores of participants on each outcome variable. Similarly, none of the participants' Cook's distance scores on outcome variables (security, energy, and exploration) exceeded 1. Therefore, no influential cases were biasing the indirect effect model. There was a linear relationship between all outcome variables (i.e., security, energy and exploration are all positively correlated with each other).

Additionally, correlations between them did not imply a multicollinearity issue. The highest correlation between predictors and outcome was ($r = .58$ $p < .001$; Tolerance = .978, VIF = 1.023). According to the Durbin-Watson statistics, the values of the residuals were independent from each other ($d = 2.04$). Homoscedasticity was also met. However, the values of residuals were not seemed to be normally distributed. I conducted a missing value analysis to detect missing cases. As a result, I observed that 27 % of the age variable was missing. However, considering the primary predictions, I did not conduct a multiple imputation method for age variables since the age variable was out of inferential statistics. Other than that, I excluded 143 people from the primary analyses since they did not answer questions on outcome variables (their data were completely missing on one or more outcome variables). Besides, 138 participants' data were missing on all variables other than demographics. Therefore, they were not included in the primary analyses. I pre-registered all data treatment procedures before the data collection. (see <https://osf.io/qmc3a>).

4. RESULTS

As a result of the data screen procedure, 285 responses out of 566 were suitable for descriptive and further analyses. I conducted descriptive, correlational, and T-test analyses in SPSS version 28.01 (IBM, 2021). First, I conducted descriptive analyses (Please see table 4.1). While 127 people (45%) were randomly assigned to the secure relationship priming condition, 154 (55%) were randomly assigned to the distant relationship priming condition.

Table 4.1 Descriptive Statistics of Outcome Variables, Age, and Page Submit Time

Variables	<i>n</i>	<i>SD</i>	<i>M</i>	<i>Range</i>
Age	205	5.009	23.640	19-60
Page Submit Time (Distant)	154	209.464	542.405	481-2819
Page Submit Time (Secure)	127	122.571	532.761	4801-1010
Felt Security	281	1.320	4.133	1-6
Energy Scale	281	1.272	3.427	1-6
Exploration Index	281	1.289	3.993	1-6

Note: Given page submit times for both conditions in the table were seconds.

I excluded Z scores on priming conditions that were out of the range between -3 and 3 regarding the page submit time. Z scores of other variables were between the range of -3 and 3. Data treatment procedures were determined before the analyses and submitted to the pre-registration form (<https://osf.io/8e3fr/>). I conducted an independent sample's T-test analysis for group differences and correlational analyses for the associations between outcome variables.

Contrary to the original study, correlational results indicated no association between age and security, energy, or exploration (please see table 4.2). However, in line with the original study, all outcome variables had a statistically significant positive relationship. Security was statistically and positively associated with an energy ($r = .149, p = .013$). Security was also positively associated with exploration motivation ($r = .584, p < .001$). Additionally, energy was positively associated with exploration feelings ($r = .250, p < .001$).

Table 4.2 Correlations Between Dependent Measures

Variables	<i>N</i>	<i>M</i>	<i>SD</i>	1.	2.	3.	4.
1. Age	205	23.640	5.009	1	-.095	-.046	-.067
2. Felt Security	281	4.133	1.320	-.095	1	.149*	.584***
3. Energy	281	3.427	1.272	-.046	.149*	1	.250***
4. ExplorationIndex	281	3.993	1.289	-.067	.584***	.250***	1

* $p < .05$ ** $p < .01$ *** $p < .001$

I also conducted a Chi-square analysis to see if participants' visualizations across priming conditions differed significantly. Chi-Square analysis yielded a significant result, χ^2 (30, $N = 281$) = 233.49, $p < .001$. In other words, people significantly differed across conditions concerning the type of relationship they visualized. 63 % of people in the secure relationship prime condition visualised their current romantic partner, spouse, fiancée, previous spouse, or previous romantic partner ($n = 80$), whereas 73 % of people in the distant relationship prime condition visualised so-called "distant" relationship¹ (school mate, acquaintance, classmate) ($n = 113$).

For the hypothesis testing, I first conducted independent samples T-tests to see the group differences in outcome variables in line with the original paper (Luke et al., 2012). The replicated paper found that people in the secure priming condition felt more secure, vital, and motivated to explore. In my study, these results were partially supported. People in the secure relationship prime condition reported more security ($M = 4.909$, $SD = 1.059$, $SE = .094$) and higher exploration motivation ($M = 4.429$, $SD = 1.094$, $SE = .097$) compared to the distant relationship prime condition ($M = 3.493$, $SD = 1.162$, $SE = .093$, $M = 3.635$, $SD = 1.329$, $SE = .107$; respectively) ($t(279) = -10.568$, $p < .001$, 95 % CI = [-1.679, -1.151]; $t(279) = -5.491$, $p < .001$, 95 % CI = [-1.07, -.509]). I used Jamovi version 2.3.0 (The Jamovi Project, 2021) to create violin plots (please see figures 4.1 and 4.2 for the security and exploration plot, respectively).

¹ The Chi-square analysis went unnoticed and I realized that I did not register this analysis to the analyses section of pre-registration form although it was included in the second experiment in Luke et al's. (2012) paper. This is the reason why I still run the analysis and here, I disclose the fact that this analysis was not included in my pre-registration form.

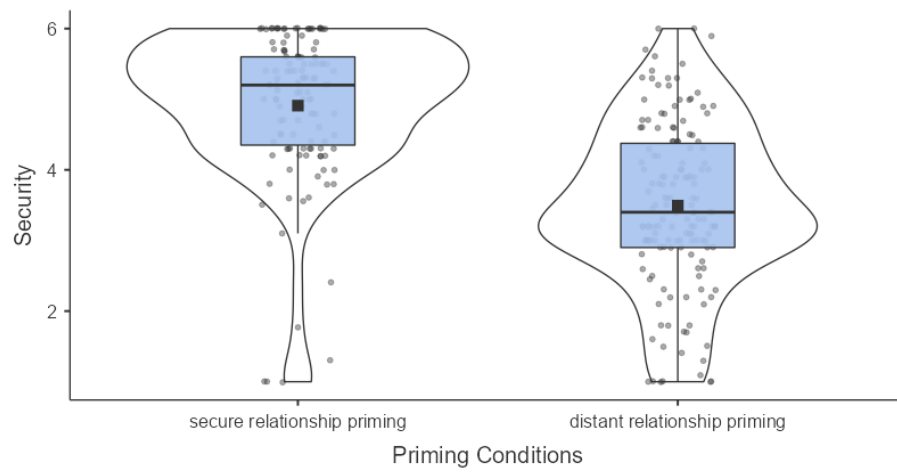


Figure 4.1 Security Score Violin Plot

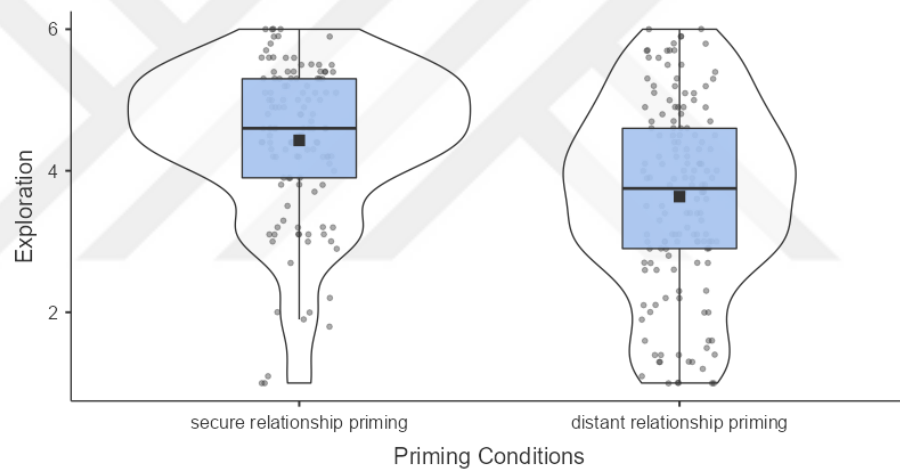


Figure 4.2 Exploration Index Score Violin Plot

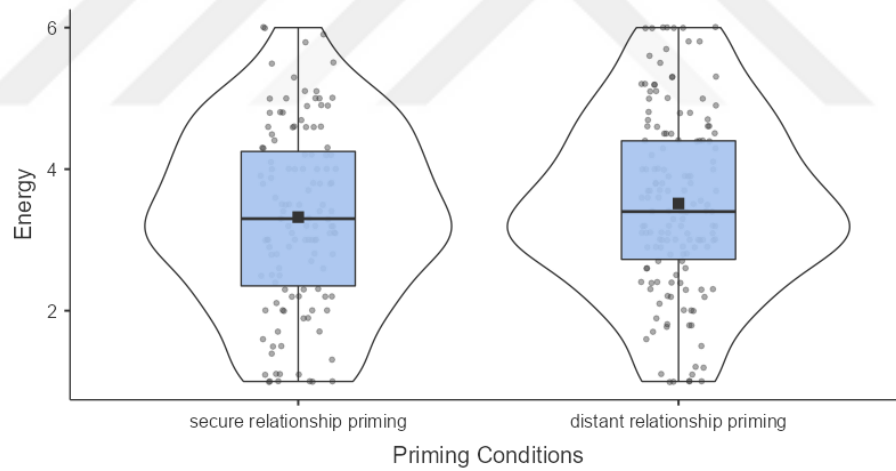
However, there was no significant group differences for energy scores across priming conditions $t(279) = 1.264, p = .207, 95\% \text{ CI} = [-.107, .492]$ (Please see table 4.3 for group differences).

Table 4.3 Group Differences in Measures Across Priming Conditions

Measures	Secure		Distant							
	Relationship		Relationship							
	Prime		Prime		95 % CI			95% CI		
	(n =127)		(n=154)							
	M	SD	M	SD	t(279)	Lower	Upper	Cohen's d	Lower	Upper
Security	4.909	1.059	3.493	1.162	-10.568	1.152	1.679	1.267	.983	1.547
Energy	3.321	1.276	3.514	1.267	1.264	-.493	.107	-.151	-.387	.084
Exploration	4.429	1.094	3.635	1.329	-5.491	.504	1.084	.646	.397	.893

* $p < .05$ ** $p < .01$ *** $p < .001$

In other words, people claimed that they felt more secure and motivated to explore when they were reminded of their secure relationships (mostly attachment figures such as romantic partners or friends). Nevertheless, they did not report more energy in the secure relationship prime condition than in the distant relationship prime condition (Please also see figure 4.3). I thoroughly discussed these results in the discussion section.

**Figure 4.3 Energy Score Violin Plot**

For the group differences, I also wanted to test the probabilities of my research hypotheses as opposed to the null hypotheses and vice versa. Therefore, I also conducted a Bayesian analysis to understand the plausibility of obtained data to theory (i.e., hypotheses). I benefitted from JASP version 0.14.0.1 (JASP, 2022) to conduct a Bayesian independent samples T-test. In evaluating the results of independent samples T-tests, one should know how to interpret the Bayes factors. Bayes factors represent which models (e.g.,

hypotheses, theories) are best illustrated by the obtained data (Dienes, 2011). The Bayes factor symbolises BF (Etz et al., 2018). Suppose a research hypothesis is illustrated as H_1 and a null hypothesis as H_0 . In that case, the BF_{01} denotes the plausible null hypotheses as opposed to alternative hypotheses (i.e., research hypotheses) considering the obtained data (Etz et al., 2018). For the BF_{10} ratio, it is vice versa. Although it is recommended to report exact Bayes factors since it is a continuous parameter, evaluating results is a rule of thumb (Dienes, 2011; Etz et al., 2018). Values range between 1-3, 3-10, and $10>$ interpreted as uninterpretable, slight, and remarkable evidence, respectively (Etz et al., 2018).

As a consequence, in table 4.4, the BF_{10} values of security and exploration were higher than 10, similar to the results of the frequentist approach of the independent sample's T-test I reported above. That is, both exploration and security support strong evidence for research hypotheses instead of null hypotheses. In other words, by the obtained data, the attachment security priming effect is way more plausible than the null effect for the scores of exploration and security. Bayes factors in table 4.4 can also be evaluated as the research hypothesis is 43 times more probable for the security scores than the null effect of the data (Etz et al., 2018). In contrast, the Bayes value for the energy was very close to 1, which is inconclusive in this case. However, the BF_{01} value for the energy supports slight evidence for the null hypothesis as opposed to the research hypothesis. That is, it can also be possible to argue that the null effect is 3.5 times more probable under the null hypothesis compared to the research hypothesis for the energy scores by the data (Please see figures 5.1, 5.2 & 5.3 on pages 22 & 23)

Table 4.4 Bayesian Group Differences

Variable	Log (BF_{10})	Error (%)	BF_{01}	Error(%)
Energy	-1.268	1.960e-5	3.554	0.053
Exploration	11.274	1.123e-10	1.269e-5	2.303e-11
Security	43.712	5.723e-26	1.037e-19	2.362e-21

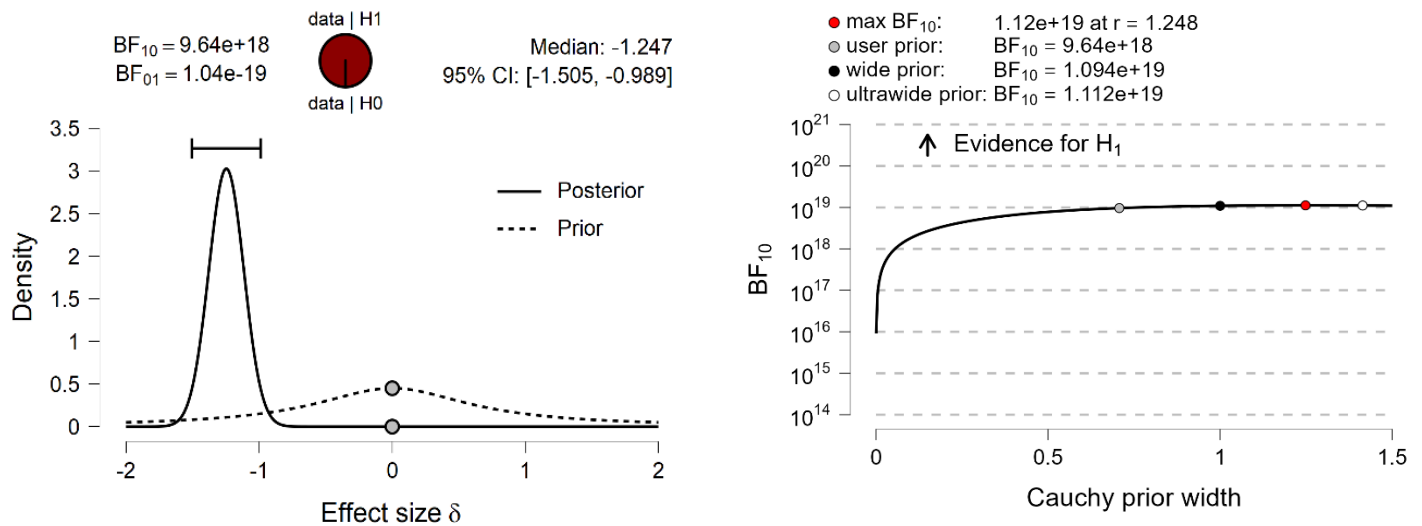


Figure 5.1 Security Score Prior and Posterior Chart (Left) and the Bayes Factor Robustness Check (Right)

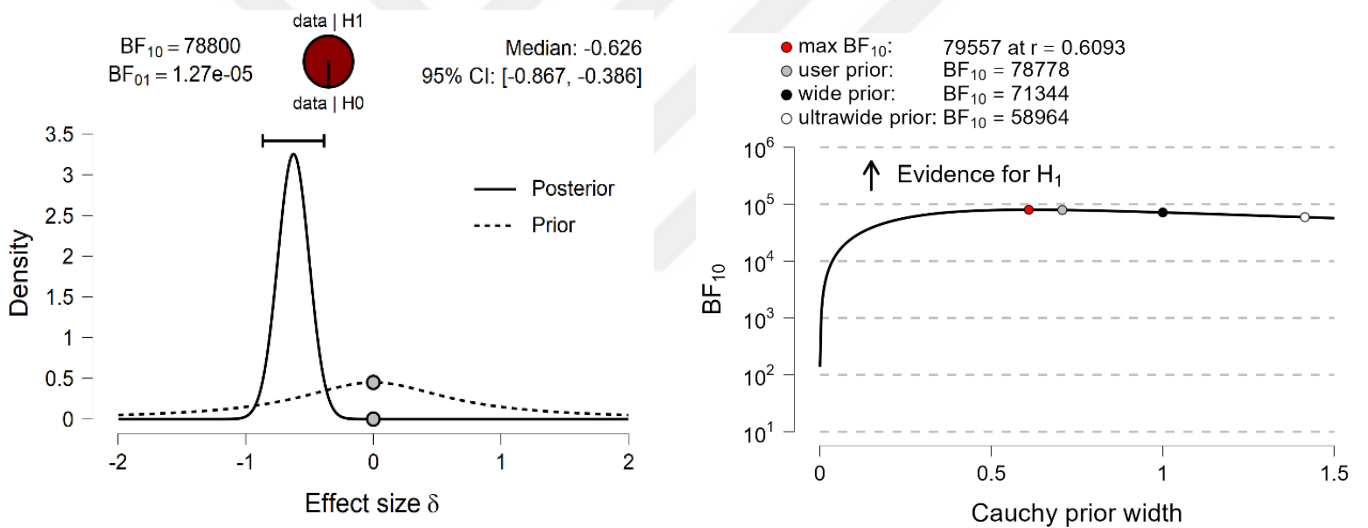


Figure 5.2 Exploration Index Prior and Posterior Chart (Left) and the Bayes Factor Robustness Check (Right)

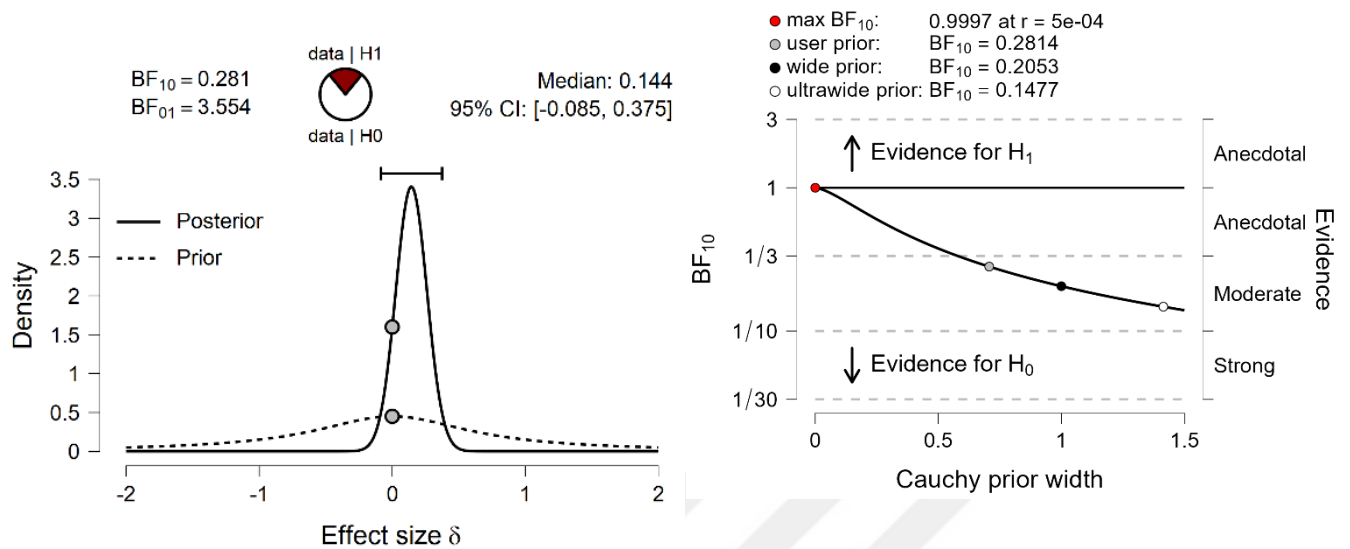


Figure 5.3 Energy Score Prior and Posterior Chart (Left) and the Bayes Factor Robustness Check (Right)

Second, I run an indirect effect model to see whether the link between secure relationship prime and exploration was mediated by energy as it is in the original study. Before conducting the analysis, I checked the normality assumptions (Please see the form at; <https://osf.io/qmc3a>). Results indicated a linear relationship between predictor variables and the outcome variable. Normality assumptions were also met, suggesting that I could run an indirect effect model (no scores higher than one on Cook's distance). The priming manipulation (contrast coded: 1 = secure relationship prime, 0 = distant (neutral) relationship prime) was the predictor, and exploration was the predicted variable in our model. Feelings of energy (subjective vitality) were used as a mediator variable as in Luke et al.'s (2012) study. I run the model in Mplus Version 7 (Muthen & Muthen, 2012). The secure relationship prime condition did not significantly predict energy feelings ($\beta = .076$, $SE = .148$, 95 % CI [-.098, 0.484], $p = .194$). Therefore, as expected from this non-significant link, indirect effect using bootstrap 1,000 sample method, was also non-significant ($\beta = .021$, $SE = 0.018$, 95 % CI [-.014, .056], $p = .248$).

As a result, although the sense of energy significantly predicted exploration feelings ($\beta = 0.275$, $SE = 0.064$, 95 % CI [.153, .404], $p < .001$) and secure relationship prime condition significantly and negatively predicted exploration index ($\beta = -0.328$, $SE = .139$, 95 % CI [-1.121, -.575], $p < .001$). I did not find any support for the indirect role of energy on the relationship between secure relationship priming condition and exploration, in contrast to Luke et al.'s (2012) second study.

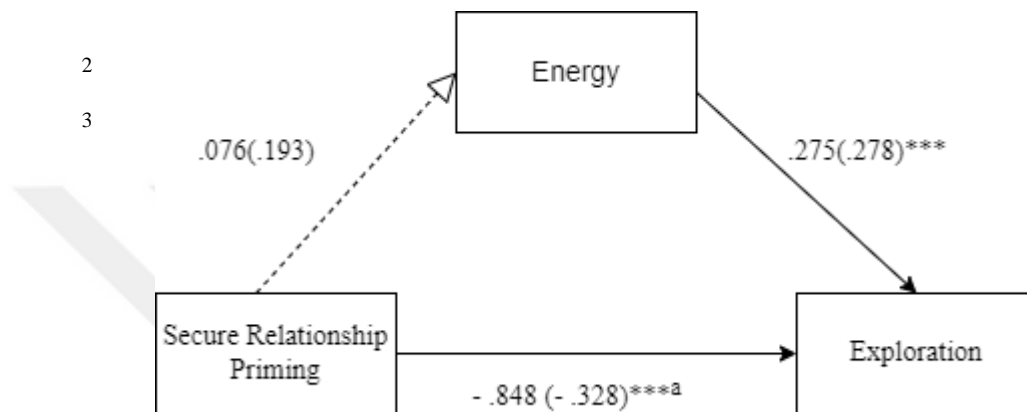


Figure 5.4 The Indirect Effect Model of Energy On the Association Between Secure Relationship Prime Condition and Exploration Feelings

2

Although I agree with common criticisms of mediational inferences using cross-sectional data (Iami et al., 2010), I aimed to replicate all analyses conducted by Luke et al. (2012) as identical as possible.

³ Note: *** $p = .001$, ^a Secure relationship priming condition was reverse coded values in parantheses show standardized estimates

5. SUMMARY OF THE FINDINGS AND A BRIEF DISCUSSION

Findings did not reveal any significant effect of priming conditions on people's sense of energy. However, I observed a significant effect of the secure relationship priming on participants' felt security and exploration index scores compared to the distant relationship priming. I have also observed significant positive associations between felt security, exploration index, and energy scores, similar to Luke et al.'s (2012) paper. However, in contrast to Luke et al.'s (2012) paper, there was no indirect role of energy in the relationship between secure relationship prime and exploration. Consequently, I conclude that I have partially replicated Luke et al.'s (2012) second study. The partial replication of the replicated study's results would have some implications.

First, it could be possible that the subjective vitality scale, which the original authors used to measure the sense of energy, was not as effective in the original study as in my study. It is also likely that the self-report form of energy might be low construct validity and lower rates of test-retest reliability scores. Hence, future studies should not overlook different operational definitions of energy. As I also did not observe any significant indirect role of energy, it might be possible that another unknown mechanism could underplay the association between secure relationship priming and exploration motivations. For example, Heylen et al. (2019) offered another indirect model for the relationship between caregiver trust and children's exploration. They found that tolerance to negative affect and regulatory strategies differences significantly explained the relationship (Heylen et al., 2019).

In addition to these weaknesses, causal mediational analysis has some limitations (Imai et al., 2010). Luke et al. 2012 concluded that priming people with secure relationships made them feel significantly more energetic than priming people with a distant relationships. Therefore, they concluded that significantly higher energy feelings also accounted for increased exploration motivations in participants. However, the replicated study's authors nor I manipulated the energy feelings, sense of energy was measured only

by a self-report. Therefore, making a causal interpretation based on these results is questionable. That is why I believe that designing a study which can experimentally manipulate the sense of energy is vital for further research. In addition to these criticisms, neither I nor Luke et al.'s 2012 controlled any variable or proposed any covariates before conducting the indirect effect model. In other words, there could be some other confounding variable(s) accounting for a significant effect in the replicated study (Luke et al., 2012) or a non-significant effect in my study. As a result, I believe that taking baseline measures and controlling some variable(s) could be essential in proposing causal indirect effect models, particularly in the context of experimental studies.



6. STUDY B (CONCEPTUAL REPLICATION: A BEHAVIOURAL MANIFESTATION OF EXPLORATION AND THE ROLE OF ATTACHMENT PATTERNS)

I found empirical support for the exploration motivation using a self-report measure in study A. The main goal of this conceptual replication was to offer a reliable behavioural measure for exploration and test its construct validity. I created a behavioural task to measure exploration motivation. By doing so, I intended to examine the link between activated attachment security (via priming used in the previous study) and exploratory feelings and behaviours (Aspelmeier & Ken, 2003; Carnelley & Ruscher, 2000; Elliot & Reis, 2003; Green & Campbell, 2000; Mikulincer & Shaver, 2020a; Mikulincer & Shaver, 2020b). Using the literature and theoretical frameworks, I created an unsolvable puzzle task. I believe that using a behavioural task would increase the reliability of the association between secure relationship priming and exploration motivations. Consequently, I expected participants in the distant relationship priming and irrelevant priming conditions spend less time on the task I called “spot the differences” than participants in the secure relationship priming condition due to the boosting function of secure relationship priming, suggested by the literature (Gillath & Karantzas, 2019; Mikulincer & Shaver, 2020a; Mikulincer & Shaver, 2020b).

In addition to this primary goal, the second minor aim of the current study was to investigate the interplay between the attachment dimensions as trait characteristics and the activated attachment security in predicting exploration at the self-reported and behavioural levels. As there have been mixed findings related to the role of attachment patterns in attachment security priming studies, I aimed to understand how people’s general tendency to bond with others plays a role in the relationship between exploration and activated attachment security.

I expected that the clarity and vividness of people’s mentalizations might also be susceptible to individual differences by looking at the results of the direct replication (study A). Therefore, I asked people to rate clarity and vividness of their mental

visualizations in the priming conditions by looking at the evidence from the memory research (Ayduk & Kross, 2010; Bryant & Chan, 2017; Koppel & Bernstein, 2015; Kross et al., 2005). In addition to that, to the best of my knowledge, clarity and vividness were only measured in a study published by Mikulincer and Shaver (2001). Therefore, I used the modified versions of the clarity and vividness items Mikulincer and Shaver (2001) used in my study.

The majority of scientific studies published have emphasized the possible psychological difficulties people can experience, such as loneliness (Beam & Kim, 2020), burn-out and stress (Yıldırım & Solmaz, 2020), anxiety (Chao et al., 2020) and depressive symptoms (Serafini et al., 2020) due to pandemic. According to literature, those negative feelings are adversely associated with a sense of energy (Bernstein & Ryan, 2004; Penninx et al., 2000; Ryan & Frederick, 1997;). Since I collected data during April and May 2021, when there were strict pandemic regulations and the number of deaths and positive cases reached its' peaks, I also used the items in the personal and work-related sub-dimensions of the Copenhagen Burnout Inventory (Kristensen et al., 2005). As a result, I aimed to understand the effects of the COVID-19 pandemic on people's emotions within the context of my studies. Since this had an exploratory purpose, I had no directional hypotheses relatedly.

To conclude, there were two fundamental research questions in the current study. The first question was to understand whether secure relationship priming affects people's motivation on a behavioural task aiming to measure exploration. A second research question was to investigate how global attachment dimensions impact participants' exploration motivations.

As a result, the hypotheses were as follows (please also see <https://osf.io/gv5y9>):

H₁: People who received a secure relationship prime will score higher on the exploration scale than participants in other priming conditions (e., distant relationship prime and irrelevant prime condition). Additionally, we hypothesised that participants in the secure

relationship prime condition would spend more time on the Spot the Differences Task (as a behavioural manifestation of exploration) than participants in other conditions.

H₂: People who are low on avoidance and anxiety dimensions would get higher scores on exploration self-report. They would spend more time on the Spot the Differences Task than those high on the same scale's anxiety or avoidance dimension.

H₃: We expect a significant moderator role of attachment dimensions (i.e., anxiety and avoidance) in the current study. The link between priming conditions and the exploration index (and the time they spent on the Spot the Differences Task) would be moderated by attachment dimensions. Specifically, we hypothesised that people high in anxiety would benefit more from security than two other conditions (higher exploration score and longer time spent on the Spot the Differences Task). We also hypothesised that people high on avoidance would report the least exploration score and spend the least amount of time on the Spot the Differences Task. And this effect would be observed regardless of priming conditions (see pre-registration hypothesis also at; <https://osf.io/gv5y9>).⁴

4

Please note that I used plural pronouns in hypotheses purposefully since I have received feedbacks and suggestions by my thesis advisor, Dr. Mehmet Harma when setting up my hypotheses.

7. METHOD

7.1 Participants

By assuming a small to medium effect size ($f = .29$) (Gillath et al., 2016), G* Power 3.1.9.7 (Faul et al., 2007 & 2009) estimated the planned sample size based on the moderated multiple regression model as 199 participants to reach $1-\beta = .80$ power at the significance level of 0.01. I planned to get 230 people, 75 people for each priming, by considering missing cases. Similar to the first study, I used convenience sampling and collected data from undergraduate psychology students. One hundred ninety-five responses ($M_{age} = 22.22$, $SD_{age} = 4.081$) out of 668 were suitable to analyse for similar purposes in the first study. For residence, 18 % of people indicated İstanbul ($n = 36$), 16.5 % of them indicated Ankara ($n = 32$), and 32 % of them indicated Kayseri ($n = 63$), which is one of the central Anatolian cities of Turkey. Men ($n = 38$) were dominated by women ($n = 156$) (80 %), and 1 participant did not answer the gender question.

7.2 Materials

7.2.1 Felt security scale

This scale was identical to the one used in study-a. Its' internal-reliability score was satisfactory ($\alpha = .96$) (please see appendix A.5 & A.6 for details)

7.2.2 Exploration index

This scale was also as same as the one used for study-a. Its' internal-reliability was satisfactory ($\alpha = .94$). (please see appendix A.9 & A.10 for details)

7.2.3 Global attachment (Fraley et al., 2011; Fraley et al., 2015)

This scale was a modified version of the Experiences in Close Relationships-Relationship Structures Scale (ECR-RS) (Fraley et al., 2011). It includes nine items that touch upon to what extent people feel anxiety and avoidance during their intimate interactions with others. It is a 7- Likert scale (*1= strongly disagree to 7= strongly agree*). I adapted the global attachment measure into Turkish for my thesis, which had satisfactory internal reliability scores. The first six items measure avoidance tendency ($\alpha = .80$), whereas the remainders measure anxiety ($\alpha = .80$). Also, the first four items are reverse coded. I used this measure to understand people's general tendency towards intimate relationships. Some example items were "*It helps to turn to people in times of need*" and "*I worry that others won't care about me as much as I care about them.*" (Please see appendix B.6 & B.7 for details)

7.2.4 The Copenhagen burnout inventory (Kristensen et al., 2005)

I wanted to understand how much variance can be explained by burnout feelings on exploration and time spent on the Spot the Differences Task. I used this measure for exploratory purposes, as stated in the pre-registration form (<https://osf.io/gv5y9>). It was first constructed and tested by Kristensen and her colleagues in 2005 to measure feelings of exhaustion. It consists of 19 items and includes different sub-dimensions for each item set (burnout related to work, burnout about customers, and individual burnout subscale) (Kristensen et al., 2005). I only used personal and work-related sub-scale items since the rest were irrelevant to the current goal of the study. I have also added "lecture, class" words and "work" into the questions since I pre-supposed that most participants would be composed of students. Some example items were "*How frequently do you feel burn-out?*", "*Do you feel burn-out at the end of a workday/after a class?*" Its' rating scale ranges from (*1= always to 5 =never*). I changed the rating scale of the original scale to make it compatible with other scales' ratings used in the study. I translated it into Turkish and used it in my research. The internal reliability score of the scale was satisfactory ($\alpha = .92$). (Please see appendix b.8 & b.9 for details)

7.2.5 Clarity and vividness (Mikulincer & Shaver, 2001)

To my knowledge, Mikulincer and Shaver's (2001) study was the only research that assessed participants' clarity and vividness scores after attachment priming. They asked one-item questions for each concept and made participants rate them on a 7-point Likert-type scale. I modified their items and used them in my study by adapting them to Turkish. Rating scale ranges from (*1 = not clear/vivid at all to 7 =very clear/very vivid*). For example, "*To what extent do you think your visualization was clear on a 7-point scale?*" "*To what extent do you think your visualization was vivid on a 7- point scale?*". I analyzed these concepts by taking their mean and creating a composite score. The reliability score of this composite measure was satisfactory ($\alpha = .90$) (please see appendix B.5 for Turkish translations)

7.2.6 Distant relationship priming

This priming condition was very similar to the one used for study 1, and I took it from Luke et al. (2012); study 2, and then adapted it into Turkish. However, I modified the instructions a bit compared to study 1 due to feedback I got from participants regarding the unclear parts of example questions and some phrases used in the instructions (please see appendix B.12 for details)

7.2.7 Irrelevant priming

I took this prime from Mikulincer and Shaver (2001), modified and adapted it into Turkish, and used it in my study. It asks people to describe their last shopping activity, questions such as what they bought, what others were doing at the time, how they went there, and their shopping experience. I included this priming condition as it sounded much more neutral to me than the distant relationship priming I used in the direct replication. However, I also kept the distant relationship priming to compare them. Instructions were the same as other priming visualizations (please see appendix B.11 for details).

7.2.8 Secure relationship priming

This priming was the same as the one used in the first study. However, I made some minor modifications to the instructions and the format of the questions (To illustrate, this time, I provided questions in a listed form, not like how I presented them one after another in study A) (please see appendix B.10 for details).

7.2.9 Spot the differences task (SDT)

I created this task to measure exploration motivations behaviourally and subtly. In the task, I presented two identical pictures to the participants. However, I directed participants as if there were some differences between the pictures, and their goal was to find out those differences. Indeed, this was an unsolvable task because there were no differences. I deceived them by stating the study's goal was to understand the effects of life events on people's visual attention. However, this was a deception to hide the real purpose of my study. The main aim of creating this task was to determine whether people reminded by a secure relationship would be more open to challenges and resistant to frustration than other priming conditions since the task was unsolvable. I estimated openness to challenge and resistance to frustration as how many seconds they spent on the task, measured by an invisible online clock on the Qualtrics. In other words, I conceptualized a sense of exploration as being open to challenges and resistance to frustration (Luke et al., 2012; Mikulincer & Shaver, 2011; Elliot & Reis, 2003; Feeney & Trush, 2010; Carnelley & Ruscher, 2000) (please see appendix B.13 for details).

7.3 Procedure

Participants were given an online link on Qualtrics to participate in the study. All participants first saw an informed consent in which I explained the requirements of the study. Later, if they agreed to continue, they were asked to answer some demographical questions. Then, they were given a global attachment dimension questionnaire. After they filled out the short version of the attachment measure (i.e., ECR-RS), a burn-out questionnaire was given to the participants just before the priming conditions. Participants were randomly assigned to one of the three priming conditions after completing these measurements. They were given 8 minutes to think, visualize, remember the instructions given in the conditions, and write a couple of sentences accordingly. When they finished the visualization task, they were asked to rate the clarity and vividness of their metallization.

Next, they were given a behavioural task for exploration, namely “Spot the Differences Task” (SDT). Since coercion would interfere with my key rationale behind designing this task, I directed participants as they could finish the task at any pace they wished. In other words, they were free to skip to other measures at any point during the task if they ever wanted to do so. However, they had to complete this task without pausing since I was mainly interested in the participants’ time spent on the task. Therefore, I also requested them to finish the task in one sitting so that other factors would not interfere with the results. I also asked them to report whether they finished it at one time or by pausing before they skipped the other measure so that I could exclude the ones who ended up pausing. After completing the SDT, I gave them the exploration index as well. I wanted to compare the time spent on SDT with the exploration score on the self-report measurement used in the previous study. Finally, I debriefed participants about the real purpose of the study.

8. RESULTS

8.1 Descriptives

For the data treatment procedures and descriptive analyses, I used SPSS version 28.01 (IBM, 2021). I screened data before the primary analyses, in line with the pre-registered form (<https://osf.io/gv5y9>). First, I excluded people who stated they have sighting problems such as colour blindness (n= 109)). Additionally, I also excluded people who indicated that they did not complete the spot the difference task in one session (n=9). Then, I excluded people who failed to pass filler items (n= 36). Next, I checked the Z scores of participants on each outcome, and I excluded those who were out of the range - 3 and 3. There was no univariate outlier. I also checked the Cook's distance scores of participants to determine if any multivariate outlier exists.

Similarly, no scores exceeded 1; hence I did not detect any multivariate outlier according to Cook's distance score of participants. As a result, the primary and descriptive analyses were conducted by 195 people. You can see the descriptive analysis results' in table 8.1

Table 8.1 Descriptive analyses of main variables

Variables	N	M	SD	Range
Page submit duration	195	189.52	134.942	18-600
Page submit duration*	195	2.161	.340	4-25
Clarity	195	5.540	1.455	1-7
Vividness	195	5.340	1.428	1-7
Attachment Avoidance Score	195	3.697	1.108	1-7
Attachment Anxiety Score	195	4.109	1.555	1-7
Felt Security	195	3.542	1.356	1-6
Exploration Index	195	3.647	1.275	1-6
Work-related burnout	195	3.162	.849	1.29-5
Personal burnout	195	3.259	.798	1.33-5
Age	195	22.22	4.081	18-42

***Note: How many seconds people stayed on the Spot the Difference task was transformed by taking square roots of the Page Submit duration variable to have a normalized distribution.**

For the type of relationship participants visualized across primes, 90 % of people in the secure relationship priming condition visualized significant others (mothers, n=13; close

friends, $n=19$; previous romantic partners, $n=6$; current romantic partners, $n=20$). On the contrary, 82 % of people in the distant relationship condition visualized a relationship that is compatible with the term “distant” ($n=18$ acquaintance, $n=4$ neighbor, $n=3$ colleague, $n=12$ friend, $n=21$ class/school/roommate). I used JASP 0.14.0.1 (JASP, 2022) to test the group differences.

8.2 Priming Effects on Exploration Index and Time Spent on the Spot the Difference Task

I examined whether our priming manipulations worked or not using felt security as a dependent variable and manipulations as an independent variable in ANOVA. Results revealed a significant priming effect on the felt security, [$F(2,192)=60.440, p<.001, \eta^2=.386, 95\% \text{ CI } [.279, .472]$]. Specifically, Tukey posthoc comparisons showed that participants in secure relationship priming condition felt more secure ($M=4.696, SD=.919$) than those in the distant relationship priming condition ($M=2.707, SD=1.131, p<.001, 95\% \text{ CI } [1.553, 2.426], d=1.921$). Additionally, participants in the secure relationship priming condition also felt more secure than people in the irrelevant priming condition ($M=3.290, SD=1.136, p<.001, 95\% \text{ CI } [.955, 1.858], d=1.364$). Participants in the distant relationship priming condition also felt significantly less secure compared to the participants in the irrelevant priming condition ($p=.006, 95\% \text{ CI } [-.947, -.200], d=-0.514$). For the violin plots, I used Jamovi version 2.3.0 (The Jamovi Project, 2021). (Please see figure 8.1)

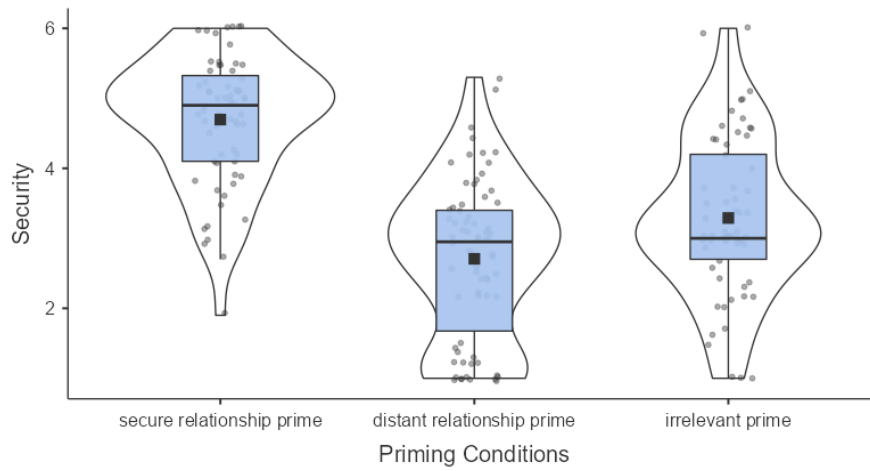


Figure 8.1 Security Score Violin Plot

To test the first hypothesis, I conducted separate one-way ANOVAs with one independent variable (priming conditions) on (i) exploration index scores and (ii) time spent on the spot the differences task. Results showed that there were significant group differences across priming conditions for exploration index scores [$F(2, 192) = 12.497, p < .001, \eta^2 = .115, 95\% \text{ CI } [.040, .198]$]. Tukey posthoc comparisons showed that people in the secure relationship priming condition ($M = 4.098, SD = 1.218$) reported higher exploration motivation as measured by the exploration index than people in the distant relationship priming condition ($M = 3.091, SD = 1.185$) ($95\% \text{ CI } [.514, 1.499], SE = .208, p < .001, d = .838$). However, there were no statistically significant group differences between secure relationship priming and irrelevant priming conditions on exploration index ($95\% \text{ CI } [-.224, .794], SE = .215, p = .384, d = .234$). Participants in the distant relationship priming condition reported significantly less exploration motivation than those in the irrelevant priming condition (i.e., remembering the last shopping experience) ($M = 3.813, SD = 1.215$) ($95\% \text{ CI } [-1.149, -0.337], SE = .208, p = .002, d = -.602$). (Please see figure 8.2)

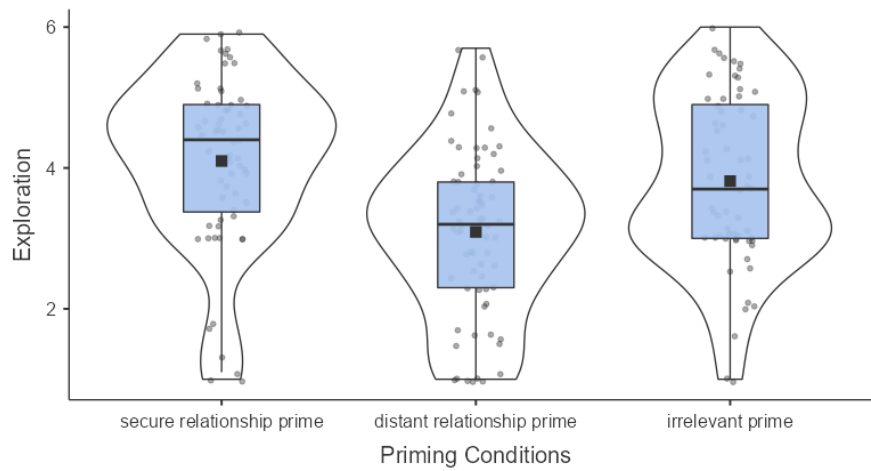


Figure 8.2 Exploration Index Score Violin Plot

However, there was no significant effect of any priming on time spent on SDT [$F(2,192) = .100, p = .905, \eta^2 = .001, 95\% \text{ CI} [.000, .014]$. (Please see figure 8.3)

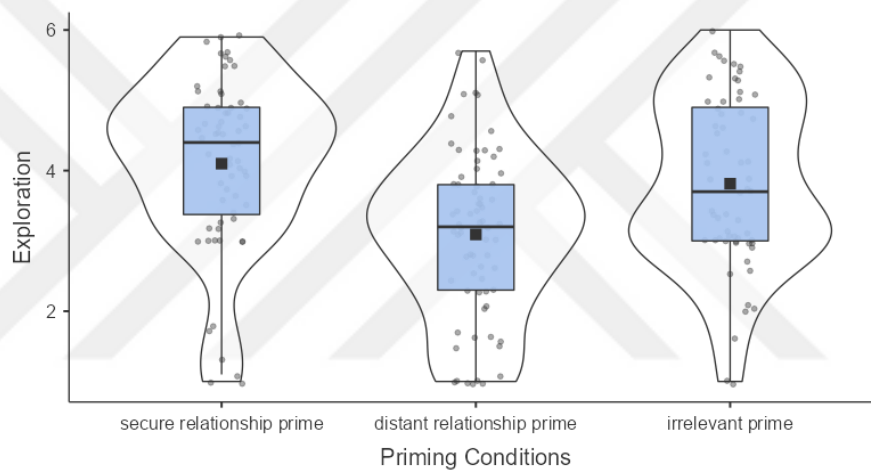


Figure 8.3 Time Spent on SDT Violin Plot

As a result of the analyses, secure relationship priming was an effective procedure to increase the sense of security and exploration measured by self-reports. However, I did not support my initial hypothesis stating the significant main effect of priming conditions on time spent on the SDT. (Please see table 8.2 for the summary of the group differences results)

Table 8.2 Priming Effects on Exploration Index and Time Spent on the Spot the Difference Task

Measures	Secure		Distant		Irrelevant		$F(2,192)$	η^2	% 95 CI	
	M	SD	M	SD	M	SD			Lower	Upper
Exploration Index	4.098	1.218	3.091	1.185	3.813	1.215	12.497***	.115	.040	.198
Page Submit Time	2.175	.369	2.159	.339	2.148	.313	.100	.001	.000	.014

* $p < .05$ ** $p < .01$ *** $p < .001$

8.3 Correlations Between Attachment Dimensions and Exploration Measures

Zero-order correlations revealed a positive correlation between felt security and exploration index scores ($r = .557, p < .001$). Exploration index scores of the participants were also negatively correlated with attachment avoidance ($r = -.238, p < .001$). Additionally, felt security was negatively correlated with the avoidance dimension of the global attachment style ($r = -.298, p < .001$). Lastly, the anxiety dimension of the global attachment measures was negatively associated with page submit time ($r = -.182, p = .011$). In addition to these, composite variable of clarity and vividness was positively correlated with felt security ($r = .348, p < .001$) and exploration index scores ($r = .220, p = .002$).

8.4 The Interplay between Attachment Dimensions and Attachment Security Priming in Predicting both Self-Reported Exploration Index and Time Spent On The SDT

I conducted two moderated regression models to test the third hypothesis, predicting the self-reported exploration index and time spent on the SDT separately in both analyses using Jamovi 2.3.0 (The jamovi project, 2021).

For the model where the self-reported exploration was the outcome variable, no multicollinearity and influential cases were biasing the model (neither analysis had cook's distances scores above 1). VIF and Tolerance scores did not warn of any multicollinearity problem. The assumption of homoscedasticity was not violated (residual plot showed that the error in the model was nearly the same across each data point). According to Durbin-Watson analysis results, the residuals' values were independent ($d = 2.151$). The residuals' values seemed to be normally distributed according to the Q-Q plot of standardized residuals. However, the Shapiro-Wilk normality test showed that the data was not normally distributed ($W = .979, p < .001$).

There were no multi-collinearity and influential cases for the model where the time spent on the SDT was an outcome variable. The assumption of homoscedasticity was also met. According to the results of the Durbin-Watson analysis, the residuals' values seemed to be independent, but the value is close to 1; therefore should be cautiously considered. ($d=1.055$). Although the values of the residuals seemed to be normally distributed Shapiro-Wilk normality test indicated that the data was not normally distributed ($W=.979, p<.001$).

I created a single composite variable by taking the average clarity and vividness to reduce multi-collinearity ($r=.820, p<.001$). The composite variable created by clarity and vividness was entered into the first step in two analyses. Attachment avoidance, anxiety, and dummy-coded priming conditions (i.e., secure relationship priming vs other primings, the reason for dummy coding of the priming conditions was that they were categorical variables at the beginning) were entered in the second step. Interaction terms were entered into the equation at the third step.

For the moderated regression model, where the self-report version of exploration was the outcome variable, the first step of the model was significant ($F(1,193) = 9.77, p=.002$). The composite score of clarity and vividness significantly predicted self-report exploration ($\beta = .204, SE=.065, 95\% [.081, .358], p=.002, p<.001$) and it accounted for 4 % variance in self-report measure of exploration. The change in R^2 was also significant for the second step of the model ($F(3,190) = 5.622, p=.001$, where I added attachment anxiety and avoidance dimensions as priming conditions and the second step of the model accounted for an additional 7 % of the variance. ($F(4, 194) = 6.84, p<.001$). Particularly, avoidance dimension of the global attachment significantly and negatively predicted scores on exploration ($\beta = -.267, SE=.079, 95\% [-.403, -.132], p<.001$, in the second step of the model. However, anxiety dimension of global attachment did not significantly predict self-report exploration in the second step of the model ($\beta = -.041, SE=.156, 95\% [-.176, .093], p = .547$). Moreover, priming conditions did not significantly predict self-report exploration ($\beta = -.069, SE=.079, 95\% [-.205, .065], p=.308$). The change in R^2 was not significant for the third step of the model, where I added interaction terms ($F(2, 188) = .443, p = .643$). In other words, there was no significant interaction between global

attachment dimensions and priming conditions on self-reported exploration. (Please see table 8.3 for the steps in the hierarchical regression analysis and their results for the self-reported exploration as an outcome model).

Table 8.3 Predicting Self-Reported Exploration Scores

Variable	R ²	<i>t</i>	Sig.	Δ R ²	B	SE	β	<i>F</i>
Step 1	.048**							9.77
Constant					2.540	0.365		
Clarity & vividness		3.13	.002		.204	.065	.220	
Step 2	.125			.077**				6.84
Priming conditions		-1.021	.308		-0.110	.108	-.069	
Avoidance		-3.895	<.001		-.308	.079	-.267	
Anxiety		-.603	.547		-.033	.056	-.041	
Step 3	.129			.004				4.68
Priming conditions* avoidance		.492	.623		.049	.100	.034	
Priming conditions*anxiety		-.695	.488		-.048	.069	-.047	

Note: Priming conditions in the model were dummy coded (secure relationship priming vs other primings) * $p < .05$ ** $p < .01$ * $p < .001$**

For the model where I added time spent on the SDT as the outcome variable, neither the first step of the model ($F(1, 193) = .104, p = .747$) nor the change in R^2 was significant in the second step of the model step ($F(3, 190) = 2.536, p = .058$). In other words, neither the clarity and vividness in the first step nor the priming conditions and dimensions of attachment significantly predict time spent on SDT. Similarly, there was no significant interaction of global attachment dimensions and priming conditions on time spent in the SDT. (Please see table 8.4 for the steps in the hierarchical regression analysis and their results for the time spent on SDT as the outcome model).

Table 8.4 Predicting Time Spent on Spot the Differences Task (SDT)

Variable	R ²	<i>t</i>	Sig.	Δ R ²	B	SE	β	<i>F</i>
Step 1	.000							.104
Constant					2.192	.099		
Clarity & vividness		-.323	.747		-.005	.017	-.023	
Step 2	.039			.038				1.929
Priming conditions		-.653	.515		-.019	.030	-.046	
Avoidance		-.692	.490		-.015	.022	-.049	
Anxiety		-2.673	.008		-.041	.015	-.191	
Step 3	.044			.005				1.467
Priming conditions* avoidance		1.010	.314		.028	.028	.074	
Priming conditions*anxiety		0.504	.615		.009	.019	.036	

Note: Priming conditions in the model were dummy coded (secure relationship priming vs other primings) * $p < .05$ ** $p < .01$ * $p < .001$**

For exploratory purposes, I also investigated the participants' work-related and personal burnout scores by adding them in the first step of the model, where the self-reported exploration was an outcome variable. While the first step of the model was not significant ($F(2, 192) = .806, p = .448$), the R^2 change was significant in the second step of the model ($F(3, 189) = 4.033, p = .008$), in which I added dummy coded priming conditions and attachment dimensions. Accordingly, the second step of the model significantly explained 6% variance in self-reported exploration $F(5, 189) = 2.758, p = .020$ (.05), mainly because avoidance dimension significantly and negatively predicted self-report exploration when the burnout scores were controlled ($\beta = -.233, SE = .083, 95\% [-.377, -.090], p = .002$). For the model where I added time spent on the SDT as the outcome variable, neither the first step of the model ($F(2, 192) = 1.35, p = .262$) nor the R^2 change in the second step was significant ($F(3, 189) = 1.702, p = .168$).

9. SUMMARY OF THE FINDINGS AND A BRIEF DISCUSSION

Overall, Study B aimed to test the role of secure relationship priming in exploration by defining exploration at a behavioural level. The results showed no significant group differences across priming conditions regarding the time spent on the SDT. Nevertheless, I found that people primed with secure relationships reported significantly higher security feelings on the felt security scale. In addition, they scored significantly higher on self-reported exploration than in the other priming conditions.

Another hypothesis of Study B was to understand the role of attachment dimensions (i.e., anxiety and avoidance) in the relationship between priming and self-reported exploration and time spent on SDT. People's sense of avoidance accounted for significant variance in self-reported exploration; however, attachment anxiety did not explain any significant variance in time spent on SDT. Similarly, unlike initial predictions, I did not observe any moderator role of attachment dimensions in the association between secure relationship priming and outcomes variables. In other words, there was no interaction effect of global attachment dimensions. Finally, analyses I conducted for exploratory purposes also revealed no role of burnout in the relationship between primings and the outcome measures.

Strikingly, I observed significantly higher security feelings and self-reported exploration in the irrelevant priming condition than in the distant relationship priming condition. I asked participants to visualize their last shopping activity in the former condition. In contrast, I asked them to visualize a relationship with whom they have neither positive nor negative, a "neutral" relationship in the latter condition. Although I initially did not expect any different results between these two conditions, the findings were not what I expected. Therefore, I could only have a chance to speculate on these exciting findings. People sometimes may prefer to go shopping with their close friends or even with their romantic partners. As a result, remembering these types of instances or memories may have increased the sense of safety in people.

Consequently, it may have increased the sense of security more than the distant relationship priming condition. It is also possible that people might have also remembered their significant others when remembering shopping due to the spreading activation effect, which constitutes a basis for the priming methodologies as a concept (Collins & Loftus, 1975). In other words, associated schemas with shopping (which I believe are the most significant others) might have also evoked “community” or “relation” based mental representations in people and hence made them report significantly more security feelings.

Similarly, remembering a shopping activity may have included some behavioural patterns we could refer to as “exploratory” behaviour. The reason is to find the best options available, and people may have undergone complex exploration-based behaviour such as comparing and contrasting different brands in shopping and finding the best option. As a result, asking them to visualize a shopping activity may have facilitated schemas often associated with typical consumer behaviour, which primarily include exploring as many options as possible in the market. As a consequence, I conclude that researchers should be careful when determining which condition they intend to serve as control and weigh up possible consequences.

10. GENERAL DISCUSSION

First and foremost, I collected data online in both studies. Although I tried to minimize the effects of third variables by distributing filler items and setting pre-determined exclusion criteria, the data quality of my research still might not be as high as the studies conducted in controlled laboratory settings. The reason is that I had to exclude nearly half of the responses due to missing cases on outcome variables in both studies. Moreover, most of the data came from students who participated in my studies to get extra points for the courses they registered for. In line with that, the data of the current studies might not be a good representation of the general Turkish population. Most participants were university students living in big cities of Türkiye (i.e., Istanbul, Ankara). Therefore, it is also questionable how much the current sample deviates from the sample's characteristics of Western societies or the replicated article itself (Luke et al., 2012).

Gillath et al. (2016) argued that feeling secure may reduce our attachment-related worries and increase the motivation to get in contact with the environment. Mikulincer and Shaver (2016) also claimed behavioural attachment system directs our attention to specific goals such as provision, staying away from danger, and a sense of safety. However, constant physical contact is not always as feasible in infancy as in adulthood. Hence, it is sometimes adequate for adults to visualize their attachment figures to feel safe. According to a recent meta-analysis on attachment security priming, priming attachment security is positively associated with helping behaviour, cognitive openness and openness to out-groups, positive affect, empathy, and compassion, and negatively linked with anxiety and depression (Gillath et al., 2022).

Therefore, current findings aligned with the attachment theory and supported the secure base function of close relationships. In other words, the current data indicated that the secure base function of close relationships could reliably be activated by using a guided

imaginary task even in a virtual environment, and its' consequences on self-report measures were salient (Carnelley & Ruscher, 2000; Gillath & Karantzas, 2019; Green & Campbell, 2000; Luke et al., 2012; Mikulincer & Shaver, 2020).

On the other hand, I did not find support for my hypothesis about increased energy feelings in the secure relationship priming than distant priming. I also did not support my fourth hypothesis, predicting that the energy feelings will play an indirect role in the association between the secure relationship between priming and the sense of exploration. Henriksen et al. (2014) found that soft drink consumption containing a high sugar volume increases among socially isolated people in contrast to those who are socially connected. Moreover, Stanton et al. (2014) also found that thinking about a loved one increases blood glucose levels. In other words, although I did not find significantly higher energy scores in the secure relationship priming condition, it might be possible that different operational definitions of energy might be considered.

For the conceptual replication (Study B), while people reported significantly higher exploration feelings in self-reported exploration in the secure relationship priming, their time spent on SDT did not significantly differ based on which priming they received. Some researchers argue that remarkable variance exists between self-reports and behavioural measures (Dang et al., 2020). I believe that similar discrepancies might also exist in my studies. I relied on the operational definition of exploration as excitement seeking and openness to novelty in the exploration index (Green & Campbell, 2000). However, I defined exploration as finding out the answers to a challenging task (i.e., unsolvable) without being tired and disappointed in the Spot the Differences Task. These specific operational definitions from each other might be responsible for different findings in my study.

Moreover, how long attachment security priming lasts is still a mystery (Gillath et al., 2022; Mikulincer & Shaver, 2020a). Consequently, there is also a gap in whether the effect of attachment security priming differ across different outcomes (i.e., affective,

cognitive, behavioural) regarding the duration (Gillath et al., 2022). Given that I relied on different types of outcomes across two studies, the effect of priming may also have varied for different outcome measures.

Additionally, I expected that people who are low on avoidance and anxiety dimensions would get higher scores on both forms of exploration. In other words, I predicted that attachment styles would moderate the relationship between secure relationship priming and people's exploration scores. Nonetheless, I only observed that the avoidance dimension accounted for a 7 % variance in self-report exploration. That is, I have partially replicated my second hypothesis in Study B. In addition, attachment styles did not moderate the relationship between priming and both forms of exploration. In other words, I did not find any support for my third hypothesis in Study B.

11. LIMITATIONS AND FUTURE DIRECTIONS

First, some researchers employed different conceptualizations of energy (Henriksen et al., 2014; Stanton et al., 2014). I urge other researchers to use various designs to define energy and not necessarily stick merely to self-reports. Different operational definitions of energy should be re-evaluated in attachment security priming. Moreover, some offered factors other than energy when explaining the relationship between secure base and exploration motivations, such as openness to negative affect and better regulation strategies (Heylen et al., 2019). Therefore, future research should not overlook the role of any potential variable(s) rather than energy to have a better underlying mechanism in this context.

Second, exploration can be defined differently (e.g., novelty-seeking, taking challenges, widening horizon; Feeney & Thrush, 2010; sensation-seeking, and curiosity; Vogl, 2020; Wagstaff et al., 2020; Szumowska & Kruglanski, 2020; Litman et al., 2005; Kashdan et al., 2009; Kashdan et al., 2004; the high need for achievement and high tolerance for failures; Elliot & Reis, 2003). However, according to Xu et al. (2015), definitions of exploration share three commonalities overall; emphasis on the novelty of the task, the motivational force behind the action (it should be targeted to reach a goal), and the emphasis on the uncertainty in the environment (Xu, 2015). As a result, I think researchers studying attachment priming should find the most suitable operational definition of exploration compatible with attachment theory by paying attention to the shared themes in numerous definitions of exploration as a measurable concept in the literature (Elliot & Reis, 2003; Madsen & Jensen, 2021; Xu et al., 2015; Green & Campbell, 2000; Heylen et al., 2019; Carnelley & Ruscher, 2000; Feeney & Thrush, 2010).

Memory research frequently investigates memories' properties in addition to the main research questions, such as memories' vividness or intensity of emotions associated with

particular memories (Ayduk & Kross, 2010; Bryant & Chan, 2017; Koppel & Bernstein, 2015; Kross et al., 2005). I also predicted to what extent people clearly and vividly visualize during priming conditions will account for variances in their exploration scores. In line with my prediction, clarity and vividness explained a significant amount of variance in the self-report version of exploration but not in the time spent on SDT. In other words, the properties of people's visualisations in mainly guided visualization tasks may account for remarkable variance in the attachment security priming studies. Therefore, I believe that researchers should consider the features of the visualisations in guided visualisation priming studies.

My results showed that role of attachment dimensions in priming studies could differ depending on the context (Gillath et al., 2022; Rowe et al., 2020). Current findings were in line with the previous findings in the literature, where the priming technique (Ma et al., 2019; Sim et al., 2019) and the differences between attachment dimensions (Harma & Gokce, 2018) have resulted in different consequences.

One important conclusion of the current studies is the variability in replication studies. I note that the current study's findings were limited to the young university students of Turkey, mostly having a psychology major. Although Hanel and Vione (2016) argued that student samples are as diverse as samples across different cultures, they also emphasised the "speciality of students" as essential for determining the sample's representativeness. I, therefore, suggest future research to understand similar research questions in diverse sample settings to increase sample validity (Row et al. 2020). Although most studies seemed to be successfully replicated in different cultural settings with a different team of researchers (Klein et al., 2014; Klein et al., 2018), contextual factors and random errors still account for variances in replication studies. Therefore, I want to highlight the importance of replication of previously published studies in a different context and with a different set of researchers.

Another important implication of the current studies was that they primarily relied on self-report measures. Although I consistently replicated the findings in the original study across current studies using identical self-reports (having translated into Turkish), I failed

to find the same effects for the SDT. Rowe et al. (2020) emphasised the importance of physiological tools in generalising the implications and benefits of attachment security priming studies to broader settings. Therefore, I urge other researchers to continue utilising behavioural indicators and implicit measures to enrich the methodologies used in priming studies and facilitate novel research questions. In this way, future research could investigate how attachment security manifests itself in human physiology and in what ways the effect of attachment security priming may manifest itself in the human brain and neurology.

I also believe that the scope of attachment security priming is mainly limited to the experimental procedures merely conducted in the laboratory. However, to test a theory's applicability to real-life (Mikulincer & Shaver, 2020), it is critical to study security priming outside laboratories, which are different social settings such as organisational and educational environments. This way, practical implications of attachment security priming could also be tracked. Therefore, future research should enlarge the scope of attachment priming studies by studying it in applied settings.

Last and not least, participants may have been primed with attachment security (i.e., subliminal, supraliminal, guided imaginary techniques; Gillath & Karantzas, 2019) in various ways in different studies (Gillath & Karantzas, 2019). What is lacking in the current literature on attachment security priming is which technique is most effective and in which conditions (Rowe et al., 2020). Therefore, I believe a series of experiments in the same study can assess the effectiveness of different priming methodologies. Although Sim et al. (2019) and Ma et al. (2019) tried to compare more than one methodology in the same study by keeping research questions the same, to the best of my knowledge, those were the few attempts that solely exist in the literature.

Therefore, I urge other researchers to find an empirical answer to the effectiveness of different priming methodologies by testing and comparing them in the same study. Moreover, further studies might also address the effect of repeated security prime as Oehler and Psouni did in 2019, thanks to momentary ecological assessments (i.e., experience sampling methodology). Thus, this would also allow researchers to implement

advanced techniques to analyse their data, such as time-series design, and to capture a more comprehensive picture of attachment security priming in the long run.



12. CONCLUSION

In this master thesis, I tried to replicate the second experiment in Luke, Sedikides, and Carnelley's (2012) paper through two studies, one for direct replication and the other for conceptual replication. My essential goal was to understand the role of energy in the procedure known as the "guided imagery technique" (Gillath & Karantzas, 2019). During this procedure, people were asked to remember any instances related to their close relationships or visualize their significant others to create a sense of security and safety. Researchers use this priming methodology to understand the consequences of temporary activated security feelings in people. My other aim was to replicate the effect of the secure base function of close relationships on exploratory behaviour or ideas, which is one of the basic tenets of adult attachment theory (Hazan & Shaver, 1987; Mikulincer & Shaver, 2016).

Other than these two primary aims, I also had minor goals. My first minor goal was to create a task to define exploration behaviourally. Another minor aim of the current studies was to understand the role of attachment patterns and the characteristics of people's metallization (i.e., clarity and vividness of their visualizations) in priming studies. To do that, I measured global attachment measures (Fraley et al., 2011; Fraley et al., 2015) and clarity and vividness in Study B (Mikulincer & Shaver, 2001).

According to the results of the current studies, I have partially replicated the findings of the second experiment in Luke et al.'s (2012) paper. Although I found the level of security and energy significantly increased in the people primed with secure relationships than the distant relationship priming (i.e., served as a control condition), I did not find any significant increase in the sense of energy across primings. Additionally, I did not replicate the indirect role of energy the authors of the replicated article found in their paper (Luke et al., 2012). Thus, energy feelings did not significantly mediate the association between secure relationship priming and the sense of exploration.

Drawing conclusions from the results of the conceptual replication (Study B), I supported the findings related to the increased self-report security and exploration in my direct replication study. However, I did not find any significant effect of secure relationship priming on the “Spot the Differences Task” task. Furthermore, neither the clarity and vividness nor the different dimensions of attachment patterns explained a significant amount of variance in the same task.

Therefore, I have partially supported my hypotheses (i.e. pre-registered; please see <https://osf.io/8e3fr/> for Study A and see <https://osf.io/gv5y9> for Study B) in the two studies I conducted.



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APPENDIX A

A.1 Informed Consent (Turkish)

Bu araştırma, Kadir Has Üniversitesi Psikoloji bölümü yüksek lisans öğrencisi Adar Cem Lağap tarafından Doç. Dr. Mehmet Harma danışmanlığında yüksek lisans tezi kapsamında yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?

Araştırmanın amacı, anılarımızın gündelik hayatımıza olan etkilerini araştırmaktır.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Araştırmaya katılmayı kabul ederseniz, sizden yaklaşık olarak 15 dakika sürecek bu çalışmada birden fazla çoktan seçmeli sorunun olduğu bir anketi cevaplamanızı bekleyeceğiz.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır.

Katılımınızla ilgili bilmeniz gerekenler:

Çalışma, genel olarak kişisel rahatsızlık verecek sorular veya uygulamalar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz çalışmayı yarıda bırakmakta serbestsiniz.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:

Çalışma sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Kadir Has Üniversitesi Psikoloji Bölümü öğretim üyelerinden Doç. Dr. Mehmet Harma ya da yüksek lisans öğrencisi Adar Cem Lağap ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.

A.2 Demographic Questionnaire (Turkish)

1)Cinsiyetiniz:

☐K ☐E ☐Belirtmek istemiyorum

2)Doğum Yılıınız:_____

3) Yaşadığınız şehri belirtiniz:_____

4) Düşünüp yazdığınız kişinin size yakınlığı nedir (örn., eş, kız/erkek kardeş, anne gibi):_____

5) Bu kişiyi ne kadar süredir tanıyorsunuz? (yıl olarak belirtiniz):_____

A.3 Secure Relationship Priming

Güvenli Bağlanılmış İlişki (Deneyssel) Yönlendirmesi (Bartz ve Lydon, 2004; Luke vd., 2012)

Please think about a relationship you have had in which you have found that it was relatively easy to get close to the other person and you felt comfortable depending on the other person. In this relationship, you didn't often worry about being abandoned by the other person and you didn't worry about the other person getting too close to you. The nominated relationship must be (or was) important and meaningful to you.

Now, take a moment and try to get a visual image in your mind of this person. What does this person look like? What is it like being with this person? You may want to remember a time when you were actually with this person. What would they say to you? What would you say in return? What does this person mean to you? How do you feel when you are with this person? How would you feel if this person was here with you now?

Turkish

Lütfen yanında rahat hissettiğiniz ve kolay bir şekilde yakınlaşabildiğiniz bir ilişkinizi düşününüz. Bu ilişki, o insan tarafından terk edilmekten endişelenmediğiniz ve aynı zamanda o kişinin sizinle çok fazla yakınlaşmasından da rahatsızlık duymadığınız bir ilişki olmalı. Düşündüğünüz bu ilişkinin sizin için önemli ve anlamlı olması çok önemli.

Şimdi bir süre bu kişiyi zihninizde canlandırmaya çalışınız. Bu kişi nasıl birine benziyor? Onunla olmak nasıl bir şeye benziyor? Bu kişiyle gerçekten beraber olduğunuz bir anı hatırlayabilirsiniz. Size ne derdi? Siz ona karşılığında ne cevap verirdiniz? Bu kişinin sizin için anlamı nedir? Onunla olmak nasıl hissettiriyor? Eğer bu kişi şu an sizinle olsaydı nasıl hissederdiniz?

A.4 Distant Relationship Priming

Kontrol (Nötr İlişki) Yönlendirmesi (Kumashiro and Sedikides, 2005; Luke et al., 2012)

Please think of a current relationship that you have. Think of a distant relationship. Think of a person with whom you have had a truly neutral relationship. Think of a person you don't know very well, and whom you neither like nor dislike.

Now, take a moment and try to get a visual image in your mind of this person. What does this person look like? What is it like being with this person? You may want to remember a time when you were actually with this person. What would they say to you? What would you say in return? What does this person mean to you? How do you feel when you are with this person? How would you feel if this person was here with you now?

Turkish

Lütfen şu anda sahip olduğunuz herhangi uzak bir ilişkiyi düşününüz. Bu kişiyle olan ilişkiniz tam anlamıyla nötr olmalı. Çok iyi tanımadığınız, kendisine karşı nötr olduğunuz bir kişiyle olan ilişkinizi düşününüz.

Şimdi bir süre bu kişiyi zihninizde canlandırmaya çalışınız. Bu kişi nasıl birine benziyor? Onunla olmak nasıl bir şeye benziyor? Bu kişiyle gerçekten beraber olduğunuz bir anı hatırlayabilirsiniz. Size ne derdi? Siz ona karşılığında ne cevap verirdiniz? Bu kişinin sizin için anlamı nedir? Onunla olmak nasıl hissettiriyor? Eğer bu kişi şu an sizinle olsaydı nasıl hissederdiniz?

A.5 Felt Security Scale

Felt Security Scale (Luke et al., 2012)

Please respond to the items below using the following 6-point rating scale according to your current feelings.

Emotional State	Frequency (Approximate)
comforted	4
secure	3
supported	4
safe	5
loved	4
protected	3
better about myself	2
encouraged	2
sheltered	2
unthreatened	2

A.6 Felt Security Scale (Turkish)

Güvende Hissetme Ölçeği

Lütfen aşağıdaki soruları bir önceki bölümde zihninizde canlandırmanızı istediğimiz kişinin sizi nasıl hissettirdiğine göre cevaplayınız. Örneğin zihninizde canlandırmanızı istediğimiz kişi sizi oldukça rahatlatmış hissettirdiyse "6", hiç rahatlatmış hissettirmediyse "1" işaretlemelisiniz. Soruların doğru veya yanlış cevapları yoktur.

1	2	3	4	5	6
Hiç hissetmiyorum					Oldukça hissediyorum
Rahatlamış					
Güvende					
Desteklenmiş					
Emniyette					
Başkaları tarafından					
Sevilmiş					
Himaye edilmiş					
Kendim hakkında					
daha iyi					
Cesaretlendirilmiş					
Korunmuş					
Tehlikelerden uzak					

A.7 Energy Scale

Energy Scale (Luke et al., 2012)

Please respond to the items below using the following 6-point rating scale according to your current feelings.

1	2	3	4	5	6
not at all					very much
alive					
energetic					
vital					
lively					
vibrant					
energized					
active					
dynamic					
excited					
much of a buzz					

A.8 Energy Scale (Turkish)

Enerji Ölçeği

Lütfen aşağıdaki soruları şu anda nasıl hissettiğinize göre cevaplayınız. Örneğin şu anda oldukça canlı hissediyorsanız "6", hiç canlı hissetmiyorsanız "1" işaretlemelisiniz. Soruların doğru veya yanlış cevapları yoktur.

1	2	3	4	5	6
Hiç hissetmiyorum					Oldukça hissediyorum
Canlı					
Zinde					
Hayat Dolu					
Neşeli					
Coşkun					
Enerjik					
Aktif					
Dinamik					
Heyecanlı					
Verimli					

A.9 Exploration Index

Exploration Index (Luke et al., 2012)

1	2	3	4	5	6
not at all					very much

Thinking about the person I described in the visualization task makes me want to...

explore someplace that I have never been before.

have several friends who are very different from each other.

try bungee jumping, skydiving, or other adventurous activities.

spend time traveling abroad.

get a job that was unusual and different.

explore unusual ideas or theories.

pick up a book on an interesting topic and read some of it.

explore the ideas of foreign cultures.

join a group or club composed of a wide range of people I don't know.

go to new museums

A.10 Exploration Index (Turkish)

Keşif Ölçeği

Aşağıdaki ifadelere ne derece katılıp katılmadığınızı lütfen aşağıdaki kritere bakarak cevaplayınız.

1	2	3	4	5	6
Hiç motive etmiyor					Oldukça motive ediyor

Zihnimde canlandırduğım ve tanımlamaya çalıştığım kişi ile ilgili düşünmek beni...(Lütfen sol taraftaki her bir ifadeyi bu cümledeki soruyu başına getirerek yukarıdaki kriterlerden size en uygun geleni daire içine alarak cevaplayınız)

Daha önce görmediğim bir yeri keşfetmem konusunda

Birbirinden oldukça farklı birden fazla arkadaşla sahip olmam konusunda

bungee jumping, serbest paraşüt ve benzeri macera dolu aktiviteleri yapmam konusunda

Yurt dışına seyahat ederek zaman geçirmem konusunda

Alışılmadık ve farklı bir işe başlamam konusunda

Alışılmadık teoriler veya fikirleri keşfetmem konusunda

İlginç bir konu hakkında yazılmış bir kitabı alıp biraz okumam konusunda

Yabancı kültürlerle ait fikirleri keşfetmem konusunda

Üyelerinin çok çeşitli ve tanımadığım insanlardan oluştuğu bir gruba veya kulübe katılmam konusunda

Yeni müzelere gitmem konusunda

A.11 Debriefing (Turkish)

Değerli katılımcı,

Doç. Dr. Mehmet Harma danışmanlığında Kadir Has Üniversitesi Psikoloji bölümü yüksek lisans öğrencisi Adar Cem Lağap tarafından tez için yürütülen bu araştırmaya katılımınız için çok teşekkür ederiz. Bu form size bu çalışmanın içeriği hakkında daha detaylı bilgilendirme sunmak amacıyla oluşturulmuştur.

Araştırma başlamadan önce verilen bilgi onam formunda çalışmada anılarımızın gündelik hayata olan etkilerinin araştırıldığı belirtilmişti. Bu kısmen doğru olsa da çalışmanın istenildiği gibi yürüyebilmesi amacıyla verilmiş ve genelleştirilmiş bir amaç tanımlamasıydı. Çalışmanın gerçek amacı, kişilerin bağlandıkları ve yoğun ilişkiler geliştirdikleri kişileri zihinlerinde canlandırmanın güvende hissetme, çevreyi keşfetme motivasyonu ve enerjik hissetmeleri üzerinde bir etkisi olup olmadığını araştırmaktır. Bu amaçla, katılımcılar deneyin başında rastgele iki farklı koşula atandı. Bunlardan birinde katılımcılara mesafeli oldukları ve yakın olmadıkları bir ilişkiyi düşünmeleri istendi. Diğer koşulda yani deneysel koşulda ise, katılımcılardan yakın ilişki içerisinde oldukları ve kendilerini yanında rahat hissettikleri bir kişiyle kurdukları ilişkiyi düşünmeleri istendi. Sonrasında bu ilişkiyi tanımlayacak birtakım cümleler yazmaları beklendi. Ayrıca katılımcılara hayal ettikleri bu kişileri ne kadar süredir tanıdıkları ve yakınlık dereceleri de soruldu. Son olarak bütün koşullardaki katılımcılara güvende hissetme, çevreyi keşfetme motivasyonlarını anlama ve enerjik/zinde hissetme ile ilgili düşüncelerini anlamaya yönelik birtakım sorular sorularak deneydeki manipülasyonun bu ölçümlere etki edip etmediği anlaşılmak istendi.

Bilindiği kadarıyla bu çalışmaya katılmanın herhangi bir riski yoktur. Bu çalışmaya ders kapsamında bonus puan almak amacıyla katılan öğrencilerin çalışma sonunda hangi ders için katıldıkları ve öğrenci numaraları alındı. Ayrıca katılımcılardan alınan tüm kişisel

bilgilerin “anonim” olarak tutulduğunu ve cevaplarınızın kimlik ve demografik bilgilerinizle eşleştirilmediğini tekrar belirtmek isteriz.

Çalışma hakkında daha fazla bilgi sahibi olmak veya çalışma tamamlandığında sonuçlar hakkında bilgi edinmek isterseniz araştırma asistanlarına veya çalışmanın yürütücüsü Doç. Dr. Mehmet Harma’ya ulaşarak bilgi alabilirsiniz.

Sevgilerimizle,



APPENDIX B

B.1 Transformation, Distribution, and Box Plot of Page Submit Duration Variable

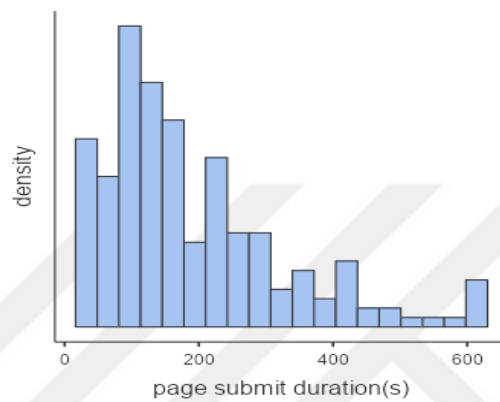


Figure b.1.1 Distribution of Page Submit Duration(s) Before Transformation

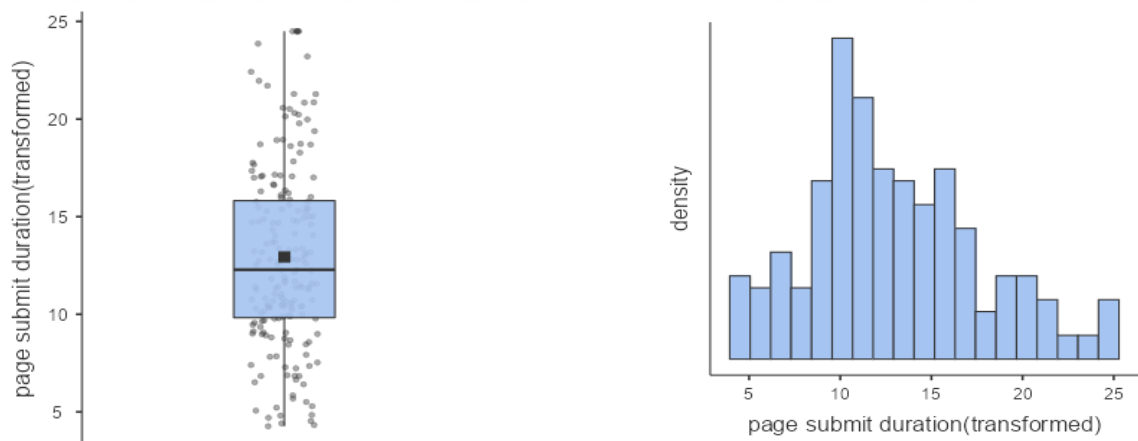


Figure b.1.2 Distribution and Box Plot of Page Submit Duration After Square Root Transformation

B.2 Distribution and Box Plots of Security and Exploration Index Scores

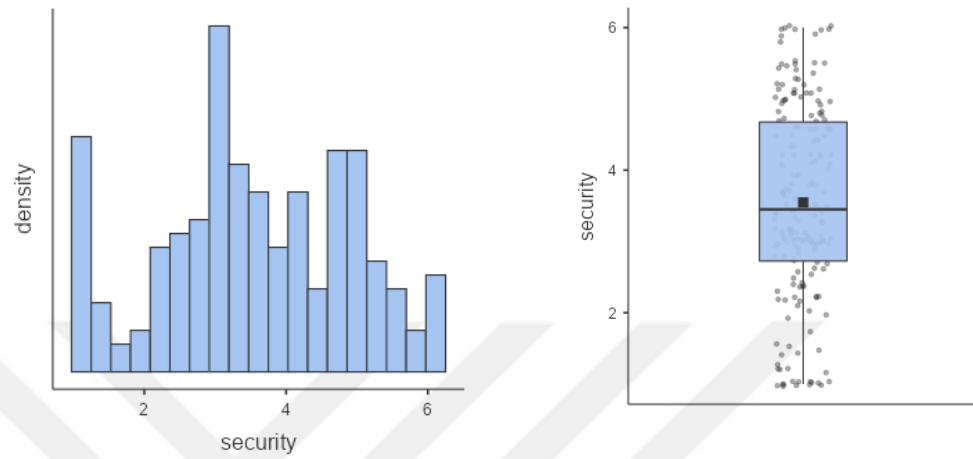


Figure b.2.1 Distribution and Box Plot of Security Scores

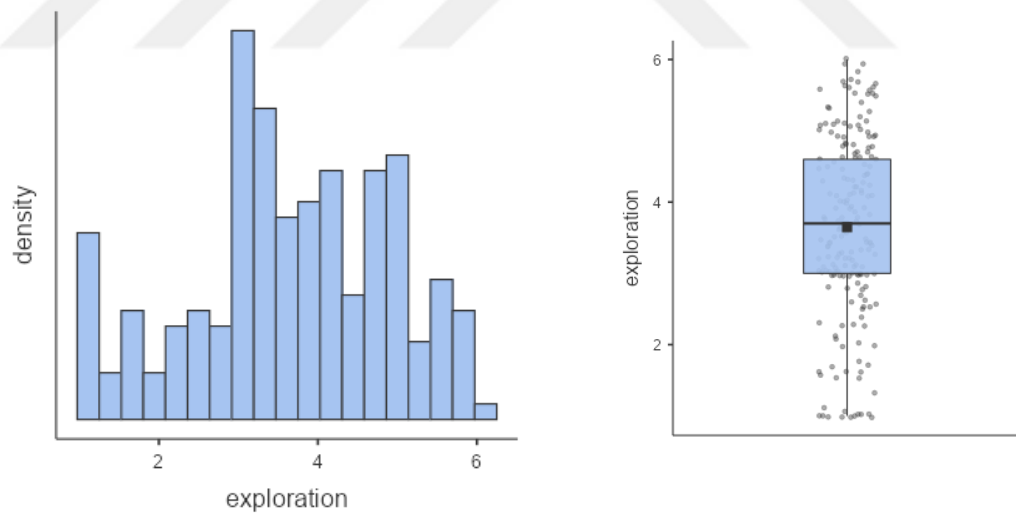


Figure b.2.2 Distribution and Box Plot of Exploration Index Scores

B.3 Distribution and Box Plots of Global Attachment Dimension Scores

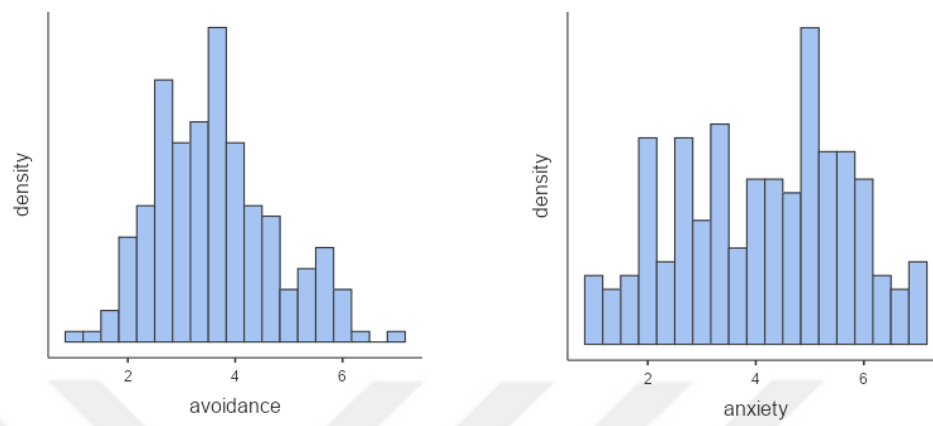


Figure b.3.1 Distribution of Global Attachment Dimension Scores

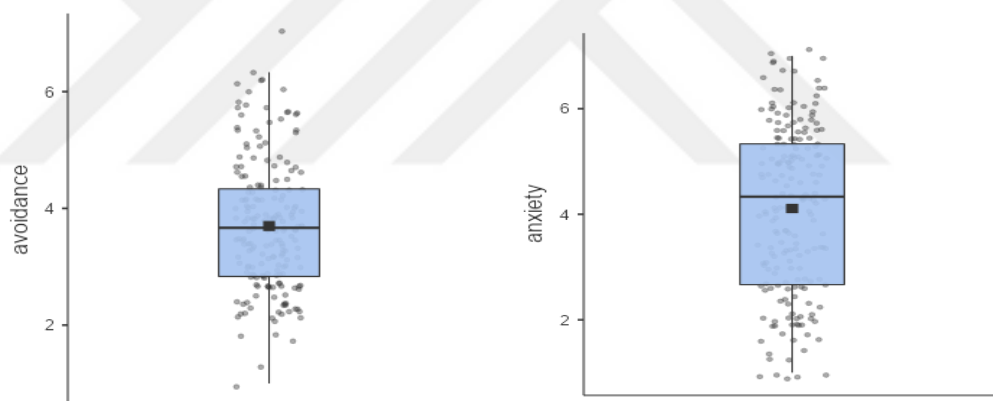


Figure b.3.2 Distribution and Box Plot of Global Attachment Dimensions

B.4 Informed Consent (Turkish)

Bu araştırma, Kadir Has Üniversitesi Psikoloji bölümü yüksek lisans öğrencisi Adar Cem Lağap tarafından Doç. Dr. Mehmet Harma danışmanlığında, tez çalışması kapsamında yürütülmektedir. Bu form, sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Neyi amaçlıyoruz?

Araştırmanın amacı, gündelik yaşantılardaki anların, yaşantıların veya anıların görsel dikkate olan etkilerini incelemektir.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Araştırmaya katılmayı kabul ederseniz, sizden yaklaşık olarak 40-45 dakika sürecek birden fazla çoktan seçmeli, boşluk doldurmalı soruyu cevaplamanızı ve iki adet bulmaca çözmenizi isteyeceğiz.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır.

Katılımınızla ilgili bilmeniz gerekenler:

Çalışma, genel olarak kişisel rahatsızlık verecek sorular veya uygulamalar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz çalışmayı yarıda bırakmakta serbestsiniz. Çalışma görsel dikkatle ilgili bazı ölçümler içerdiğinden, görme bozukluğunuzun olmaması (astigmat, miyop veya hipermetrop değil; renk körlüğü vb.) önem teşkil etmektedir. Ayrıca, çalışmaya dinlenmiş olduğunuz ve rahat hissettiğiniz bir zaman diliminde katılmanızı rica ediyoruz.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:

Çalışma sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Kadir Has Üniversitesi Psikoloji Bölümü öğretim üyelerinden Doç. Dr. Mehmet Harma ya da yüksek lisans öğrencisi Adar Cem Lağap ile iletişime geçebilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.



B.5 Demographic Questions (Turkish)

Herhangi bir görme bozukluğunuz var mı? (Miyop, Hipermetrop, Astigmat hariç)?

Evet

Hayır

B. 5.1 Demografikler

Lütfen yaşınızı rakamla belirtiniz (25, 38, 21 gibi)

Lütfen yaşadığınız şehri belirtiniz

Lütfen cinsiyetinizi belirtiniz.

Kadın Erkek Belirtmek istemiyorum

Yazarak belirtmek istiyorum

B.5.2 Canlılık ve Netlik Ölçümü (Mikulincer ve Shaver, 2001)

Sizce, az önceki zihinsel canlandırmanız ne kadar netti? (1=Hiç net değildi, 2=Net değildi, 3=Biraz net değildi, 4= Kararsızım, 5= Biraz netti, 6=Netti, 7=Oldukça Netti)

1

2

3

4

5

6

7

Hiç net değildi

Oldukça netti

Sizce, az önceki zihinsel canlandırmanız ne kadar canlıydı? (1=Hiç canlı değildi, 2=Canlı değildi, 3=Biraz canlı değildi, 4= Kararsızım, 5= Biraz canlıydı, 6=Canlıydı, 7=Oldukça canlıydı)

1

2

3

4

5

6

7

Hiç canlı değildi

Oldukça canlıydı

B.6 Global/General Attachment (Fraley et al., 2011; Fraley et al., 2015)

We have recently begun supplementing the ECR-RS with an item set that is designed to more explicitly probe people's general attachment styles. We did not want our general measure to be a literal linear combination of the relationship-specific measures because that operation made it difficult to study how general and relationship-specific representations may change together.

The instructions we are currently using to assess "general" or "global" attachment are as follows:

"Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about **close relationships in general**". (The first 6 items tap avoidance with the first 4 items reverse keyed; the last 3 items tap anxiety.)

1 2 3 4 5 6 7

completely agree

completely disagree

1. It helps to turn to people in times of need.
2. I usually discuss my problems and concerns with others.
3. I talk things over with people.
4. I find it easy to depend on others.
5. I don't feel comfortable opening up to others.
6. I prefer not to show others how I feel deep down.
7. I often worry that other people do not really care for me.
8. I'm afraid that other people may abandon me.
9. I worry that others won't care about me as much as I care about them.

Note: The first four items are reverse coded.

B.7 Global Attachment Measure (Turkish)

Bütüncül Bağlanma Ölçümü (Fraley vd., 2011; 2014; Fraley vd., 2015)

Aşağıda yer alan ölçek maddelerini, kurduğunuz yakın ilişkilerinizi düşünerek cevaplayınız (1= Kesinlikle katılmıyorum, 2= Katılmıyorum, 3=Biraz katılmıyorum, 4= Kararsızım, 5= Biraz katılıyorum, 6= Katılıyorum, 7= Kesinlikle katılıyorum). Yakın ilişkiler; annenizle, babanızla, arkadaşlarınızla, varsa romantik partnerinizle veya daha genel manada tanıdığınız, güvendiğiniz herhangi biriyle kurduğunuz; karşılıklı güven ve sevgiye dayalı tüm ilişkilerdir. Lütfen aşağıda yer alan her bir durum için kendinize en uygun olan seçeneği işaretleyiniz.

- | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|---|---|-------------|---|---|------------|
| Kesinlikle katılmıyorum | | | | | | Kesinlikle |
| | | | katılıyorum | | | |
1. İhtiyacım olduğunda insanlardan yardım istemek işime yarar. (Kaçınmacı Bağlanma) *
 2. Sorunlarımı ve kaygılarımı genellikle insanlarla paylaşıyorum. (Kaçınmacı Bağlanma) *
 3. İnsanlarla başımdan geçenler hakkında konuşurum. (Kaçınmacı Bağlanma) *
 4. İnsanlara rahatlıkla güvenirim. (Kaçınmacı Bağlanma) *
 5. İnsanlara kendimi açma konusunda rahat hissetmem. (Kaçınmacı Bağlanma)
 6. İnsanlara gerçekte ne hissettiğimi göstermemeyi tercih ederim. (Kaçınmacı Bağlanma)
 7. Sıklıkla, insanların beni önemsemediği kaygısına kapılıyorum. (Endişeli Bağlanma)
 8. İnsanların beni terk etmesinden korkarım. (Endişeli Bağlanma)
 9. İnsanların beni, benim onları umursadığım kadar umursamayacağından korkarım. (Endişeli Bağlanma)

Not: İlk 4 madde ters kodlanarak hesaplanır.

B.8 The Copenhagen Burnout Inventory (Kristensen et al., 2005)

Always Often Sometimes Seldom Never

Personal Burnout

How often do you feel tired?

How often are you physically exhausted?

How often are you emotionally exhausted?

How often do you think: "I can't take it anymore"?

How often do you feel worn out?

How often do you feel weak and susceptible to illness?

Work-Related Burnout

Do you feel worn out at the end of the working day?

Are you exhausted in the morning at the thought of another day at work?

Do you feel that every working hour is tiring for you?

Do you have enough energy for family and friends during leisure time (inverse scoring)?

Is your work emotionally exhausting?

Does your work frustrate you?

Do you feel burnout because of your work?

B.9 Copenhagen Burnout Inventory (Turkish)

Tükenmişlik Ölçeği (Kristensen vd., 2005)

Lütfen aşağıdaki ifadeleri, son zamanlarda ne sıklıkla yaşadığınızı göz önünde bulundurarak cevaplayınız. (1= hiç, 2= nadiren, 3=bazen, 4= sıklıkla, 5=her zaman)

Kişisel tükenmişlik:

1. Ne sıklıkla yorgun hissediyorsunuz?
2. Ne sıklıkla fiziksel olarak tükenmiş hissediyorsunuz?
3. Ne sıklıkla duygusal olarak tükenmiş hissediyorsunuz?
4. Ne sıklıkla “Artık dayanamıyorum”. diye düşünüyorsunuz?
5. Ne sıklıkla yıpranmış hissediyorsunuz?
6. Ne sıklıkla zayıf ve hastalanmaya açık hissediyorsunuz?

İş ile ilgili tükenmişlik:

1. İş/ders gününün sonunda yıpranmış hissediyor musunuz?
2. Sabahları “yine bir iş/ders günü daha” diye düşündüğünüzde tükenmiş hissediyor musunuz?
3. Her çalışma/ders saatinin sizin için eziyetli olduğunu hissediyor musunuz?
4. Boş zamanlarınızda aileniz ve arkadaşlarınız için yeterli enerjiye sahip olur musunuz? *
5. İşiniz/dersleriniz duygusal olarak yorucu mudur?
6. İşiniz/dersleriniz size yıldırıyor mu?
7. Dersleriniz/işiniz yüzünden tükenmiş hissediyor musunuz?

B.10 Secure Relationship Priming (Version 2) (Turkish)

Güvenli Bağlanılmış İlişki Yönlendirmesi

Sizin için anlamlı ve önemli olan bir ilişkiyi düşününüz. Bu düşündüğünüz ilişkideki kişi, rahatlıkla yaklaşabildiğiniz ve terkedilmekten korkmadığınız, sevgisinden emin olduğunuz biri olmalı. Şimdi, bir süre bu kişiyi zihninizde canlandırmaya çalışınız. Bu kişiyle gerçekten beraber olduğunuz bir zamanı veya onunla geçirdiğiniz bir anıyı hatırlayabilirsiniz. **8 dakika boyunca yukarıda belirtilen konularda düşünmenizi ve bir şeyler yazmanızı rica ediyoruz. (8 dakika sonra ileri tuşu belirecektir ve ona basarak ilerleyebilirsiniz.)**

-Bu kişinin sizin için anlamı nedir?

-Onunla olmak nasıl hissettiriyor?

-Eğer bu kişi şu an sizinle olsaydı nasıl hissederdiniz?

-Bu kişinin sevgisi hakkında ne düşünüyorsunuz?

-Bu kişiyle aranızdaki ilişki hakkında ne düşünüyorsunuz?

Not: Cevaplarken derseniz yukarıdaki sorulardan da faydalanabilirsiniz

B.11 Irrelevant Priming (Mikulincer & Shaver, 2001)

Imagine yourself going to a grocery store and buying products you need for your house, and imagine other persons who are also buying products, talking among themselves about daily issues, examining new brands, and comparing different products.

(Turkish)

Nötr Koşul (Alışveriş) Yönlendirmesi

Lütfen, en son yaptığınız market alışverişinizi düşününüz ve zihninizde canlandırmaya çalışınız. Bu durumu ayrıntılı bir şekilde anlatmanızı rica ediyoruz. **8 dakika boyunca belirtilen konuda düşünmenizi ve yazmanızı rica ediyoruz. (8 dakika sonra ileri tuşu belirecektir ve ona basarak ilerleyebilirsiniz.)**

-Nereye gittiniz?

-Ürünleri alırken nelere dikkat ettiniz?

-Markete nasıl ulaştınız ve nasıl geri döndünüz?

- O esnada çevrenizdeki insanların davranışları nelerdi?

-Markette çalışan personellerin davranış ve tutumları nasıld

Not: Cevaplarken dilerseniz yukarıdaki sorulardan da faydalanabilirsiniz.

B.12 Distant Relationship Priming (Version 2) (Turkish)

Nötr İlişki Yönlendirmesi

Aranızdaki ilişkinin ne olumlu ne olumsuz olduğu, nötr olarak tanımlayabileceğiniz bir ilişkinizi hayal ediniz. Çok iyi tanımadığınız, kendisine karşı herhangi bir pozitif veya negatif duygu barındırmadığınız bu kişiyle olan ilişkinizi zihninizde canlandırmaya çalışınız. Bu kişiyle gerçekten beraber olduğunuz bir zamanı veya onunla geçirdiğiniz bir anıyı hatırlayabilirsiniz. **Not: 8 dakika boyunca yukarıda belirtilen konularda düşünmenizi ve yazmanızı rica ediyoruz. (8 dakika sonra ileri tuşu belirecektir ve ona basarak ilerleyebilirsiniz Dilerseniz 8 dakika dolduktan sonra da yazmaya devam edebilirsiniz.)**

-Bu kişinin sizin için anlamı nedir?

-Onunla olmak nasıl hissettiriyor?

-Eğer bu kişi şu an sizinle olsaydı nasıl hissederdiniz?

-Bu kişinin sevgisi hakkında ne düşünüyorsunuz?

-Bu kişiyle aranızdaki ilişki hakkında ne düşünüyorsunuz?

Not: Cevaplarken dilerseniz yukarıdaki sorulardan da faydalanabilirsiniz.

B. 13 Spot the Differences Task (Turkish)

Farkı Bul Oyunu

Şimdi size iki sokak fotoğrafı göstereceğiz ve **farkı bul** oyunu oynatacağız. Soldaki fotoğraf ile sağdaki fotoğraf arasında bazı farklar bulunmaktadır. Bulduğunuz farkları fotoğrafın altındaki kutuya sıra gözetmeksizin rastgele yazabilirsiniz. Örnek olması amacıyla 1 adet fark fotoğrafların üzerinde gösterilerek, fotoğrafların üstünde kalın puntıyla yazılmıştır. Örnekteki gibi bulduğunuz farkı birkaç kelime ile yazmanız yeterlidir. Her insanın görsel algılama yeteneği farklı olacağından, çok veya az fark bulmanızın, olumlu veya olumsuz herhangi bir anlam ifade etmediğini hatırlatmak isteriz. Dilediğiniz noktada bir sonraki sayfaya geçebilirsiniz.

Örn; Sağ taraftaki panjurun üzerindeki kırmızı benekler



Farkı bul oyunuyla ilgili ařağıdaki ifadelerden size uygun olanı iřaretleyiniz.

A) Tek seferde bitirdim. (Bařından hi kalkmadan)

B) Ara vererek bitirdim. (kahve, ay almaya gitmek; tuvalete gitmek, kapı alması vb. her řey ara vermeye dâhildir).



B.14 Debriefing (Turkish)

Değerli katılımcı,

Doç. Dr. Mehmet Harma danışmanlığında, Kadir Has Üniversitesi Psikoloji bölümü yüksek lisans öğrencisi Adar Cem Lağap tarafından tez için yürütülen bu araştırmaya katılımınız için çok teşekkür ederiz. Bu form, sizi bu çalışmanın içeriği hakkında daha detaylı bilgilendirmek amacıyla oluşturulmuştur.

Size gösterdiğimiz fotoğraflar **farkı bul** oyunu oynanabilen çevrimiçi bir internet sitesinden alınmıştır. Aşağıda, oyunun orijinal halini çözümleriyle beraber görmektesiniz. Deneysel manipülasyon yapabilmek adına, soldaki fotoğrafın aynısının sağa yapıştırılmış hali bütün katılımcılara sunuldu. Bir diğer deyişle, deneyde size aralarında fark varmış gibi sunulan fotoğraflar aslında birbirinin aynısıydı ve aralarında herhangi bir fark bulunmuyordu. Amacımız, kişilerin görsel algısını değil, çözümü olmayan bir oyun üzerinde ne kadar zaman ve çaba harcayacaklarını tespit etmektir. Bilimsel bulgulara göre, kişilere, yanlarında kendilerini güvende hissettikleri ilişkiler hatırlatıldığında; daha enerjik ve canlı hissettikleri raporlanmıştır (Luke vd., 2012; Stanton vd., 2014; Fredrickson, 2004). Bundan yola çıkarak, deneyin başında katılımcılardan, üç deneysel koşuldan herhangi birine rastgele atanarak bir şeyler hatırlamaları istendi. İnsanların çözümü olmayan bir bulmaca üzerinde zaman ve çaba harcama düzeylerinde atandıkları deneysel koşula göre farklılıklar bekliyoruz. **Bize yardımcı olduğunuz için tekrardan teşekkür ederiz.** Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır.

Deneye sizden sonra da katılabilecek insanlar olabileceğinden, **deneyin gerçek amacını** yakın çevrenizle ve arkadaşlarınızla **paylaşmamanızı rica ediyoruz.** Çalışma hakkında daha detaylı bilgi almak veya sonuçlarını öğrenmek isterseniz yüksek lisans öğrencisi Adar Cem Lağap ile iletişime geçebilirsiniz.



CURRICULUM VITAE

Adar Cem LAĞAP

Education

2014 – 2019

Middle East Technical University
B.A. in Psychology
GPA: 3.73

2019 - Present

Kadir Has University
M.A. in Psychology
GPA: 4.00

Current Work Affiliation

August 2021- to Present

Research & Teaching Assistant

Abdullah Gul University Department of Psychology, Sumer Campus Factory Building
38080, Kocasinan, Kayseri/Turkey

Ongoing Projects

October 2021- to Present

Researcher/Investigator in Turkey at the Influence of Co-Thermoregulation in Couples Study.

Scientific Work

Lagap, A.C., Harma, M., & Büyükcan-Tetik, A. (2022). Secure relationship priming, sense of security, energy and exploration: Direct and conceptual replication of Luke, Sedikides, and Carnelley (2012) study 2. *Unpublished manuscript*.

Presentations

Lagap, A. C., & Harma, M. (2022). Attachment security, subjective vitality, and exploration: Direct replication attempt of Luke et al. (2012) and a follow-up study. [Poster Presentation]. Society for Personality and Social Psychology, 19 February, San Francisco, California, United States. (Online).

Lagap, A.C., & Harma, M. (2021). Attachment security, subjective vitality, and exploration: Direct replication attempt of Luke et al. (2012) and a follow-up study. [Poster Presentation]. Psychological Science Accelerator, 30th October, Gather Town (Online).

Lagap, A.C, Arıcan, B., Sevinç, D., & Biton, B. N. (2019) Perceived Partner Responsiveness Emotion-Coregulation and Relationship Satisfaction: On Positive Affect. [Data Blitz]. Convention of National Social Psychology, 20-21 December, Kadir Has University, Istanbul, Turkey.

Research Experiences

May 2022- July 2022

Coder and Author at the Stress Regulation via Being in Nature and Social Support in Adults, A Meta-Analysis Project, <https://osf.io/6wpav/>

July 2020- January 2021

Research Assistant (Assoc. Prof. Dr. Mehmet Harma)
Investigating impacts of COVID-19 Pandemic on Psycho-Social Outcomes from a Network Perspective (120K392)
-Item & Survey development specific to COVID-19, EFA analysis, writing and reporting statistical analysis, review and data gathering

February 2019- May 2019

Research Assistant (Assistant. Prof. Dr. Başak Şahin-Acar)
PSY 393 Workshop: Gender Stereotypes among Kindergarten Children
-Open-ended interviews with kindergarten children about gender identity

November 2018 – January 2019

Research Assistant (Assoc. Prof. Dr. Emre Selçuk)
PSY 395 Workshop: The Effect of Perceived Partner Sensitivity on Well-being and the possible moderator effect of mobility frequency
- Data collection from 60 partners and data analysis

June – July 2018

Lab Assistant
Social Psychology Lab (Assistant. Prof. Dr. Canay Doğulu)
Baskent University

- Content analysis through MAXQDA to understand people's social representations about earthquake and death

February – May 2018

Lab Assistant
PSY 396 Workshop (Assoc. Prof. Dr. Ahmet Uysal)
METU Department of Psychology

November 2017 – January 2018

Lab Assistant
PSY 394 Workshop (Assoc. Prof. Dr. Ahmet Uysal)
METU Department of Psychology

June – September 2017

Research Assistant (Assistant. Prof. Dr. Başak Şahin Acar)
Generational Narrative Styles Among Daughters, Mothers, and Grandmothers
- semi-structured interviews, data collection, and transcription

Publications and Presentations Derived from Thesis

Lagap, A.C., & Harma, M. (2021). Attachment security, subjective vitality, and exploration: Direct replication attempt of Luke et al. (2012) and a follow-up study. [Poster Presentation]. Psychological Science Accelerator, 30 October, Gather Town (Online).

Lagap, A. C., & Harma, M. (2022). Attachment security, subjective vitality, and exploration: Direct replication attempt of Luke et al. (2012) and a follow-up study. [Poster Presentation]. Society for Personality and Social Psychology, 19 February, San Francisco, California, United States (Online).

Lagap, A.C., Harma, M., & Büyükcan-Tetik, A. (2022). Secure relationship priming, sense of security, energy and exploration: Direct and conceptual replication of Luke, Sedikides, and Carnelley (2012) study 2. *Unpublished Manuscript*.
