THE MODERATING ROLE OF SENSORY-PROCESSING SENSITIVITY IN THE RELATIONSHIP BETWEEN SPOUSAL CAREGIVING, PERCEIVED SOCIAL SUPPORT AND MARITAL QUALITY

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ABSTRACT

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This thesis aims to examine the moderating role of sensory-processing sensitivity (SPS) in the relationship between caregiving, perceived social support and marital quality. Specifically, in two studies the role of SPS was tested by comparing the three trait-environment interaction approaches, namely (1) diathesis-stress model, (2) differential susceptibility hypothesis, and (3) vantage sensitivity model, using the Actor-Partner Interdependence Model (APIM). It was expected that if SPS has a moderating effect in the relationship between the proposed study variables, this effect would support for either diathesis-stress model, differential susceptibility hypothesis or vantage sensitivity. In the first study, the Highly Sensitive Person Scale (HSPS; Aron & Aron, 1997), originally developed as an unidimensional measure of SPS, was adapted into Turkish and its psychometric properties of the HSPS were investigated on 341 Turkish university students by utilizing exploratory and confirmatory factor analyses and comparing the alternative models that were suggested in the previous studies. The results suggested that the HSPS is psychometrically valid and reliable measure with its four-factor structure, which

showed a better fit to the data than the alternative factor solutions. In the second study, the moderating effect of SPS was tested using APIM analysis on 133 Turkish married couples. The results suggested that both wives' and husbands' low sensitivity significantly moderated the relationship between their partners' low level of social support and wives' use of negative communication patterns. The findings were unsupportive for differential susceptibility hypothesis and vantage sensitivity. However diathesis-stress model was partially supported. The implications of moderating effects of low sensitivity and operation of trait-environment interactions in marital dynamics were discussed considering relevant theories, past research, and cultural aspects.

Keywords: Diathesis-stress model, differential susceptibility hypothesis, vantage sensitivity, sensory-processing sensitivity, marital quality.

ÖZ

UYARICI İŞLEME HASSASİYETİNİN EŞ BAKIMI, ALGILANAN SOSYAL DESTEK VE EVLİLİK KALİTESİ ARASINDAKİ İLİŞKİDEKİ DÜZENLEYİCİ ROLÜ

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Bu tez çalışmasının amacı, uyarıcı işleme hassasiyetinin eş bakımı, algılanan sosyal destek ve evlilik doyumu ve evlilik iletişim kalitesi arasındaki ilişkide düzenleyici (moderator) rolünü araştırmaktır. Bu amaç doğrultusunda, iki ayrı çalışmada üç yaklaşım; (1) yatkınlık-stres modeli, (2) ayırıcı yatkınlık hipotezi ve (3) avantajlı hassasiyet modeli, kişilik-çevre etkileşimi kapsamında Aktör-Partner Bağımlılık Analizi kullanılarak karşılaştırılmıştır. Uyarıcı işleme hassasiyetinin düzenleyici rolünün araştırma değişkenleri arasındaki ilişkide bulunması halinde, bu etkinin yatkınlık-stres modeli, ayırıcı yatkınlık hipotezi ya da avantajlı hassasiyet modellerinden birini destekleyici nitelikte olması beklenmektedir. Birinci çalışmada, orijinalde tek boyutlu olarak ele alınan içeren uyarıcı işleme hassasiyetini ölçmek için kullanılan Yüksek Duyarlı Kişi Ölçeği (YDKÖ; Aron ve Aron, 1997) Türkçeye uyarlanmış ve 341 üniversite öğrencisi üzerinde ölçeğin psikometrik özellikleri betimleyici ve doğrulayıcı faktör analizi teknikleri kullanılarak ve geçmiş çalışmalarda önerilen faktör yapıları ile karşılaştırmalı olarak incelenmiştir. Birinci çalışmanın sonuçları, YDKÖ'nin, veriye daha uygunluk gösteren dört boyutlu faktör yapısı ile tanımlanması durumunda psikometrik bakımdan geçerli ve güvenilir bir

ölçüm aracı olduğunu göstermiştir. İkinci çalışmada, Aktör-Partner Bağımlılık Modeli kullanılarak uyarıcı işleme hassasiyetinin düzenleyici rolü 133 evli çift üzerinde incelenmiştir. Çalışmanın sonuçları, kadınların ve kocaların düşük uyarıcı hassasiyeti düzeylerinin, partnerlerinin düşük sosyal destek ve kadınların olumsuz iletişim şekilleri kullanımı arasındaki ilişkide düzenleyici rolü olduğunu göstermiştir. Bulgular ayırıcı yatkınlık hipotezini ve avantajlı hassasiyet modelini destekleyici nitelikte değildir, ancak yatkınlık-stres modeli kısmi olarak desteklenmiştir. Düşük seviye uyarıcı hassasiyetinin düzenleyici rolü ve kişilik-çevre etkileşimi kuramlarının evlilik ilişkisi içerisindeki işleyişi, ilgili kuramlar, geçmiş araştırmalar ve kültürel özellikler dikkate alınarak tartışılmıştır.

Anahtar Kelimeler: Yatkınlık-stres modeli, ayırıcı yatkınlık hipotezi, avantajlı hassasiyet, uyarıcı işleme hassasiyeti, evlilik kalitesi.

Dedicated to My Beloved Deceased Grandmother,

Gülsevim Baygut

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INTRODUCTION

1.1 General Introduction

Marriage is an important social institution for better functioning of the society with healthy individuals (Kağıtçıbaşı, 2000). Although there exists a large volume of published studies describing the factors behind happy and unhappy marriages, little research has been devoted in understanding the cumulative power of both environmental and individual-related factors in explaining marital quality. Considering that the variation in the degrees of marital quality cannot be explained by environmental factors or individual factors only, the current study aims to extend the past research on marital quality by examining the interplay between environmental influences and individual characteristics in predicting marital quality. Specifically, the current study aims to apply conceptualization of trait-environment interactions, which have been used extensively in developmental psychology, in understanding the dynamics of marital relationships.

In predicting marital quality, the trait-environment interaction framework will be utilized because this approach highlights how one's inherit individual characteristics and exposure to varying environmental influences interact and affect marital quality. The research in this area is guided by three trait-environment interaction models, namely (1) diathesis-stress model/dual risk model, (2) differential susceptibility hypothesis, and (3) vantage sensitivity. Each model provides a perspective on how endogenous characteristic that one possesses disproportionately affects one's individual outcome depending on the quality of environmental influences. Those specific endogenous characteristics are called "vulnerability-resilience" in diathesis-stress model, "susceptibility" in differential susceptibility hypothesis, and "vantage sensitivity factor" in vantage sensitivity approach.

Accordingly, considering the basic propositions of the aforementioned models, the overarching aim of the present study is to examine a novel model in which sensory-processing sensitivity is treated as a moderator of the relationship between spousal caregiving, perceived social support, and marital quality. In this model, partner effects were considered as environmental factors, which are expected to influence each dyad member. Specifically, it is expected that sensory-processing sensitivity will show a moderating effect, and this moderating effect will support for either diathesis-stress model, differential susceptibility hypothesis or vantage sensitivity. In the present study, sensory-processing sensitivity, which can be simply conceptualized as an adult temperament trait, was treated as an endogenous characteristic. The concept of sensory-processing sensitivity which was proposed by Aron and Aron (1997) seems to be promising to investigate for its potential moderating effect in close relationships because this inherited temperament is mostly ruled out in predicting relationship quality (Aron, 2001). Since marital quality is an interdependent phenomenon including by both partners, the examination of trait-environment interactions will be broadened by dyadic analysis. Inclusion of both spouses in dyadic manner provides a comprehensive examination of trait-environment interactions in a way that has not been studied before.

In the following sections, first, the growing body of the evidence on trait-environment interactions will be presented; and then, both environmental and individual difference correlates of marital quality will be covered. Second, research addressing the trait-environmental interactions from three different theoretical frameworks, namely diathesis-stress model, differential susceptibility hypothesis, and vantage sensitivity will be presented in three separate sections. Third, the conceptualization of sensory-processing sensitivity and the rationale of utilizing this trait within the trait-environment interactions will be discussed in detail. Lastly, the general aims of the study and major research questions will be highlighted with hypothetical graphic displays.

1.2 Correlates of Marital Quality

1.2.1 Environmental Correlates

Environmental influences on marriage can be conceptualized as those influences that are not related to innate traits and genetic influences, but factors stemming from internal and external resources. Over the years, the research on the factors affecting marital quality has been recognized as a central issue within close relationship literature. As Bradbury, Fincham and Beach (2000) argue, the study of how marriages differ in their quality deserves a systematic investigation into wide range of factors. Although it is not possible to mention all environmental influences on marriage in this study, brief overview of the literature in this area may give a hint to understand how marital quality is being affected by environmental factors that each member of a dyad is being exposed.

In an attempt to shed light on the factors affecting marital quality, a considerable amount of literature has been published on these factors including spousal support (e.g., Overall, Fletcher & Simpson, 2010), job characteristics (e.g., Hughes, Galinsky & Morris, 1992), economic well-being (e.g., Dakin & Wampler, 2008; Higginbotham & Felix, 2009), religion (e.g., Lichter & Carmalt, 2009), personal stress (e.g., Randall & Bodenmann, 2008), work-family conflict (e.g., Akanbi & Oyewo, 2014; Suchet & Barling, 1986), and many others. Each of these factors have a great influence on marital functioning whether the quality was considered to be in terms of satisfaction, adjustment, or conflict resolution.

It has been consistently demonstrated that there is a strong relationship between spousal support and couple satisfaction. Feeney's (1996) study has shown that there is a positive link between marital satisfaction and spousal caregiving. It has also been documented by experimental design that those who received high level of support from their partners did not show elevated levels of stress as the exam date is getting closer. More specifically, those whose partners provide good quality of spousal caregiving and support report more marital satisfaction and positive outcomes. It has been corroborated by the findings of Julien and Markman (1991) and Collins and Feeney (2000) that partners' sensitive behaviors to respond to the partner's needs have a positive influence on relationship satisfaction and stability. Consistently, other studies have also shown that the buffering effect of spousal support in lessening the life stress of individuals (Cobb, 1976). Although spousal support has been linked to marital quality, it is also important to consider the social support received from

different domains (i.e., friends) significantly affects the marital success (Bryant & Conger, 1999). Therefore, it is likely that the support received from diverse domains have a vital role in the quality of relationship quality in marriage.

Intriguingly, stress in couples has also been considered as a significant determinant that affects both personal health and couples' relationship quality. According to Bodenmann (2005), stress in couples is defined in a dyadic manner in a way that the stress level of one partner has an influence on the other partner. Thus, its negative effect on relationship quality should be considered as mutually shared by each member of a dyad. The stress in marriage is usually accompanied with negative physical and emotional outcomes. For example, daily stress decreases the time and motivation to be close with the partner, destructs the communication quality and physical and psychological health of the couples. All these negative outcomes result in marital dissatisfaction and even divorce (Bodenmann, 2005; Bodenmann et al., 2007). The negative relationship between stress level and relationship quality has been found in a wide range of studies whether the stress is conceptualized as economic stress (e.g. Bahr, 1979), daily stress (e.g., Harper, Schaalje & Sandberg, 2000), or work stress (e.g., Story & Repetti, 2006). These studies outline a vital role of stress in relationship functioning in a negative manner.

These environmental effects on marital functioning are interconnected with each other in a way that a negative influence of a situation causes a rise of another negativity which in turn leads to lowered marital quality. It is a granted fact in the close relationship literature that relationship quality is easily affected by the lack of resources and/or presence of external and internal stressors (Collins, Guichard, Ford & Feeney, 2006). It seems to be very likely that if an individual is overwhelmed by work load and stress, this kind of situation decreases the motivation to be responsive to the needs of the partner and weakens the feeling of intimacy and closeness. Therefore, various factors may mediate the relationship between environmental influences and relationship functioning. For instance, Hughes, Galinsky and Morris (1992) found that those who have negative job characteristics experience more work-family conflict which in turn damages the marital quality of couples. The similar effect was found for the negative influence of external stressors in a way that

external stress lead to internal stress that each dyad member experiences results in more dissatisfactions among couples (Bodenmann, Ledermann & Bradbury, 2007).

Overall, although many contextual factors predict the marital functioning and present the picture of how behaviors and emotions are affected by negative and positive environmental exposures, what we know about the factors affecting marital quality cannot be confined to environmental influences. There is also large volume of studies that examine the marital quality from the lens of personality-related factors. Thus, intra-individual characteristic or individual differences should be considered together with the environmental factors to better understand the underlying dynamics of marital quality.

1.2.2 Individual Correlates

The individual characteristics can be described as those which are unique to a person and usually an innate trait with genetic components. The excessive interest in examination of the impact of contextual factors on marital outcomes may seem to underestimate the role of individual characteristics that each member of dyad possesses. However, spouses' individual characteristics have a critical role in the understanding of marital functioning as that some environmental influences do. Perhaps the most obvious of these is the personality traits. It has been revealed that agreeableness and openness at individual level and partners' extraversion and conscientiousness were associated with relationship conflict (Bono, Boles, Judge & Lauver, 2002). In a similar vein, it has been reported by meta-analytic review of Heller, Watson and Iles (2004) that all five personality traits namely lower neuroticism, higher extraversion, higher openness, higher agreeableness, and higher conscientiousness were related to marital satisfaction, with the strength of the relationships varied. The similar result was also found by Noftle and Shaver (2006) except for the significant relationship between openness and relationship quality. Among the personality traits, neuroticism was found to be the most critical personality trait that captures "a form of insecurity" in close relationships (Noftle & Shaver, 2006, p.200) so that it is negatively associated with relationship outcomes, especially with the marital ones (e.g., Heller et al., 2004; Karney & Bradbury, 1995).

Related with neuroticism, trait anxiety was negatively and significantly predicts marital satisfaction of married women (Bayrami, Heshmat, & Karami, 2011). As a similar construct to trait anxiety, negative emotionality was also found to be associated with relationship dissatisfaction (e.g., Donnellan, Assad, Robins & Conger, 2007; Stroud, Durbin, Saigal & Knobloch-Fedders, 2010). It is whether wife or husband who reported high levels of negative emotionality, the marital dissatisfaction was reported by both themselves and their partners if one of the dyad members has negative emotionality (Stroud et al., 2010).

Genetic studies on marital outcomes have also been recognized as a significant individual difference correlates of marital outcomes. Genetic influence on marital outcomes has been explored in several studies that have been focused on either divorce risk (e.g., Jocklin, McGue & Lykken, 1996; Mcgue & Lykken, 1992) or marital satisfaction (e.g., Spotts et al., 2004). The findings of the genetic studies on marital outcomes concluded that genotype is a critical determinant marital quality and satisfaction (Towers, Spotts & Neiderhiser, 2008). Although it is not possible to attain single determinants for the risk of divorce, Jocklin et al. (1996) found that personality characteristics of a spouse may account for considerable contribution for the relationship between genotype and divorce risk.

As an aspect of individual difference in terms of personality characteristics, adult temperament should also be considered as a critical predictor of marital outcomes. Blum and Mehrabian (1999) found that spouses with pleasant and dominant temperament reported more marital happiness. Comparison with the previous studies, they conclude that temperament accounted for more proportion of variance in predicting marital satisfaction than personality traits. One of the recent perspectives in the field of adult temperament is *sensory-processing sensitivity* coined by Aron and Aron (1997) as an adult temperamental characteristic. Aron (2001, 2004) claimed that sensitivity trait has a substantial influence on relationship outcomes, especially on closeness and intimacy. She argued that with the effect of past relationship experiences, sensitivity trait significantly affects the motivation to be close and intimate in romantic relationships. Especially with the adverse relationship history, people with high sensitivity are likely to have decreased motivation for closeness which in turn may associate with relationship dissatisfaction. The

association can be reversed for those with secure and healthy past relationship experiences.

Self-esteem was also demonstrated as an important individual characteristic affecting the quality of romantic relationships. Previous studies have reported that low self-esteem has a negative influence on close relationships in a way that lower self-esteem predicts lower relationship satisfaction (e.g., Hendrick, Hendrick & Adler, 1988) and marital happiness (Klemer, 1971). The underlying mechanism beyond the relationship between self-esteem and relationship quality may be explained by the fact that people with low self-esteem are more likely to be pessimistic and depressed (Baumeister, Campbell, Krueger & Vohs, 2003), and feel unhappy (Oprisan & Cristea, 2012) which in turn may cause to feel less satisfied in a romantic relationship.

When it comes to individual difference on romantic relationship outcomes, attachment orientations should be given a special emphasis within the scope of individual differences in behavior, emotions and cognitions in close relationships (Mikulincer & Shaver, 2007; Vaughn, Bost & van Ijzendoorn, 2008). Through the two-dimensional classification of attachment style (Brennan, Clark, & Shaver, 1998; Shaver & Mikulincer, 2007), it has been well-documented fact that attachment anxiety and attachment avoidance has a negative influence on relationship satisfaction (e.g., Collins & Read, 1990; Simpson, 1990; Sümer & Cozzarelli, 2004). Apart from personal effect of attachment styles on one's own relationship outcomes, the dyadic influence should also be taken into account. To illustrate the dyadic effect of attachment styles, Kane et al. (2007) demonstrated that women reported less relationship satisfaction when their partners were high on attachment avoidance, whereas men were less satisfied when their partners were high on attachment anxiety. It has been also investigate that the positive association between attachment security and relationship satisfaction is mediated by the attribution styles. For instance, Collins and Read (1990) found that especially attachment anxiety is negatively related to marital quality; however this relationship is mediated by the negative attributions that spouses made about the partner's behaviors.

Overall, studies on environmental factors and individual characteristics play a significant role in determining the spouses' behaviors and psychological states which directly affect marital functioning in positive or negative manner. However, questions have been raised about how the marital outcomes are affected when the environmental and individual-related factors are combined or interacted. For instance, an individual who is securely attached is supposed to be sensitive and responsive to the needs of his/her intimate partner. However, this sensitivity may be negatively affected by contextual conditions such as work stress. Only when considering solely secure attachment, members of couples are supposed to have high level of marital satisfaction. When considering work stress which has a negative impact on marital outcomes, marital satisfaction is supposed to be decreased for both members. Therefore, the singular emphasis in predicting marital quality may be problematic and incomplete when it is known that both environmental and individual characteristics play an important role. The determinants are multiple and mostly interactive so that answers should be given by considering joint effects of both types of influences; environmental factors and individual characteristics.

It seems that the previous studies have not paid adequate attention in predicting marital quality considering the joint effects of marital environment and personal characteristic of dyad members. However, the research investigating the interactions between two factors (variables) seems to be both comprehensive and complete for the understanding of marital outcomes. In that sense, this study seeks to answer this problem by analyzing the interaction effects between the critical proximal contextual factors of marital relationships and spouses' individual characteristics through the framework of trait-environment interactions.

In the following section, trait-environment interactions will be elaborated in detail by providing direct link to three major trait-environment interaction models, diathesis-stress model, differential susceptibility hypothesis, and vantage sensitivity because the major research question of this study will be investigated through the systematic examination of these models.

1.3 Trait-Environment Interactions

From the biological perspective, it has been well-documented that individuals vary in their biological make-up, so that individual outcomes are affected differently depending on the environmental qualities when interacting with individual characteristics. The recent developments in the field of trait-environment and gene-environment interactions have heightened that a particular inherited characteristic one possesses promotes environmental influences exhibiting heightened adversity or positivity. According to Dick (2011), a gene-environment interaction refers to "a situation in which the effect of genes depends on the environment and/or the effect of the environment depends on genotype" (p.385). With this conceptualization, he argues that both genetic and environmental influences are highly important determinants of developmental outcomes and that merging of these influences are more important to explain developmental and psychological outcomes than simply searching for the best-predictor. Thus, the factors influencing individual outcomes can be explained solely by neither environmental factors nor individual factors, but the interplay between the two. However, the nature of interaction between individual and environmental factors varies depending how the genotype or inherited trait operates in varying environmental conditions.

Accordingly, the nature of interaction effects between biological and environmental influences in understanding psychological outcomes has been framed and widely explored by three major models: (1) diathesis-stress model (Monroe & Simons, 1991) / dial-risk model (Sameroff, 1983), (2) differential susceptibility hypothesis (Belsky, 1997, 2005; Belsky, Bakerman-Kranenburg, & van IJzendoorn, 2007; Belsky & Pluess, 2009) and (3) vantage sensitivity (Manuck, 2011; Pluess & Belsky, 2012). Although all three models intend to examine interplay between individual characteristics and environmental influences, the major theoretical issue that has been dominated the field concerns differentiation of models across methodological and theoretical level.

As the operation of endogenous characteristics change, these characteristics were conceptualized differently for each model, namely vulnerability-resilience factors in diathesis-stress model, plasticity markers/susceptibility factors in differential susceptibility hypothesis, or vantage sensitivity/promotive factors in vantage sensitivity. Pluess and Belsky (2009, 2012) suggests that these models should be

tested within the same study and the same sample in order to reveal whether endogenous characteristic is vulnerability factor, susceptibility factor or vantage-sensitivity factor.

In the following section, the fundamental differences between these models were discussed in detail in separate headings on theoretical and empirical basis for each. Throughout this study, the term gene-environment interaction will be used interchangeably with the term trait-environment interaction which refers to joint effects of environmental factors and inherited individual characteristics.

1.3.1 Diathesis-Stress Model

The inherited tendency to predispose to experience negative life events has been usually investigated within the framework of diathesis-stress model (Monroe & Simons, 1991), or dual-risk model (Sameroff, 1983). Diathesis-stress/dual risk model suggests that co-occurrence of vulnerability factor with negative environmental influences lead vulnerable individuals to run into adverse effects of negative environment exposures (Belsky & Pluess, 2009). This evolutionally-inspired interaction is operative only in the presence of negative environmental influences (e.g. Walker, Downey & Bergman, 1989). In the diathesis-stress model, biological vulnerability is considered to be inherited within one's biological makeup, and stay stable and dormant unless individual encounter environmental stressors (Ingram & Luxton, 2005). However, vulnerabilities are not operative under supportive environments.

On the one hand, genotype, personality traits or adverse early life stressors such as early traumatic experiences are considered as *vulnerability* or *risk* factors. These risk factors lead to elevated predisposition to exhibit negative individual outcomes in the presence of negative life events (Sigelman & Rider, 2012). The recent study by Yaman, Mesman, van Ijzendoorn & Bakermans-Kranenburg (2010) showed that temperamentally difficult children are more affected by lack of positive parenting by displaying more aggression compared to temperamentally easy children. However, children with difficult temperament did not benefit more from positive parenting than children with easy temperament. Behavioral inhibition (Turner, Beidel & Wolff,

1996) and joint effect of anxious solitude and exclusion by peers (Gazelle & Ladd, 2003) were also reported as vulnerability factors that lead heightened psychological problems such as anxiety and depression for children. Thus, dual risks stemming from both environment and individual heighten the vulnerability in this model.

On the other hand, particular individual characteristics or specific life events may also function as *resilient* factors that protect individuals from adverse effect of negative life events (e.g., Bakermans-Kranenburg, Dobrova-Krol & van IJzendoorn, 2011; van IJzendoorn et al., 2011). Although diathesis-stress literature has considerable evidence on vulnerability factors, intrinsically it includes both vulnerability and resilience concepts, so that it can also be described as risk-resilience model. Bakermans-Kranenburg and his colleagues (2011) found that children who are carriers of two long alleles of 5HTT gene are found to be resilient to negative effects of institutional care; even they were raised in childcare institutions.

For the present study, sensory-processing sensitivity trait as a genetically based trait is expected to exhibit a vulnerability-resilient factor in marriage that highly sensitive individuals and their partners may have different patterns of marital quality when they or their partners are exposed to poor spousal caregiving and low level of social support. However, within the scope of this model, they are not expected to benefit more from good quality of spousal caregiving and high level social support.

The vulnerability has recently been challenged by differential susceptibility studies demonstrating that vulnerability may also induce *susceptibility* or *plasticity* in a way that an individual benefits more from supportive environmental exposures by virtue of possessed endogenous trait. As an alternative to diathesis-stress-model, differential susceptibility or "less is more" hypothesis was covered in the following section.

1.3.2 Differential Susceptibility Hypothesis

While diathesis-stress model suggests that "vulnerable" individuals are functioning negatively when they encounter unsupportive environmental conditions, differential

susceptibility hypothesis broadens this proposition claiming that some individuals may be disproportionately affected by both positive and negative environmental exposures. In other words, individuals may be "vulnerable to negative effects of adverse exposures, as well as “susceptible” to beneficial effects of positive environmental conditions (e.g., Belsky, 1997, 2005; Belsky, Bakermans-Kranenburg & van Ijzendoorn, 2007). Unlike, diathesis-stress model, this type of interaction is operative in both presence negative and positive environmental conditions. The empirical evidence supporting moderating role of susceptibility markers in relation between environmental influences and individual outcomes was presented by studies on trait-environment or gene-environment interactions. Belsky and Pluess (2009) categorized the susceptibility markers into three groups, namely genetic, phenotypic, and endophenotypic susceptibility markers. Genetic markers are those characterized with particular sequence of a set of genes. Phenotypic markers refer to stable physical and personality characteristics coded in specific genes such as negative affectivity, difficult temperament, behavioral inhibition or sensory-processing sensitivity. Lastly, endophenotypic markers refer to those markers that manifested in physiological symptoms such as blood pressure, skin conductance level, or cortisol reactivity. These susceptibility markers have been extensively investigated in research for trait-environment or gene-environment interactions, and most of them supported differential susceptibility model.

1.3.2.1 Genetic Markers of Differential Susceptibility Hypothesis

There is a large volume of published studies investigating gene-environment interactions with differential susceptibility approach through utilizing various candidate genes. One of the most prominent genetic marker for differential susceptibility to environment was 5-HTTLPR short alleles (a serotonin-transporter-linked polymorphism region) and 7-repeat DRD4 allele (polymorphism for dopamine receptor) (Belsky & Pluess, 2009). The presence of one of these genes in one’s genotype influence one’s outcomes *for-better* and *for-worse* manner in supportive and adverse environmental conditions. (e.g., Caspi et al. 2003). While the moderating role of 5-HTTLPR gene has been mostly identified in association with adverse childhood environment (e.g., Stein, Schork & Gelernter, 2008; Taylor et al., 2006) and adverse family environment (e.g., Eley et al., 2004), evidence for DRD4

susceptibility marker has been shown in the studies on maternal sensitivity (e.g., Bakermans-Kranenburg & van Ijzendoorn, 2006), negative maternal mental health (e.g., Bakermans-Kranenburg & van Ijzendoorn, 2007), and parenting quality (e.g., Bakermans-Kranenburg & van Ijzendoorn, Mesman, Alink & Juffer, 2008; Sheese, Voelker, Rothbart & Posner, 2007).

Other genetic markers can be listed as low activity in MAOA gene. For instance, 7-year old boys with low MAOA activity displayed more mental health problems when exposed to abusive behaviors, but fewer symptoms if they did not experience (Kim-Cohe et al., 2007). The same behavioral pattern in response to low MAOA activity was conducted for adolescents (Capsi et al, 2002), as well as for adult population (Foley et al, 2004), resulting in significant differences between those who have low MAOA activity and who have high MAOA activity. Other susceptibility-inducing alleles demonstrating gene-environment interactions are mostly studied on adult population such as DRD2 gene (e.g., Elovainio et al., 2007; Keltikangas-Jarvinen et al., 2007), serotonin receptor gene HTR2A-T allele (e.g., Jokela et al., 2007; Jokela, Lehtimamaki & Keltikangas-Jarvinen, 2007), and THP1 gene (e.g., Jokela, Raikkonen, Lehtimaki, Rontu & Keltikangas-Jarvinen, 2007; Keltikangas-Jarvinen et al., 2007).

1.3.2.2 Phenotypic Markers of Differential Susceptibility Hypothesis

Apart from genetic susceptibility markers, many of the empirical evidence for differential susceptibility hypothesis comes from the studies investigating the moderating effect of temperamental characteristics of children (phenotypic markers) on the association between risky and supportive environments, and developmental outcomes. The past decade has seen the increased interest in utilizing child temperamental characteristics as phenotypic susceptibility marker (e.g., Bradley & Corwyn, 2008; Kochanska, Akson and Joy, 2007; Pluess & Belsky, 2009). Especially Kochanska et al.'s (2007) study on highly fearful children and Poehlmann et al.'s (2012) examination on temperamentally prone-to-distress infants have shown that temperamentally susceptible children were more likely to manifest positive behaviors in response to positive exposures, while reacting negatively to the negative exposures. However, Jessee et al.'s (2010) study diverged from these studies, and

examined the moderating role of parent's levels of negative affect and constraint in relation between marital quality and parental sensitivity. They found that those high on negative affect and constraint showed more change in parental sensitivity if reported high marital quality. Whereas, those low on both personality constructs were display low change on parental sensitivity if they report lower marital quality. This specific finding can be interpreted from the perspective of differential susceptibility.

Surprisingly, a series of studies by Aron, Aron and Davies (2005) suggested that individuals in early adulthood may also show differential outcomes depending on their levels of sensory-processing sensitivity, measured by the Highly Sensitive Person Scale (Aron & Aron, 1997). The sensitivity as a plasticity marker was the first to be tested for adult population. They tested the interactions of sensory-processing sensitivity with adverse childhood environment in predicting adult shyness and negative emotionality (Study 2 and 3). The results indicated that highly sensitive individuals who reported more problematic childhood scored higher in shyness and reported more negative emotionality. Whereas their levels of shyness and negative emotionality were lower in the absence of problematic childhood history than individuals with low sensitivity. In the last study, they tested the effect of sensory-processing sensitivity in the experimental conditions. One group of participants was asked to solve a part of intelligence test with easy questions, while others were exposed to relatively difficult ones, and both groups reported their level of negative affectivity. The results revealed that when highly sensitive participants were taken difficult test, they reported more state negative affect. On the contrary, they had lower negative affect when they solved easy test. Therefore, highly sensitive individuals were more affected by emotional comfort and discomfort that they experienced after successfully completing a test and being forced by difficult questions.

In the present study, it is examined if the sensory-processing sensitivity shows supportive evidence for differential susceptibility hypothesis. It is expected that highly sensitive individuals will have advantage or disadvantage depending on the quality of spousal caregiving and level of social support. In other words, the highly sensitive individuals are expected to be more positively and negatively affected from

positive and negative caregiving and social support conditions, respectively. In that sense, sensory-processing sensitivity was supposed to be a susceptibility or plasticity marker, rather than a vulnerability-resilience factor.

1.3.2.3 Endophenotypic Markers of Differential Susceptibility Hypothesis

Drawing from the work of Boyce and Ellis's (2005) on biological-sensitivity-to-context thesis, endophenotypic susceptibility markers has been studied within two separate physiological systems namely the autonomous nervous system and the neuroendocrine system (Pluess & Belsky, 2009). There have been studies in the literature that cardiovascular reactivity like high blood volume pulse (e.g., Gannon, Banks, Shelton & Luchetta, 1989; Boyce et al., 1995), high skin conductance reactivity (e.g., El-Sheikh, Erath & Keller, 2007), and cortisol reactivity (e.g., Obradovi´c, Bush, Stamperdahl, Adler, & Boyce, 2010) have been evidenced as endophenotypic plasticity markers proving for-better and for-worse pattern. To illustrate the moderating role of endophenotypic characteristics, Gannon et al. (1989) measured undergraduates' blood volume pulse amplitude and heart rate recovery before and after stress test, daily hassles, and common physical and psychological symptoms of students were recorded. Consistent with differential susceptibility approach, individuals who showed high blood volume pulse amplitude reactivity reported fewer physical symptoms when they reported to fewer daily hassles compared to individuals with low blood pulse amplitude reactivity. Similarly, they reported fewer depressive symptoms than individuals with high heart rate recovery when experience fewer daily hassles (as cited in Belsky & Pluess, 2009).

Drawing on extensive range of study findings, the authors set out the similar way in which temperamentally difficult or negatively emotional children are more susceptible to the effects of environmental influences when exposed to both positive and negative ones. Those individuals who carry a susceptibility marker seem to be not only at risk of exhibiting adverse developmental outcomes but also at advantage to benefit more from favorable environments. It can be said that depending on the environmental quality, susceptibility markers lead to increased risk in unfavorable exposures, and decreased adversity in favorable exposures. However, in recent years, differential susceptibility hypothesis has been advanced by Pluess and Belsky (2012)

with the notion of "vantage sensitivity". Thus, trait-environment interactions seem to be reflective of more comprehensive approach in predicting individual outcomes.

1.3.3 Vantage Sensitivity

The proposition that some people show differential outcomes depending on environmental influences as a function of inherited individual characteristics has been mostly studied within the scope of differential susceptibility-like theoretical framework. Before establishing basic promises of differential susceptibility hypothesis, diathesis-stress model/dual risk model has been appreciated by many researchers focusing on the notion that negative environmental influences more negatively affect children with risk characteristics (e.g., Belsky, Hsieh & Crnic, 1998; Capsi et al., 2003). Ranging from the terms *vulnerability* to *susceptibility factors*, much of the research has been devoted to investigate that some people are more prone to either negative or both positive and negative exposures due to the inherited characteristics that they possess. The recent concept called *Vantage Sensitivity*, coined by Manuck (2011) and advanced by Pluess and Belsky (2012) has been integrated to the research on trait-environment or gene-environment interactions. The explicitly drawing from the basic promises of differential susceptibility hypothesis, the vantage sensitivity is labelled as "*bright side of differential susceptibility*". In order to describe a situation with this term, individuals who possess biologically endogenous characteristics are more positively affected by favorable environments than others, contrary to exhibit elevated vulnerability to adversity. Therefore, it can be said that it functions as an opposite of vulnerability. Moreover, it can be best manifested when environmental quality range from positive to absence of positive exposures. By means of this, the positive environmental exposure may be in the expected intensity to reveal that one has an advantage of sensitivity in the presence of positive influences. Otherwise, it can be found a misnomer of differential susceptibility hypothesis (Pluess & Belsky, 2012).

Carefully reviewing the research on differential susceptibility hypothesis, vantage sensitivity has gained recognition with providing much empirical support from larger volume of studies. As a synonym of '*advantage'*, vantage sensitivity was described as a notion that "some individuals are more sensitive and positively responsive to the

environmental advantages to which they are exposed" (p.3). The vantage sensitivity is usually confused and accompanied with the term 'resilience'. While resilience refers to protective function when exposed environmental adversity, vantage sensitivity refers to promotion or to gain profit from positive environmental influences. Therefore, vantage sensitivity reflects favorable individual variation in response to positive exposures. However, it does not provide protective function in the face of adversity (Pluess & Belsky, 2012).

There have been several studies in the literature that either explicitly or implicitly providing empirical evidence for vantage sensitivity. As it is found in differential susceptibility-like findings, three vantage sensitivity factors namely (1) behavioral, (2) physiological and (3) genetic vantage factors have been identified as bearing potentially advantageous responsiveness to positive exposures (Pluess & Belsky, 2012). In terms of behavioral vantage sensitivity factors, infant temperament (i.e., temperamental shyness and negative emotionality) found to be operative especially for child populations (e.g. Cassidy, Woodhouse, Sherman, Stupica & Lejuez, 2011; Kim & Kochanska, 2012; Ramchandani, van IJzendoorm & Bakermans-Kranenburg, 2010; Schipper, Oosterman & Schuengel, 2012), while sensitive personality (i.e., sensory-processing sensitivity) emerged as an endogenous (intrapersonal) factor that moderates the effects of positive environmental conditions for adults (e.g., Aron, Aron, & Davies, 2005; Pluess & Boniwell, 2012 cited in Pluess & Belsky, 2012).

Apart from behavioral vantage sensitivity factors, respiratory sinus arrhythmia (RSA) (e.g., Eisenberg et al., 2012; Obradovi´c et al., 2010), and high cortisol activity have been found as physiological vantage sensitivity factors. In terms of genetic vantage sensitivity factors, it was found that those who are carriers of DRD4 7-repeat allele (e.g., Bakerman-Kranenburg, van IJzendoorn, Pijlman, Mesman & Juffer, 2008; Kegel, Bus & van IJzendorrn, 2011; Nederhof, Belsky, Ormel & Oldehinkel, 2012) and 5-HTTLPR gene (e.g. Hankin et al., 2011; Pluess, Belsky, Way & Taylor, 2010) benefitted favorably from supportive environmental exposures.

Overall, studies have found that inherit characteristics of individuals may also solely function as vantage sensitivity factor and lead one individual to be more responsive to just supportive exposures, consistent with vantage sensitivity pattern. Although

more research is needed to broaden the concept of vantage sensitivity, this study can contribute to the growing area of research on vantage sensitivity in a manner that it has not been studies previously.

For the present study, the moderating role of sensory-processing sensitivity is expected to show support for vantage sensitivity approach. In that sense, it is specifically expected that individuals who have high sensory system sensitivity will show increased level of marital satisfaction and decreased use of negative communication patterns in the presence of good spousal caregiving and high level of social support. However, they will not negatively affected by poor spousal caregiving quality and low level of social support. If the results support for vantage sensitivity, we will conclude that high sensitivity can be considered as vantage sensitivity factor, rather than vulnerability-resilience factor or susceptibility marker.

1.4 Summary of the Models

Under the framework of trait-environment interactions, there are three possibilities that susceptible individuals respond differently to changing environmental conditions. First possibility was represented by "*diathesis-stress model/dual risk model*" which implies that the exposure to adverse effects of environmental conditions results in more negative outcomes for vulnerable individuals. However, these individuals benefit from supportive environmental conditions. The second possibility was illustrated by "*differential susceptibility hypothesis*" which claims that susceptible individuals or individuals with plasticity markers react disproportionately to both the adverse and supportive experiences and exposures by displaying more negative outcomes for former and more positive ones for the latter. More specifically, more plastic individuals show adverse outcomes as a consequence of negative experiences, as well as more positive outcomes as a result of supportive environments. However, responsibility to environmental influences does not differ for less susceptible individuals. The third possibility is called "*vantage sensitivity*", opposite of diathesis-stress model which posits that individuals may benefit more from supportive environmental conditions without being affected more negatively from unsupportive ones. In other words, some individuals may show better outcomes

as a function of their genetic variation with no negativity in negative influences. The distinctive features of these models are summarized in Table 1.

Table 1. *The Summary of Trait-Environment Interaction Models*

Models	Criterion	Outcome
Diathesis-stress model / Dual risk model **"*Dark side"***	Effect of positive environments	No effect
	Effect of negative environments	More negative/positive outcome
	Biological variation	Vulnerability-resilience
Differential susceptibility hypothesis ***"Dark and bright side"***	Effect of positive environments	More positive outcome
	Effect of negative environments	More negative outcome
	Biological variation	Susceptibility/plasticity
Vantage sensitivity ***"Bright side"***	Effect of positive environments	More positive outcome
	Effect of negative environments	No effect
	Biological variation	Vantage sensitivity

While diathesis-stress model (dark side of susceptibility) has been challenged by differential susceptibility hypothesis (both dark and bright side of susceptibility), vantage sensitivity (bright side of susceptibility) extended the notion of differential susceptibility by explicitly stipulating the positive responsiveness for positive functioning (Pluess & Belsky, 2012). Through the contribution of vantage sensitivity to the existing literature, trait-environment interactions have been completed by taking all possible nature of interactions into account. Therefore, each extension in the knowledge of trait-environment interactions seemed to make it possible to broaden the understanding of individual outcomes. Although there are various differences among these models, the common feature of these models is that individuals with endogenous characteristics disproportionately affected by environmental qualities compared to individuals without those inherited characteristics. In all models, individual outcomes are predicted by the interplay between genetic variants and environmental influences, rather than solely explained by either individual or environmental variants.

Although theoretical and conceptual differences were elaborated thoroughly by providing evidences for each model, it seems to be insufficient to infer the results simply on visual checks on graphed interactions (Belsky & Pluess, 2013). To overcome this difficulty in evaluating the interaction effects, advanced statistical techniques seem to be demanding to distinguish these models from each other. Following the suggestions of Roisman et al. (2012), the examination of whether a particular moderating effect of an inherited characteristic supports for diathesis-stress model (for-worse only), differential susceptibility hypothesis (for-better and for-worse), or vantage sensitivity (for-better only) can be statistically probed and analyzed utilizing regions of significance calculation (Preacher, Curran & Bauer, 2006), the proportion of interaction index and the proportion affected index. These statistical approaches to distinguish the models will be elaborated in the 'Results' chapter.

These models have been mostly investigated among children. On the purpose of investigating above mentioned trait-environment interactions among adults, we selected sensory-processing sensitivity which was proposed by Aron and Aron (1997) and measured by the Highly Sensitive Person Scale as and endogenous characteristic that gives susceptibility to individuals for better and/or for worse manner. The rationale of selecting this personality trait as susceptibility trait was discussed in the following section.

1.5 The Rationale of Using Sensory-Processing Sensitivity

1.5.1 The Conceptualization of Sensory-Processing Sensitivity

The concept of sensory-processing sensitivity (SPS) has been coined by Aron and Aron (1997) and hypothesized as an inherited human trait that affects the processing of sensory information and physiological reactions to internal (e.g., hunger and pain) and external (e.g., load noises and bright lights) stimulations. The conceptual framework of SPS has been constructed as a product of studies investigating personality traits and temperament. Considering the research on animal temperament, two distinct survival strategies have been evolved as a function of environmental influences, "exploration or a quiet vigilance" (Aron & Aron, 1997, p.345). A number of studies have shown the operation of these survival strategies for pumpkinseed

sunfish (Wilson, Coleman, Clark, & Biederman, 1993), for rats (Blanchard, Flannelly, & Blanchard, 1986) and for rhesus monkeys (Suomi, 2006). Their sensitive biological makeup increases the chance to reach survival materials (e.g., food and covering), and avoid from risk and threat inducing situation (e.g., predator and adverse weather conditions). The same survival strategies have been considered as well for the human beings who developed reactivity to environmental influences and improved their ability to survive in varying environmental conditions (Aron & Aron, 1997). This personality characteristic was proposed by Aron and Aron (1997) and labeled as 'sensory-processing sensitivity' reflecting one of the survival strategies for humans.

Aron and Aron (1997) have examined the core and common characteristics of SPS among other related concepts such as inhibitedness (Gray, 1981; Kagan, 1994), introversion (Eysenck, 1981, 1991), and shyness (Cheek, 1989). Given that SPS has been found as a unique construct from these temperamental constructs, the latest definition of SPS was proposed as "a genetically determined trait involving deeper cognitive processing of stimuli that is driven by higher emotional reactivity." (Aron, Aron & Jagiellowicz, 2012, p.262). Based on the suggestions of Kagan's (1994) taxonomic analysis on temperament, this novel trait is considered to be found in about 15-25% of population (Aron & Aron, 1997). In a series of qualitative and quantitative studies across different samples, Aron and Aron (1997) developed 27-item the Highly Sensitive Person Scale (HSPS) and identified the scale as a valid, reliable and unidimensional tool to measure the construct of SPS. The psychometric properties and construct validity of the Turkish version of the scale were explored and elaborated in the following chapter.

1.5.2 The Characteristics of Highly Sensitive People

By its nature, the sensitivity trait is involved in behavior, emotional reactivity in the inner state, genotype, and neurological system. Some typical characteristics and behavioral patterns of highly sensitive individuals can be identified as withdrawal from over stimulating environments, greater awareness to subtle changes, overwhelmed by intense, complex and strong stimulations (e.g., bright lights, chaotic environments, and loud noise), and heightened processing of both negative and

positive sensory inputs (Aron & Aron, 1997; Aron et al., 2012). During the exposure to the strong sensory input, highly sensitive people are hyper aroused and experience increased physiological reactivity which is manifested by heightened feel of tension, high level of stress, and increased heart rate and salivary cortisol levels (Rizzo-Sierro, Leon-S & Leon-Sarmiento, 2012). In addition, highly sensitive people usually showed poor performance while being observed and pushed to carry out multiple tasks at once because such environments create intense and strong stimulation for them (Aron & Aron, 1997; Aron 1996).

Because of their low level of threshold to process the sensory information, moderate level of stimulation is perceived as overstimulation by highly sensitive people. This overreaction results in increased emotional/physiological reactivity which in turn leads to "pause-to-check" type of behavior before acting in novel situations (Aron & Aron, 1997; Aron et al., 2012). Pause-to-check type of behavior refers to a great tendency to think before acting in especially new environments which in turn lead to improve the ability to detect subtleties and micro changes in the environments. This pause-to-check type of behavior makes them conscientious and creates tendency to think about the consequences of their actions which in turn creates elevated fear and anxiety (Aron, 2001).

Positive aspects of high sensitivity should also be highlighted because this trait seems to be "both a blessing and a curse" (Gearhart, 2012, p.2). It has been argued that highly sensitive people are likely to be creative, art-lover, and to have a deep and complex inner life with heightened sense of aesthetic values (e.g., arts and music) (Aron, 2004; Aron & Aron, 1997). Due to deep processing of sensory information, they have greater tendency to make sense of subtle communication cue that one holds, so that they have improved nonverbal communication skills and empathy with those who are not in good physical and psychological state (Aron, 2001).

1.5.3 Sensory-Processing Sensitivity and Related Constructs

A number of studies have been conducted to establish the construct validity of the HSPS (e.g., Aron & Aron, 1997; Smolewska, Mc Cabe & Woody, 2006). Specifically, the examination to distinguish SPS from introversion and neuroticism

was strongly needed because some characterizations of highly sensitivity people are also captured by these personality traits. Sensitive people have a greater tendency to think carefully and deeply when encountering novel and overstimulated environments. Therefore, they are more likely to experience fear, anxiety and stress, so that they are usually miscalled as neurotic, shy or introverted. Although these constructs have some common ground in a conceptual basis, Aron and Aron's study in 1997 found 30% of highly sensitive people as extraverted. Utilizing several measures to gauge introversion and neuroticism across different samples, they found that SPS has a statistical and conceptual overlap with introversion and neuroticism. However, substantial amount of variance in SPS was unexplained by these two constructs as well as by the combination of the both. Similarly, Smolewska et al. (2006) concluded that SPS is associated, but not equal to neuroticism and introversion.

Based on Gray's proposed model on behavioral motivations, SPS was found to be related to behavioral inhibition system (BIS) guided by avoidance motivation in the face of anxiety and fear-induced situations (Gray, 1982). Behaviorally inhibited people pay great attention to avoid from unpleasant and novel situations. They particularly escape from novel situations because they want to lessen the possibility to experience negative emotions. BIS sensitivity leads to behavioral pauses to check and elaborate the cues in a given environment which in turn understood as shyness or introversion. Despite the conceptual overlap with SPS, the contribution of BIS into SPS was small to moderate, even after combining the effect of neuroticism (Smolewska et al., 2006).

In addition to examination of the relationship between SPS and personality traits, a number of studies have examined the link between SPS and negative psychological outcomes. Specifically, high sensitivity was found to be associated with pessimism and avoidant personality disorder (Meyer & Carver, 2000), anxiety (Neal, Edelmann & Glachan, 2002; Liss, Timmel, Baxley & Killingsworth, 2005; Liss, Mailloux & Erchull, 2008), perceived stress and perceived ill-health symptoms (Benham, 2006), self-discrepancy between ideal and actual self (Kemler, 2006), harm avoidance and agoraphobia-feeling anxious in open and crowded places due to the perceived danger and threat- (Hofmann & Bitran, 2007), symptoms of autism, alexithymia-inability to

identify and express the emotions- (Liss et al., 2008), work stress (Evers, Rasche & Schabracq, 2008), and low mental health (Ahadi & Basharpoor, 2010).

Previous findings suggest that SPS is related to some temperamental and personality traits such as introversion, neuroticism, and BIS and negative clinical outcomes. However, considerable variance in SPS remained unexplained by these traits, indicating distinctiveness of SPS. Considering these findings, it can be said that SPS cannot be conceptualized solely by particular personality and behavioral constructs. Indeed, these related constructs seemed to form a conceptual ground for the concept of SPS.

1.5.4 Biological Correlates of Sensory-Processing Sensitivity

In an attempt to examine underlying mechanisms for increased level of sensory-processing sensitivity, the recent studies on SPS have shifted their attention to search for biological correlates of SPS in genetic and neurological level. In an investigation into genetic correlates of SPS, Licht, Mortensen & Knudsen (2011) have found that SPS is related to certain alleles located within the serotonin system, especially with the 5-HTTLPR short/short genotype (the serotonin-transporter-linked polymorphic region). In another major study, Chen et al. (2011) examined the association between SPS and 16 dopamine-related genes (a total of 98 polymorphisms) selected from four subsystems of the dopamine system (dopamine synthesis, degradation, dopamine receptor, and dopamine modulation). They have found that most of the polymorphisms in the dopamine related genes, namely *TH, DβH, SLC6A3, DRD2, NLN, NTSR1, NTSR2* were associated with SPS.

As well as considering the genetic correlates of SPS, the studies utilizing functional magnetic resonance imagining (fMRI) are worthwhile to mention. Aron et al. (2010) examined the interplay between SPS and cultural differences in neural responses to visual stimuli and the results revealed that highly sensitive participants showed greater activation the brain regions for attention without being affected by cultural contexts due to their deep processing of stimuli. Jagiellowicz et al. (2011) analyzed the brain activity of highly sensitive people when responding to the visual scenes to detect minor vs. major changes. It has been demonstrated that high sensitivity is

related to increased response time and higher level of brain activity in the regions for high-level visual processing while detecting minor changes. A similar study by Gerstenberg (2012) concluded that SPS is related to decreased reaction time, fewer error rate and increased stress level while performing the task. The most recent fMRI study on SPS by Acevedo et al. (2014) reported that highly sensitive individuals showed greater brain activation in the regions for attention, empathy, and action planning. Specifically, when encountering romantic partners' happy and sad facial expressions, SPS was related to increased activation in the regions for awareness and empathy.

Overall, these findings suggest that SPS leads to different genetic and neural functioning in one's biological makeup. These genetic and neurological studies extend the knowledge of how SPS exists as a distinct temperamental trait and leads to different behavioral patterns in response to relevant situations. Therefore, it can be said that this temperamental trait is not about the abnormal state of sensory system. Rather, it is related to presence of specific genes and working patterns of neurons that characterize and distinguish highly sensitive people from non-highly sensitive ones.

1.6 Rationale of the Study

The rationale of the current study is based on the two basic arguments. Firstly, as it was mentioned above, high sensitivity, reflected by high scores on the HSPS, has a strong link with the polymorphisms found in dopamine (Chen et al., 2011) and serotonin-related genes (Licht et al., 2011). Although, SPS is not related to all polymorphisms responsible from behavioral susceptibility, the association of 5-HTTLPR and DRD2 polymorphisms with SPS is promising to study adverse and supportive effects of environmental exposures in the presence and absence of sensitivity. Previous studies have shown that DRD2 is linked to genetic susceptibility which leads susceptible individuals negatively affected by unsupportive environments and positively by supportive environmental conditions (e.g., Berman & Noble, 1997; Elovainio et al., 2007; Mills-Koonce et al., 2007). Similar findings were shown for 5-HTTLPR gene. Those who are carriers of 5-HTTLPR s/s allele showed worse outcomes in response to adverse environmental conditions, as well as

benefitted more from supportive environmental exposures (e.g., Brummet et al., 2008; Taylor et al., 2006; Wilhelm et al., 2006; Zalsman et al., 2006).

Given that SPS is directly involved in susceptibility genes which predisposes individuals to advantageous and disadvantageous environmental influences, individuals high in SPS may show the same *for-better* and *for-worse* pattern in a manner that differential susceptibility hypothesis suggests. It is well-documented fact that a number of studies used various susceptibility factors ranging from fearfulness to difficult temperament, and appeared to be supporting differential susceptibility hypothesis. However, there are also overwhelming suggestions that sensory-processing sensitivity can be tested to see whether it functions within the framework of trait-environment interactions (e.g., Aron et al., 2010, 2012; Pluess & Belsky, 2013; van IJzendoorn & Bakermans-Kranenburg, 2012). Therefore, the further investigation is needed to examine whether highly sensitive individuals exhibit vulnerability, susceptibility, or vantage sensitivity in response to varying environmental conditions. Therefore, the examination of moderation role of SPS and nature of its functionality for varying environmental conditions can be worthwhile to address this question. The study of SPS within the framework of trait-environment interactions seems to be promising to address this need in the literature and to establish systematic investigation of SPS for crossover interactions.

Secondly, the research on trait-environment or gene-environment interactions proved extensive evidence on operative function of behavioral susceptibility especially for children. For example, past studies have demonstrated that numerous investigation on temperament (e.g., temperament, impulsivity, and inhibitedness) as a phenotypic susceptibility marker has been mostly conducted on child population (e.g., Kochanska et al., 2007; Pluess & Belsky, 2009). However, few of them focused on adult population (e.g., Aron et al., 2005; Liss et al., 2005). Calling special attention to the research on adult susceptibility to environmental conditions, Aron et al. (2005) reported that highly sensitive individuals showed less shyness and negative affect in good environmental conditions (less adversity in childhood history), whereas bad environmental conditions (adverse childhood history) predicted high levels of shyness and negative affect for highly sensitive individuals compared the individuals with low sensitivity (study 2 and 3). Their last study was conducted on experimental

basis (study 4). Two groups of participants were exposed to either easy or difficult intelligence test, and asked report their level of negative affectivity. The results revealed that those high on sensitivity reported more negative affect when they were taken difficult test. On the contrary, they had lower negative affect when they solved the easy test.

It can be said that specific genotypes lead individuals to have more sensitive and responsive nervous system which in turn manifested by either advantage or disadvantage in varying degrees of environmental qualities (Acevedo et al., 2014; Belsky & Pluess, 2013). This responsiveness suggests operating either for-better and for-worse, or only for-worse, or only for-better model for adult population because SPS seems the most appropriate candidate phenotypic marker for adult population (e.g., Belsky & Pluess, 2009). However the systematic examination to reveal whether SPS is vulnerability, susceptibility, or vantage sensitivity marker thus far has not been conducted. Realizing this gap in the existing literature, the current study will investigate the potential moderating role of SPS (phenotypic marker) through gathering data from married couples in dyadic level. Unlike the past studies, the current study offers a great opportunity to transfer and employ the knowledge on trait-environment interactions into dyadic level.

1.7 The General Aims of the Study

In the light of the previous studies on trait-environment interactions and SPS, the objective of the current study is twofold. First, it aims to adapt The Highly Sensitive Person Scale (Aron & Aron, 1997) into Turkish and to evaluate its psychometric properties on a Turkish sample before testing the main hypotheses of the study. The details of the first study were provided in the following chapter.

Secondly, the overarching aim of the current study is to investigate the potential moderating effect of sensory-processing sensitivity on the relationship between spousal caregiving, perceived social support and marital satisfaction and communication quality. In that respect, three different perspectives on trait-environment interactions will be tested to reveal the nature of moderating role of SPS. To clearly differentiate three types of interactions namely differential

susceptibility hypothesis, diathesis-stress model, and vantage sensitivity and to better illuminate the nature of relationship between the study variables, the hypothetical figures on three different trait-environment interaction models were depicted considering the major study variables (see Figure 1, 2 & 3).

Based on the existing literature and interrelations between these above mentioned study variables, following research questions were proposed for the present study:

Research Question-1: Whether or not sensory-processing sensitivity has a moderating role in support of diathesis-stress model? In this situation, the highly sensitive partners compared to non-highly sensitive partners are expected to report lower relationship satisfaction and higher negative communication patterns when they experience poor quality of caregiving and have lower perceived social support. If this differential group is resilient to adverse effects of negative environmental conditions, the expected relationship between study variables will be in opposite direction. However, they will not differ in marital satisfaction and the use of negative communication patterns than non-highly sensitive partners under conditions of good quality caregiving and higher social support (see Figure 1).

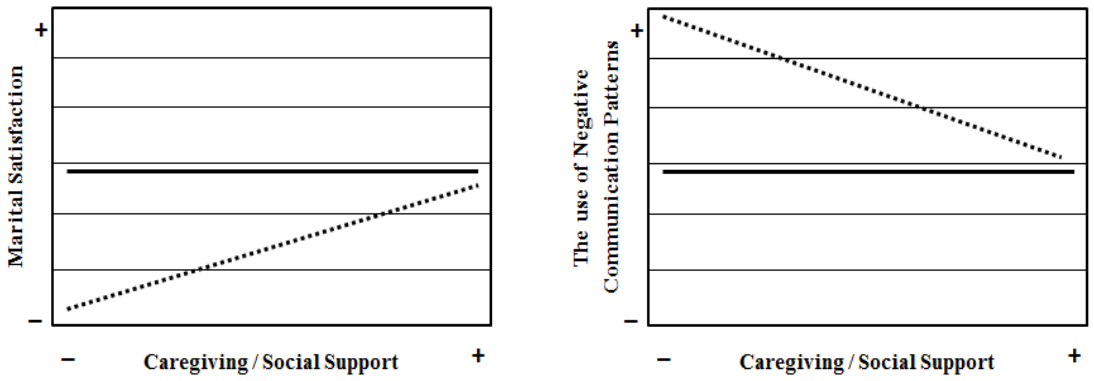

Figure 1. *Diathesis-Stress Approach to Caregiving and Social Support for Marital Satisfaction and the Use of Negative Communication Patterns.* (adapted from Belsky, Bakermans-Kranenburg & van Ijzendoorn, 2007)

Note: Dotted lines represents highly sensitive individuals.

Research Question-2: Whether or not sensory-processing sensitivity has a moderating role in support of differential susceptibility hypothesis? In this situation, the highly sensitivity partners are expected to report higher relationship satisfaction and lower use of negative communication patterns than non-highly sensitive partners when they experience more positive caregiving and higher perceived social support, and report lower relationship satisfaction and higher negative communication patterns than non-highly sensitive partners when they experience poor caregiving quality and lower perceived social support from the partner (see Figure 2).

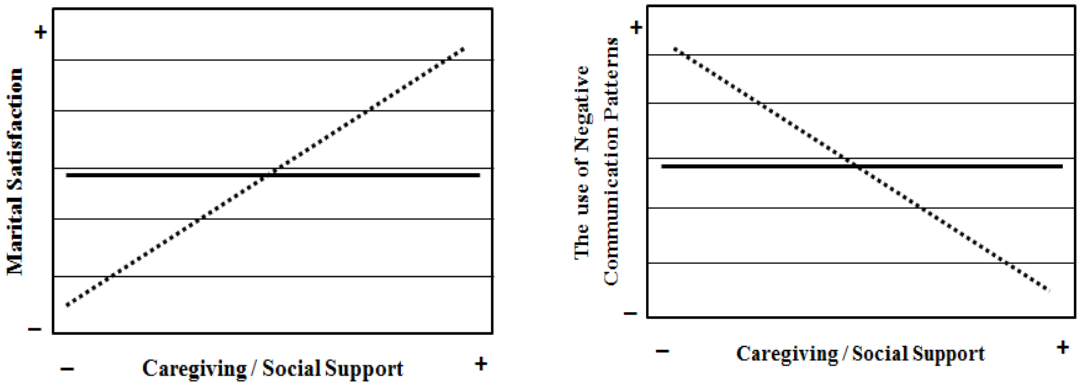

Figure 2. *Differential Susceptibility to Caregiving and Social Support for Marital Satisfaction and the Use of Negative Communication Patterns.* (adapted from Belsky, Bakermans-Kranenburg & van Ijzendoorn, 2007)

Note: Dotted lines represents highly sensitive individuals.

Research Question-3: Whether or not sensory-processing sensitivity has a moderating role in support of vantage sensitivity? In this situation, the highly sensitive partners are expected to report higher marital satisfaction and lower use of negative communication patterns than non-highly sensitive partners under the conditions of good quality of caregiving and higher social support. However, sensitive partners do not report lower marital satisfaction and higher use of negative communication patterns than non-highly sensitive partners when they received lower spousal caregiving and lower social support (see Figure 3).

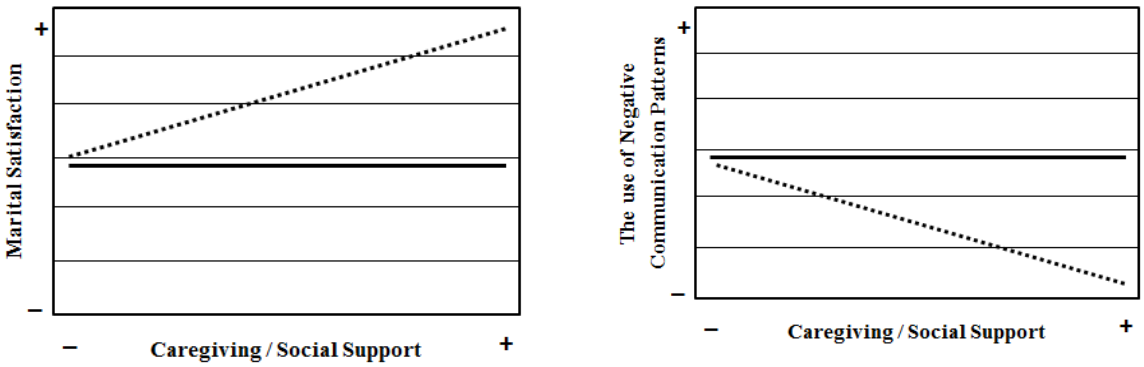

Figure 3. *Vantage Sensitivity Approach to Caregiving and Social Support for Marital Satisfaction and the Use of Negative Communication Patterns.* (adapted from Belsky, Bakermans-Kranenburg & van Ijzendoorn, 2007)

Note: Dotted lines represents highly sensitive individuals.

CHAPTER 2

STUDY I:
THE PSYCHOMETRIC PROPERTIES OF THE TURKISH VERSION OF THE HIGHLY SENSITIVE PERSON SCALE

2.1 Introduction

The aim of the first study was to examine psychometric quality of The Highly Sensitive Person Scale (HSPS; Aron & Aron, 1997) in Turkish culture before using this measure in the second of study in order to investigate the moderating role of sensory-processing sensitivity. Aron and Aron (1997) developed the 27-item HSPS to assess the individual differences on sensory system sensitivity like tendency to strongly and deeply process both internal (e.g., pain and hunger) and external stimuli (e.g., arts, noise, others' emotional states). Their study using both qualitative and quantitative methods provided evidence for convergent and divergent validity of the HSPS and the significant associations between SPS and other related constructs such as shyness (Cheek, 1989) and introversion (Eysenck, 1981, 1991) were obtained.

The 27-item HSPS has been examined over six different samples and shown a unidimensional structure tapping the general characteristics of those with trait of high sensory system sensitivity. Later studies reexamining the factorial structure of the HSPS have a little agreement concerning the most appropriate factor structure. Thus, literature has emerged that offers mixed findings with some studies suggesting unidimensional structure and other studies finding evidence for multidimensional structure.

Table 2. *Previous Studies Examining Psychometric Properties of the HSPS*

Study characteristics					Type of factor analysis	
The study	Sample characteristics	Number of items being retained	Number of factors	% Variance accounted	EFA	CFA
Aron & Aron, 1997, study 6	172 college students	27 items	1	54	+	–
Aron & Aron, 1997, study 7	109 college students	27 items	1	47	+	–
Meyer et al., 2005	156 nonclinical adults	27 items	4	48.4	+	–
Smolewska et al., 2006	851 college students	25 items	3	40.5	+	+
Hoffman & Bitran, 2007	89 adult outpatients	27 items	1	23.96	+	–
Evans & Rothbart, 2008	297 college students	25 items	2	Not specified	+	+
Liss et al., 2008	201 college students	25 items	3	Not specified	–	+
Evers et al., 2008	75 working people	18 items	3	Not specified	+	–

Note: EFA= Exploratory factor analysis; CFA= Confirmatory factor analysis; The distribution of items across the components was different from one study to another.

Past studies testing the factor structure of the HSPS were presented in Table 2. For instance, Meyer, Ajchenbrenner and Bowles (2005) obtained a four-factor structure accounting for 48.41% of the total variance, representing (1) general sensitivity/ overstimulation, (2) adverse reactions to strong sensations, (3) psychological fine-discrimination, and (4) controlled harm-avoidance. Smolewska et al. (2006), however, reevaluated the factor structure of the HSPS and found a three-factor solution which accounted for 40.5% of the total variance. They also showed that three-factor solution had better fit than the single factor structure. Three factors were labelled as (1) ease of excitation, (2) aesthetic sensitivity and (3) low sensory threshold. Although Evers et al. (2008) replicated the three-factor model on Dutch sample, they had to exclude 9 items used in Smolewska et al.'s study for statistical

reasons. Evans and Rothbart (2008) have examined the factor structure of the HSPS and tested its relationship with the Adult Temperament Questionnaire (ATQ). They obtained two factors and these factors were conceptually associated with the two subscales of the ATQ, namely (1) negative affect and (2) orienting sensitivity. Although their three-factor solution was similar to Smolewska et al.'s factor structure, they decided to retain two factors considering conceptual concerns. Finally, Liss et al. (2008) tested and compared two and three-factor models. Although both models did not reveal adequate fit to the data, three-factor model seemed to have better fit to the data than the two-factor model in their analyses.

In conclusion, previous studies, investigating psychometric structure of the HSPS have yielded equivocal results that may cause both practical and conceptual limitations in examining SPS. Therefore, there is a need for testing alternative models considering the findings of the aforementioned studies. This necessity underlies both the significance of the current study and dire need of comprehensive examination of factor structure of HSPS. Current study primarily aims to examine the psychometric properties of the HSPS on a Turkish sample concerning all of the alternative models. Furthermore, this study will also be the first attempt to examine SPS as well as the factor structure of the HSPS in a non-Western sample. Finally, construct validity of the HSPS for the Turkish sample will be investigated considering its associations with the Behavioral Inhibition and Behavioral Activation System Scales (BIS/BAS), social introversion, and big five personality traits.

2.2 Method

2.2.1 Participants

The sample of this study consisted of 341 university students. Among the participants, 126 (37%) were male and 215 (63%) were female. The ages of the participants varied between 18 and 35 with a mean of 23.33 and a standard deviation of 3.94. The mean age for male and female participants was 25.37 (*SD* = 4.45) and 22.13 (*SD* = 3.03), respectively. Of the participants, 229 (67.2%) were undergraduate, 112 (32.8%) were graduate students. In terms of perceived economic status, 253 (74.2%) of the sample with the highest proportion, reported to being in middle status, 55 (16.1%) participants stated to be lower economic status, and 33

(9.7%) reported their economic status as high. 208 (61%) of the sample stated that they spend most of their lifetime in metropolises and remaining participants reported city (*n* =75, 22%), district (*n* =41, 12%), village (*n* =10, 2.9%) and town (*n* =7, 2.1%) as their mostly lived places. Detailed demographic characteristics of the participants were presented in Table 3.

Table 3. *Demographic Characteristics of the Sample*

	Male	**Female**	**Total**
Number of Participants	126 (37%)	215 (63%)	341
Age			
Mean	25.37	22.13	23.33
SD	4.45	3.03	3.94
Range	19-35	18-34	18-35
Education (Last Graduation Level)			
Undergraduate Degree (%)	56 (44.4%)	173 (80.5%)	229 (67.2%)
Graduate Degree (%)	90 (55.5%)	42 (19.6%)	112 (32.8%)
Perceived Economic Status			
Lower (%)	24 (19.0%)	31 (14.4%)	55 (16.1%)
Middle (%)	80 (63.5%)	173 (80.5%)	253 (74.2%)
Upper (%)	22 (17.5%)	11 (5.1%)	33 (9.7%)
Place Lived the Longest			
Metropolis (%)	70 (55.6%)	138 (64.2%)	208 (61.0%)
Province (%)	31 (24.6%)	44 (20.5%)	75 (22.0%)
City (%)	17 (13.5%)	24 (11.2%)	41 (12.0%)
Town (%)	3 (2.4%)	4 (1.9%)	7 (2.1%)
Village (%)	5 (4%)	5 (2.3%)	10 (2.9%)

2.2.2 Measures

Besides demographic information form (see Appendix A), the questionnaire set consisted of four scales, namely The Highly Sensitive Person Scale (HSPS; Aron & Aron, 1997), Behavioral Inhibition System Scale and Behavioral Activation System Scale (BIS/BAS Scale; Carver &White, 1994), Social Introversion measure (Aron & Aron, 1997) and Big Five Inventory (BFI; Benet-Martinez & John, 1988). Demographic information form included questions like age, gender, education level, income level, the type of region that they spend most of their lifetime, name of the university and department that they have been studying at the time they fill out the questionnaire.

2.2.2.1 The Highly Sensitive Person Scale

Sensory-processing Sensitivity was assessed by The HSPS which was developed by Aron and Aron (1997). It consists of 27 items and participants rated the items using 7-point scales-ranging from 1 (not at all) to 7 (extremely) (see Appendix B). The HSPS basically measures over-arousal to stimuli in the environment (e.g., "I am easily overwhelmed by things like bright lights, strong smells coarse fabrics, or sirens close by") as well as high negative emotionality and physiological reactivity in response to over stimulation (e.g., "I am annoyed when people try to get me to do too many things at once"). In previous studies, the HSPS was widely employed on various samples drawing from different populations including college students (e.g., Aron &Aron, 1997; Benham, 2006; Evans & Rothbart, 2008; Smolewska et al., 2006; Liss et al., 2008), employees (e.g., Evers et al., 2008), adult outpatients (e.g., Hoffman & Bitran, 2007), and adults from anxiety and depression self-help organizations (e.g., Neal, Edelmann & Glachan, 2002). In all these studies, it was found to have high internal consistency and construct validity. Reliability and validity information of the Turkish HSPS are reported in the results section.

2.2.2.2 Social Introversion

Social introversion was measured with two items developed by Aron and Aron (1997) and found to be partially correlated with the HSPS (e.g., Aron et al., 2005). Participants rated the items ("Do you prefer to go out with one or two friends (vs. a larger group)?" and "Do you like having just a few close friends (as opposed to a large circle of friends)?") on 7-point scale ranging from 1 (not at all) to 7 (extremely) (see Appendix C). The sacle adaptation procedure was the same with the HSPS. In this study, the measure showed good internal consistency with Cronbach's alpha value of .79 (see Table 10).

2.2.2.3 Behavioral Inhibition and Behavioral Activation System Scale

Behavioral inhibition and activation motivations were assessed by Behavioral Inhibition and Behavioral Activation System Scales (BIS/BAS Scales; Carver and White, 1994) gauging individuals' sensitivity on two basic motives which serve as

underlying mechanisms for behaviors; a motive to avoid something unpleasant (e.g., impending punishment) and a motive to approach something desired(e.g., impending reward) (Gray,1991). The BIS Scale composes of 7 items assessing anxiety occurred when punishment was considered (e.g., "I feel worried when I think I have done poorly at something"). The BAS Scale generally assesses the sensitivity to reward and reactivity to rewarding situations. It consists of 13 items with three subscales; Reward Responsiveness (e.g., "When good things happen to me, it affects me strongly"), Drive (e.g. "If I see a chance to get something I want, I move on it right away"), and Fun Seeking (e.g., "I'm always willing to try something new if I think it will be fun"). Both BIS and BAS Scales were rated on 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree) with no neutral response (see Appendix D). Internal reliabilities of the BIS Scale were found to be .74 and .78 in the studies of Carver and White (1994) and Smolewska et al. (2006), respectively. Similarly, internal reliabilities of the subscales of BAS Scale were high with alphas ranging from .66 to .75 for both studies.

The BIS/BAS scales were adapted into Turkish by conducting translation and back-translation procedures. The adaptation procedure was presented in the procedure section in detail.

In order to reveal the factor structure of the BIS/BAS scales, principal component analysis with varimax rotation was performed on 20 item BIS/BAS scales. The number of components was assessed by considering the eigenvalues greater than one, Cattell's scree plot test, item loadings and interpretability of the components. The principal component analysis yielded five components with eigenvalues greater than one, accounting for 60.68% of total variance for the current data (eigenvalues: 4.99, 3.36, 1.53, 1.19 and 1.06). The cross-loaded items were retained for the component with highest loading. Distribution of items across components was quite similar to original factor structure suggested by Carver and White (1994) and to factor structure of Turkish version of scales suggested by Şişman (2012) who adapted the scales into Turkish and published the findings for a Turkish sample during the data collection process of the current study. However, two reversed coded items (e.g., "I rarely experience fear or nervousness" and "I have few fears compared to my friends") from BIS scale was retained within a separate component as it was suggested in

previous studies (e.g., Beck, Smits, Claes, Vandereycken & Bijttebier, 2009; Johnson, Turnen, & Iwata, 2003; Poythress et al., 2008) because these items were highly related to (absence of) fear factor for punishment sensitivity. Thus, BIS scale was divided into two subscales corresponding BIS-Fear (2 items) and BIS-Anxiety (5 items) subscales. The factor structure of the BAS scale was the same with the original factor structure (Carver & White, 1994) which was divided into three subscales namely Reward Responsiveness (5 items), Drive (4 items) and Fun Seeking (4 items). Eigenvalues, explained variances and Cronbach's alpha coefficients for each factor, and factor loadings were presented in Appendix E. Considering the interpretability of the results and the similarity to original factor structure, item ratings on both BIS and BAS subscales were mean averaged in order to create total scores. The internal reliability coefficients were .78 for BIS scale and .81 for BAS Drive, .78 for BAS Reward Responsiveness, and .66 for BAS Fun Seeking (see Table 10).

When the relationship between the BIS/BAS scales and other measures was examined, it was found that BIS scale showed similar pattern with Beck et al. (2009), revealing positive relationship with Neuroticism ($r = .49$, $p < .01$) and negative relationship with Extraversion ($r = -.18$, $p < .01$). Consistent with the suggestions of Beck et al. (2009) and Furhnam (2008), BAS Reward Responsiveness showed positive association with both Extraversion ($r = .24$, $p < .01$) and Neuroticism ($r = .20$, $p < .01$). The strength and pattern of relationship of Extraversion with BAS Drive ($r = .32$, $p < .01$) and with BAS Fun Seeking ($r = .33$, $p < .01$) was consistent with the results of Carver and White (1994). These findings suggest that Turkish BIS/BAS scales have good internal reliabilities and construct validity to be used in further analysis.

2.2.2.4 Big Five Inventory

Personality traits were measured using 44-item BFI developed by Benet-Martinez and John (1998). BFI assesses the five basic personality dimensions, namely Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. The items were rated on a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The participants were asked to rate their agreement with sentence

"I see myself as *someone who*…" by filling the blank in the sentence with each trait adjective. The Neuroticism (e.g., "I see myself as *someone who worries a lot*) and Extraversion (e.g., "I see myself as *someone who is talkative*") dimensions were measured by eight items for each. Agreeableness (e.g., "I see myself as *someone who has a forgiving nature*") and Conscientiousness (e.g., "I see myself as *someone who does things efficiently*") dimensions were assessed by nine items for each and Openness (e.g., "I see myself as *someone who is curious about many different things*") was assessed by ten trait adjectives (see Appendix F).

The Turkish adaptation of the scale was done by Sümer and Sümer (2005) within the scope of Schmitt and his colleagues' (Schmitt, Allik, McCrae & Benet-Martinez, 2007) international study which investigates patterns and profiles of personality descriptions across 56 nations. The Cronbach's alpha levels for the original BFI scales were found to be ranging from .70 to .79 (Schmitt et al., 2007). The BFI scales were also shown good internal reliabilities for Turkish sample with Cronbach's alphas ranging between .64 and .77 (Sümer, Lajunen and Özkan, 2005). For the present study, the internal reliability levels of the BIF Scales were revealed as .74, .84, .65, .80 and .78 for Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness, respectively (see Table 10).

2.2.3 Procedure

The Highly Sensitive Person Scale (Aron &Aron, 1997) and Behavioral Inhibition and Behavioral Activation System Scales (Carver & White, 1994) were translated into Turkish by three graduate students. In order to check accuracy and congruency between original and translated scales, the back-translation procedure was conducted by a bilingual psychologist who was not informed about the study. Final versions were decided by considering all translations and were submitted Middle East Technical University Research Center for Applied Ethics together with other scales that will be used in main part of the present study. After getting ethical approval, the scales were counterbalanced in the questionnaire battery and were administered to the undergraduate and graduate students in the classroom. Undergraduate students were given one course credit in return for their participation. It took approximately ten minutes to fill out the questionnaire.

The administration of the questionnaire was repeated one month later in order to assess test-retest reliability of the scale. For the Time 2 measurement, the same questionnaire was mailed online to 100 participants who took the questionnaire before. Since it was the end of the spring semester and beginning of the summer holiday, the Time 2 assessment was conducted in online basis because it coincided with the end of the spring semester when students leave the campus. At the end, 55 (55%) were completed the questionnaire battery.

2.2.4 Overview of Data Analysis

In order to reveal the psychometric properties of the Turkish version of the HSPS and to establish convergent and divergent validity of the scale, Statistical Package for Social Sciences (SPSS 20.0) was used. A principle component analysis with promax rotation was performed on 27 items of the HSPS. The number of factors was determined with regard to criterion eigenvalues, item-total correlations, factor loadings, the Cattell's scree plot test and interpretation of items to be retained for the factors.

Besides these factor determination techniques, parallel analysis (Horn, 1965) was also run to determine the correct number of factors on the Turkish version of the scales because this factor retention technique is considered as reliable technique for assisting the specification of correct number of factors (e.g., Velicer, Eaton & Fava, 2000). Internal consistency of the whole scale and potential subscales was assessed by Cronbach's alpha coefficients.

To ensure the fitness of alternative factor models suggested in previous studies, a series of confirmatory factor analyses were conducted utilizing Lisrel 8.5 (Jöreskog & Sörbom, 1993). Several evaluation criterions such as chi-square (χ^2) statistics, goodness of fit statistics, and χ^2:df ratio were analyzed and interpreted to assess the fitness of alternative models for the current data. In assistance to assess model fitness, χ^2 value is expected to be at most five times higher than degrees of freedom value and root mean square error of approximation (RMSEA) below .10 to be

evaluated as acceptable fit. Moreover, χ^2 values for the good fit were also desired to be low as compared to the other models' statistics.

Prior to the analysis, the total scores were calculated by averaging the ratings on each scale and subscale. In order to identify relationship between HSPS, BIS/BAS scales, social introversion measure and big five personality traits, Pearson correlations and multiple regression analyses were conducted. Table 2 shows the expected relationship patterns between the HSPS and the other related scales used in the study. Previous studies suggested that HSPS has a positive relationship with BIS scale, Neuroticism, social introversion, and some of the BAS subscales, and negative relationship with Extraversion (e.g., Aron & Aron, 1997; Aron, 2010; Smolewska et al., 2006). As an evidence for convergent and divergent validity of the scale, the same patterns of relationships were also expected for the Turkish sample. Moreover, in order to examine how much personality dimensions and behavioral constructs (BIS/BAS and social introversion) share in the prediction of sensory-processing sensitivity, a series of multiple regression analyses were conducted.

2.3 Results

2.3.1 Data Screening and Cleaning

Initially, the sample consisted of 345 participants. Prior to the analysis, all of the variables were examined for 345 cases through various SPSS programs for the accuracy of data entry, missing values, and multivariate and univariate outliers. Normality, linearity, and multicollinearity assumptions were met for each variable. Since the distribution of missing values was completely at random and less than 5% of the sample, missing values were replaced with the median values of the related scale scores. After handling the missing values, the data set was also examined for the potential univariate and multivariate outliers through the examination of standardized scores and Mahalonobis distance, Cook's distance and Leverage values. Four cases were found to be both univariate and multivariate outliers because their standardized scores and Mahalonobis distance values were considerably above the cut-off value. These cases were removed from the sample by the list wise deletion, and remaining 341 cases for the further analyses.

2.3.2 Factor Structure of the Turkish HSPS

The factor structure of the HSPS was explored utilizing SPSS 20.0. The principal component analysis with promax rotation was performed on 27 items of the HSPS. The Kaiser-Meyer-Olkin measure was .86, and Bartlett's test of sphericity was significant (χ^2 (351) =3241.69, p=.000), suggesting current sample was suitable and eligible to proceed factor analysis. Initial analysis yielded eight-factor solution with eigenvalues greater than one. However, results of Cattell's scree plot test, component loadings, and interpretation of components suggested four factor-solution. Besides, parallel analysis (O'Connor, 2000) was also utilized to determine optimum number of factors for Turkish HSPS. The eigenvalues generated from the random data set (1.55, 1.47, 1.40, 1.35, and 1.30) were compared with the initial eigenvalues generated from the actual data set (6.83, 2.22, 1.98, 1.48 and 1.28), suggesting four-factor solution. After the parallel analysis and interpretability of the components, the data was forced to extract four factors. Four-factor solution accounted for a total of 46.3% variance. The cutoff value for item loading was above .30. If any item was loaded on more than one factor, the factor with highest component loading was designated for that cross-loaded item. Table 4 shows item loadings across the components, eigenvalues, explained variances, and Cronbach's alphas for each component.

The first component included 10 items (α = .79) explaining 25.31% of total variance and reflected being extremely overwhelmed by multitasking experiences and uncomfortably aroused by being rushed into various tasks at one and the same time (e.g., "I find it unpleasant to have a lot going on at once."). Therefore, the component was labeled "Sensitivity to Multitasking" (SEM). The second component consisted of 7 items (α = .85) accounting 8.21% of total variance, representing high level of arousal and overreaction to strong external stimulus such as loud noise or bright lights (e.g., "I am easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by."). Thus, it was labelled "Sensitivity to External Stimulus" (SES). The third component composed of 5 items (α = .67) contributing 7.31% of explained variance, concerning being highly touched by aesthetic and artistic values such as arts and music (e.g., "I am deeply moved by the arts or music). For this reason, it was

labeled “Sensitivity to Aesthetic Values” (SAV). The fourth component was composed of 5 items (α = .59) explaining 5.47% of total variance, representing being attentive and conscientious to subtleties and changes in physical environment (e.g., “I am conscientious.”). Thus, this component was labeled “Sensitivity to Environmental Changes” (SEC).

Table 4. *The Results of the Principal Component Analysis with Promax Rotation for the Turkish HSPS: Component Loadings, Eigenvalues, Explained Variances, and Cronbach's Alphas for Each Component*

Scale Items	Components			
	1 (SEM)	**2 (SES)**	**3 (SAV)**	**4 (SEC)**
23. I find it unpleasant to have a lot going on at once.	**.83**			
16. I am annoyed when people try to get me to do too many things at once.	**.74**			
19. I become unpleasantly aroused when a lot is going on around me.	**.70**			
14. I get rattled when I have a lot to do in a short amount of time.	**.66**			
21. Changes in my life shake me up.	**.59**			
26. When I must compete or be observed while performing a task, I become so nervous or shaky that I do much worse than I would otherwise.	**.55**			
27. When I was a child, my parents or teachers seemed to see me as sensitive or shy.	**.48**			
5. I find myself needing to withdraw during busy days, into bed or into a darkened room or any place where I can have some privacy and relief from stimulation.	**.45**		.35	
18. I make a point to avoid violent movies and TV shows.	**.31**			
20. Being very hungry creates a strong reaction in me, disrupting my concentration or mood.	**.30**			
7. I am easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by.		**.90**		
9. I am made uncomfortable by loud noises.		**.88**		
1. I am easily overwhelmed by strong sensory input.		**.82**		
25. I am bothered by intense stimuli, like loud noises or chaotic scenes.		**.79**		
13. I startle easily.		**.71**		
6. I am particularly sensitive to the effects of caffeine.		**.43**		
4. I tend to be very sensitive to pain.		**.41**	.32	
10. I am deeply moved by the arts or music.			**.79**	
22. I notice and enjoy delicate or fine scents, tastes, sounds, works of art.			**.66**	
8. I have a rich, complex inner life.			**.64**	
11. My nervous system sometimes feels so frazzled that I just have to go off by myself.	.35		**.37**	
3. Other people's moods affect me.			**.34**	
12. I am conscientious.				**.74**
24. I make it a high priority to arrange my life to avoid upsetting or overwhelming situations.				**.54**
15. When people are uncomfortable in a physical environment I tend to know what needs to be done to make it more comfortable (like changing the lighting or the seating).				**.52**
2. I seem to be aware of subtleties in my environment.				**.51**
17. I try hard to avoid making mistakes or forgetting things.	.34			**.46**
Eigenvalues:	**6.83**	**2.22**	**1.98**	**1.48**
Explained Variance (%):	**25.31**	**8.21**	**7.31**	**5.47**

Note: SEM = Sensitivity to Multitasking; SES = Sensitivity to External Stimulus; SAV = Sensitivity to Aesthetic Values; SEC = Sensitivity to Environmental Changes; Component loadings in bold font were assigned for the factors; N= 341.

2.3.3 Confirmatory Factor Analysis of the Turkish HSPS

Although exploratory factor analysis yielded a four-factor structure, a series of confirmatory factor analysis were run using Lisrel 8.5 (Jöreskog & Sörbom, 1993) to test and compare the fitness of the alternative models in the previous studies summarized in Table 1. Specifically, the following four models were compared consecutively in the analyses: (a) Model 1, 27-item single factor structure; (b) Model 2, Evans and Rothbart's (2008) two-factor solution, (c) Model 3, Smolewska et al.'s (2006) three-factor solution; (d) Model 4, four-factor solution. Table 5 presents results of fit statistics of each alternative model tested in the study. In order to ensure reliable comparison of fitness statistics, all alternative models are set to be equal by including the same correlated errors in all models. These high error correlations were explained below in detail.

Table 5. *Comparison of Confirmatory Factor Analysis Fit Indices of Alternative Models for the Turkish HSPS*

Models[1]	χ^2	df	χ^2:df	p	RMSEA	NNFI	GFI	AGFI	CFI
One-factor model	1507.01	322	4.68	.00	.10	.69	.75	.71	.71
Two-factor model	1369.41	321	4.27	.00	.10	.71	.77	.73	.74
Three-factor model	1051.84	319	3.30	.00	.08	.77	.81	.78	.79
Four-factor model	717.71	316	2.27	.00	.06	.85	.87	.84	.86

Note: RMSEA = Root-mean-square error of approximation; NNFI= Non-normed fit index; GFI= Goodness of fit index; AGFI= Adjusted goodness of fit index; CFI= Comparative fit index.

[1] Correlated item errors shown in Figure 1 were included to all models.

As presented in Table 5, the single factor model provided poor fit to the data than the other alternative models [χ^2 (322) = 1507.01, p<.001, χ^2:df = 4.68, RMSEA = 0.10, GFI =0.75, AGFI =0.71, CFI =0.71]. Two-factor model [χ^2 (321) = 1369.41, p<.001, RMSEA = 0.10, GFI =0.77, AGFI =0.73, CFI = 0.74] and three-factor model [χ^2 (319) = 1051.843, p<.001, RMSEA = 0.08, GFI =0.81, AGFI =0.78, CFI= 0.79] provided compatible fits with high χ^2:df ratio and poor relative fit statistics. However, compared to the other models, four-factor model yielded the best fit to the data [χ^2 (318) = 862.45, p<.001, χ^2:df = 2.60, RMSEA = 0.07, GFI =0.84, AGFI =0.81, CFI =0.82]. The examination of modification indices for four-factor model suggested that there are highly correlated items suggesting a potential overlaps, and

correlated errors should be allowed for items in the SEM (19th and 23th items) and SAV (10th and 22th items) subscales. The inclusion of these correlated errors to the four-factor model would result in significant decrease in chi-square value and χ^2:df ratio. The revised four-factor model was tested with the inclusion of these correlated errors and the results indicated improved model fit statistics in acceptable ranges and low χ^2:df ratio [χ^2 (316) = 717.71, p<.001, χ^2:d.f. = 2.27, RMSEA= 0.06, GFI =0.87, AGFI = 0.84, CFI = 0.86]. As an additional analysis, series of chi-square difference test were run to compare the revised four-factor model with other models. The revised four-factor model yielded a better goodness of fit than unmodified four-factor model [χ^2_{diff} (2) = 144.74, p<.001], single factor model [χ^2_{diff} (6) = 789.3, p<.001], two-factor model [χ^2_{diff} (5) = 651.7, p<.001] and three-factor model [χ^2_{diff} (3) = 334.13, p<.001]. The details of revised four-factor model were depicted in Figure 4. The structural correlations between latent variables corresponding the factors of the Turkish HSPS were relatively high, ranging from .46 (between SEM and SEC) to .72 (between SAV and SEC). The majority of the factor loadings in each factor were relatively high though there were a few items with relatively low loadings ranging from .27 to .88 and all were significant.

Although factor analyses yielded four separate factors, CFA analyses showed that these factors are strongly correlated suggesting a higher order factor representing a global sensory system sensitivity. Therefore, a second-order factor analysis was conducted to test if these four sensitivity domains can be represented in a single second-order latent variable. The fit indices of the second-order model showed the acceptable fit to the data [χ^2 (318) = 729.35, p<.001, χ^2:d.f. = 2.29, RMSEA= 0.06, GFI =0.86, AGFI = 0.84, CFI = 0.86]. As illustrated in Figure 5, the structural correlations of second-order SPS construct with four subscales were high, ranging from .69 (with SEC) to .87 (with SAV). Therefore, the factor structure of the Turkish HSPS strongly supported a common second-order factor, depicting a global *sensory-processing sensitivity* underlying four-first order factors namely, sensitivity to multitasking, sensitivity to external stimuli, sensitivity to aesthetic values, and sensitivity to environmental changes.

In sum, concerning the chi-square (χ^2) goodness of fit statistics and χ^2:df ratio for each model, modified four-factor solution was found to be the best fitting to the data

than the other alternative models. The comparison of alternative models for the HSPS revealed that fit indices for unidimensional model were worse among four factor solutions and two and three-factor solutions were compatible in their fitness to the data. The four-factor solution demonstrated the most acceptable fit indices to be assessed as the ultimate factor structure of the Turkish HSPS. Four components extracted from foregoing exploratory factor analysis namely SEM, SES, SAV, and SEC were determined as the coherent facets of Turkish HSPS.

2.3.4 Test-Retest Reliability of the Turkish HSPS

In order to examine the test-retest reliability of the Turkish HSPS, Pearson's Correlation analysis was conducted between scale scores at Time 1 and Time 2. Test-retest reliabilities, Cronbach's alpha coefficients, means and standard deviations for each of the four HSPS subscales measured at Time 2 were presented in Table 6. Test-retest reliabilities ranged from.75 to .88. Internal consistency of the scales was also satisfactory, ranging from .54 to .88. Split-half reliability scale was .82

Table 6. *Test-retest Reliabilities, Cronbach's alphas, Means and Standard Deviations for Time 2 Measurement*

Variables	**Test-retest correlations (*r*)**	**α**	**Mean**	**SD**
Total HSPS score	.88*	.90	4.53	0.83
Sensitivity to multitasking	.84*	.79	4.08	1.02
Sensitivity to external stimulus	.77*	.88	4.56	1.16
Sensitivity to aesthetic values	.84*	.77	4.97	1.09
Sensitivity to environmental changes	.75*	.54	4.94	0.81

Note: * p<.001

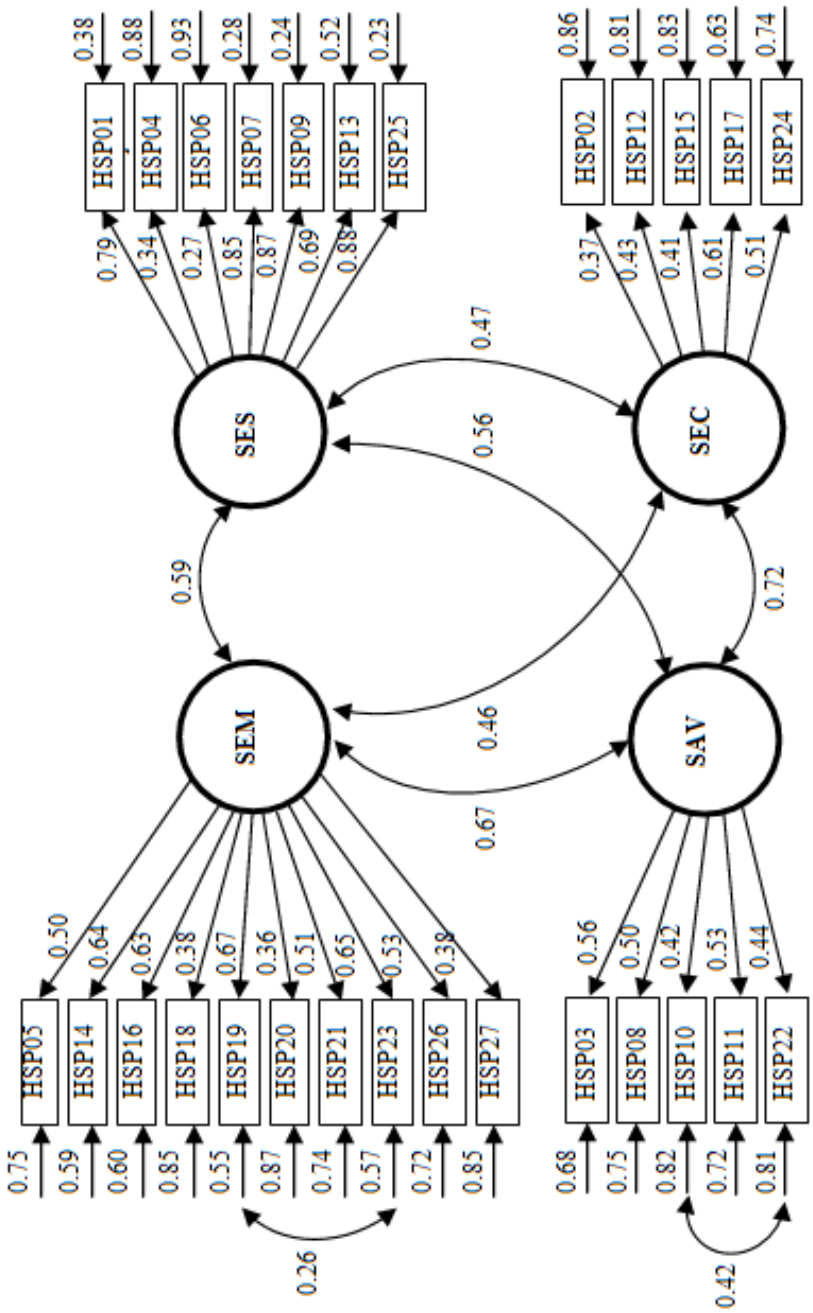

Figure 4. *Standardized Path Coefficients for the Modified Four-Factor Model*

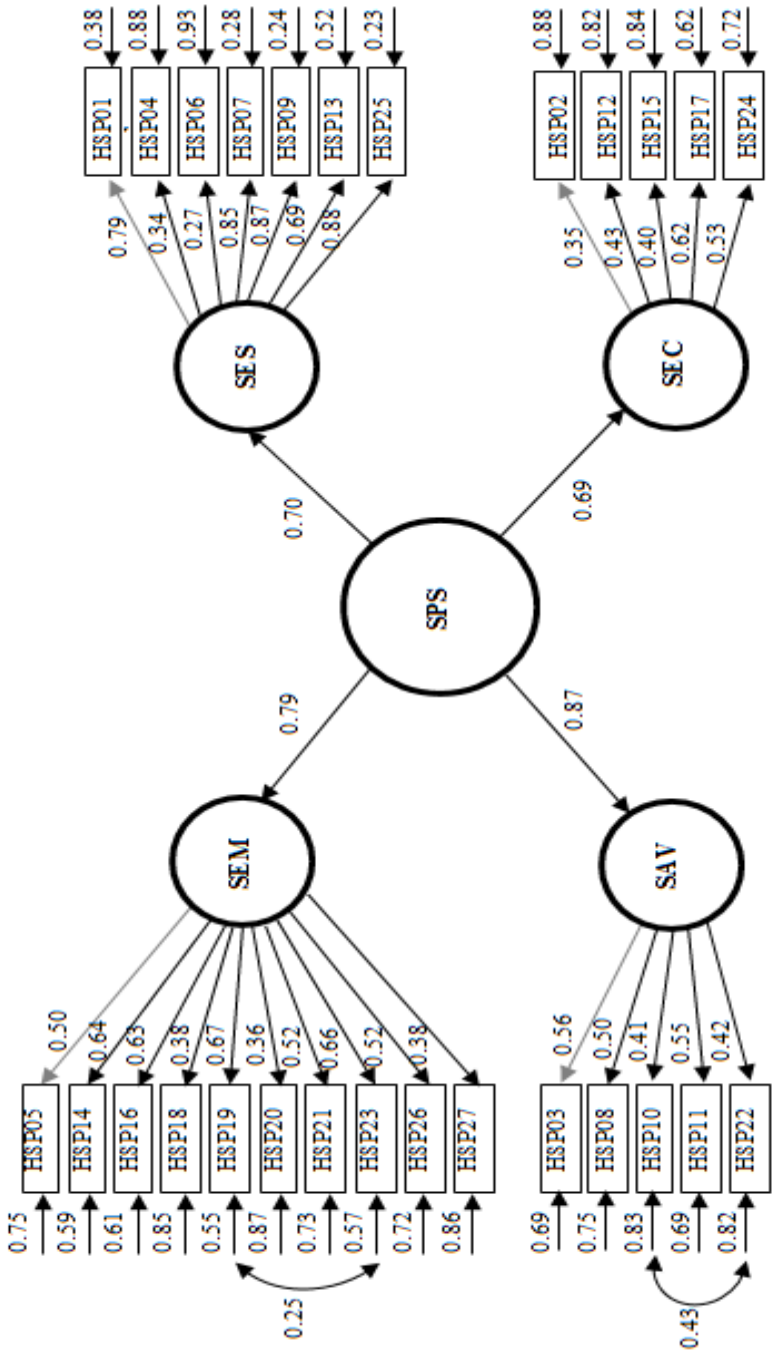

Figure 5. *Standardized Path Coefficients for the Second-Order Confirmatory Factor Analysis*

2.3.5 Gender Differences on the Study Variables

Before testing the construct validity of the Turkish HSPS, gender differences on the study variables were examined by a series of analyses of variance (ANOVA). The Table 7 shows means, standard deviations, F values and eta-square values. As can be seen in Table X, females reported higher SEM ($M_{females}$ = 4.34 and M_{males} = 4.00), SES ($M_{females}$ = 4.60 and M_{males} = 4.23), SAV ($M_{females}$ = 5.18 and M_{males} = 4.50) and SEC ($M_{females}$ = 4.94 and M_{males} = 4.66) than males. Females also reported to have higher BIS ($M_{females}$ = 4.35 and M_{males} = 3.87), BAS drive ($M_{females}$ = 4.27 and M_{males} = 3.88) and BAS reward responsiveness ($M_{females}$ = 5.15 and M_{males} = 4.67) than males. Regarding the personality dimensions, significant gender differences was found only on neuroticism that females were higher on neuroticism ($M_{females}$ = 3.03 and M_{males} = 2.77) compared to males. Comparison of eta square values yielded strongest gender differences on BAS reward responsiveness.

Table 7. *Gender Differences between Study Variables*

	Female (n = 126)		**Male (n = 215)**		**Model Summary**	
Variables	Mean	SD	Mean	SD	F (1, 339)	η^2
SEM	4.34	1.01	4.00	0.99	8.70**	.03
SES	4.60	1.26	4.23	1.01	8.19**	.02
SAV	5.18	0.91	4.50	0.94	42.76**	.11
SEC	4.94	0.89	4.66	0.86	8.04**	.02
Social Introversion	4.41	1.71	4.60	1.49	1.12	.00
BIS	4.35	0.78	3.87	0.75	32.04**	.09
BAS drive	4.27	0.88	3.88	1.05	13.44**	.04
BAS reward responsiveness	5.15	0.58	4.67	0.60	53.31**	.14
BAS fun seeking	4.18	0.85	4.16	0.79	0.04	.00
Neuroticism	3.03	0.72	2.77	0.61	11.42**	.03
Extraversion	3.45	0.75	3.30	0.75	3.27	.01
Agreeableness	3.67	0.55	3.72	0.48	0.35	.00
Conscientiousness	3.58	0.67	3.49	0.68	1.37	.00
Openness	3.75	0.58	3.64	0.57	2.71	.01

Note: SEM = Sensitivity to multitasking; SES = Sensitivity to external stimuli; SAV = Sensitivity to aesthetic values; SEC = Sensitivity to environmental changes; BIS = Behavioral inhibition system; BAS = Behavioral activation system.*p<.05; **p<.01.

2.3.6 Behavioral and Personality Correlates of the Turkish HSPS: Validity Analysis

The bivariate correlations, means, standard deviations, and Cronbach's alpha values of the scales were presented in Table 10. Prior to the analysis, the total scores were calculated by averaging the ratings on items in each scale and subscale.

The bivariate correlations among HSPS subscales were significant and positive ranging from .26 (SEM and SEC) to .50 (SEM and SES). As it was expected, the total HSPS score positively correlated with Neuroticism (r =.39, p<.01) and social introversion (r = .29, p<.01), and negatively with Extraversion (r = -.22, p<.01). Especially Sensitivity to Multitasking dimension showed the highest association with the Neuroticism (r =.41, p<.01) and Extraversion (r = -.33, p<.01). Like Smolewska et al.'s (2006) study findings, relationship of Openness with the HSPS (r = .11, p<.05) and with Sensitivity to Aesthetic Values subscale (r = .43, p<.01) was significant and positive. Unexpectedly, similar association with this strength was found for the relationship between Conscientiousness and Sensitivity to Environmental changes (r = .40, p<.01).

The association between BIS and the HSPS and its subscales revealed consistent results with the hypotheses and the past studies (e.g., Smolewska et al., 2006). BIS did show strong relationship with the HSPS (r =.53, p<.01) and with its subscales; SEM (r =.52, p<.01), SES (r =.36, p<.01), SAV (r =.36, p<.01), and SEC (r =.27, p<.01).

Contrary to expectations, BAS Reward Responsiveness (r =.37, p<.01), BAS Drive (r =.21, p<.01) and BAS Fun Seeking (r = .11, p< .05) positively correlated with the HSPS. Surprisingly, BAS Fun Seeking (r =.23, p<.01) and BAS Reward Responsiveness (r =.42, p<.01) showed the highest positive correlation with Sensitivity to Aesthetic Values among other components of the HSPS.

Two sets of regression analyses were run to examine the validity of the Turkish HSPS. In the first set, the four subscales of the HSPS (dependent variables) were predicted from the behavioral variables including BIS, three subscales of the BAS

and social introversion (predictor variables). In the second set, the same dependent variables were predicted from the big five personality dimensions. Behavioral variables and five personality traits were entered simultaneously to each regression equation. The details of the regression analyses can be seen from the Table 8 and 9.

Firstly, behavioral variables were regressed on SEM, SES, SAV and SEC. BIS (β_{SEM} = .51, β_{SES} = .32, β_{SAV} = .28, and β_{SEC} = .22) and social introversion (β_{SEM} = .26, β_{SES} = .24, β_{SAV} = .15, and β_{SEC} = .11) significantly predicted four subscales of the HSPS though the magnitude of the effects varied. Whereas BAS drive significantly predicted SES (β = .13) and SEC (β =.31), BAS reward responsiveness predicted SAV only (β = .23). BAS fun seeking, however, predicted the SEM (β = .14) and SAV (β = .91) sub-dimensions.

Second set of regression analysis were conducted by treating big five personality dimensions as predictor variables. The results revealed that neuroticism positively (β_{SEM} = .40, β_{SES} = .28, β_{SAV} = .38, and β_{SEC} = .14) and extraversion negatively (β_{SEM} = -.29, β_{SES} = -.12, β_{SAV} = -.20) predicted all of the HSPS sub-dimensions, except SEC. Agreeableness weakly but significantly predicted SEM (β =.11) and SAV (β =.09). Conscientiousness predicted SEC (β =.38) positively but SEM (β = -.10) negatively. Finally, openness strongly predicted SAV (β =.51) and moderately strongly SEC (β =.27). Overall, behavioral variables predominantly predicted SEM (R^2 =.34, F (5,335) = 35.35, p < .001) and SES (R^2 =.21, F (5,335) = 18.10, p < .001) and personality dimensions predominantly predicted SAV (R^2 =.36, F (5,335) = 36.87, p < .001) and SEC sub-dimensions (R^2 =.24, F (5,335) = 21.44, p < .001).

Table 8. *Multiple Regression Analyses Predicting SEM, SES, SAV, and SEC from Behavioral Variables*

Independent variables	Dependent variables			
	SEM	SES	SAV	SEC
BIS	.51**	.32**	.28**	.22**
BAS drive	.02	.13*	.03	.31**
BAS reward responsiveness	.01	.05	.23**	.10
BAS fun seeking	.14**	.05	.19**	-.06
Social introversion	.26**	.24**	.15**	.11*
F (5, 335)	35.15	18.10	24.51	16.93
R^2	.34	.21	.27	.20

Note: SEM = Sensitivity to Multitasking; SES = Sensitivity to External Stimulus; SAV = Sensitivity to Aesthetic Values; SEC = Sensitivity to Environmental Changes; BIS = Behavioral Inhibition System; BAS = Behavioral Activation System; *p< .05; **p< .01.

Table 9. *Multiple Regression Analyses Predicting SEM, SES, SAV, and SEC from Big Five Personality Dimensions*

Independent variables	Dependent variables			
	SEM	SES	SAV	SEC
Neuroticism	.40**	.28**	.38**	.14**
Extraversion	-.29**	-.12*	-.20**	-.05
Agreeableness	.11*	.03	.09*	.08
Conscientiousness	-.10*	.08	.01	.38**
Openness	-.02	.07	.51**	.27**
F (5, 335)	24.00	6.74	36.87	21.44
R^2	.26	.10	.36	.24

Note: SEM = Sensitivity to Multitasking; SES = Sensitivity to External Stimulus; SAV = Sensitivity to Aesthetic Values; SEC = Sensitivity to Environmental Changes;
*p< .05; **p< .01.

Table 10. *Bivariate correlations of the subscales of HSPS and total HSPS score with study variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Total HSPS score	(0.87)														
2. SEM	.84**	(0.79)													
3. SES	.80**	.50**	(0.85)												
4. SAV	.68**	.43**	.40**	(0.67)											
5. SEC	.56**	.26**	.33**	.41**	(0.59)										
6. BIS	.53**	.52**	.36**	.36**	.27**	(0.78)									
7. BAS drive	.21**	.06	.16**	.20**	.33**	-.01	(0.81)								
8. BAS reward resp.	.37**	.25**	.24**	.42**	.29**	.38**	.44**	(0.78)							
9. BAS fun seeking	.11*	.06	.05	.23**	.05	-.12*	.38**	.39**	(0.66)						
10. Social introversion	.29**	.28**	.26**	.14*	.12*	.08	-.03	-.06	-.14*	(0.79)					
11. Neuroticism	.39**	.41**	.26**	.34**	.05	.49**	-.01	.20**	.06	.14**	(0.74)				
12. Extraversion	-.22**	-.33**	-.13*	-.07	.05	-.18**	.32**	.24**	.33**	-.43**	-.13*	(0.84)			
13. Agreeableness	-.06	-.11*	-.07	-.03	.13*	.06	-.06	.11*	-.12*	-.16**	-.39**	.13*	(0.65)		
14. Conscientiousness	.04	-.15**	.05	.02	.40**	.18**	.14*	.12*	-.28**	.04	-.13*	.04	.23**	(0.80)	
15. Openness	.11*	-.14*	.03	.43**	.28**	-.07	.29**	.23**	.28**	-.14*	-.06	.33**	.10	.09	(0.78)
Means	4.53	4.21	4.46	4.93	4.83	4.18	4.13	4.98	4.17	4.48	2.93	3.40	3.70	3.55	3.71
Standard deviation	0.78	1.01	1.19	0.97	0.89	0.80	0.96	0.63	0.83	1.63	0.69	0.75	0.53	0.67	0.58

Note: HSPS = Highly sensitive person scale; SEM = Sensitivity to Multitasking; SES = Sensitivity to External Stimulus; SAV = Sensitivity to Aesthetic Values; SEC = Sensitivity to Environmental Changes; BIS = Behavioral Inhibition System; BAS = Behavioral Activation System; N = 341; Values on the diagonal within the parentheses indicate Cronbach's α values of the corresponding scale.
*p< .05; **p< .01.

2.4 Discussion

The main objective of this study was to explore factor structure of the HSPS and to identify the best fitting model for Turkish sample, utilizing both exploratory and confirmatory factor analysis. Additionally, we examined reliability and validity of the HSPS subscales for the Turkish sample. To our knowledge, the present study was first to investigate the factorial structure of the HSPS for Turkish sample because past studies were mostly conducted in Western cultures. The use of different samples to investigate the factorial structure of the HSPS in the Turkish culture is imperative to support cross-cultural validity of the SPS construct and its measurement, the HSPS. Overall, the findings can be summarized in three parts: (1) HSPS has four intercorrelated components representing; Sensitivity to Multitasking (SEM), Sensitivity to External Stimuli (SES), Sensitivity to Aesthetic Values (SAV) and Sensitivity to Environmental Changes (SEC); (2) the four-factor model had better fit than previously reported alternative models; (3) the HSPS subscales showed expected relationships with the other related constructs supporting the validity of the Turkish HSPS.

Our findings demonstrated that Turkish HSPS has four intercorrelated components that capture the specific aspects of the SPS. These findings also suggested that although previously shown unidimensional structure as well as two or three-factor structures assess global SPS, they failed to represent all aspects of it. Considering that the HSPS is tapping the specific aspects of SPS construct, results also supported for single common second-order factor model underlying four interrelated sensitivity domains; sensitivity to multitasking, sensitivity to externals stimuli, sensitivity to aesthetic values, and sensitivity to environmental changes. Consistent with the suggestions of Smolewska et al. (2006), the factor structure of the HSPS may be more suitable for higher-order factor model for SPS. Along the same line, four subscales of the Turkish HSPS were also accounted by single second-order factor; sensory-processing sensitivity which can be measured in four different sensitivity domains.

However, multidimensional scoring of the subscales is particularly advantageous when there is a need to assess relative sensitivity thresholds in the different

sensitivity domains to have a precise evaluation. It also assists the tracking the individual differences in each aspect. Furthermore, this study broadens the factorial analysis of the HSPS by comparative examination of alternative factor models. Hence, it makes a major contribution to research on the HSPS by providing statistical and theoretical consideration, rather than simply exploring the appropriate factor structure for the current data. Hence, this study has contributed to the research o SPS by both confirming its multidimensional structure and showing specific associations between the specific domains of SPS and their potential correlates.

Unlike the past studies on the HSPS, the results of confirmatory factor analysis for four-factor solution suggested to include correlated error variances to the model. This modification was justifiable because these items with high correlated errors indeed captured very similar indicators of sensory system sensitivity within the same domains. The future studies should consider revising the two subscales by removing two items that appeared to be redundant, and thus highly correlated with each other.

Our findings also suggest that the emerging fourth component of the HSPS namely SEC has a critical contribution to the assessment of domain-specific sensory system sensitivity. It is relatively a new component reflecting some of the typical characteristics of highly sensitivity individuals such as having an unconscious vigilance to detect the environmental subtleties and a desire for deliberation, especially in the novel situations. Given that the HSPS was designed to capture specific characteristics of highly sensitive people, SEC is reflecting one of those characteristics in a way that is generalizable among highly sensitive people. The four-factor model also corroborates the findings of Meyer et al. (2005), who suggested the four-factor structure for the HSPS. However, the lack of elaborative report on their four-factor solution limits the comparison of factor analysis of the current study with Meyer et al.'s findings.

There were two noteworthy findings emerged from examination of relationship between the HSPS subscales and personality dimensions. The first was that SAV was the only subscale that was strongly related to openness. This finding is in agreement with Smolewska et al.'s (2006) finding which showed that openness is associated with aesthetic sensitivity subscale (AES). The combination of these findings provides

some support for the genetic studies that SPS was found to be related to 5-HTTLPR polymorphism (Licht et al., 2011) which also shares substantial common variance with openness (Stoltenberg et al., 2002). Taken together, it seems to be encouraging to investigate the genetic correlates of SPS considering its association with personality dimensions.

The second critical finding was that unlike the previous studies (e.g., Smolewska et al., 2006), conscientiousness was found to be associated with SEC. Regarding the content of SEC, it can be said that those who have high level of SEC are likely to be aware of their environment and more attentive to the subtle changes and have greater tendency to think thoroughly before acting like those high on personality trait conscientiousness (Kochanska, 1993). Our findings showed that SAV and SEC were best explained by big five personality dimensions, rather than behavioral constructs. Hence, it seems to be promising to demonstrate the potential relationship between all of the big five personality dimensions and SPS rather than its link with neuroticism only as it was commonly focused in the previous studies.

Moreover, it is the four HSPS subscales that were correlated with BIS positively and moderately strongly showing its strong role in SPS. Partially supporting Smolewska et al.'s (2006) findings that BAS subscales were also found to be associated with SPS. However, it was somewhat surprising that all of the HSPS subscales were predicted by different BAS subscales with varying magnitudes. This result may be explained by the fact that individuals high on BAS sensitivity as well as on SPS may show overwhelming reactions and feel psychological arousal in the presence of rewarding situations and positive cues (e.g., Aron & Aron, 1997; Aron, 2010). This finding also supports the idea of Corr (2001) who modified Gray's (1970, 1981, 1991) Reinforcement Sensitivity Theory. Reinforcement Sensitivity Theory (RST) theorizes that there are two distinct motivational systems namely BIS and BAS. The latter is based on appetitive (approach) motivation which drives reactivity to reward and pleasant situations, while the former is based on aversive (avoidance) motivation which organizes behavior in response to punishment, overstimulation, and novel situation. According to RST, these two systems operate separately in human brain and reinforce different sets of behaviors. Nevertheless, Corr (2001) supports Joint Systems Hypothesis which hypothesizes that these two systems may fuction jointly

within the same biological system (e.g., Gomez, Cooper, McOrmond & Tatlow, 2004).

For the validity of the scale, it is important to distinguish between the SPS construct from other related constructs such as neuroticism and social introversion. The present findings were consistent with those of Aron and Aron (1997) showing the HSPS is independent from neuroticism and social introversion to a moderate degree. The current study further supports the construct validity of the Turkish HSPS based on its relationships with behavioral constructs such as BIS and BAS sensitivity.

In conclusion, this study has demonstrated, for the first time that the Turkish HSPS with its four components is psychometrically sound and reliable instrument to measure the innate trait of sensory processing sensitivity. The findings suggest that further examination in this area is needed to show the functions of the specific domains of SPS in the intrapersonal and interpersonal processes. Cross-cultural comparisons are also needed to investigate if these four domains and their correlates differ across cultures.

In the following chapters, the moderation role of SPS in married couple dynamics will be investigated utilizing APIM approach. In this endeavor, the Turkish version of the HSPS will be used. The findings suggested that the four subscales of the Turkish HSPS are strongly correlated. Therefore, it seems reasonable to create both total score for the HSPS as well as separate score for each component. However, considering high correlations between the components of the HSPS and the theoretical framework of the main study, a total SPS score for each partner will be calculated rather than using separate sub-dimensions.

CHAPTER 3

STUDY II:
THE EXAMINATION OF MODERATING ROLE OF SENSORY-PROCESSING SENSITIVITY

3.1 Method of Study II

3.1.1 Participants

Initially, 135 Turkish married couples from the community of metropolitan cities of Turkey participated in the study. Married couples were recruited by convenience sampling technique. Only those who were above (a) 18 years old or older and (b) married with the same partner at least for 6 months participated in the study. Prior to the analysis, accuracy of data, missing values and outliers were checked for whole sample. Two participants (one woman and one man) from different couples left 20% of items missing, therefore they, together with their spouses were excluded from the sample, remaining 133 married couples for the further analyses. The detail information about data screening and cleaning procedure was provided in the next chapter.

Demographic characteristics of the sample were presented in Table 11. The age of the wives ranged from 22 to 72 years (M = 37.20, SD = 10.11) and the ages of the husbands were between 24 and 68 (M = 40.66, SD = 10.04). The duration of marriage of the participants was ranging from 6 to 604 months (M = 160.05, SD = 131.44) and length of acquaintance was ranging from 1 to 244 months (M =36.91, SD = 41.02). Of wives, 12 (9%) had primary education, 6 (4.5%) had secondary education, 43 (32.3%) had high school education, 55 (41.4%) had Bachelor's degree, and 17 (12.8%) were with Master's degree and higher. Of husbands, 4 (3%) had primary education, 5 (3.8%) had secondary education, 52 (39.1%) had high school education, 47 (35.3%) had Bachelor's degree, and 25 (18.8%) had Master's degree

and higher. Of the total couples, 33 (24.8%) had no children, 32 (24.1%) had only one child, 56 (42.1%) had two children, and 12 (9.1%) of the couples had three children and more.

Of the total sample, 6 (2.3%) stated their perceived socio-economic status as low, 28 (10.5%) reported as standing on the medium-low status, 121 (45.5%) of them stated as being middle class, 103 (38.7%) reported to have medium-high class, and 8 (3%) reported to have high class. Regarding the type of marriage, 36 (27.1%) wives and 39 (29.3%) husbands described their marriage as arranged marriage which was initiated by family members and/or relatives. 54 (40.6%) wives and 60 (45.1%) husbands stated that they had love marriages. Twenty seven wives (20.3%) and husbands (20.3%) reported that they see each other as a suitable potential spouse. Sixty (12%) wives and 7 (5.3%) husbands reported that their friendship turned into a romantic relationship.

3.1.2 Measures

Wives and husbands filled out the same questionnaire battery that was given the separate envelopes. The battery consisted of demographic questionnaire form (see Appendix G), Highly Sensitive Person Scale (HSPS; Aron and Aron, 1997), Caregiving Scale (Kunce and Shaver, 1994), The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988), Relationship Happiness Scale (RHS; Fletcher, Fitness, & Blampied, 1990) and Communication Patterns Questionnaire-Short Form (CPQ-SF; Christensen, 1987, 1988; Christensen & Sullway, 1984). In the demographic information form, respondents were asked to indicate their age, gender, occupation, educational level, spouse's education level, perceived economic status, the duration of marriage, the length of acquaintance, the number of children, and type of marriage. All of the measures in the questionnaire were presented in the same order for both wives and husband.

Table 11. *Demographic Characteristics of the Sample*

	Wives	Husbands	Total
Number of Participants	133 (50%)	133 (50%)	266 (133 couples)
Age			
Mean	37.20	40.66	38.93
SD	10.11	10.04	10.20
Range	22-72	24-68	22-72
Duration of Marriage (Month)			
Mean	160.05	160.05	-
SD	131.44	131.44	-
Range	6-604	6-604	-
Length of Acquaintance (Month)			
Mean	36.91	36.91	-
SD	41.02	41.02	-
Range	1-244	1-244	-
Education			
Primary School (%)	12 (9%)	4 (3%)	16 (6%)
Secondary School (%)	6 (4.5%)	5 (3.8%)	11 (4.1%)
High School (%)	43 (32.3%)	52 (39.1%)	95 (35.7%)
University (%)	55 (41.4%)	47 (35.3%)	102 (38.3%)
Master's Degree and More (%)	17 (12.8%)	25 (18.8%)	42 (15.8%)
The Number of Children			
No children (%)	33 (24.8%)	33 (24.8%)	-
One Child (%)	32 (24.1%)	32 (24.1%)	-
Two Children (%)	56 (42.1%)	56 (42.1%)	-
Three Children and more (%)	12 (9.1%)	12 (9.1%)	-
Perceived Economic Status			
Lower (%)	2 (1.5%)	4 (3%)	6 (2.3%)
Medium-Low	13 (9.8%)	15 (11.3%)	28 (10.5%)
Middle (%)	60 (45.1%)	61(45.9%)	121 (45.5%)
Medium-High	54 (40.6%)	49 (36.8%)	103 (38.7%)
Upper (%)	4 (3%)	4 (3%)	8 (3%)
Type of Marriage			
Arranged marriage (%)	36 (27.1%)	39 (29.3%)	-
Love marriage (%)	54 (40.6%)	60 (45.1%)	-
Seeing each other suitable (%)	27(20.3%)	27 (20.3%)	-
Friendship turn into love	16 (12%)	7 (5.3%)	-

3.1.2.1 The Highly Sensitive Person Scale

The Highly Sensitive Person Scale was developed by Aron and Aron (1997) to assess sensory-processing sensitivity of the participants. The scale consisted of 27 items and participants rated the items using 7-point scales-ranging from 1(not at all) to 7 (extremely) (see Appendix B). As explained in the first study, the Turkish version of

the HSPS was found to have four-factor structure, measuring typical experiences and characteristics of highly sensitive people: sensitivity to (1) *multitasking* (e.g., "I find it unpleasant to have a lot going on at once"), (2) *external stimuli* (e.g., "I am easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by"), (3) *aesthetic values* (e.g., "I am deeply moved by the arts or music"), and (4) *environmental changes* (e.g., "I seem to be aware of subtleties in my environment"). The detailed information about the factor structure of the HSPS was provided in the study one. In the current study, the Cronbach's alpha was .80 for wives, and .86 for husbands. To test the major research questions, total sensory-processing sensitivity score was calculated by averaging the ratings of all items because the factor analysis of the Turkish HSPS showed single common factor tapping the primary sensitivity domains. High scores indicate high levels of sensory-processing sensitivity.

3.1.2.2 The Caregiving Scale

The Caregiving Scale was developed by Kunce and Shaver (1994) to assess four aspects of caregiving in intimate relationships namely *proximity vs. distance* (e.g., "When my partner cries or is distressed, my first impulse is to hold or touch him/her"), *sensitivity vs. insensitivity* (e.g., "I am very good about recognizing my partner's needs and feelings, even when they're different from my own"), *cooperation vs. control* (e.g., "I tend to be too domineering when trying to help my partner") and *compulsive caregiving* (e.g. "I tend to get overinvolved in my partner's problems and difficulties"). The scale consisted of 32 items and each item is rated on 6-point scale, ranging from 1 (not at all) descriptive of me to 6 (very descriptive of me). Both husbands and wives indicated the amount of caregiving that they provide for their partners in the items (see Appendix H).

The scale was adapted into Turkish by Gündoğdu-Aktürk (2010). Unlike the four factor solution of the original scale, three subscales, namely *Sensitive Caregiving*, *Controlling-Compulsive Caregiving* and *Caregiving Avoidance* were extracted for Turkish sample. The internal reliabilities of the Turkish version of the subscales were found to be .84 for sensitive caregiving and controlling-compulsive caregiving and .70 for caregiving avoidance. In the current study, internal reliability coefficients

were found to be .88 and .85 for wives and husbands for sensitive caregiving, .86 and .81 for wives and husbands for controlling-compulsive caregiving, and .79 and .77 for wives and husbands for caregiving avoidance. In the current study, negatively worded items for spousal caregiving were reversed coded and averaged to create a score reflecting the quality of caregiving.

3.1.2.3 Multidimensional Scale of Perceived Social Support

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet and Farley, 1988) is 12-item social support scale. It assesses participants' perceived social support received from there sources; *family* (e.g., "My friends really try to help me"), *friends* (e.g., "I have friends with whom I can share my joys and sorrows"), and *significant other* (e.g., "There is a special person who is around when I am in need"). The items are rated on 6-point scale ranging from 1 (never/ no) to 6 (always/ yes). The scale was adapted to Turkish by Eker and Arkar (1995) (see Appendix I). The authors reported high Cronbach's alpha scores .85, .88 and .92 for family, friends, and significant other subscales, respectively. In the current study, the alpha coefficients for wives and husbands were .88 and .86 for family, .88 and .91 for friends, and .91 and .88 for significant other subscales. For the current study, total perceived social support score was calculated by averaging the subscales, and higher scores indicate high levels of perceived social support.

3.1.2.4 The Relationship Happiness Scale

The marital satisfaction was measured by using 6-item the Relationship Happiness Scale (RHS; Fletcher, Fitness, & Blampied, 1990) which was designed for both married and unmarried couples. Participants rated the items using 5-point scales, ranging from 1 (strongly disagree) to 5 (strongly agree) (e.g., "My marriage with my husband/wife makes me happy") (see Appendix J). The RHS assesses the perceptions of love, happiness, seriousness of problems, level of commitment, general satisfaction, and relationship stability. The internal consistency of the scale was found to be .87 for the original scale. The Turkish adaptation of the scale was done by Tutarel –Kışlak (2002) and internal consistency of the scale was found to be

.90 for Turkish sample. In the current study, the RHS had good Cronbach's alpha, .95 for both wives and husbands. Higher scores indicate greater marital satisfaction.

3.1.2.5 Communication Patterns Questionnaire- Short Form

Communication Patterns Questionnaire-Short Form (CPQ-SF) is a 11-item brief version of the Communication Patterns Questionnaire (CPQ; Christensen, 1987, 1988; Christensen & Sullway, 1984). It measures the dyadic communication patterns that are used when a relationship problem arises and during the discussion of a relationship problem. The participants rated the items on 9-point scales, ranging from 1 (very unlikely) to 9 (very likely). The factor structure of the scale was analyzed by Futris, Campbell, Nielsen & Burwell (2010) and three subscales were revealed measuring (1) *criticize/defend* (e.g., "Both spouses blame, accuse, or criticize each other), (2) *demand/withdraw* (e.g., "Both spouses avoid discussing the problem"), and (3) *positive interaction* (e.g., "Both spouses suggest possible solutions and compromises") (see Appendix K). In the present study, items on positive interaction subscale were reversed coded and averaged to create a score for negative communication quality. Thus, higher scores indicate greater likelihood of using the negative communication patterns.

3.1.3 Procedure

All of the measures were given to both wives and husbands in separate envelops. Before the data collection, the questionnaire set was submitted to Middle East Technical University Research Center for Applied Ethics. Following the approval from the ethical committee (see Appendix L), the participants were selected through snowball technique. The questionnaire batteries including informed consent form were placed into envelopes separately for wives and husbands. The couples were asked to fill out the questionnaire by themselves without sharing information or discussing with their partner. After completing the questionnaires, they returned completed battery to the researcher in separate sealed envelopes.

3.1.4 Overview of Data Analysis

In order to examine whether sensory-processing sensitivity moderates the relationship between perceived social support and caregiving and relationship quality, Actor-Partner Interdependence Model (APIM; Cook & Kenny, 2005; Kenny, Kashy & Cook, 2006) was performed to enable the systematic examination of mutual influence of both partners on the relationship outcomes. Given the systematic analysis provided by APIM, the interdependence between couples' reports can be statistically controlled within the same model. In APIM analysis, each member of a dyad has an influence on both his/her outcome variable (actor effect) and other dyad members' outcome variable (partner effect). This approach enables to estimate both actor and partner effects at the same time by controlling for interdependency between the members of the dyad. APIM technique was employed via Lisrel 8.5 (Jöreskog & Sörbom, 1993).

For the significant moderation effects (interaction between a predictor and a moderator variables), hierarchical moderated regression analyses were also conducted via SPSS 20.0 to obtain the pattern of the interactions following the procedure outlined by Aiken & West (1991).

CHAPTER 4

RESULTS OF THE STUDY II

Preliminary analyses were conducted to screen the data for data accuracy, to handle the missing values, and to clean potential outliers. Before testing the main study hypotheses, descriptive statistics were presented: Following the descriptive statistics, main study hypotheses were tested by using dyadic data analysis technique using Actor-Partner Interdependence Modelling (APIM; Kenny et al., 2006). SPSS 20.0 and LISREL 8.5 were used in the statistical analyses.

4.1 Data Screening and Cleaning

The data was examined for outliers, missing values, normality, linearity and multicollinearity assumptions. Assumptions of normality, linearity, and multicollinearity were tested via examination of scatter plot and standardized residual plots. The initial sample consisted of 135 married couples. Examination of missing value analysis revealed that two participants (one woman and one man) had high number of missing values, so these two cases were omitted from the data set, together with data provided by their partners, resulting 133 married couples (a total of 266 participants) for the main analysis. Within the remaining 266 cases, distribution pattern of missing values was completely at random and amount of missing values was less than 5% so that the missing values were replaced with the variables' near point median values. After handling missing values, the data was also checked for potential univariate and multivariate outliers, and no outliers were detected in the data set. The further analyses were conducted with 133 couples.

4.2 Descriptive Statistics

Regarding the descriptive statistics for major study variables, means, standard deviations, bivariate correlations, and gender differences on the major study variables using ANOVAs were presented in the following parts.

4.2.1 Bivariate Correlations

Bivariate correlations among major study variables and means and standard deviations for the major study variables were presented in Table 12. A series of Pearson's correlation analysis revealed that the pattern and strength of relationships between major study variables were in the expected direction for both wives and husbands. The correlations coefficients between the HSPS subscales were ranging from .19 to .42 and from .24 to .57 for wives and husbands, respectively.

Correlations between sensory-processing sensitivity and other study variables indicated that wives' total score on sensory-processing sensitivity was positively correlated with their total use of negative (r = .17, p<.05), and criticize/demand (r = .24, p<.01) communication patterns. Husbands' total score on sensory-processing sensitivity, however, was not correlated with their total scores on study variables. It was positively correlated with husbands' controlling-compulsive caregiving (r = .21, p<.05), avoidance caregiving (r = .22, p<.05), and the use of criticize/demand communication patterns (r = .19, p<.05). Except for the positive correlation between husbands' sensitivity to environmental changes and wives' marital satisfaction (r = .22, p<.05), neither total sensory-processing sensitivity score nor its subscales were significantly associated with marital satisfaction for both wives and husbands. However, comparison of the relationship of HSPS subscales with other study variables yielded that SEM showed more associations with other study variables for both wives and husbands than the other HSPS subscales. More specifically, SEM was negatively correlated with both positive outcomes, such as spousal caregiving (r = -.30, p<.01 for wives and r = -.19, p<.05 for husbands), and negative outcomes such as criticize/defend style of communication (r = .25, p<.01 for wives and r = .20, p<.01 for husbands).

Consistent with the expectations, wives' spousal caregiving was positively correlated with wives' total social support (r = .35, p<.01), marital satisfaction (r = .42, p<.01), and negatively with the use of negative communication patterns (r = -.47, p<.05). The same patterns of relationship was also observed for the relationship of husbands' spousal caregiving with husbands' total social support (r = .42, p<.01), marital satisfaction (r = .45, p<.01), and the use of negative communication patterns (r = -.50, p<.01).

Wives' marital satisfaction was positively correlated with their own (r = .47, p<.01) and husbands' (r = .30, p<.001) total score on perceived social support, and negatively associated with wives' (r = -.39, p<.01) and husbands' (r = -.22, p<.05) use of negative communication patterns. Similarly, husbands' marital satisfaction was positively associated with their own (r = .49, p<.001) and wives' (r = .29, p<.001) total perceived social support, and negatively related to husbands' use of negative communication patterns (r = -.33, p<.001).

Comparing the strength of intrapersonal (i.e.., husbands-husbands and wife-wife) and interpersonal correlations (i.e., husband-wife), intrapersonal correlations were relatively higher than interpersonal correlations. For example, wives' spousal caregiving significantly correlated with their own poor communication quality (r = -.47, p<.01). However, the strength of relationship between wives' caregiving and husbands poor communication quality was relatively lower (r = -.19, p<.05). This pattern was also observed for the relationship between social support and marital satisfaction. Wives' and husbands' marital satisfaction was positively associated with their own (r = -.47, p<.01 and r = .49, p<.01 respectively), and their partners' social support (r = .30, p<.01 and r = .29, p<.01), suggesting that, as would be expected, intrapersonal correlations were relatively stronger than interpersonal correlations.

Table 12. *Bivariate Correlations between Wives' and Husbands' Scores on the Major Study Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. SPS_W	1																	
2. SPS_H	.06	1																
3. SEM_W	.83**	.05	1															
4. SEM_H	.10	.85**	.09	1														
5. SES_W	.73**	.14	.42**	.13	1													
6. SES_H	.08	.86**	.09	.57**	.17	1												
7. SAV_W	.64**	-.10	.40**	-.08	.28**	-.09	1											
8. SAV_H	-.09	.65**	-.06	.40**	-.08	.49**	-.02	1										
9. SEC_W	.49**	.01	.19*	.08	.19*	-.04	.27**	-.08	1									
10. SEC_H	-.00	.53**	-.07	.24**	.12	.38**	-.08	.23**	.03	1								
11. PSS_W	-.02	.00	-.19*	.01	.04	-.10	.02	-.05	.21*	.23**	1							
12. PSS_H	-.02	-.05	-.02	-.11	-.08	-.05	.00	-.07	.07	.15	.18*	1						
13. FAM_W	.03	.04	-.10	-.02	.11	.02	-.01	.02	.16	.19*	.79**	.09	1					
14. FAM_H	-.02	-.03	.01	-.06	-.08	-.02	-.03	-.04	.05	.09	.21*	.82**	.13	1				
15. FRI_W	.00	-.01	-.17	.04	.03	-.15	.09	-.02	.21*	.15	.78**	.09	.36**	.08	1			
16. FRI_H	.05	-.10	.07	-.18*	.00	-.06	.07	-.07	-.02	.12	-.02	.74**	-.04	.32**	.03	1		
17. SIGN_W	-.09	-.03	-.19*	-.02	-.04	-.11	-.03	-.13	.14	.23**	.85**	.26**	.57**	.30**	.49**	-.03	1	
18. SIGN_H	-.10	.01	-.15	.02	-.13	-.04	-.05	-.05	.15	.13	.27**	.79**	.14	.64**	.11	.31**	.40**	1

Table 12. *Bivariate Correlations between Wives' and Husbands' Scores on the Major Study Variables (cont'd)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19. TOTCARE_W	-.14	-.02	-.30**	-.10	-.05	-.06	.01	-.00	.13	.23**	.35**	.18*	.32**	.14	.16	.01	.38**	.30**
20. TOTCARE_H	-.03	-.14	-.09	-.19*	.02	-.08	-.02	-.20*	.07	.13	.29**	.42**	.19*	.44**	.15	.15	.35**	.42**
21. SENSC_W	.02	.09	-.12	.03	.06	.01	.03	.09	.20*	.25**	.40**	.15	.43**	.18*	.11	-.09	.46**	.32**
22. SENSC_H	.12	.10	.08	.05	.08	.08	.00	.00	.18*	.19*	.36**	.41**	.29**	.43**	.18*	.13	.43**	.44**
23. CONTC_W	.16	.05	.25**	.15	.07	.00	.00	.02	.01	-.11	-.00	-.07	-.02	.03	.03	-.14	-.02	-.04
24. CONTC_H	.03	.21*	.10	.26**	-.08	.08	.02	.21*	.03	.02	-.14	-.22*	-.12	-.22*	-.07	-.12	-.15	-.18*
25. AVOIDC_W	.16	.09	.28**	.09	.10	.15	.00	.09	-.07	-.14	-.34**	-.16	-.23**	-.15	-.26**	.03	-.33**	-.28**
26. AVOIDC_H	.15	.22*	.19*	.24**	.12	.19*	.04	.25**	-.01	-.13	-.15	-.32**	-.04	-.36**	-.09	-.09	-.23**	-.33**
27. SATIS_W	-.09	.04	-.16	.01	-.03	-.01	-.10	-.03	.12	.22*	.47**	.30**	.39**	.32**	.18*	.05	.57**	.39**
28. SATIS_H	-.10	-.05	-.07	-.06	-.16	-.03	-.12	-.17	.12	.14	.29**	.49**	.17*	.47**	.10	.09	.44**	.65**
29. NEGCOM_W	.17*	-.06	.29**	-.03	-.05	-.09	.20*	.04	-.04	-.10	-.19*	.03	-.18*	.05	-.09	.07	-.18*	-.07
30. NEGCOM_H	.05	.08	.08	.15	-.07	.04	.13	.04	.01	-.06	-.21*	-.32**	-.18*	-.40**	-.12	-.07	-.22*	-.31**
31. CRITDEF_W	.24**	-.01	.25**	-.01	.11	-.03	.20*	.06	.07	-.02	.04	-.06	.03	.02	.05	-.05	.02	-.11
32. CRITDEF_H	.16	.19*	.12	.20*	.09	.14	.25**	.17	-.02	.01	-.02	-.15	-.00	-.19*	.04	.01	-.08	-.20*
33. DEMWITH_W	.15	-.04	.17	.00	.01	-.10	.16	-.03	.07	.04	-.10	.08	-.11	.07	-.08	.07	-.06	.04
34. DEMWITH_H	.05	.06	.08	.13	-.09	.05	.07	-.05	.11	-.05	-.19*	-.19*	-.17	-.25**	-.14	-.06	-.15	-.16
35. POSTIVE_W	.09	.08	-.14	.07	.25**	.03	-.01	-.06	.27**	.25**	.32**	-.01	.30**	-.00	.14	-.10	.34**	.11
36. POSTIVE_H	.14	.10	.04	.05	.17*	.14	.07	.00	.14	.10	.25**	.37**	.20*	.44**	.14	.10	.26**	.37**

Table 12. *Bivariate Correlations between Wives' and Husbands' Scores on the Major Study Variables (cont'd)*

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
19. TOTCARE_W	1																	
20. TOTCARE_H	.37**	1																
21. SENSC_W	.73**	.34**	1															
22. SENSC_H	.23**	.72**	.39**	1														
23. CONTC_W	-.66**	-.21*	-.16	.05	1													
24. CONTC_H	-.20*	-.74**	-.15	-.22*	.21*	1												
25. AVOIDC_W	-.76**	-.24**	-.37**	-.14	.28**	.05	1											
26. AVOIDC_H	-.42**	-.84**	-.23**	-.42**	.33**	.50**	.34**	1										
27. SATIS_W	.42**	.36**	.57**	.43**	-.05	-.15	-.27**	-.24**	1									
28. SATIS_H	.38**	.45**	.42**	.50**	-.06	-.15	-.33**	-.38**	.55**	1								
29. NEGCOM_W	-.47**	-.17	-.31**	-.12	.33**	.15	.37**	.12	-.39**	-.16	1							
30. NEGCOM_H	-.19*	-.50**	-.16	-.44**	.09	.34**	.16	.36**	-.22*	-.33**	.29**	1						
31. CRITDEF_W	-.39**	-.16	-.19*	-.10	.37**	.08	.29**	.18*	-.27**	-.19*	.55**	.10	1					
32. CRITDEF_H	-.11	-.35**	-.06	-.24**	.13	.33**	.06	.23**	-.18*	-.27**	.23**	.67**	.24**	1				
33. DEMWITH_W	-.19*	.00	.01	.06	.20*	.075	.21*	-.02	-.09	.02	.77**	.25**	.10	.12	1			
34. DEMWITH_H	-.16	-.28**	-.09	-.21*	.11	.18*	.16	.26**	-.12	-.16	.27**	.83**	.01	.29**	.35**	1		
35. POSITIVE_W	.36**	.21*	.52**	.25**	-.04	-.14	-.21*	-.10	.48**	.18*	-.54**	-.18*	-.01	-.09	-.16	-.08	1	
36. POSITIVE_H	.12	.48**	.22*	.58**	.09	-.25**	-.12	-.28**	.19*	.34**	-.06	-.57**	.04	-.15	.05	-.23**	.27**	1

Note: 'W' and 'H' letters represents wives and husbands respectively. SPS = Sensory-processing sensitivity; SEM = Sensitivity to multitasking; SES = Sensitivity to external stimulus; SAV = Sensitivity to aesthetic values; SEC = Sensitivity to environmental changes; PSS = Total perceived social support; FAM = Perceived social support received from family; FRI = Perceived social support received from friends; SIGNOT = Perceived social support received from significant other; TOTCARE = Total spousal caregiving; SENSC = Sensitive Caregiving; CONTC = Controlling-Compulsive Caregiving; AVOIDC = Caregiving Avoidance; SATIS = Marital Satisfaction; NEGCOM = The total use of negative communication patterns; CRITDEF = The use of Criticize/Defend Communication Pattern; DEMWITH = The use of Demand/Withdraw Communication Pattern; POSITIVE =The use of Positive Communication Pattern.
*p< .05; **p< .01.

4.2.2 Gender Differences between the Major Study Variables

In order to examine the gender differences on the major study variables, a series of Analyses of Variance (ANOVA) were conducted. Table 13 shows mean differences between husbands' and wives' scores on main study variables. The results of ANOVAs showed that wives (M =4.82, SD = 0.74) had higher overall sensory-processing sensitivity score than husbands (M =4.37, SD = 0.84). With regard to sub-scales of HSPS, wives reported higher level of sensitivity to multitasking (M_{SEM} = 4.52, SD_{SEM} = 1.03), to external stimulus (M_{SES} = 4.87, SD_{SES} = 1.11), and to aesthetic values (M_{SAV} = 4.93, SD_{SAV} = 1.02) than their husbands (M_{SEM} = 3.91, SD_{SEM} = 1.10; M_{SES} = 4.41. SD_{SES} = 1.28; M_{SAV} = 4.54, SD_{SAV} = 1.00). Among the other study variables, perceived social support received from friends significantly differed for wives and husbands. Wives (M = 4.74, SD = 1.26) reported to have higher levels of social support received from friends than their husbands (M = 4.43, SD = 1.16). There were no significant gender differences on the other variables. Eta^2 values suggested that the strongest gender difference was on sensitivity to multitasking.

Table 13. *Gender Differences between Study Variables*

Variables	Wives (n = 135) Mean	SD	Husbands (n = 135) Mean	SD	F (1. 264)	Eta^2
Sensory-processing sensitivity						
Total sensory-processing sensitivity	4.82	.74	4.37	.84	21.22**	.07
Sensitivity to multitasking	4.52	1.03	3.91	1.10	21.79**	.08
Sensitivity to external stimulus	4.87	1.11	4.41	1.28	9.94**	.04
Sensitivity to aesthetic values	4.93	1.02	4.54	1.00	10.11**	.04
Sensitivity to environmental changes	5.20	1.00	5.05	.96	1.62	.01
Perceived social support						
Total social support	5.03	.96	4.93	.79	.78	.00
Family support	5.09	1.14	5.09	1.01	.00	.00
Friend support	4.74	1.26	4.43	1.16	4.14*	.02
Special person support	5.26	1.16	5.27	0.89	.01	.00
Spousal caregiving						
Total spousal caregiving	4.51	.71	4.46	.66	.38	.00
Sensitive caregiving	5.01	.83	4.86	.70	2.37	.01
Controlling-compulsive caregiving	3.16	1.28	3.11	1.06	.12	.00
Caregiving avoidance	2.60	1.00	2.61	.92	.01	.00
Communication quality						
Total negative communication quality	4.42	1.25	4.30	1.22	.63	.00
Criticize/defend	5.58	2.21	5.19	1.94	2.32	.01
Demand/withdraw	4.36	1.81	4.53	1.66	.62	.00
Positive interaction	6.65	1.97	6.98	1.62	2.24	.01
Relationship satisfaction	4.31	.88	4.39	.78	.58	.00

Note: *p<.05; **p<.01

4.3 Testing the Trait-Environment Interaction Models

The moderating role of sensory-processing sensitivity in the relationship between caregiving and perceived social support, and marital satisfaction and communication quality was tested via APIM analysis. In these analyses, wives' and husbands' caregiving and social support were treated as the predictor variables, wives' and husbands' sensory-processing sensitivity scores were used as the moderator variables, and marital satisfaction and communication quality as the outcome variables. Figure 6 and 7 illustrate conceptual models in which the data was tested separately for each dependent variable. Thus, four different models were tested, separately. Following the suggestions of Aiken and West (1991), before computing the interaction terms, the predictors and moderators were mean-centered by subtracting the sample mean from each score in a variable in order to eliminate multicollinearity between the variables and to ease the interpretation of the results. In order to test moderating effect, the product terms (interactions) were computed by multiplying each centered predictor variable (perceived social support and spousal caregiving) with each centered moderator variable (wives' and husbands' sensory-processing sensitivity). Thus, four product terms were calculated for each model (see Figure 6 and 7).

Firstly, fully saturated models were examined, and the correlated errors between wives' and husbands' outcome variables were included to each model as suggested by Kenny and Cook (1999). If the interaction effects were not significant, the analysis was repeated removing the insignificant product terms. If the interaction terms were significant, the further analysis was conducted to reveal whether the interaction is more compatible with diathesis-stress model, differential susceptibility hypothesis or vantage sensitivity.

Following the suggestions of Roisman et al. (2012), four statistical parameters were utilized to evaluate the significant interaction effects, namely (1) regions of significance with respect to predictor variable, (2) regions of significance with respect to moderator variable, (3) proportion of interaction index, and (4) proportion affected index. The regions of significance with respect to independent and moderator variables indicate the regions in which values of the independent variable

and moderator variable is statistically significant. According to Roisman and his colleagues, if the data is supporting the differential susceptibility hypothesis, the regions representing both low and high values of independent variable should be statistically significant. Moreover, the relationship between independent and dependent variable should be significant for the values of moderator variable falls above the standard deviation of the mean of the moderator. Even if there is no strict cut-off point for the moderator variable, in this study, it is expected that individuals who falls in the regions of two-standard deviation above the mean of sensory-processing sensitivity variable will show statistically differential outcomes depending on the values of the independent variable. Therefore, the slope representing highly sensitive group is expected to be statistically significant. Roisman et al. (2012) describe the proportion of interaction index as total interaction area that falls left and right sides of the crossover points, and the proportion affected index as the proportion of individual cases in the data that are affected from the interaction. In the present study, proportion affected index shows the proportion of people who are affected from the relationship between sensory-processing sensitivity and marital quality. It is expected that if the data is compatible with differential susceptibility hypothesis, proportion of interaction index value summed for the both sides of the crossover point and the value for proportion affected index should be close to the value of 1.00.

The regions of significance, proportion of interaction index, and proportion affected index were calculated by utilizing web application provided by Fraley (2014). In the present study, the analysis procedure was the same for all models, and the results were provided in the following sections.

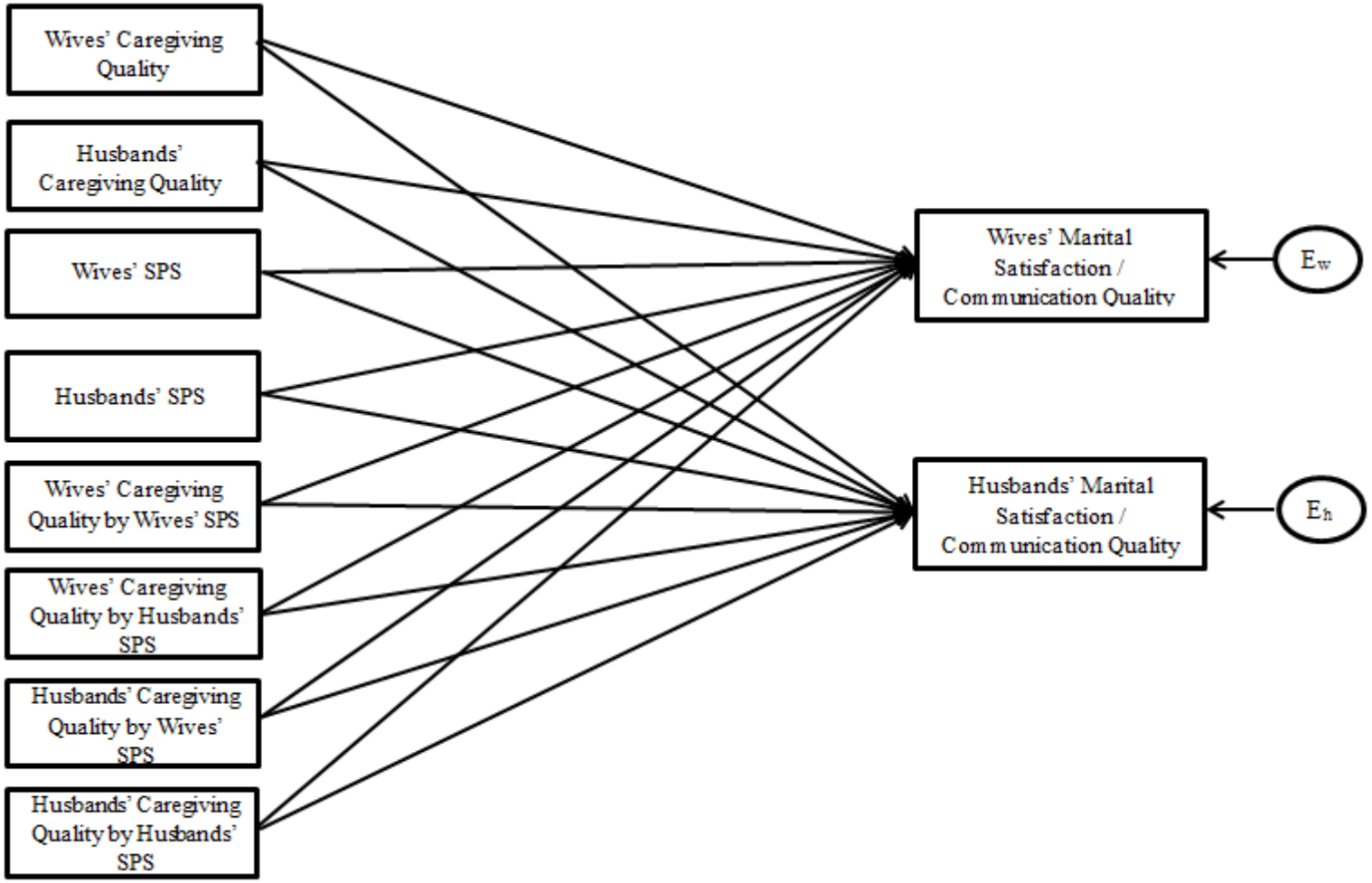

Figure 6. *The Proposed Model for Caregiving Quality X Sensory-Processing Sensitivity (SPS) on Marital Satisfaction and Communication Quality*

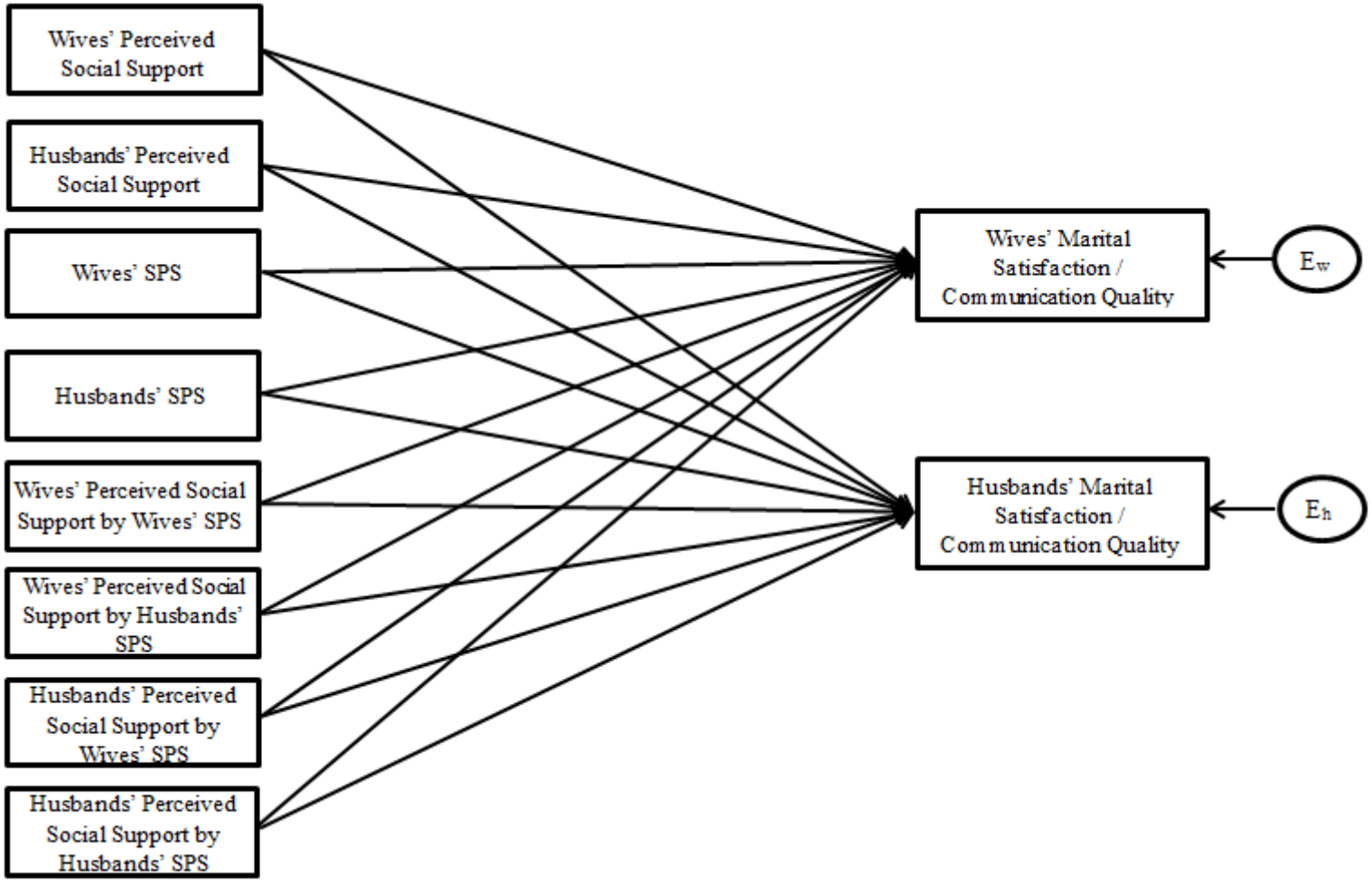

Figure 7. *The Proposed Model for Perceived Social Support X Sensory-Processing Sensitivity (SPS) on Marital Satisfaction and Communication Quality*

4.3.1 Model 1: The Moderating Effect of Sensory-Processing Sensitivity in the Relationship Between Caregiving Quality and Marital Satisfaction

The first model examined whether sensory-processing sensitivity moderates the relationship between caregiving quality and marital satisfaction. The model included wives' and husbands' caregiving quality (predictor variables), their sensory-processing sensitivity (moderator variables), the interaction terms and wives' and husband' marital satisfaction.

The saturated model indicated that interaction effects and main effects of wives' and husbands' sensory-processing sensitivity on marital satisfaction were not significant; indicating neither sensory-processing sensitivity nor the interaction effects significantly predicted marital satisfaction. Therefore, the analysis was repeated by removing the insignificant interaction effects and the links between SPS and marital satisfaction from the model, emphasizing the main effects of wives' and husbands' caregiving quality on marital satisfaction. The final model showed good fit to the data (χ^2 (4, N = 133) = 1.77, p = 0.78, GFI = 1.00, AGFI = 0.98, CFI = 1.00, RMSEA = .00).

The results revealed that both actor and partner effects of caregiving were significant on marital satisfaction (see Figure 8). Wives high on spousal caregiving reported higher marital satisfaction (β = .33, p< .05), and their husbands also reported higher marital satisfaction (β = .25, p<.05). Additionally, husbands' caregiving predicted both their own (β = .36, p<.05) and their partners' marital satisfaction (β = .23, p< .05). In order to test whether actor effects and partner effects significantly differ for wives and husbands, two actor effects and two partner effects were set to be equal. The chi-square difference tests revealed that neither actor effects ($\chi^2\Delta$ (1, N=133) = .04, p = ns.) nor partner effects ($\chi^2\Delta$ (1, N=133) = .23, p = ns) did significantly differ for wives and husbands.

Overall, the results revealed that wives' and husbands' caregiving significantly predicted both their own and partners' marital satisfaction. Besides, the interaction effects were insignificant in predicting wives' and husbands' marital satisfaction.

Therefore, sensory-processing sensitivity was not a significant moderator in the relation between caregiving and marital satisfaction.

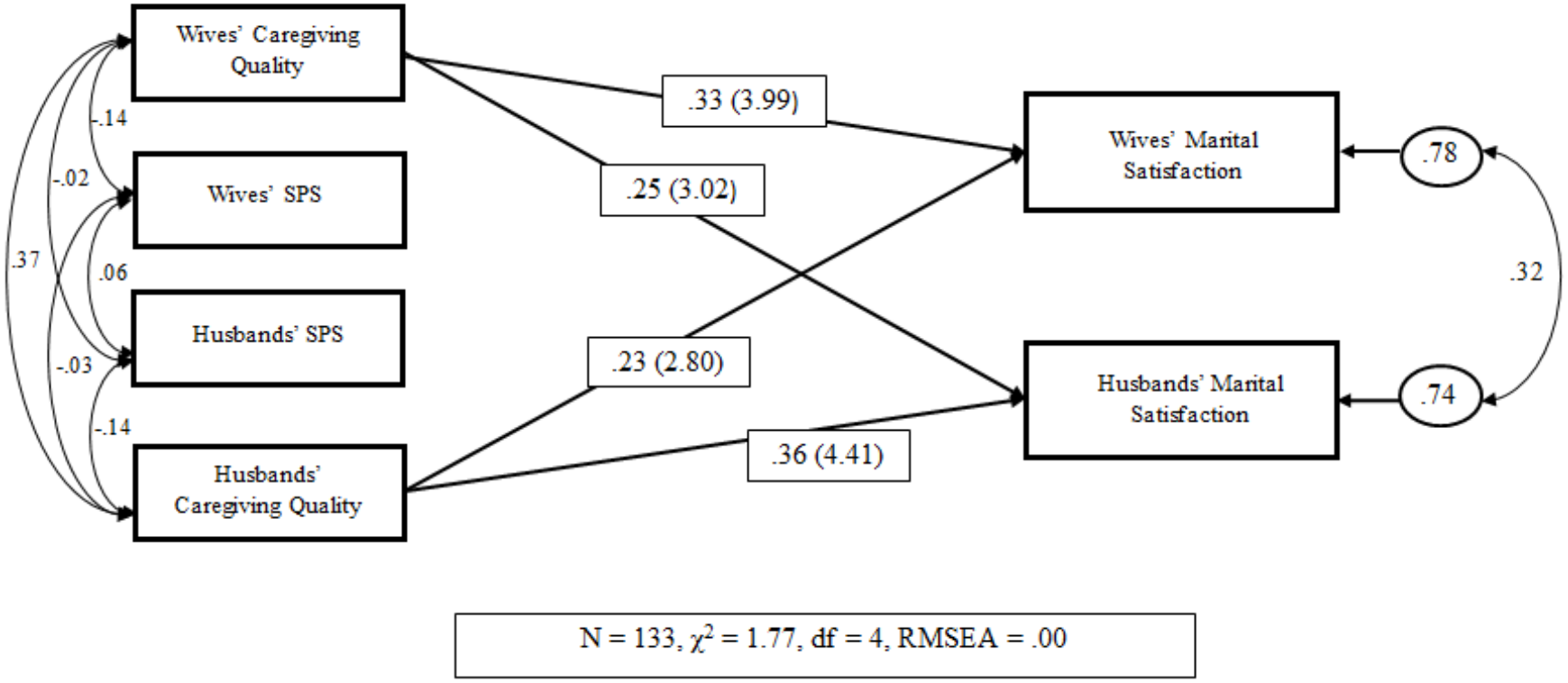

Figure 8. *Actor and Partner Effects of Spousal Caregiving in Predicting Marital Satisfaction*
Note: Values in parentheses represents *T* values.

4.3.2 Model 2: The Moderating Effect of Sensory-Processing Sensitivity in the Relationship Between Caregiving Quality and Marital Communication Quality

The second model examined whether sensory-processing sensitivity moderates the relation between caregiving quality and marital communication quality. The same procedure explained above in testing the second model.

The saturated model revealed that all interaction effects and wives' and husbands' sensory-processing sensitivity did not predict wives' and husbands' use of negative communication patterns during the conflict. Thus, the analysis was carried on removing insignificant interaction effects and insignificant paths. The final model yielded good fit to the data (χ^2 (6, N = 133) = 3.27, p = 0.77, GFI = 0.99, AGFI = 0.97, CFI = 1.00, RMSEA = .00).

As seen in Figure 9, neither wives' nor husbands' sensory-processing sensitivity predicted marital communication quality. The actor effect of caregiving on outcome variable was significant for both wives and husbands. Specifically, wives high on spousal caregiving reported lower level use of negative communication patterns (β = -.46, p<. 05). Husbands' caregiving also predicted their own communication quality (β = -.50, p<.05). In order to compare the magnitude of actor effects, these actor effects were equalized in the model and full saturated model was compared with the restricted one. The result indicated that the effect of wives on their own use of negative communication patterns did not significantly differ from the effect of husbands on their own use of negative communication patterns (χ^2 Δ (1, N = 133) = .35, p = ns).

Overall, the results of the model 2 revealed that the only significant relationship was found for actor effects. The use of negative communication patterns were significantly predicted by partner's their own caregiving quality. The link between product terms and the outcome variables were insignificant, indicating the absence of significant interaction effects. Thus, sensory-processing sensitivity was not a significant moderator in the relation between caregiving and marital communication quality.

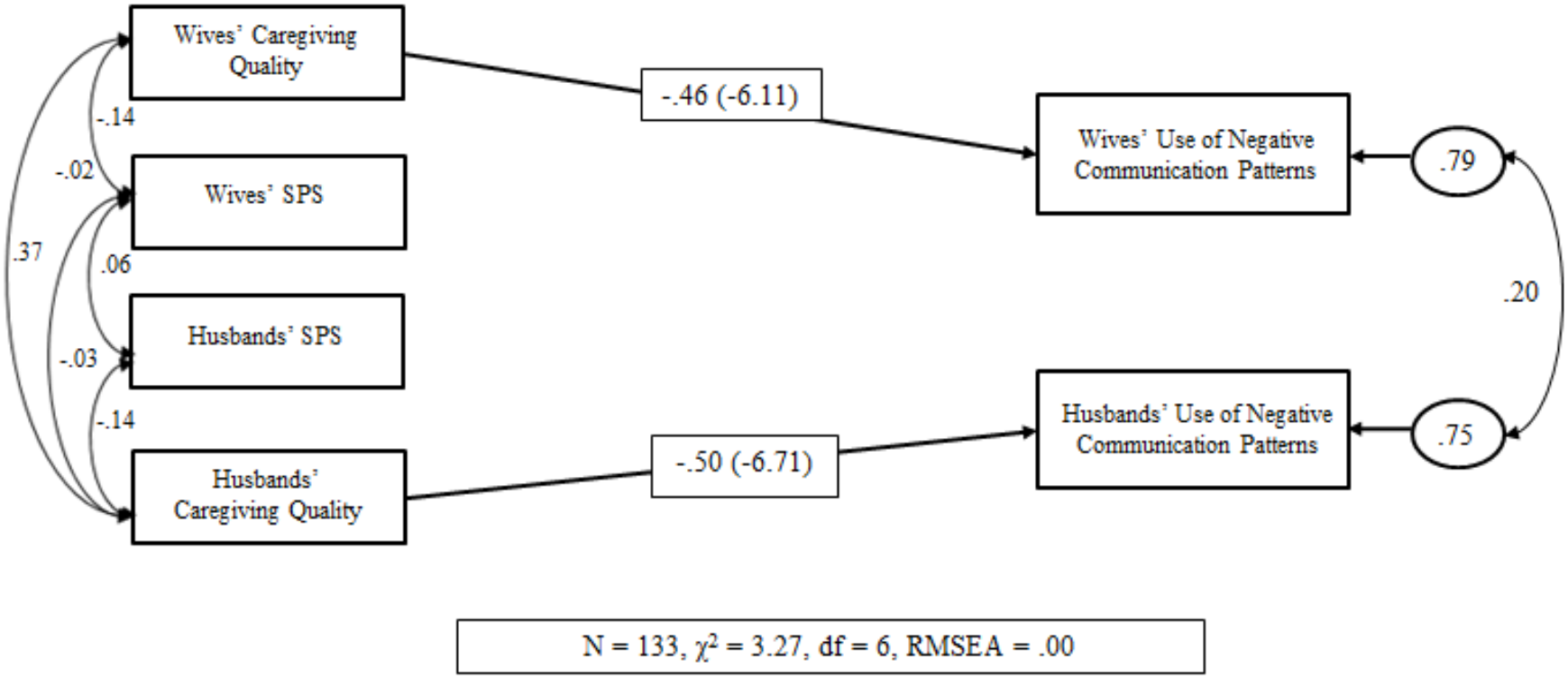

Figure 9. *Actor and Partner Effects of Spousal Caregiving in Predicting Use of Negative Communication Patterns*
Note: Values in parentheses represents *T* values.

4.3.3 Model 3: The Moderating Effect of Sensory-Processing Sensitivity in the Relationship between Perceived Social Support and Marital Satisfaction

The third model examined whether sensory-processing sensitivity moderates the relationship between perceived social support and marital satisfaction. The test of fully saturated model showed that the main effects of sensory-processing sensitivity and perceived social support were insignificant for both wives and husbands and the interaction terms were not significant. Therefore, the analysis was repeated excluding insignificant interaction effects. The insignificant paths were also dropped from the model. The final trimmed model revealed good fit to the data (χ^2 (4, N = 133) = 2.45, p = 0.65, GFI = 0.99, AGFI = 0.97, CFI = 1.00, RMSEA = .00).

As seen in Figure 10, both wives' and husbands' perceived social support significantly predicted both their own and their partners' marital satisfaction. Specifically, wives who reported higher perceived social support reported higher marital satisfaction (β = .43, p< .05), and their husbands (β = .21, p< .05) were more satisfied in their marriage. Similarly, husbands' perceived social support predicted both their own (β = .45, p< .05) and their wives (β = .23, p< .05) marital satisfaction. In order to test whether the magnitude of actor effects were different for wives and husbands, two actor parameters were set equal to each other. The fully saturated model and restricted model was compared by chi-square difference tests and the results yielded that neither actor effects (χ^2 Δ (1, N = 133) = .18, p =ns) nor partner effects (χ^2 Δ (1, N = 133) = .64, p = ns) did significantly differ for wives and husbands.

To sum up, the results revealed that perceived social support had significant actor and partner effects, whereas sensory-processing sensitivity did not. Comparison of the actor and partner effects showed insignificant difference among the effects. The model did not show significant interaction effects, indicating that sensory-processing sensitivity did not moderate the relationship between perceived social support and marital satisfaction.

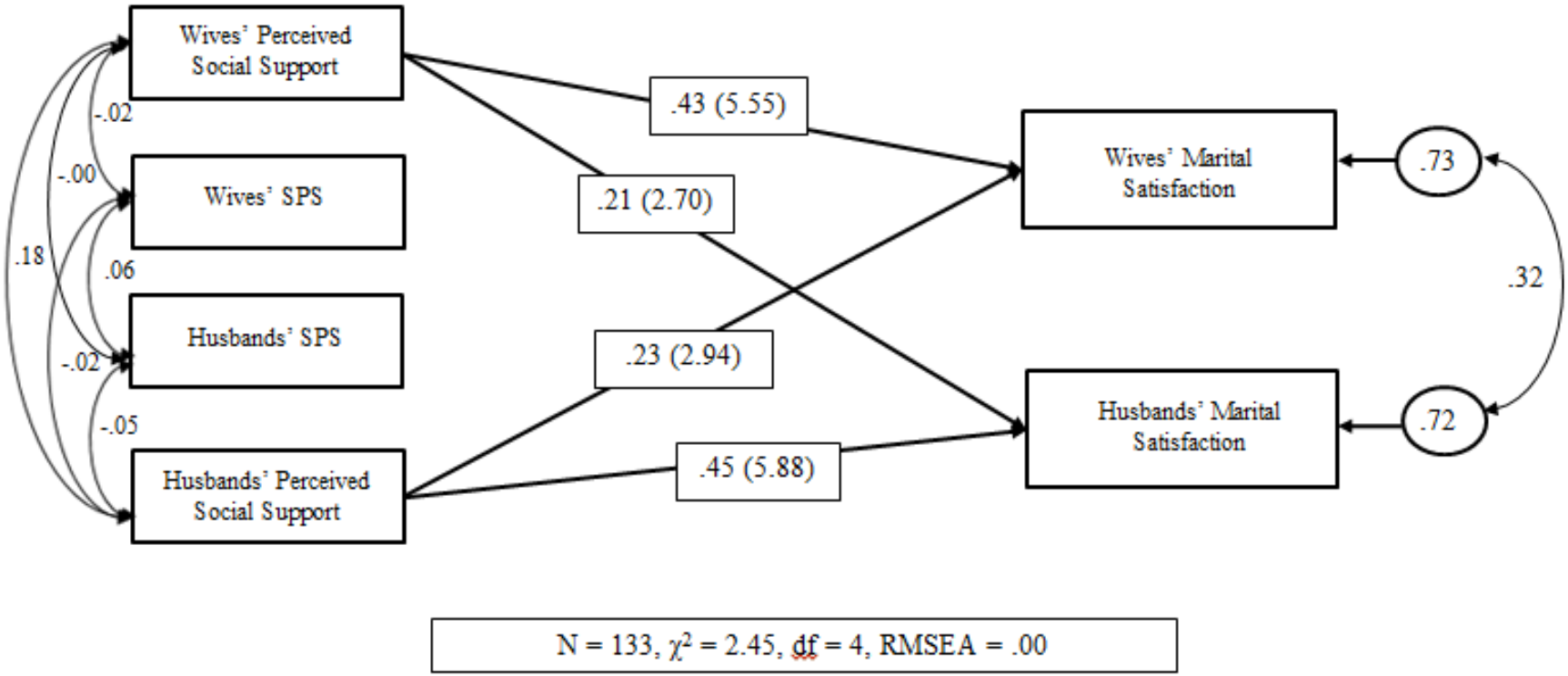

Figure 10. *Actor and Partner Effects of Perceived Social Support in Predicting Marital Satisfaction*
Note: Values in parentheses represents *T* values.

4.3.4 Model 4: The Moderating Effect of Sensory-Processing Sensitivity on the relationship between Perceived Social Support and Marital Communication Quality

This model examined whether the relationship between perceived social support and the use of negative communication patterns is moderated by sensory-processing sensitivity. The fully saturated model yielded no significant the main effect of husbands' sensory-processing sensitivity and wives' perceived social support. The interaction effect of wives' social support and wives' sensory-processing sensitivity and of husbands' social support and husbands' sensory-processing sensitivity were also insignificant. With two insignificant interaction effects removed from the model, the analysis was repeated. The model was finalized with all insignificant paths dropped (χ^2 (8, N = 133) = 9.88, p = 0.27, GFI = 0.98, AGFI = 0.92, CFI = 0.96, RMSEA = .04).

As seen in Figure 11, wives' sensory-processing sensitivity positively predicted their own negative communication quality (β = .17, p< .05). Husbands' perceived social support negatively predicted their own poor communication quality (β = -.34, p< .05). In sum, wives' sensory-processing sensitivity and husbands' perceived social support had significant actor effects. Besides, the interaction effects between wives' social support and husbands' sensory-processing sensitivity (β = .29, p< .05) and between husbands' social support and wives' sensory-processing sensitivity (β = -.21, p< .05) significantly predicted wives' use of negative communication patterns. In other words, these two significant effects reveled that (a) wives' perceived social support significantly interacted with husbands' sensitivity in predicting wives' poor communication quality, and (b) husbands' perceived social support significantly interacted with wives' sensitivity in predicting wives' poor communication quality.

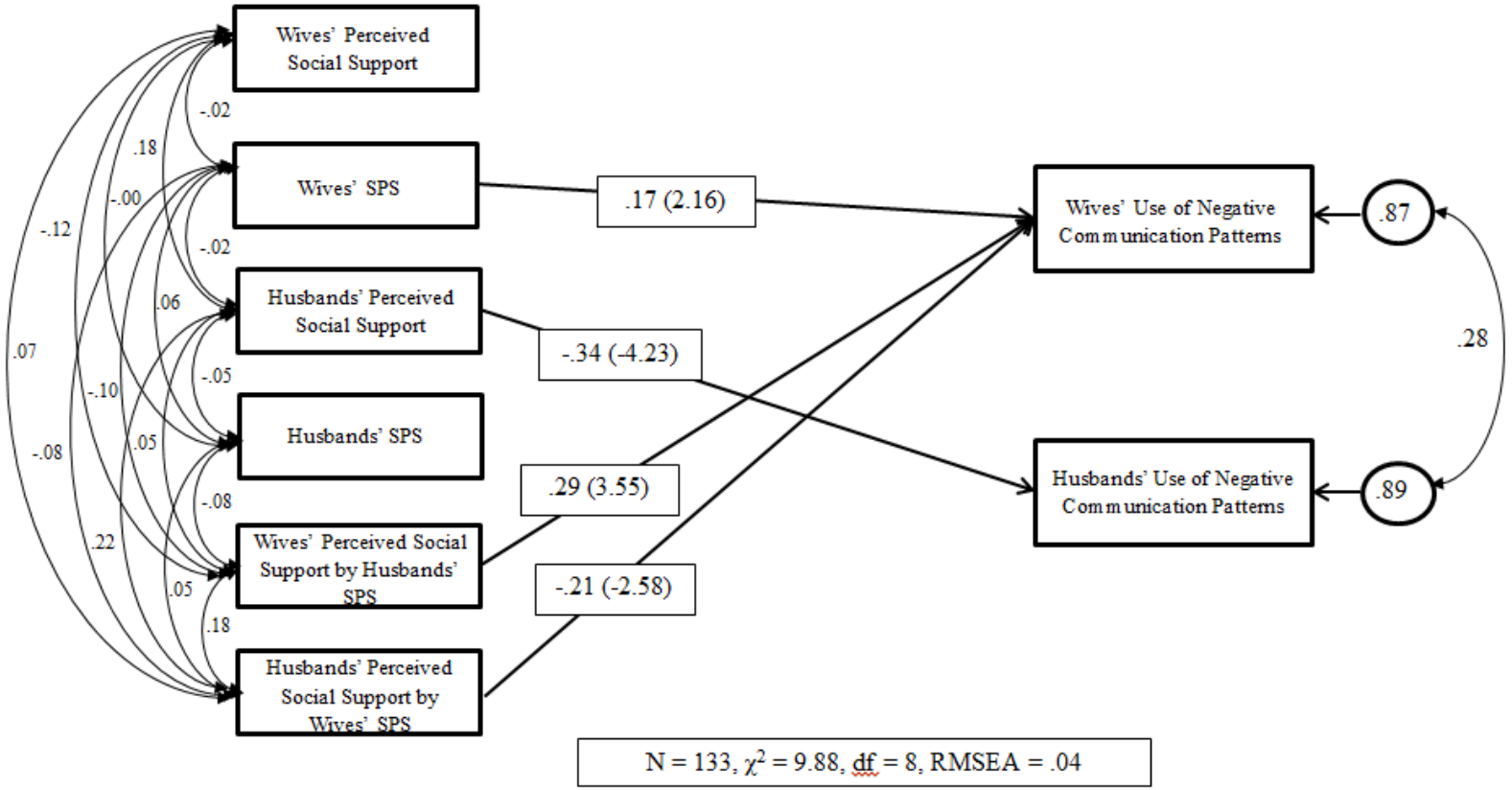

Figure 11. *Actor, Partner, and Interaction Effects of Spousal Caregiving in Predicting Use of Negative Communication Patterns*
Note: Values in parentheses represents *T* values.

To further investigate the nature of the first interaction, hierarchical moderated regression was conducted by entering wives' social support and husbands' sensitivity in the first step and the interaction term (wives' social support X husbands' sensitivity) in the second step. As outlined by Aiken and West (1991), the regression slopes for low sensitivity and high sensitivity were plotted at 1SD below and 1SD above the mean of the moderator variable. Following the suggestions of Roisman et al. (2012), the interactions were probed at 2SD above and 2SD below the mean of independent variable. The course of probing and plotting interactions was the same for both interaction analyses.

Whether the slopes of husbands' high and low sensitivity were significantly different from zero was examined by simple slope analysis. The simple slope analysis revealed that the slope for low husbands' sensory sensitivity was significant (t = -3.14, p< .01), and but it was not significant for highly sensitive husbands (t = .24, p = ns). In other words, when husbands were low in sensitivity, wives' social support is negatively related to their use of negative communication patterns, whereas this relationship was not significant when husbands were highly sensitive (see Figure 12).

In order to ascertain the regions at which the regression of wives' poor communication quality on husbands' sensitivity is statistically significant, regions of significance (RoS) at low and high levels of wives' social support were determined as a critical examination for differential susceptibility (Roisman et al., 2012). As seen in Figure X, wives' poor communication quality differed significantly for husbands with low and high sensitivity on the lower bound of wives' social support (t = 2.35, p <.01), whereas it was insignificant for the region that falls upper levels of wives' social support (t = 1.76, p = ns). Proportion of interaction index and the proportion affected index values were 0.38 and 0.23, respectively, indicating the pattern that is far from the support for differential susceptibility hypothesis. Overall, the results revealed that wives' with low sensitive husbands had higher levels of poor communication when they receive lower social support compared to wives' with highly sensitive husbands.

The second hierarchical multiple regression analysis was conducted by entering the husbands' social support and wives' sensitivity in the first step and their interaction

(husbands' social support X wives' sensitivity) in the second step. Following the procedure with the previous one, the slopes for low and high wives' sensitivity was plotted to examine whether they are different from zero. The simple slope analysis revealed that the effect of husbands' social support on wives' communication quality was significant for wives with low sensitivity (t = 2.13, p< .05), and it was not significant for wives with high sensitivity (t = 1.16, p = ns). In other words, husbands' social support was related to wives' use of negative communication patterns when wives were low in sensitivity. However, this relationship does not exist for highly sensitive wives (see Figure 13).

To reveal the regions in which the relationship between wives' communication quality was significantly related to wives' sensitivity, the regions of significance (RoS) was determined for low and high levels of husbands' social support. The results revealed that the interaction term was significant for lower levels of husbands' social support (t = 3.11, p<.05), whereas it was insignificant for upper levels of husbands' social support (t = 1.30, p = ns) (see Figure X). Proportion of interaction index value was 0.17 and the proportion affected index value was 0.61. Although proportion affected index seems to warrant for differential susceptibility hypothesis, the regions of significance results and proportion of index value withhold support for differential susceptibility hypothesis. To sum, the results revealed that wives who have not sensory sensitivity had lower use of negative communication patterns than highly sensitive wives when their husbands had low social support.

The same analyses were also repeated for each subscale of the HSPS, namely, SEM, SES, SAV, and SEC. The results revealed that the pattern of relationship among study variables did not differ for the HSPS subscales. Therefore, only analyses on the total score of the HSPS were presented.

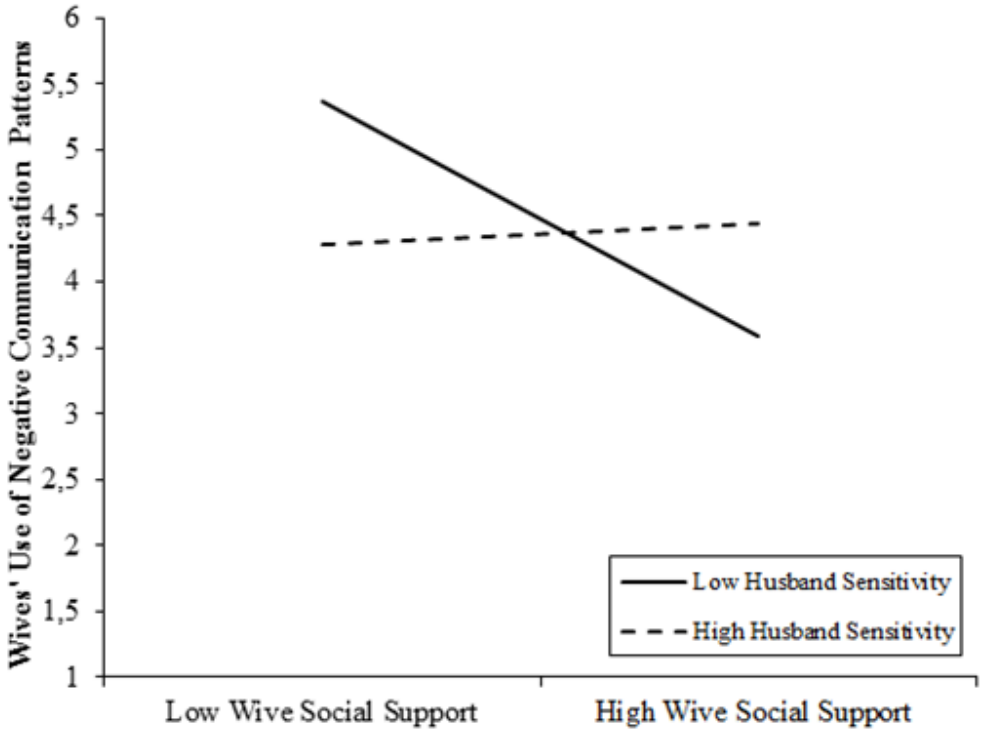

Figure 12. *The Interaction between Wives' Social Support and Husbands' Sensitivity in Predicting Wives' Use of Negative Communication Patterns.*

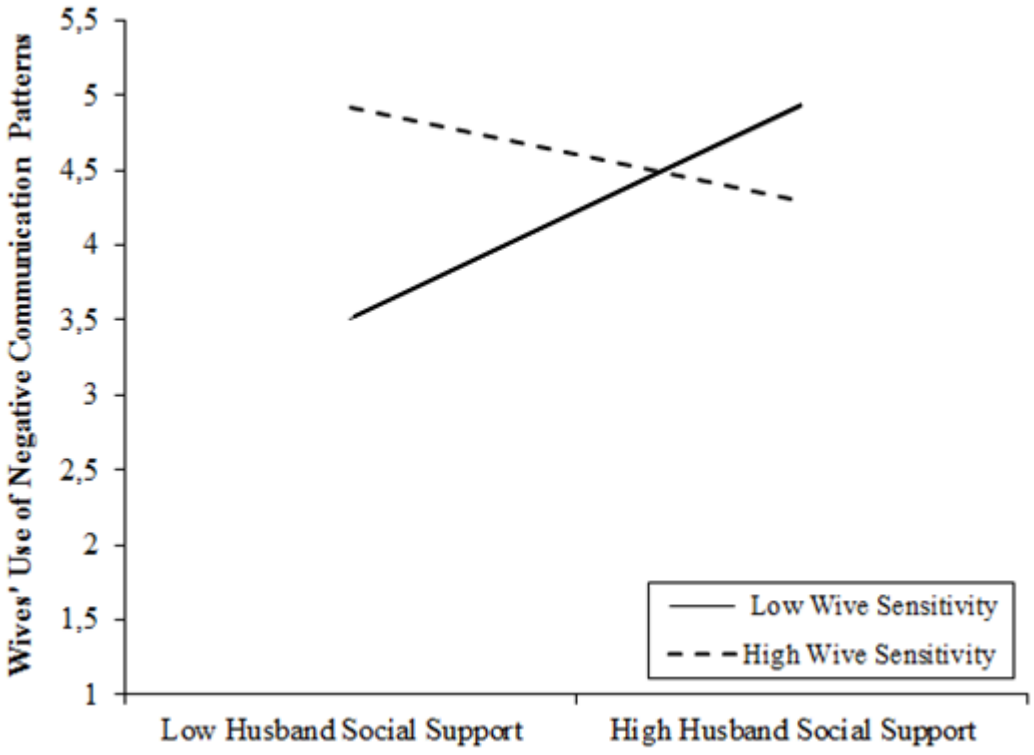

Figure 13. *The Interaction between Husbands' Social Support and Wives' Sensitivity in Predicting Wives' Use of Negative Communication Patterns.*

4.4 Summary of the Results of the Models

With regard to actor and partner effects, wives' and husbands' caregiving and social support were significant in predicting both their own and their partners' marital satisfaction. Wives' and husbands' social support were significant in predicting their own use of negative communication patterns. Overall, while marital satisfaction was predicted by both actor and partner effects of spousal caregiving and social support, communication quality was only predicted by actor effect.

With regard to interaction effects, none of the interactions were significant in the first three models, indicating sensory-processing sensitivity did not have a moderating role in the relationship (1) between caregiving and marital satisfaction, (2) between caregiving and communication quality, and (3) between perceived social support and marital satisfaction. However, the moderating role of wives' and husbands' sensory-processing sensitivity was obtained in the relationship between partners' amount of social support and wives' communication quality. These significant interaction effects can be summarized in two points: (1) husbands' low sensitivity increases wives' use of negative communication patterns at low levels of wives' social support; (2) wives' low sensitivity decreases wives' use of negative communication patterns at low levels of husbands' social support.

The simple slope analysis and calculation of regions of significance for the predictor variables showed that the interaction terms were only significant for partners with low sensitivity and the slopes were only significant in lower levels of the partners' social support. The proportion of interaction and proportion affected indexes for both significant interaction effects were not in favor of differential susceptibility hypothesis. Considering the statistical and theoretical prerequisites for significant trait-environment interactions, the interaction effects were failed to demonstrate the support for trait-environment interactions approaches, namely diathesis-stress model, differential susceptibility hypothesis, and vantage sensitivity. These results will be discussed and elaborated in the discussion section through the lens of available literature.

CHAPTER 5

DISCUSSION

The major objective of the present study was to examine whether sensory-processing sensitivity level of couples would moderate the relationship between spousal caregiving and perceived social support and marital satisfaction as well as marital communication quality and whether the potential moderating effect of SPS would support for diathesis stress model, differential susceptibility hypothesis, or vantage sensitivity. In line with this purpose, the first study dealt with the adaptation and validation process of the Highly Sensitive Person Scale (Aron & Aron, 1997) for a Turkish sample to assess the sensory-processing sensitivity level of the participants. In the second study, considering theoretical and empirical evidence for trait-environment interactions in adulthood and for potential moderating effect of sensory-processing sensitivity, the present study present a novel model in which sensory-processing sensitivity of the couples would moderate a relationship of spousal caregiving and perceived social support with marital satisfaction and marital communication quality. For that purpose, the three different trait-environment interaction approaches namely diathesis-stress model (Monroe & Simons, 1991) / dual-risk model (Sameroff, 1983), differential susceptibility hypothesis (Belsky, 1997, 2005; Belsky & Pluess, 2009), and vantage sensitivity model (Pluess & Belsky, 2012) were tested in dyadic level considering the couple dynamics in marriage. Since the couple dynamics are always considered within a dyadic level, the Actor-Partner Interdependence Model (Cook & Kenny, 2005; Kenny, Kashy & Cook, 2006) was utilized in the second part of the study.

In this chapter, the findings of the first study and the second study will be discussed through the elaboration of the existing literature on close relationships and trait-environment interactions. The discussion of the main study findings were followed

by contribution of the study, limitations of the study, and suggestions for future studies. The final conclusion of the present study was presented at the last section.

5.1 General Evaluation of the Study I

One of the objectives of the present study was to adapt the Highly Sensitive Person Scale (Aron & Aron, 1997) into Turkish and to examine the psychometric properties of the scale for a Turkish sample. The HSPS was originally found to be unidimensional scale with valid and reliable structure. However, the past studies on the factorial structure of the scale were mixed and ambiguous indicating two-factor (Evans & Rothbart, 2008), three-factor (Smolewska et al., 2006), or four-factor structure for the scale (Meyer et al., 2005). Therefore, unidimensional structure of the HSPS was challenged by these studies. Through the use of exploratory and confirmatory factor analysis, the data showed the best fit for the four-factor solution, and the factors were named as sensitivity to multitasking (SEM), sensitivity to external stimuli (SES), sensitivity to aesthetic values (SAV), and sensitivity to environmental changes (SEC).

In the light of correlational and regression analyses, the Turkish version of the HSPS was found to be reliable and valid instrument to measure the innate trait of sensory-processing sensitivity. The findings suggested that Turkish HSPS has multidimensional factor structure with each capturing different domains of SPS. Although further factor analysis suggested a common underlying second-order factor, these four subscales of the Turkish HSPS may be useful when detecting sensitivity levels for each sensitivity type. Especially, the determination and inclusion of SEC subscale was crucial to comprehend domain-specific sensory system sensitivity because it was relatively a new dimension when considering previous studies suggesting multidimensional structure. The findings also implied that the construct of SPS is related to both behavioral constructs, such as behavioral inhibition and behavioral activation sensitivity, and personality traits, such as neuroticism, extraversion and openness. Specifically, the relationship of SPS with both the BIS and the BAS sensitivity was important to provide a support for Joint

System Hypothesis (Corr, 2001) which postulates that these two motivational systems may interact with each other within the same biological structure.

In conclusion, this study was the first to adapt the Highly Sensitive Person Scale into Turkish and to examine its psychometric properties for a Turkish sample. The validity and reliability of the Turkish HSPS was well-established utilizing various statistical techniques. However, it was concluded that the further examination on psychometric properties of the Turkish HSPS is needed to examine culture-specific and culture-general sensitivity types.

5.2 General Evaluation of the Study II

5.2.1 Actor and Partner Effects of Perceived Social Support and Caregiving in Predicting Marital Quality

Both actor and partner effects of perceived social support and caregiving on marital satisfaction and marital communication quality were estimated by testing the interactions between wives' and husbands' SPS and relationship environment quality on marital quality. Given that couples have influence on both their own and their partners' relationships outcomes, the APIM approach was utilized in order to link causes and consequences of the couples' behaviors in the relationship. Therefore, the APIM framework enabled to capture the effect of self and partner caregiving quality and perceived social support on marital satisfaction and marital communication quality.

The actor and partner effects of spousal caregiving and perceived social support showed that wives' and husbands' marital satisfaction was predicted by both wives' and husbands' caregiving quality and perceived social support. Consistent with the previous studies (e.g., Kane et al., 2007; Overall et al., 2010), wives' and husbands' caregiving quality and perceived social support were significant predictors of both their own and their partners marital satisfaction. These significant partner effects of spousal caregiving quality and of perceived social support on marital satisfaction emphasized once again that couples' caregiving quality and social support levels are interdependent in predicting their marital satisfaction. Although the results indicated that the actor effects were stronger than the partner effects, wives and husbands were significantly affected by their partners' caregiving quality and social support

received from different domains such as friends and family members. The similar parent effects were not observed in predicting marital communication quality. The findings indicated that wives' and husbands' use of negative communication patterns were significantly and negatively predicted only by their own caregiving quality.

Another significant actor effect was found in the relationship between wives' SPS and their own use of negative communication patterns. This result was consistent with previous studies (e.g., Bouchard, 2003; Kurdek, 1997) that the individuals who are high on negative affectivity have a greater tendency to have adverse communication styles. Thus, it can be said that it has a negative effect on communication patterns that people use to solve the relationship problem. Since those who are highly sensitive are more likely to have negative affectivity and to experience anxiety, fear and depressive behaviors (Aron et al., 2012), it seems that they would have a tendency to use negative communication patterns such as criticism, withdrawal, and dominance while discussing the relationship problem. Therefore, the present study supported the expectations that wives' use of negative communication skills is predicted by their level of sensory system sensitivity. Considering that this result was only found for wives, but not for husbands, it should be explored in the future studies examining gender differences in the effects of sensory-processing sensitivity on marital outcomes.

5.2.2 Interaction Effects among Wives' and Husbands' Sensory-Processing Sensitivity, Caregiving Quality, and Perceived Social Support on Marital Quality

The moderation analysis with APIM revealed two important interaction effects; (1) husbands' SPS level and wives' perceived social support, and (2) wives' SPS level and husbands' perceived social support significantly interacted in predicting wives' use of negative communication patterns. More specifically, wives whose husbands are low in sensitivity reported to use more negatively toned communication styles when they received less social support. In addition, wives reported to use less negatively toned communication styles when they were low in SPS and their husbands received less social support. Even if the results are not significant for highly sensitive wives and husbands, the patterns of relationship between social

support and communication quality were in reversed direction for highly sensitive individuals compared to non-highly sensitive wives and husbands.

The present results did not reveal supportive findings for trait-environment interactions as it is framed by differential susceptibility hypothesis and vantage sensitivity. In other words, the present study did fail to demonstrate the proposed moderating effect of high sensitivity trait for differential susceptibility hypothesis and vantage sensitivity approach. The visual assessment of interaction effects by means of graphical displays and statistical evaluation of the results indicated that high sensitivity did not function as susceptibility marker or vantage sensitivity factor in the relationship between spousal caregiving, social support and marital quality. Statistical indexes to evaluate the interaction effects (i.e., proportion of interaction and proportion affected index) did not show significant effect to warrant aforementioned trait-environment interaction models. However, the results suggest that wives and husbands with low sensitivity are vulnerable or resilient depending on the quality of environmental conditions.

Accordingly, two critical findings were inferred from the these findings; (1) husbands' low sensitivity lead to wives' increased level of negative communication pattern use when wives are exposed to negative environmental condition (i.e., low level of perceived social support), and (2) wives' low sensitivity lead to less use of negative communication patterns when the husbands are exposed to negative environmental condition (i.e., low level of perceived social support). These results suggest that the effect of SPS on marital communication quality depends on who has low level of sensitivity and who is exposed to negative environmental conditions. In that sense, the impact of innate sensitivity trait on marital outcomes cannot be generalizable for both partners. Rather, it should be cautiously evaluated for both wives and husbands. This finding is partially consistent with the findings of Malouff, Thorsteinsson, Schutte, Bhullar and Rooke (2010) who found that the relationship between personality characteristics and relationship outcomes did differ for men and women. However, interaction effects found in the present study emphasizes that innate sensitivity trait has different effects on relationship outcomes depending on gender. SPS together with environmental conditions works differently for wives and husbands.

The moderation analyses yielded that low sensitivity has a positive effect on wives' marital outcomes even if their partners are exposed to negative environmental conditions. It is expected that husbands' low level of social support would have a detrimental effect on wives' marital outcomes because low social support may lead to elevated level of stress which in turn negatively affects wives' behaviors and expressions during the discussion of relationship problem. However, wives' low sensitivity seems to buffer the adverse effects of husbands' negative environmental influence (low social support) and lead to lessen the possibility of negative communication pattern use for wives. In that sense, in contrast to high sensitivity, low sensitivity may be related with indifference and high tolerance for negative environmental effects in marital relationships. Consequently, low sensitivity seems to have a protective function in negative environmental conditions. This result is not consistent with vantage sensitivity approach because wives with low sensory-processing sensitivity did not benefit from husbands' high social support. However, it can be speculated that wives with low sensitivity did show resilience to negative relationship environment namely husbands' low social support condition. Therefore, low sensitivity trait seems to increase wives' *resilience* to negative environmental conditions exposed by husbands. The combination of wives' low sensitivity and husbands' low social support demonstrated that low sensitivity may not be a vulnerability factor, but a resilient factor for wives within the dynamics of marriage. On the other hand, the results revealed that husbands' low sensitivity does not have such buffering effect. In contrast, when husbands' low sensitivity is combined with wives' negative environmental condition, wives' use of negative communication patterns was higher. Therefore, low sensitivity trait increases husbands' *vulnerability* to negative environmental conditions exposed by wives. Husbands' low sensitivity is a vulnerability factor in marriage because when it is combined with negative environmental exposures, wives' marital communication quality seems to be worsened.

To sum, these interaction effects partially support diathesis-stress model because interaction of husbands' low sensitivity with wives' low social support, and of wives' low sensitivity with husbands' low social support pose dual risk for wives' communication quality. The results did not entirely support the expected pattern of relationship within the diathesis-stress model because it is expected highly sensitivity

individuals will be more vulnerable-resilient in adverse conditions. However, test of moderation effect suggest that individuals with low sensitivity showed a different pattern of effect depending on the quality of environmental conditions. Consistent with the diathesis-stress framework, when individuals' low sensitivity is combined with adverse relationship conditions such as low social support, wives' marital communication quality is affected negatively or positively depending on who has low sensitivity and who paves for negative environmental exposures. Therefore, low sensitivity can be characterized as resilient or vulnerability factor depending on the quality of relationship environment.

Although diathesis-stress model is partially supported, the unsupported results should be elucidated in the light of existing literature. There may be several reasons for these unexpected findings within the framework of trait-environment interactions. Firstly, genetic plasticity for highly sensitive couples might not be observed for low/high quality of spousal caregiving and high/low social support exposures. In other words, biological sensitivity that high sensitivity trait creates may not be observable in all environmental conditions. In the theoretical review on developmental plasticity by Belsky and Pluess (2013), it is argued that the state of plasticity that is obtained in particular conditions may not be observed when exposed to different environmental inputs. For the present study, moderating effect of sensitivity trait may not be obtained for the positive and negative spousal caregiving and low and high social support conditions. Moreover, the couples that sampled in the present study may have developmental susceptibility but their susceptibility may not be observable for high sensitivity trait. Taken all together, it is questionable some individuals' genetic variation is operative only for particular genetic marker and particular environmental condition (Belsky & Pluess, 2009, 2013; Pluess & Belsky, 2012). Thus, similar questions may also be employed for the present study because the focus on particular environmental conditions (i.e., caregiving and perceived social support) may be unsupportive for proposed trait-environment interaction models.

The present study has challenged with the past studies which mostly focused on developmental plasticity in childhood because it is well-documented fact that individuals show more developmental plasticity in their early life, rather than in late

life span (e.g., Belsky & Pluess, 2009; Belsky et al., 2007). The myriad evidence has been reported that some children have biological plasticity that they are more prone to negative environmental conditions with displaying negative outcomes, and also benefit more from positive experiences by exhibiting positive outcomes (e.g., Bakermans-Kranenburg & van Ijzendoorn, 2006; Kochanska et al., 2007). The reason for this early susceptibility may be the fact that children have constantly changing biological structure, so that they are biologically more sensitive to environmental exposures and experiences. However, important question should be raised about the timing of developmental plasticity that we detect when measuring the plasticity marker and environmental conditions (Belsky & Pluess, 2013). Since it is harder to detect biological plasticity in adulthood than in childhood, the present study findings may be negatively affected by this timing of susceptibility issue.

An important finding was that while referring a situation as gene-environment interaction, one should ensure to eliminate the possibility of gene-environment correlation because as Dick (2011) said some environmental influences may not be random, and naturally occurring, but genetically influenced. Kendler and Baker (2007) argue that if ones' behaviors are influenced by his/her genotype, then the environmental conditions that are shaped by individuals' behaviors should be affected by genetic factors. This genetic influence on environmental experiences is called as gene-environment correlation.

The findings in the present study can also be interpreted considering gene-environment correlation because spousal caregiving and perceived social support may be affected by both individuals' and partners' genotype. According to Plomin, DeFries and Loehlin (1977), there are three types of gene-environment correlation namely active, reactive, and passive. For example, individuals' high or low sensory-processing sensitivity may have an influence on how their partners' respond and behave (reactive gene-environment correlation) or else individuals may make a choice for their environment because of their high or low sensitivity (active gene-environment correlation). We may partial out the possibility of passive type because it is usually determined by individuals' genetic inheritance of nuclear family. However, in marriage, it can be said that each individual shapes his/her own marital

conditions, so that genetic inheritance can have little or no effect on marital environment.

Considering gene-environment correlations, it may be said that high or low sensitivity may affect individuals' behaviors which in turn affects romantic partners' responsiveness and sensitiveness to the need of spouse. Since high sensitivity is directly related to stimulation and perceptions, it influences how a situation is perceived, and how behaviors are formed in response to a particular situation. Thus, while individuals' sensitivity trait may influence the way caregiving patterns are formed by the partners, their perceived social support received from different domains may also be affected by their own sensitivity trait. In order to warrant the gene-environment interaction, genotype and environmental exposures should be independent from each other not to support for gene-environment correlation. How we can deal with the gene-environment correlations while examining gene-environment interactions was highlighted while addressing the limitations of the present study.

5.3 The Contributions and Implications of the Study

This study has contributed to the existing literature in a number of ways. First of all, this is the first study that adapts the Highly Sensitive Person Scale (Aron & Aron, 1997) into Turkish, examines its psychometric properties, and establishes its construct validity for a Turkish sample. Through utilizing advanced statistical techniques, the present study not only examined factorial structure of the HSPS for the Turkish sample, but also enabled to make comparison with the alternative factor structures suggested in the past studies. Since the previous findings on the HSPS offers contradictory findings about the factorial structure of the HSPS, the present study may have the potential to shed a different light on the understanding of its underlying factorial structure through suggesting four-factor model for the Turkish HSPS.

Second, this study will be one of the first studies to test trait-environment interactions from different frameworks through the use of SPS as susceptibility factor among adults. The examination of moderating role of sensory-processing sensitivity

seems to be promising because SPS was revealed to be inherited personality trait exhibiting strong association with 5-HTTLPR polymorphism (Licht et al., 2011) and dopamine-related genes (Chen et al., 2011). Moreover, it develops and appears early in life and remains stable throughout the life span. With regard to these aspects of SPS, it has been argued in the previous studies that SPS can be investigated for its moderating role in both risky and supportive environments (e.g., Aron et al., 2005; Liss et al., 2005) among children. However, it is substantially rare to find research that directly focuses on the moderating effect of sensory-processing sensitivity within the framework of trait-environment interactions, especially for adults. Therefore, this study offers some important insights and initiatives into the examination of moderating role of SPS considering different frameworks of trait-environment interactions, namely diathesis-stress model, differential susceptibility hypothesis, and vantage sensitivity.

Third, the current study contributes to the research on trait-environment interactions by examining the moderating effects of SPS on married couples through utilizing Actor-Partner-Interdependence Model (APIM) framework. In other words, the present study is the first to undertake APIM approach within the examination of trait-environment interactions. Previous studies generally investigate the trait-environment interactions at individual levels. However, when dyadic nature of marriage and marital outcomes is considered, the trait-environment interactions at dyadic level shed different light on the examination of behavioral susceptibility for married couples. In that respect, this study has broaden the examination of trait-environment interactions by dyadic investigation of partners' levels of spousal caregiving, perceived social support, and sensory-processing sensitivity on marital quality outcomes. Through the APIM approach, it has become possible to simultaneously estimate both the effects of actor's and partner's sensitivity on relationship outcomes in relation to relationship environment. Dyadic interaction effects reflect not only actor effect but also partner effect which distinguishes the current study from previous ones that mostly stressed on actor effects. Therefore, the current study provided evidence on the influence of each partners' sensitivity on the relationship between spousal caregiving and social support and relationship outcomes of both spouses.

Last but not least, the models tested in the present study have critical implications in predicting the marital quality from different theoretical perspectives. Although different propositions were established for each model models, all models aim at predicting marital quality through the joint effect of environmental influences and enduring individual characteristics. Karney and Bradbury (1995) suggested that the theoretical framework which involves wide range of potential predictors of marital outcomes should be adapted to the research on marriage. As it was suggested, the trait-environment interactions provide more integrative framework and robust predictive power than focus on single framework (i.e., environmental influences and enduring individual characteristics). The present study findings suggested that wives' use of negative communication styles is depend on both their own and their partners' SPS and perceived social support levels. Therefore, the present study offers novel predictive models for marital outcomes by combining the influences of environmental factors with couples' inherit sensitivity trait.

The results of the main study have two practical implications that may be critical for family counseling and couple therapy. Firstly, the main effects of caregiving quality and perceived social support imply that wives and husbands are positively affected by positive caregiving behaviors and social support received from family members and friends. The findings suggest that when couples are exposed to supportive and responsive caregiving behaviors; both they and their partners are more satisfied in the marriage. The same effect was also found for the prediction of use of negative communication patterns while discussing the relationship problem. Although the effects of SPS on marital quality was only found for wives and for the marital communication quality, couple counseling experts and psychologists should consider the innate trait of sensory-processing sensitivity while evaluating the relationship problems and behavioral patterns of couples. For that reason, SPS level of participants may be a reliable component to predict the relationship outcomes. Even if the further study is need to establish a robust link between actor and partner effects of SPS and marital outcomes, the present study may encourage clinical couple trials to take the enduring individual characteristics of couples into account while consulting the couples.

Secondly, the present study also implies that there is an interaction between SPS and perceived social support in predicting wives' use of negative communication patterns. This suggests that through the implication of trait-environment interactions to the understanding of couple dynamics, it may be possible to gain more insight on "what works for whom" and how the marital outcomes are affected when specific environmental conditions are combined with specific innate traits of the couples (Belsky & Pluess, 2013, p.1254). For that reason, joint effects of multiple factors accounting for marital outcomes may be more explanatory and informative about the dynamics in a marriage (Karney & Bradbury, 1995). The present study suggested that SPS may be a valuable factor to be considered together with relationship environment while assisting the couples about better marital functioning. Therefore, depending on the presence and absence of the sensitivity trait, different treatment patterns may be administered to the couples to increase couples' marital satisfaction as well as to decrease their personal health problems.

5.4 Limitations and Suggestions for Future Studies

The present study has limitations that should be addressed before interpreting the findings. Firstly, the present study is the first to adapt the HSPS into Turkish and to utilize the scale in accordance with the research questions. The sample of the first study was composed of University students which may not be representative of the general population. Thus, the generalizability of four-factor structure of the Turkish HSPS to the general population may be problematic. For that reason, the psychometric properties of the Turkish scale should be examined in different samples besides university students. Moreover, since it is the initial attempt to translate the scale into Turkish, the further studies are needed to establish validity and reliability of the scale across different samples. Through the use of scale in different samples, the validity and reliability of the Turkish version of the scale can be strengthened.

Second limitation of the present study was collecting the data through the self-report method. Since the examination of differential susceptibility hypothesis heavily relies on whether the participants are strictly divided into negative and positive extremes in the scale for environmental conditions, it becomes crucial to detect the environmental exposures properly (Cassidy et al., 2011) because trait-environment

interactions are very sensitive to scaling of environmental influences. Given that the examination of trait-environment interactions is very sensitive to the effect of environmental conditions, the present study may not be able to capture two distinct groups of individuals who are subject to extremely negative and extremely positive relationship environments because the present study was rely on naturally occurring environmental conditions in marriage. Thus, experimental designs may provide proper manipulation of positive and negative environmental conditions. In a similar vein, experimental designs may also eliminate the possibility of inferring genotype-environment correlation. The importance of experimental evaluation of behavioral susceptibility was also addressed by Belsky and Pluess (2013) who argued that it might be better to employ experimental designs in the work of genetic plasticity evaluation. In experimental designs, we can identify to what extent the participants will expose to negative and positive environments. However, Belsky and Pluess emphasized on this kind of manipulations because assignment of individuals to environmental adversity condition poses an ethical problem which should be taken into account seriously. As a result, it can be said that the experimental designs would provide more information in understanding of how the couples with high sensory-processing sensitivity are differentially affected by environmental effects. Hence, future research should employ experimental designs in order to better examine genetic plasticity.

Finally, the negative affectivity and neuroticism were not assessed for the couples. Since the HSPS was found to be related to negative affectivity and neuroticism, the partialing out of either negative affectivity or neuroticism would provide more accurate data on sensory-processing sensitivity. The future studies should consider controlling for negative affectivity or neuroticism while assessing the sensory-processing levels of the participants.

5.5 Conclusion

The major objective of the present study was to explore the moderating role of SPS in predicting marital quality within the scope of three main trait-environment interaction models; diathesis-stress model, differential susceptibility hypothesis, and vantage sensitivity. In parallel with this purpose, the Highly Sensitive Person Scale

(Aron & Aron, 1997) was translated and adapted into Turkish in order to use in the second study. Considering the previous studies on psychometric properties of the HSPS, a new examination was needed to explore the factorial structure of the scale for the Turkish sample. The Turkish version of the HSPS has high reliability and well established validity through tapping the four different sensitivity dimensions on it, namely sensitivity to multitasking (SEM), sensitivity to external stimuli (SES), sensitivity to aesthetic values (SAV), and sensitivity to environmental changes (SEC). In the second study, abovementioned trait-environment interactions were tested in dyadic level. The results suggested that wives' SPS and husbands' perceived social support, and husbands' SPS and wives' perceived social support showed significant interaction effect in predicting wives' marital communication quality. More specifically, wives with low sensitivity are protected against displaying excessive use of negative communication patterns, even when their husbands had low level of social support. Whereas, husbands with low sensitivity exhibited a vulnerability effect through the fact that wives' use of negative communication patterns were higher when they reported low level of social support.

The results generally suggested that the effect of high/low sensitivity on marital communication quality is changing depending on who is exposed to negative environmental conditions and who has predisposition to high sensitivity trait. Therefore, these significant interaction effects suggest that marital communication quality cannot solely be explained by the innate characteristics of couples or environmental exposures that each member of a dyad experiences in a relationship. Consistent with the suggestions of Rehman, Ginting, Karimiha and Goodnight (2010), the consideration of both enduring characteristics and environmental factors offers more comprehensive and holistic approach to the understanding of marital outcomes. For that reason, the joint effects of inherit characteristics and environmental exposures seem to present a complete picture of how relationship quality is shaped by married couples.

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APPENDICES

APPENDIX A. Demographic Information Form of Study I

Bu araştırma Orta Doğu Teknik Üniversitesi Sosyal Psikoloji Yüksek Lisans öğrencisi Gülbin Şengül tarafından yüksek lisans tezi kapsamında Prof. Dr. Nebi Sümer danışmanlığında yürütülmektedir. Araştırmanın amacı farklı uyarıcılara karşı hassasiyet düzeyi ile bireysel özellikler arasındaki ilişkiyi incelemektir. Bu kasamda sizden yaklaşık 5 ile 8 dakika arasında zamanınızı alacak iki ölçüm aracını doldurmanız istenmektedir.

Ölçeklerin nasıl cevaplandırılmasıyla ilgili yönergeler her ölçeğin başında verilmektedir. **Lütfen yönergeleri dikkatli bir şekilde okuyunuz. Bütün soruları içtenlikle ve eksiksiz bir şekilde cevaplamanız araştırma sonuçlarının tutarlılığı bakımından büyük önem taşımaktadır.** Çalışmada katılımcılardan herhangi bir kimlik bilgisi istenmemektedir. Elde edilen veriler araştırmacı tarafından toplu halde değerlendirilecek ve veriler sadece bilimsel amaçlı yayın ve çalışmalarda kullanılacaktır.

1. Yaşınız: _____

2. Cinsiyetiniz: : Erkek □ Kadın □

Öğrenci iseniz;

3. Okuduğunuz Üniversite: _____

Bölüm: _____

Öğrenci değilseniz;

Mesleğiniz: _____

4. Eğitim durumunuz (en son mezun olduğunuz okulu işaretleyiniz):

□ İlkokul □ Orta okul □ Lise □ Üniversite □ Yüksek lisans ve üstü

5. Aylık gelir miktarınız: □ Düşük □ Orta □ Yüksek

6. Hayatınızın büyük bir bölümünü geçirdiğiniz yerleşim merkezi (size en uygun olan kutucuğu işaretleyiniz):

□ Büyükşehir □ İl □ İlçe □ Kasaba/Belde □ Köy

APPENDIX B. The Highly Sensitive Person Scale

Bu ölçek kişilerin dışsal (örn., ışık, ses) ya da içsel (örn., ağrı, açlık) duyusal uyarıcıları algılamalarındaki hassasiyet derecesini ölçmek amacıyla hazırlanmıştır. Aşağıda dışsal ve içsel duyusal uyarıcıları algılamaya ilişkin örnekler bulunmaktadır. Lütfen aşağıdaki her bir maddeyi dikkatli bir şekilde okuyarak, verilen ifadenin sizin durumunuza ne derece uyduğunu 7 aralıklı cetvel üzerinde işaretleyerek belirtiniz. Örneğin ifadeye size hiç uymuyorsa 1'i, tamamen uyuyorsa 7'i işaretleyiniz.	**Bana Hiç Uymuyor**			**Kısmen Uyuyor**			**Bana Tamamen Uyuyor**
1. Güçlü uyarıcılardan (örneğin parlak ışık, yüksek ses, yoğun koku) hemen rahatsız olurum.	1	2	3	4	5	6	7
2. Çevremdeki fark etmesi zor detayları hemen fark ederim.	1	2	3	4	5	6	7
3. Etrafımdaki insanların ruh hali beni etkiler.	1	2	3	4	5	6	7
4. Acı veya ağrıya karşı fazla duyarlıyımdır.	1	2	3	4	5	6	7
5. Yoğun günlerimdeyken; yatağımda, karanlık bir odada veya yalnız kalabileceğim ve huzur bulabileceğim herhangi bir yerde kabuğuma çekilme ihtiyacı hissederim.	1	2	3	4	5	6	7
6. Kafeinin etkilerine karşı çok hassasımdır.	1	2	3	4	5	6	7
7. Parlak ışıklar, yoğun kokular, kaba kumaşlar ya da yakınımda çalan bir siren gibi şeylerden anında rahatsız olurum.	1	2	3	4	5	6	7
8. Zengin ve karmaşık bir iç dünyam var.	1	2	3	4	5	6	7
9. Şiddetli gürültüden/sesten çok çabuk rahatsız olurum.	1	2	3	4	5	6	7
10. Sanat ya da müzik beni derinden etkiler.	1	2	3	4	5	6	7
11. Bazen sinir sistemim o kadar yıpranır ki kendimi toplamak için hemen başımı alıp gitmek zorunda kalırım.	1	2	3	4	5	6	7
12. Dikkatli ve özenliyimdir.	1	2	3	4	5	6	7
13. Beklenmedik ses ve hareketlerde kolayca irkilirim.	1	2	3	4	5	6	7

14. Kısa zamanda çok iş yapmam gerektiğinde elim ayağıma dolanır.	1	2	3	4	5	6	7
15. İnsanlar bulundukları fiziksel ortamdan rahatsız olduklarında, ortamı rahat hale getirmek için ne yapılması gerektiğini tahmin ederim (ışıkları ayarlamak ya da oturma yerlerini değiştirmek gibi).	1	2	3	4	5	6	7
16. İnsanlar beni aynı anda birçok şey yapmaya zorladıklarında sinirlenirim.	1	2	3	4	5	6	7
17. Hata yapmamak veya bir şeyleri unutmamak için çok çabalarım.	1	2	3	4	5	6	7
18. Şiddet içerikli filmleri ve TV programlarını izlemekten özellikle kaçınırım.	1	2	3	4	5	6	7
19. Etrafımda aynı anda birçok şey birden olduğunda fena halde rahatsız olurum.	1	2	3	4	5	6	7
20. Çok aç olmak bende konsantrasyonumun düşmesi veya ruh halimin bozulması gibi güçlü tepkilere yol açar.	1	2	3	4	5	6	7
21. Hayatımda değişiklik olması beni fazlasıyla etkiler/sarsar.	1	2	3	4	5	6	7
22. Güzel kokuları, tatları, sesleri ve sanat eserlerini hemen fark eder ve bunlardan keyif alırım.	1	2	3	4	5	6	7
23. Aynı anda birçok şeyin olmasından hoşlanmam.	1	2	3	4	5	6	7
24. Hayatımı, üzüntü veren ve beni bunaltan durumlardan kaçınacak şekilde düzenlemeye öncelik veririm.	1	2	3	4	5	6	7
25. Yüksek ses ya da karmaşık ortamlar gibi kuvvetli uyarıcılardan rahatsız olurum.	1	2	3	4	5	6	7
26. Bir yarışmada olduğumda ya da bir görevi yaparken gözlemlendiğimde, o kadar gerilir ve etkilenirim ki normalde yapacağımdan daha kötü performans sergilerim.	1	2	3	4	5	6	7
27. Ben çocukken, ailem veya öğretmenlerim beni hassas ya da utangaç biri olarak görürlerdi.	1	2	3	4	5	6	7

APPENDIX C. Social Introversion Measure

1----------2----------3----------4----------5----------6----------7
Bana Hiç Uymuyor **Kısmen Uyuyor** **Bana Tamamen Uyuyor**

	Bana Hiç Uymuyor			**Kısmen Uyuyor**			**Bana Tamamen Uyuyor**
1. Dışarıya kalabalık bir grup yerine bir ya da iki arkadaşımla çıkmayı tercih ederim.	1	2	3	4	5	6	7
2. Geniş arkadaş çevresinin aksine birkaç yakın arkadaşımın olmasını tercih ederim.	1	2	3	4	5	6	7

APPENDIX D. Behavioral Inhibition and Behavioral Activation System Scale

1----------2----------3----------4----------5----------6
Hiç katılmıyorum **Tamamen katılıyorum**

Aşağıda kişilerin iyi ya da kötü bir durumla karşılaşılaştıklarında neler hissettiklerine ilişkin örnekler cümleler verilmiştir. Sizden istenilen her bir maddeyi dikkatli bir şekilde okuyarak, ifadeye ne derece katılıp katılmadığınıza karar vermenizdir. Kararınızı aşağıda 6 aralıklı cetvel üzerinde size uygun olan seçeneği işaretleyerek veriniz. Örneğin, verilen ifadeye tamamen katılıyorsanız 6'ı verilen ifadeye hiç katılmıyorsanız 1'i işaretleyiniz.	**Hiç Katılmıyorum**	**Katılmıyorum**	**Biraz katılmıyorum**	**Biraz katılıyorum**	**Katılıyorum**	**Tamamen Katılıyorum**
1. İstediğim şeyleri elde etmek için her yolu denerim.	1	2	3	4	5	6
2. Tatsız bir şeyler olacağını hissettiğimde çok fazla gerilirim.	1	2	3	4	5	6
3. Sevdiğim bir şeyi elde etme fırsatı bulduğumda, hemen heyecanlanırım.	1	2	3	4	5	6
4. Eğlenceli olacağını düşünüyorsam, yeni şeyler denemeyi her zaman isterim.	1	2	3	4	5	6
5. Bir yarışmayı kazanmak beni heyecanlandırır.	1	2	3	4	5	6
6. Hata yapmaktan korkarım.	1	2	3	4	5	6
7. Bir şeyleri, başka nedenle değil, sırf eğlenceli olduğu için sıklıkla yapabilirim.	1	2	3	4	5	6
8. Eleştirilmek ya da azarlanmak beni çok üzer.	1	2	3	4	5	6
9. Bir şey istediğimde, onu elde etmek için elimden gelen her şeyi yaparım.	1	2	3	4	5	6
10. Yeni heyecanları ve çoşku uyandıracak şeyleri şiddetle arzularım.	1	2	3	4	5	6
11. Arkadaşlarımla karşılaştırdığımda, benim çok az korkularım var.	1	2	3	4	5	6
12. Başıma iyi şeyler geldiğinde, havalara uçarım.	1	2	3	4	5	6
13. Çoğunlukla pek düşünmeden anında harekete geçerim.	1	2	3	4	5	6

14. Başıma kötü bir şey gelirken bile, pek korkmam ya da gerilmem.	1	2	3	4	5	6
15. Bir konuda iyiysem, onu sürdürmekten zevk duyarım.	1	2	3	4	5	6
16. İstediğim bir şeyi elde etme fırsatı yakaladığımda hemen harekete geçerim.	1	2	3	4	5	6
17. Birisinin bana kızgın olduğunu bildiğimde ya da bunu hissettiğimde çok endişelenir ve üzülürüm.	1	2	3	4	5	6
18. İstediğim bir şeyi elde ettiğimde, heyecanlanır ve enerji dolarım.	1	2	3	4	5	6
19. Bir konuda yetersiz olduğumu düşündüğümde endişelenirim.	1	2	3	4	5	6
20. Bir şeyin peşindeysem, hiçbir sınır tanımam.	1	2	3	4	5	6

APPENDIX E. The Results of Principal Component Analysis for BIS /BAS Scales

Items	Components				
	BIS-Anxiety	**BAS reward respon.**	**BAS drive**	**BAS fun seeking**	**BIS-Fear**
I worry about making mistakes.	**.77**				
Criticism or scolding hurts me quite a bit.	**.76**				
I feel worried when I think I have done poorly at something.	**.73**				
If I think something unpleasant is going to happen I usually get pretty "worked up.	**.66**				
I feel pretty worried or upset when I think or know somebody is angry at me.	**.66**				
When I get something I want, I feel excited and energized.		**.75**			
It would excite me to win a contest.		**.68**			
When I'm doing well at something, I love to keep at it.		**.67**			
When good things happen to me, it affects me strongly.		**.62**			
When I see an opportunity for something I like, I get excited right away.		**.42**			
I go out of my way to get things I want.			**.86**		
When I want something, I usually go all-out to get it.			**.83**		
When I go after something I use a "no holds barred" approach.			**.79**		
If I see a chance to get something I want, I move on it right away.			**.54**		
I often act on the spur of the moment.				**.72**	
I will often do things for no other reason than that they might be fun.				**.68**	
I'm always willing to try something new if I think it will be fun.				**.61**	
I crave excitement and new sensations.		.41		**.58**	
I have very few fears compared to my friends.*					**.78**
Even if something bad is about to happen to me, I rarely experience fear or nervousness.*					**.72**
Eigenvalues:	**4.99**	**3.36**	**1.53**	**1.19**	**1.06**
Explained Variance (%):	**14.86**	**14.41**	**13.60**	**10.14**	**7.68**

Note: Factor loadings lower than .40 are omitted.

*Reversed item

APPENDIX F. Big Five Inventory

Aşağıda sizi kısmen tanımlayan (ya da pek tanımlayamayan) bir takım özellikler sunulmaktadır. Örneğin, başkaları ile zaman geçirmekten hoşlanan birisi olduğunuzu düşünüyor musunuz? Lütfen aşağıda verilen özelliklerin sizi ne oranda yansıttığını ya da yansıtmadığını belirtmek için sizi en iyi tanımlayan rakamı her bir özelliğin yanına yazınız.

1 = Hiç katılmıyorum
2 = Biraz katılmıyorum
3 = Ne katılıyorum Ne katılmıyorum (Kararsızım)
4 = Biraz katılıyorum
5 = Tamamen katılıyorum

Kendimi ..... biri olarak görüyorum.

___ 1. Konuşkan
___ 2. Başkalarında hata arayan
___ 3. İşini tam yapan
___ 4. Bunalımlı, melankolik
___ 5. Orijinal, yeni görüşler ortaya koyan
___ 6. Ketum/vakur
___ 7. Yardımsever ve çıkarcı olmayan
___ 8. Biraz umursamaz
___ 9. Rahat, stresle kolay baş eden
___ 10. Çok değişik konuları merak eden
___ 11. Enerji dolu
___ 12. Başkalarıyla sürekli didişen
___ 13. Güvenilir bir çalışan
___ 14. Gergin olabilen
___ 15. Maharetli, derin düşünen
___ 16. Heyecan yaratabilen
___ 17. Affedici bir yapıya sahip
___ 18. Dağınık olma eğiliminde
___ 19. Çok endişelenen
___ 20. Hayal gücü yüksek
___ 21. Sessiz bir yapıda
___ 22. Genellikle başkalarına güvenen
___ 23. Tembel olma eğiliminde olan
___ 24. Duygusal olarak dengeli, kolayca keyfi kaçmayan
___ 25. Keşfeden, icat eden
___ 26. Atılgan bir kişiliğe sahip
___ 27. Soğuk ve mesafeli olabilen
___ 28. Görevi tamamlanıncaya kadar sebat edebilen
___ 29. Dakikası dakikasına uymayan
___ 30. Sanata ve estetik değerlere önem veren
___ 31. Bazen utangaç, çekingen olan
___ 32. Hemen hemen herkese karşı saygılı ve nazik olan
___ 33. İşleri verimli yapan
___ 34. Gergin ortamlarda sakin kalabilen
___ 35. Rutin işleri yapmayı tercih eden
___ 36. Sosyal, girişken
___ 37. Bazen başkalarına kaba davranabilen
___ 38. Planlar yapan ve bunları takip eden
___ 39. Kolayca sinirlenen
___ 40. Düşünmeyi seven, fikirler geliştirebilen
___ 41. Sanata ilgisi çok az olan
___ 42. Başkalarıyla işbirliği yapmayı seven
___ 43. Kolaylıkla dikkati dağılan
___ 44. Sanat, müzik ve edebiyatta çok bilgili

APPENDIX G. Demographic Information Form of Study II

1) Cinsiyetiniz: □ Erkek □ Kadın

2) Yaşınız: _____

3) Mesleğiniz: _____

4) Eğitim durumunuz:

□İlkokul □Orta okul □Lise mezunu □Yüksek okul
□Üniversite mezunu □Yüksek lisans □Doktora

5) Eşinizin eğitim durumu:

□İlkokul □Orta okul □Lise mezunu □Yüksek okul
□Üniversite mezunu □Yüksek lisans □Doktora

6) Size göre ailenizin aylık gelir düzeyini yansıtan şıkkı işaretleyerek belirtiniz:

□ Düşük □ Orta Düşük □ Orta □ Orta Yüksek □ Yüksek

7) Kaç yıldır evlisiniz: _____ yıl ve _____ ay

8) Bu sizin ilk evliliğiniz mi?: □ Evet □ Hayır; Hayır ise kaçıncı evliliğiniz?: ____

9) Evlilikten önce ne kadar süredir tanışıyordunuz?: _____ yıl ve _____ ay

10) Evlenme şekliniz ile ilgili olarak aşağıdaki seçeneklerden sizi en iyi tanımlayan seçeneği işaretleyiniz.

□ Görücü usulü □Kendi başına tanışarak

*Eğer kendi başınıza/tanışarak evlendiyseniz aşağıdaki seçeneklerden hangisi sizin evlenme şekliniz en iyi tanımlar. Lütfen bir seçeneği işaretleyiniz. Eğer hiçbir seçenek uygun değilse durumunuzu diğer seçeneğinde yazarak belirtiniz.

□ Tanıştıktan sonra duygusal olarak aşk yaşadığımız için evlendik.
□ Tanıştıktan sonra birbirimizi evlenmek için uygun gördüğümüz için evlendik.
□ Arkadaşlığımız zaman içerisinde sevgiye dönüştüğü için evlendik.
□ Diğer (Lütfen kısaca yazınız) _____

11) Çocuğunuz var mı?
□ Hayır □ Evet; Evet ise: kaç çocuğunuz var?: Kız _____ Erkek _____

APPENDIX H. The Caregiving Scale

1----------2----------3----------4----------5----------6
Beni Hiç Tanımlamıyor Beni Tamamen Tanımlıyor

Aşağıda evlilik ilişkilerinde sıklıkla yaşanan bazı durumlar, duygular ve davranışlar sıralanmıştır. Aşağıdaki maddeleri eşinizle ilişkilerinizi ve bu ilişkide yaşadığınız duygu ve davranışları göz önünde bulundurarak değerlendiriniz. Yaşadığınız duygu ve davranışları en doğru tanımladığına inandığınız ilgili rakamı işaretleyiniz. Örneğin, ilgili madde sizin duygu ve davranışlarınızı hiç tanımlamıyorsa "1" rakamını, sizi tamamen tanımlıyorsa "6" rakamını veya uygunluk derecesine göre diğer rakamları işaretleyiniz.	**1 Beni Hiç Tanımlamıyor**	**2**	**3**	**4**	**5**	**6 Beni Tamamen Tanımlıyor**
1. Eşim bana sarılmak istediğinde ya da buna ihtiyacı var gibi göründüğünde memnuniyetle ona sarılırım.	1	2	3	4	5	6
2. Eşim dertli veya üzgün olduğunda, rahatlatmak ve destek olmak için ona sokulurum.	1	2	3	4	5	6
3. Eşim bana sarılmak istediğinde bazen kendimi geri çekerim.	1	2	3	4	5	6
4. Eşimin destek ve rahatlama aradığını hissettiğimde ona rahatlıkla sarılırım.	1	2	3	4	5	6
5. Eşim sarılmak veya öpmek için bana yaklaştığında bazen onu iterim.	1	2	3	4	5	6
6. Eğer eşim sıkıntıdaysa ya da ağlıyorsa ilk tepkim ona dokunmak veya sarılmak olur.	1	2	3	4	5	6
7. Eşim bunalımda olduğunda veya ağladığında ilgilenmek istemediğim olur.	1	2	3	4	5	6
8. Eşimin bana muhtaç ve "yapışık" olmasından hoşlanmam.	1	2	3	4	5	6
9. Eşimin ihtiyaçları ve hisleri benimkilerden çok farklı olsa bile, çok iyi farkederim.	1	2	3	4	5	6
10. Eşimin yardım ve destek çağrıştıran hal ve hareketlerini anlamak için özen gösteririm.	1	2	3	4	5	6
11. Eşim rahatlamaya ihtiyaç duyduğunda, o söylemese de, her zaman anlarım.	1	2	3	4	5	6
12. Sıklıkla eşimin üzgün veya endişeli olduğunu farkedemediğim olur.	1	2	3	4	5	6
13. Bazen eşimin nasıl hissettiğini anlatan gizli ipuçlarını kaçırırım.	1	2	3	4	5	6

14. Eşimin ne zaman benim desteğime veya yardımıma ihtiyacı olduğunu ne zaman sorununu kendi başına halletmek istediğini gayet iyi anlayabilirim.	1	2	3	4	5	6
15. Eşimin ihtiyaçlarına ve hislerine kendimi verme ve anlama konusunda pek iyi değilim.	1	2	3	4	5	6
16. Eşimin yardım ve anlayış için gönderdiği işaretleri bazen kaçırır ya da yanlış anlarım.	1	2	3	4	5	6
17. Eşime yardım etmeye ya da anlayışlı olmaya çalışırken fazla dominant oluyorum.	1	2	3	4	5	6
18. Eşimin bir sorununu çözmesine yardım ederken kontrolü elime almak yerine onunla iş birliği yapmaya çalışırım.	1	2	3	4	5	6
19. Eşime herhangi bir konuda yardım ederken illa kendi bildiğim yolla yapmak isterim.	1	2	3	4	5	6
20. Eşime kendi problemlerini çözmede kontrolü elime almadan yardımcı olabilirim.	1	2	3	4	5	6
21. Eşimin kendi problemlerini çözme çabasını her zaman desteklerim.	1	2	3	4	5	6
22. Eşim bana bir sorunundan bahsettiğinde, onun yaptıklarını eleştirmekte çok ileri gidebiliyorum.	1	2	3	4	5	6
23. Eşimin kendi problemlerini çözme ve kendi kararlarını alma becerisine her zaman saygı duyarım.	1	2	3	4	5	6
24. Eşim bir karar almaya çalışırken sıklıkla ne yapması gerektiğini ondan önce ben söyleyiveririm.	1	2	3	4	5	6
25. Eşimin sorunlarına ve dertlerine gereğinden fazla karışırım.	1	2	3	4	5	6
26. Çoğu zaman eşimin problemlerine kendimi fazla kaptırırım.	1	2	3	4	5	6
27. Eşimin sorunlarını üstüme alır sonra da bu sorunlar yüzünden kendimi tükenmiş hissederim.	1	2	3	4	5	6
28. Eşimin dertlerini sanki kendi dertlerimmiş gibi üstüme alarak sorunlar yaratırım.	1	2	3	4	5	6
29. Eşime, sorunlarına fazla burnumu sokmadan yardım ederim.	1	2	3	4	5	6
30. Gerektiğinde, eşimin bir sorunla ilgili yardım isteğine suçluluk hissetmeden „hayır“ diyebilirim.	1	2	3	4	5	6
31. Eşime karşı aşırı koruyucu olmamak ve ona çok karışmamak için kendimi kontrol ederim.	1	2	3	4	5	6
32. Gerektiğinde, eşimin ihtiyaçlarından önce kendi ihtiyaçlarımla ilgilenirim.	1	2	3	4	5	6

APPENDIX I. Multidimensional Scale of Perceived Social Support

Aşağıda verilen cümler için, sizin görüş, duygu ve düşüncenizi yansıtan seçeneği "Hiçbir Zaman" (1) ile "Her Zaman" (6) arasındaki uygun gördüğünüz rakamı daire içine alarak belirtiniz.

1----------2----------3----------4----------5----------6

Hiçbir Zaman **Her Zaman**

	1 Hiçbir Zaman	**2**	**3**	**4**	**5**	**6 Her Zaman**
1. İhtiyacım olduğunda yanımda olan özel bir insan var.	1	2	3	4	5	6
2. Sevinç ve kederlerimi paylaşabileceğim özel bir insan var.	1	2	3	4	5	6
3. Ailem bana gerçekten yardımcı olmaya çalışır.	1	2	3	4	5	6
4. İhtiyacım olan duygusal yardımı ve desteği ailemden alırım.	1	2	3	4	5	6
5. Beni gerçekten rahatlatan özel bir insan var.	1	2	3	4	5	6
6. Arkadaşlarım bana gerçekten yardımcı olmaya çalışırlar.	1	2	3	4	5	6
7. İşler kötü gittiğinde arkadaşlarıma güvenebilirim.	1	2	3	4	5	6
8. Sorunlarımı ailemle konuşabilirim.	1	2	3	4	5	6
9. Sevinç ve kederlerimi paylaşabileceğim arkadaşlarım var.	1	2	3	4	5	6
10. Yaşamımda duygularıma önem veren özel bir insan var.	1	2	3	4	5	6
11. Kararlarımı vermede ailem bana yardımcı olmaya isteklidir.	1	2	3	4	5	6
12. Sorunlarımı arkadaşlarımla konuşabilirim.	1	2	3	4	5	6

APPENDIX J. The Relationship Happiness Scale

Aşağıda eşinizle olan ilişkiniz hakkında cümleler verilmiştir. Eşinizle olan ilişkinizi göz önünde bulundurarak bu cümlelere ne ölçüde katıldığınızı yani ne ölçüde sizin ilişkinizi yansıttığını belirtiniz. Her bir ifadenin evliliğinizdeki duygu ve düşüncelerinizi ne oranda yansıttığını karşılarındaki beş aralıklı cetvel üzerinde ilgili rakamı işaretleyerek belirtiniz.

1----------2----------3----------4----------5
Hiç Katılmıyorum **Tamamen Katılıyorum**

	1 Hiç Katılmıyorum	**2**	**3**	**4**	**5 Tamamen Katılıyorum**
1. Eşimle iyi bir ilişkim var.	1	2	3	4	5
2. Eşimle ilişkim çok istikrarlı.	1	2	3	4	5
3. Eşimle ilişkim çok güçlü.	1	2	3	4	5
4. Eşimle ilişkim beni mutlu ediyor.	1	2	3	4	5
5. Eşimle kendimi gerçekten bir bütünün parçası gibi hissediyorum.	1	2	3	4	5
6. Genel olarak evliliğimdeki her şeyden çok memnunum.	1	2	3	4	5

APPENDIX K. Communication Patterns Questionnare-Short Form

Aşağıda sizin ve eşinizin ilişkinizde karşılaştığınız sorunlarla nasıl baş ettiğinizi ölçen sorular yer almaktadır. Her maddeyi okuduktan sonra o maddede belirtilen durumun kendiniz ve eşiniz için uygunluğunu düşününüz ve 1'den (Hiç uymuyor) 9'a (Çok uyuyor) kadar sıralanan puanlar üzerinde size en uygun görünen puanı yuvarlak içine alarak işaretleyiniz.

1----------2----------3----------4----------5----------6----------7----------8----------9
Hiç Uymuyor **Kararsızım** **Çok Uyuyor**

	1 Hiç Uymuyor	**2**	**3**	**4**	**5 Kararsızım**	**6**	**7**	**8**	**9 Çok Uyuyor**
A. İLİŞKİYLE İLGİLİ BİR SORUN ORTAYA ÇIKTIĞINDA:									
1. Her ikimiz de sorunu tartışmaktan kaçınırız.	1	2	3	4	5	6	7	8	9
2. Her ikimiz de sorunu tartışmaya çalışırız.	1	2	3	4	5	6	7	8	9
3. Eşim tartışmayı başlatmaya çalışırken, ben tartışmaktan kaçınırım.	1	2	3	4	5	6	7	8	9
4. Ben tartışmayı başlatmaya çalışırken, eşim tartışmaktan kaçınır.	1	2	3	4	5	6	7	8	9

A. İLİŞKİYLE İLGİLİ BİR SORUNU TARTIŞIRKEN:									
1. Her ikimiz de birbirimizi suçlar ve eleştiririz.	1	2	3	4	5	6	7	8	9
2. Her ikimiz de duygularımızı birbirimize ifade ederiz.	1	2	3	4	5	6	7	8	9
3. Her ikimiz de mümkün olan çözüm ve anlaşma yollarını ararız.	1	2	3	4	5	6	7	8	9

4. Eşim ısrarla kusur bulup üstelerken ve isteklerde bulunurken, ben karşılık vermem, sessizleşirim veya konuyu daha fazla tartışmayı reddederim.	1	2	3	4	5	6	7	8	9
5. Ben ısrarla kusur bulup üstelerken ve isteklerde bulunurken, eşim karşılık vermez, sessizleşir veya konuyu daha fazla tartışmayı reddeder.	1	2	3	4	5	6	7	8	9
6. Eşim beni eleştirirken, ben kendimi savunurum.	1	2	3	4	5	6	7	8	9
7. Ben eşimi eleştirirken, eşim kendini savunur.	1	2	3	4	5	6	7	8	9

APPENDIX L. Ethics Committee Approval

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
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15 Nisan 2013

Gönderilen: Prof.Dr. Nebi Sümer
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IAK Başkanı

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Psikoloji Bölümü Yüksek Lisans öğrencisi Gülbin Şengül'ün "Romantik İlişkilerde Karşılıklı Bakım Verme ve Sosyal Desteğe Karşı Ayırıcı Yatkınlık: Uyarıcıları İşleme Hassasiyetinin Düzenleyici Rolü" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

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APPENDIX M. Türkçe Özet

Evlilik toplumun sağlıklı bir şekilde hayatını devam ettirebilmesi için gerekli olan önemli bir sosyal kurumdur (Kağıtçıbaşı, 2000). Evlilik yazınına bakıldığında evlilik kalitesini etkileyen faktörlerin araştırılması ile ilgili birçok araştırma yapıldığı görülmektedir. Yapılan çalışmalar evlilik kalitesini etkileyen çevresel ve bireysel faktörler olmak üzere iki kategoriye ayrılmıştır. Fakat bu iki kategorideki faktörlerin evlilik kalitesini belirlemede ortak etkisini inceleyen araştırmaların yok denecek kadar az olduğu görülmektedir. Evlilik kalitesinin sadece çevresel ya da sadece bireysel faktörlerle açıklanamayacağı düşünüldüğünde, bu tez çalışması öncelikle gelişimsel psikoloji alanında uygulanan kişilik-çevre etkileşimi modellerini evlilik dinamikleri kapsamında karşılaştırmalı olarak incelemeyi amaçlamaktadır. Bu çalışmada kişilik ve çevresel özellikleri bir araya getiren üç temel kuramsal model esas alınmıştır. Bunlar; (1) Yatkınlık-Stres Kuramı, (2) Ayırıcı Yatkınlık Hipotezi ve (3) Avantajlı Hassasiyet modelleridir.

Bu tez çalışmasında, uyarıcı işleme hassasiyeti (sensory-processing sensitivity) olarak bilinen bir anlamda yetişkin mizacı diyebileceğimiz kalıcı bir özelliğin bir tarafta, evlilik içi bakım verme ve algılanan sosyal destek, diğer tarafta da evlilik doyumu ve evlilik iletişim kalitesi olduğu, iki değişken grubu arasındaki ilişkideki düzenleyici değişken rolü incelenmektedir. Genel olarak, uyarıcı algılama hassasiyetinin yukarıda sayılan değişkenler arasında düzenleyici rolünün olması ve bu düzenleyici rolün yatkınlık-stres kuramı, ayrıcı yatkınlık hipotezi ya da avantajlı hassasiyet modellerinden birini desteklenmesi beklenmektedir.

Bu genel amaç doğrultusunda bu tez araştırması iki çalışmadan oluşmaktadır. Birinci çalışmadaki amaç uyarıcı işleme hassasiyeti kavramını ölçmek için Aron ve Aron (1997) tarafından geliştirilen Yüksek Duyarlı Kişi Ölçeği'nin (The Highly Sensitive Person Scale) Türkçeye uyarlanarak geçerlilik ve güvenilirliğini sınamak ve Türkiye'deki araştırmacıların kullanımına sunmaktır. İkinci çalışmadaki amaç ise Türkçeye uyarlanan bu ölçeği kullanılarak uyarıcı işleme hassasiyetinin yukarıda bahsi geçen üç temel kişilik-çevre etkileşimi modelleri ışığında düzenleyici rolünün

incelemektir. Bu tez çalışmasında ele alınan üç temel kuramsal model bir sonraki bölümde bu alanda yapılan görgül çalışmalarla birlikte kısaca özetlenmiştir. Temel araştırma sorularını takiben birinci çalışmanın ve ardından ana çalışmanın yöntemi, bulguları ve tartışma bölümleri sunulmaktadır.

Evlilik Kalitesini Etkileyen Çevresel ve Bireysel Faktörler

Öncelikle çevresel faktörler, kalıtımsal özellikler ve genetik yapıyla ilgisi olmayan, ancak ve sadece çevre etmenli etkiler olarak tanımlanabilir. Evlilik kalitesini etkileyen çevresel faktörler üzerine yapılan çalışmalar evlilik içi destek (örn., Overall, Fletcher ve Simpson, 2010), mesleki özellikler (örn., Hughes, Galinsky ve Morris, 1992), ekonomik refah (bkz., Dakin ve Wampler, 2008; Higginbotham ve Felix, 2009), din (örn., Lichter ve Carmalt, 2009), kişisel stress (örn., Randall ve Bodenmann, 2008) ve iş-aile çatışması (örn., Akanbi ve Oyewo, 2014; Suchet ve Batrling, 1986) gibi birçok faktör üzerinde durmuştur.

Yapılan araştırmalar eşinden ve çevresinden yeterli destek alan bireylerin daha yüksek evlilik doyumu bildirdiklerini göstermektedir. Bunun yanı sıra bazı araştırmalarda eşlerden alınan desteğin kişilerdeki stres seviyesini düşürmede önemli bir etken olduğu, bundan dolayı da stres seviyesinden kaynaklanan olumsuz sonuçları engellediğini bulunmuştur (Bodenmann, 2005). Geçmiş çalışmalar ışığında stresin evlilik kalitesini olumsuz yönde etkileyen önemli bir unsur olduğu bilinmektedir. Günlük stres seviyesinin yüksek olması ilişki partneriyle beraber vakit geçirme motivasyonunun düşmesine ve sonuç olarak eşlerde evlilik doyumunun düşmesine, hatta boşanmalara neden olmaktadır (Bodenmann, 2005; Bodenman ve ark., 2007).

Evlilik kalitesini etkileyen diğer önemli faktörler kişilik özellikleri kategorisi altında incelenebilir. Kişilik özellikleri kişiye özgü olan ve genetik temelleri bulunan özellikler olarak tanımlanabilir. Bu kategori altında akla ilk gelen faktörler yazında beş büyük kişilik özellikleri olarak bilinen gelişime açıklık, uyumluluk, dışadönüklük, öz disiplin ve duygusal denge (nörotism) kişilik özellikleridir. Yapılan araştırmalar özellikle duygusal dengenin evlilik kalitesi üzerinde oldukça büyük etkisi olduğunu ve evlilik doyumunu olumsuz olarak etkilediğini ortaya koymuştur

(Heller ve ark., 2004; Karney ve Bradbury, 1995). Nörotik kişilik özelliği ile birlikte kaygı, düşük öz saygı, bağlanmaya ilişkin kaygı ve bağlanmaya ilişkin kaçınma faktörleri de kişilik özellikleri kapsamında evlilikte her iki taraf için de olumsuz etki yaratmakta ve evlilik kalitesini düşürmektedir. Aron ve Aron (1997) tarafından geliştirilen hassas kişilik yapısının da kişilerin partneri ile yakın ve samimi ilişki içerisine girmesini etkileyen bir yetişkin mizacı olduğu bilinmektedir. Yapılan araştırmalar özelliklede olumsuz ilişki deneyimlerine sahip hassas kişilerde, yakınlaşma motivasyonlarının düşmesi ve dolayısıyla ilişki tatminsizliği gibi olumsuz ilişki sonuçlarının ortaya çıkmasına neden olmaktadır (Aron, 2001, 2004).
Bütün bu çalışmalar ele alındığında ne sadece çevresel etkenlerin ne de sadece bireysel özelliklerin evlilik ile ilgili sonuçları açıklamada tek başlarına yeterli oldukları söylenebilir. Bu iki kategorideki faktörlerin etkileşiminin incelemesinin evlilik kalitesi ile ilgili sonuçlara daha kapsamlı bir bakış açısı sunacağı düşünülmektedir. Bu anlamda bu tez çalışması evlilik kalitesi için önemli olan eş bakımı ve sosyal destek gibi önemli çevresel faktörlerin bir yetişkin mizaç türü olan uyarıcı işleme hassasiyeti ile olan etkileşimi kişilik-çevre etkileşimi modelleri temel alınarak incelenecektir.

Kişilik-Çevre Etkileşimi

Kişilik-çevre etkileşimi ya da bir diğer deyişle gen-çevre etkileşimi Dick (2011) tarafından genlerin etkisinin çevresel koşullara ya da çevrenin etkisinin genlerin etkisine göre değişkenlik gösterdiği durumlar olarak tanımlanmaktadır. Bu tip etkileşimlerin örüntüsü psikoloji yazınında üç temel kuram etrafında şekillenmiştir. Bu kuramlar, (1) Yatkınlık-Stres Kuramı (Monroe ve Simons, 1991) / İkili-Risk Modeli (Sameroff, 1983), (2) Ayırıcı Yatkınlık Hipotezi (Belsky, 1997, 2005; Belsky ve Pluess, 2009) ve (3) Avantajlı Hassasiyet (Manuck, 2011; Pluess ve Belsky, 2012) modelleridir. Bir sonraki bölümde bu modellerin teorik çerçeveleri görgül çalışmaların örneklendirilmesiyle birlikte verilmiştir.

Yatkınlık-Stres Kuramı

Yatkınlık-stres kuramı ya da ikili-risk modeli temel olarak risk oluşturabilecek kişisel özelliklerinden birine sahip bireylerin kötü çevresel koşullara maruz

kaldıklarında bu risk etkenlerine sahip olmayan bireylere kıyasla daha fazla olumsuz etkileneceğini ileri sürer. Yatkınlık-stres kuramına göre kişinin sahip olduğu genellikle kalıtımsal olan mizaç ile ilgili özellikler kötü çevresel koşullarla birleştiği zaman bu birey için çift taraflı bir risk oluşturmakta ve kişi kalıtımsal risk faktörlerine sahip olmayan bireylere göre daha olumsuz sonuçlar göstermektedir (örn., Belsky ve Pluess, 2009; Yaman, Mesman, van Ijzendoorn ve Bakermans-Kranenburg, 2010). Bu risk faktörleri tepkisellik, zor mizaç ve korku/kaygı gibi biyolojik temelli özellikler olabilir. Yapılan bazı çalışmalar bu risk faktörlerine sahip olan bazı bireylerin olumsuz çevresel koşullarına maruz kalsalar bile olumsuz etkilerden etkilenmedikleri yani bir anlamda dirençlilik gösterdikleri görülmüştür (örn., Bakermans-Kranenburg, Dobrova-Krol ve van Ijzendoorn, 2011; van Ijzendoorn ve ark., 2011). Yatkınlık-stres kuramının temel iddiasına karşılık olarak ayırıcı yatkınlık hipotezinin risk faktörlerinin hem olumlu hem de olumsuz çevresel koşullara göre orantısız sonuçlar ortaya çıkaracağı iddiasını ortaya atmasıyla birlikte farklı bir boyut kazanmıştır.

Ayırıcı Yatkınlık Hipotezi

Ayırıcı Yatkınlık Hipotezi'nin temel savı bazı kişilerin kötü çevresel koşullarda olumsuz sonuçlar gösterebileceği, ancak iyi çevresel koşullardan da başkalarına oranla daha çok yararlanabileceğine dayanır. Diğer bir deyişle, yatkınlık-stres modelinin aksine, bu model kişisel-çevre etkileşiminin sadece olumsuz koşullarda değil hem olumlu hem de olumsuz koşullarda ortaya çıktığı ileri sürmektedir. Riskli olarak görülebilecek zor mizaç veya tepkisellik gibi bazı genetik kişilik özellikleri olumsuz çevresel koşullarda bu özelliklere sahip olmayan bireylere göre daha olumsuz etki gösterebileceği gibi, olumlu çevresel koşullarda da diğer bireylere göre daha olumlu sonuçlar gösterebilir. Bu kurama göre birey çevresel faktörlerin her türlüsüne aşırı hassasiyet göstermekte ve çevrenin getirdiği her türlü etkiye daha yatkın durumda olmaktadır. Bu kuram çerçevesinde risk faktörü olarak adlandırılan etkenlerin aslında tamamen bir risk faktörü olmadığı aynı zamanda bireyleri olumlu çevresel koşullarda diğer bireylere göre daha avantajlı kılan özellikler olduğu söylenebilir.

Bireylerin daha iyi ya da daha kötü sonuçlar göstermelerine yol açan özellikler fenotipik, endofenotipik ve genetik faktörler olarak üç başlık altında incelenebilir. Fenotipik özelliklere örnek olarak zor mizaç (örn., Bradley ve Corwyn, 2008), korkuya eğilim (örn., Kochanska, Aksan ve Joy, 2007, ve hassas kişilik yapısı (Aron, Aron ve Davies, 2005) gösterilebilir. Endofenotipik özellikler yüksek kan basıncı (örn., Boyce ve ark., 1995), deri iletkenliği tepkiselliği (örn., El-Sheikh, Earth ve Keller, 2007), ve kortizon tepkiselliği (örn., Obradovi'c, Bush, Stamperdahl, Adler ve Boyce, 2010) örnek olarak verilebilir. Yapılan araştırmalar ayırıcı yatkınlık ortaya çıkaran birçok aday gen bulmuştur. Bunlardan bazıları 5-HTTPLR kısa aleleler (örn.,Taylor ve ark., 2006), MAOA genindeki düşük aktivite (örn., Kim-Cohe ve ark., 2007), DRD4 geni (örn., Bakermans-Kranenburg ve van IJzendoorn, 2006, 2007), ve DRD2 geni (örn., Keltikangas-Jarvinen ve ark., 2007) şeklinde sıralanabilir.

Avantajlı Hassasiyet

İlk Manuck (2011) tarafından önerilen ve Pluess ve Belsky (2012) tarafından geliştirilen avantajlı hassasiyet modeline göre genetik yapıları nedeniyle diğer bireylerden farklı olan bazı kişiler olumlu çevresel koşullara maruz kaldıklarında diğer bireylere göre bu durumlardan daha fazla yaralanmaktadırlar. Bireyler sadece olumlu çevresel koşullara karşı daha duyarlı olduğundan, bu durum yazarlar tarafından avantajlı hassasiyet olarak adlandırılmıştır (örn. Kegel, Bus ve van Ijzendoorn, 2011; Pluess, Belsky, Way ve Taylo, 2010; Ramchandani, van Ijzendoorn ve Bakermans-Kranenburg, 2010).

Uyarıcı Hassasiyeti Kavramı

Uyarıcı hassasiyeti Aron ve Aron (1997) tarafından kişilik ve yetişkin mizacı ile ilgili yazının ışığında geliştirilmiş, kişilerin iç ve dış kaynaklı uyaranları algılama ve yorumlama yetilerindeki hassasiyet olarak tanımlanan kalıtımsal olan bir bireysel özelliktir. Yapılan araştırmalar, uyarıcı işleme hassasiyetinin kavramsal olarak çekingenlik, nörotiklik ve utangaçlık gibi kişilik özellikleriyle yakından ilişkili ama tamamen bu kavramlarla eş değer olmadığını ortaya koymuştur. Bunun yanı sıra uyarıcı işleme hassasiyeti üzerine yapılan araştırmalar bu özelliğin genetik temelli

olduğunu, özellikle de dopamin ve serotonin sistemleri ile yakından ilişkili olduğunu saptamıştır.

Uyarıcı hassasiyetine sahip olan bireylerin genellikle uyarıcıların fazlaca bulunduğu ortamlardan kaçınma, ortamdaki ufak detay ve değişiklikleri hemen fark edebilme, yoğun, kuvvetli ve karışık ortamlardan oldukça rahatsız olma gibi özelliklere sahip olduğu bilinmektedir. Bu bireyler uyarıcı hassasiyetinin aktive edildiği ortamlarda yüksek seviyede stres, gerginlik ve kaygı gibi duygular yaşamaktadırlar.

Bu çalışmada uyarıcı işleme hassasiyetinin düzenleyici rolüne bakılmasının iki önemli sebebi vardır. Bunlardan birincisi uyarıcı işleme hassasiyeti ile ilişkili bulunan 5-HTTPLR ve DRD2 genlerinin aynı zamanda davranışsal yatkınlığa neden olan gen olmalarıdır. Bu genlere sahip olan bireylerin iyi çevresel koşullardan diğer bireylere nazaran en iyi şekilde yaralanan fakat kötü çevresel koşullardan da bir o kadar kötü etkilenen bireyler olduğu yapılan araştırmalar sonucunda ortaya çıkmıştır. Bir diğer neden ise uyarıcı işleme hassasiyeti özelliğinin, kişilik-çevre etkileşiminin yetişkin bireylerde test edilmesini mümkün kılan ve daha önce çocuk popülasyonunda test edilen çocuk mizacı kavramına en yakın olan fenotipik yatkınlık özelliği olmasıdır. Geçmiş çalışmalarda uyarıcı işleme hassasiyetini düzenleyici rolünün bulunması ve birçok çalışmanın bu araştırma sorusunu yöneltmesi hassas kişilik özelliğinin kişilik-çevre etkileşimi modelleri çerçevesinde çalışılmasını önermektedir.

Çalışmanın Amacı ve Araştırma Soruları

Bu tez çalışmasının iki temel amacı vardır. Bunlardan birincisi uyarıcı işleme hassasiyetinin ölçümü için kullanılan Uyarıcı İşleme Hassasiyeti Ölçeği'nin Türkçeye uyarlanmasının yapılarak Türk örneklemi üzerinde geçerlilik ve güvenilirliğini test etmek ve psikometrik özelliklerini incelemektir. İkinci amaç ise hassas kişilik özelliği olarak bilinen uyarıcı işleme hassasiyetinin evlilik içi eş bakımı ve sosyal destek ve evlilik doyumu ve evlilik içi iletişim kalitesi arasındaki ilişkideki düzenleyici rolünü incelemektir. Araştırma değişkenleri arasındaki ilişkide ortaya çıkması beklenen hassas kişilik özelliğinin düzenleyici rolü üç temel kişilik-çevre etkileşimi kuramları çerçevesinde test edilmiştir.

Özetle, yanıtlanması gereken temel araştırma soruları şu şekildedir.

Araştırma Sorusu-1: Uyarıcı işleme hassasiyeti yatkınlık-stres modelini destekleyici düzenleyici rol gösterecek midir? Göstermesi halinde hassas kişilik özelliğine sahip çiftlerin düşük düzey eş bakımı ve sosyal destek aldıkları durumlarda diğer çiftlere göre daha düşük seviyede evlilik doyumu ve iletişim kalitesi göstermeleri beklenmektedir. Diğer deyişle, hassas kişilik özelliğinin dirençlilik faktörü olarak ortaya çıkması halinde hassas çiftlerin düşük seviye eş bakımı ve sosyal destek alma durumlarında diğer bireylerden daha düşük seviye evlilik doyumu ve iletişim kalitesi göstermemeleri beklenmektedir.

Araştırma Sorusu-1: Uyarıcı işleme hassasiyeti ayırıcı yatkınlık hipotezini destekleyici düzenleyici rol gösterecek midir? Bu durumda hassas kişilik özelliğine sahip çiftlerin düşük düzey eş bakımı ve sosyal destek aldıkları durumlarda diğer çiftlere göre daha düşük seviyede evlilik doyumu ve iletişim kalitesi göstermeleri, fakat yüksek düzey eş bakımı ve sosyal destek aldıkları durumda diğer çiftlere göre daha yüksek evlilik doyumu ve iletişim kalitesi göstermeleri beklenmektedir.

Araştırma Sorusu-3: Uyarıcı işleme hassasiyeti avantajlı hassasiyet modelini destekleyici düzenleyici rol gösterecek midir? Bu durumda hassas kişilik özelliğine sahip çiftlerin yüksek düzey eş bakımı ve sosyal destek aldıkları durumlarda diğer çiftlere göre daha yüksek evlilik doyumu ve iletişim kalitesi göstermeleri beklenmektedir. Bu ilişki türünün ya da tam tersinin düşük düzey eş bakımı ve sosyal destek durumlarında gözlenmemesi beklenmektedir.

Birinci Çalışma: Uyarıcı İşleme Hassasiyeti Ölçeği'nin Türkçeye Uyarlanması ve Psikometrik Özelliklerinin İncelenmesi

Ana çalışmaya hazırlık amcaı taşıyan birinci çalışmada Uyarıcı İşleme Hassasiyeti Ölçeği'nin Türkçeye uyarlanması yapılarak, psikometrik özelliklerinin Türk örneklemi temelinde incelenmesi amaçlanmıştır. Aron ve Aron (1997) tarafından 27 maddelik ve tek boyutlu olarak geliştirilen ölçek niteliksel ve niceliksel araştırma yöntemleri ve çeşitli örneklemler kullanılarak geçerli ve güvenilir bir ölçek olduğu

saptanmıştır. Fakat ölçeğin faktör yapısı üzerine yapılan araştırmalar, ölçeğin hem çok boyutlu olabileceğini hem de gözlenen boyu sayısının farklı olabileceğini göstermiştir. Örneğin Smolewska ve ark.'ları (2006) üç boyutlu faktör yapısını savunurken, Evans ve Rothbart (2008) Uyarıcı İşleme Hassasiyeti Ölçeği'nin iki boyutlu faktör yapısına sahip olduğunu iddia etmektedir. Uyarıcı İşleme Hassasiyeti Ölçeği ile ilgili yazındaki bu uyumsuz ve birbiriyle çelişen araştırma sonuçları ölçeğin faktör yapısının tekrardan incelenmesi ihtiyacını doğurmuştur.

Birinci Çalışma: Yöntem

Birinci çalışmanın örneklemi 126 erkek, 215 kadın katılımcı olmak üzere toplam 341 üniversite öğrencisinden oluşmuştur. Katılımcıların yaşları 18 ile 35 arasında değişmektedir ve yaş ortalaması 23.33'tür. Araştırma amacı doğrultusunda Uyarıcı İşleme Hassasiyeti Ölçeği'nin Türkçeye çevirisinin ardından İngilizceye geri çevrilmesini her iki dile hâkim uzman psikolog tarafından yapılmıştır. Araştırmada çevirisi yapılan Uyarıcı İşleme Hassasiyeti Ölçeği (Aron ve Aroni 1997), Davranışsal İnhibasyon Sistemi / Davranışsal Aktivasyon Sistemi Ölçeği (Carver ve White, 1994), Sosyal içe kapanıklık ölçeği (Aron ve Aron, 1997) ve Beş Büyük Faktör Envanteri (Benet-Martinez ve John, 1988) kullanılmıştır. Verinin analizinde SPSS 20.0 ve Lisrel 8.5 istatistik programları kullanılmıştır. Geçerlilik ve güvenilirlik çalışmalarının dışında betimleyici ve doğrulayıcı faktör analizleri ölçeğin 27 maddesi üzerinde yapılmıştır.

Birinci Çalışma: Bulgular

Betimleyici faktör analizinde promax döndürme işlemi uygulanmış ve scree plot testi, faktör yükleri, paralel analiz gibi değerlendirme ölçütlerinin analizi sonucunda ölçeğin dört faktörlü çözüme daha uygun olduğu belirlenmiştir. Bulunan dört faktörlü yapı toplam varyansın % 46.3'ü açıklamıştır. Elde edilen boyutlar sırasıyla *çoklu göreve karşı hassasiyet* (α = .79), *dışsal uyaranlara karşı hassasiyet* (α = .85), *estetik değerlere karşı hassasiyet* (α = .67) ve *çevresel değişimlere karşı hassasiyet* (α = .59) olarak adlandırılmıştır.

Ölçek yapısı aynı zamanda doğrulayıcı faktör analizi kullanılarak test edilmiştir. Lisrel 8.5 ile yapılan doğrulayıcı faktör analizinde Hassasiyet Ölçeği'nin faktör yapısı ile ilgili yapılmış çalışmalar dikkate alınarak birbirinden farklı dört model karşılaştırılmış ve veri setine uyumlukları incelenmiştir. Karşılaştırılan modeller sırasıyla (1) Aron ve Aron'ın (1997) tek boyutlu faktör yapısı, (2) Evans ve Rothbart'ın (2008) iki boyutlu faktör yapısı, (3) Smolewska ve ark.'larının (2006) üç boyutlu faktör yapısı ve (4) betimleyici faktör analizinde bulunan dört boyutlu faktör yapısıdır. Yapılan analizler sonucunda dört boyutlu faktör yapısının veri setine diğer faktör yapılarına göre daha uygun olduğu belirlenmiştir [χ^2 (318) = 862.45, p<.001, χ^2:df = 2.60, RMSEA = 0.07, GFI =0.84, AGFI =0.81, CFI =0.82]. Modifikasyon endeksi çoklu göreve karşı hassasiyet ve estetik değerlere karşı hassasiyet boyutlarından benzer anlamlar taşıyan iki maddenin birbirleriyle oldukça ilişikli olduğunu göstermiştir. Bu nedenle bu maddelerin hata kovaryansları modele dâhil edilmiştir. İkinci-düzey doğrulayıcı faktör analizi sonuçları ise bu birbiriyle yüksek düzeyde ilişkili 4 alt boyutun bir üst düzeyde genel uyarıcı işleme hassasiyeti kavramını temsil ettiklerini göstermiştir.

Geçerlilik çalışması için Türkçeye uyarlanan Uyarıcı İşleme Hassasiyeti Hassasiyeti Ölçeği'nin Davranışsal İnhibisyon Sistemi / Davranışsal Aktivasyon Sistemi Ölçeği, Sosyal içe kapanıklık ölçeği ve Beş Büyük Faktör Envanteri'ndeki beş kişilik özellikleri ile olan ilişkisi araştırılmıştır. Değişkenler arasındaki korelasyonlar hassasiyet özelliğinin nörotiklik ile pozitif (r =.39, p< .01), dışadönüklük ile negatif yönde ilişkili (r = -.22, p< .01) olduğu göstermiştir. Sonuçlar sosyal içe kapanıklık ölçeğinin çoklu göreve karşı hassasiyet, dışsal uyaranlara karşı hassasiyet, estetik değerlere karşı hassasiyet ve çevresel değişimlere karşı hassasiyet boyutlarıyla pozitif ilişkili olduğunu göstermektedir. Her bir boyutun çalışma değişkenleri tarafından ne kadar açıklanabildiğini test etmek için bir dizi regresyon analizi yapılmıştır. Analizlerde yordayıcı değişkenler davranışsal değişkenler ve kişilik özellikleri olmak üzere iki gruba ayrılmıştır. Çoklu göreve karşı hassasiyet, dışsal uyaranlara karşı hassasiyet, estetik değerlere karşı hassasiyet ve çevresel değişimlere karşı hassasiyet boyutlarının hepsi davranışsal inhibisyon, sosyal içe kapanıklık ve nörotik kişilik özelliği tarafından anlamlı olarak yordanmıştır. Sonuçlar genel olarak, çoklu göreve karşı hassasiyet ve dışsal uyaranlara karşı hassasiyet boyutlarının davranışsal değişkenler tarafından ve estetik değerlere karşı hassasiyet ve çevresel

değişimlere karşı hassasiyet boyutlarının ise kişilik özellikleri tarafından daha iyi yordandığını göstermektedir.

Birinci Çalışma: Tartışma

Özetle bu çalışma sonucunda, Türkçe Hassasiyet Ölçeği dört boyutlu faktör yapısına diğer faktör modellerine göre daha uygun bulunmuştur. Ölçeğin boyutları çoklu göreve karşı hassasiyet, dışsal uyaranlara karşı hassasiyet, estetik değerlere karşı hassasiyet ve çevresel değişimlere karşı hassasiyet olarak adlandırılmıştır. Ölçeğin geçerlilik analizleri, Türkçe Hassasiyet Ölçeği'nin nörotiklik ve sosyal içe kapanıklık ölçekleriyle ilişkili olduğunu ama tamamen bu kavramları temsil etmediğini göstermiştir. Dört boyutlu faktör yapısıyla birlikte bulunan çevresel değişimlere karşı hassasiyet ölçeğinin geçmiş çalışmalarda bulunan boyutlara kıyasla yeni bir alt ölçek olarak bulunmasıdır. Ölçeğin hem kişilik özellikleriyle hem de davranışsal kavramlarla yordanabiliyor olması uyarıcı işleme hassasiyetinin diğer çalışmalarda bulunduğu gibi sadece kişilik ile ilgili olmadığını davranış stilleri çerçevesinde de değerlendirilmesi gerektiğini ortaya koymuştur.

Ölçeğin çok boyutlu olarak incelenmesinin her bir alt boyuttaki hassasiyet derecesini belirlemek ve kişinin hangi kaynaktan uyarıcıya daha hassas olduğunu anlayarak uygun boyutta incelemek gibi avantajları vardır. Bu anlamda bu çalışma bir yandan çok boyutlu faktör yapısını öneren çalışmaları destekleyici özelliktedir. Geçerlilik ve güvenilirlik çalışmalarına ve genel olarak bütün sonuçlar değerlendirildiğinde dört boyutlu olarak Türkçeye uyarlanmış Uyarıcı İşleme Hassasiyeti Ölçeği psikometrik özellikleri bakımından geçerli ve güvenilir bir uyarıcı işleme hassasiyeti ölçüm aracıdır. Türkçe ölçeğin farklı örneklemlerde ve kültür yapılarında test edilmesi elde edilen dört boyutun ne ölçüde evrensel olduğunu ortaya koyacaktır.

İkinci Çalışma: Uyarıcı İşleme Hassasiyetinin Düzenleyici Rolünün İncelenmesi

İkinci Çalışma: Yöntem

İkinci çalışmaya 18 yaşından büyük ve en az 6 aylık evli olan toplam 135 çift katılmıştır. Datanın eksik ve aşırı uç değerlerden temizlenmesi sonucunda 133 çift

verisi analiz için hazır hale getirilmiştir. Evli çiftlerin yaşları 22 ile 72 arasında değişmektedir ve çiftlerin ortalama evlilik süreleri 13 yıldır. Otuz üç (% 24.8) çiftin hiç çocuğu yoktur, 32 (% 24.1) çift bir çocuğu olduğunu, 56 (% 42.1) çift iki çocuğu olduğunu ve 12 (% 9.1) çift ise üç çocuk veya daha fazla çocuğu olduğunu bildirmiştir.

Bu araştırmada eş bakımı, sosyal destek ve evlilik kalitesi arasındaki ilişkide bulunması hedeflenen uyarıcı işleme hassasiyetinin düzenleyici rolünün incelenmesi için Türkçeye uyarlanan Hassasiyet Ölçeği (Aron ve Aron, 1997), Eş Bakım Ölçeği (Kunce ve Shaver, 1994), Çok Boyutlu Algılanan Sosyal Destek Ölçeği (Zimet, Dahlem, Zimet ve Farley, 1988), İlişkilerde Mutluluk Ölçeği (Fletcher, Fitness ve Blampied, 1990) ve İletişim Şekilleri Ölçeği-Kısa formu (Christensen, 1987, 1988; Christensen & Sullway, 1984) kullanılmıştır. Tüm çiftler aynı soru bataryasını yanıtlamışlardır. Soru bataryaları çiftlere ayrı kapalı zarf içerisinde verilmiş ve aynı şekilde geri alınmıştır.

Çift verisinin test edilmesi için Aktör-Partner Bağımlılık Modeli (APIM) kullanılarak Lisrel 8.5 aracılığıyla veri test edilmiştir. Eşlerin davranışları hem kendi değişkenlerini (aktör etkisi) hem de partnerlerinin davranışlarını etkilediğinden (partner etkisi) bu analiz yöntemi kullanılmıştır. Hassasiyet özelliğinin olası düzenleyici rolünün test edilebilmesi için analizlerden önce yordayıcı değişkenler (kadın ve kocaların eş bakımı ve algıladıkları sosyal destek) ve düzenleyici değişken (kadın ve kocaların uyarıcı işleme hassasiyet seviyeleri) ortalanmış (centering) değişken haline getirilmiş ve bu değişkenlerin birbirleriyle çarpımlarıyla oluşan ortak etki (interaction) değişkenleri oluşturulmuştur. Çiftlerin verisi kullanıldığından test edilen her bir modelde dört ortak etki değişkeni bulunmaktadır. Analizlerde önce doymuş (saturated) model incelenmiştir. Bu modelde anlamlı olmayan ortak etki değişkenleri modelden çıkarılarak analiz tekrarlanmıştır. Ortak etkilerinin anlamlı çıkması halinde uyarıcı hassasiyeti özelliğinin düzenleyici rolünün örüntüsünü belirlenek için SPSS 20.0 kullanılarak hiyerarşik regresyon analizi yapılmış ve ortak etkilerin grafiği Aiken ve West'in (1991) önerileri ışığında çizilmiştir.

İkinci Çalışma: Bulgular

İki değişkenli Korelasyonlar

Ana çalışma değişkenleri arasındaki korelasyonlar hem kadın hem de koca için beklenen yönde bulunmuştur. Uyarıcı hassasiyeti özelliği negatif iletişim stili kullanımı gibi olumsuz evlilik sonuçlarıyla pozitif korelasyon göstermiştir. Beklenebileceği gibi, kadın ve erkeklerin kendi değişkenleri arasındaki ilişkiler, eşlerinin değişkenleri ile gösterdikleri ilişkilerden daha güçlü olduğu görülmüştür. Örneğin kadının eş bakımı ve kendi olumsuz iletişim stili kullanımı arasındaki ilişki ($r = -.47$, $p < .01$), kadının eş bakımı ve eşinin olumsuz iletişim stili kullanımı arasındaki ilişkiden ($r = -.19$, $p < .05$) daha güçlüdür.

Kişilik-Çevre Modellerinin Test Edilmesi

Model 1: Uyarıcı Hassasiyetinin Eş bakımı ve Evlilik Doyumu Arasındaki İlişkideki Düzenleyici Rolü

Bu modelde ortak etkilerinin hiç biri anlamlı çıkmamıştır. Anlamlı olmayan ilişkilerin ve ortak etkilerinin modelden çıkarılmasıyla analiz tekrarlanmıştır. Nihai model dataya iyi uyum göstermiştir (χ^2 (4, N = 133) = 1.77, p = 0.78, GFI = 1.00, AGFI = 0.98, CFI = 1.00, RMSEA = .00). Hem kadının hem de kocanın eş bakım kalitesinin hem kendi hem de eşlerinin evlilik tatminlerini anlamlı olarak etkiledikleri ortaya çıkmıştır. Kadın ve kocanın uyarıcı hassasiyeti kendilerinin ve eşlerinin evlilik tatminini anlamlı olarak yordamamıştır.

Model 2: Uyarıcı Hassasiyetinin Eş bakımı ve Evlilik İletişim Kalitesi Arasındaki İlişkideki Düzenleyici Rolü

Bu modelde hiç bir ortak etki anlamlı bulunmamıştır. Önceki modelde olduğu gibi bu modelde de anlamlı olmayan tüm ilişkiler modelden çıkarılmış ve model uyum endeksleri modelin nihai haline iyi değerler göstermiştir (χ^2 (6, N = 133) = 3.27, p = 0.77, GFI = 0.99, AGFI = 0.97, CFI = 1.00, RMSEA = .00). Çiftlerin eş bakımının sadece kendi evlilik iletişim kalitelerini olumlu olarak etkiledikleri bulunmuştur.

Kadın ve kocanın uyarıcı hassasiyeti ne kendilerinin ne de eşlerinin olumsuz iletişim stili kullanmalarını anlamlı olarak yordamamıştır.

Model 3: Uyarıcı Hassasiyetinin Algılanan Sosyal Destek ve Evlilik Tatmini Arasındaki İlişkideki Düzenleyici Rolü

Test edilen bu modelde de hiç bir ortak etki anlamlı olarak evlilik tatminini açıklamamıştır. Anlamsız ilişkilerin modelden çıkarılmasıyla ortaya çıkan model dataya uygun bulunmuştur (χ^2 (4, N = 133) = 2.45, p = 0.65, GFI = 0.99, AGFI = 0.97, CFI = 1.00, RMSEA = .00). Evlilik tatmini çiftlerin hem kendi hem de partnerlerinin sosyal destek alımı ile anlamlı ve olumlu olarak yordandığı gözlenmiştir. Kadın ve kocaların uyarıcı hassasiyetlerinin evlilik tatmini ile anlamlı olarak ilişki olmadığı gözlenmiştir.

Model 4: Uyarıcı Hassasiyetinin Algılanan Sosyal Destek ve Evlilik İletişim Kalitesi Arasındaki İlişkideki Düzenleyici Rolü

Bu modelde anlamsız olarak bulunan iki ortak etki ve anlamsız ilişkiler modelden çıkarılmış ve model tekrar analiz edilmiştir. Kadınların uyarıcı hassasiyetleri kendilerinin negatif iletişim kalitelerini olumlu olarak etkilediği gözlenmiştir. Aynı zamanda kocaların sosyal destek alımları kendi evlilik iletişim kalitelerini anlamlı ve olumlu olarak etkilediği görülmüştür. Anlamlı çıkan bu aktör etkilerinin yanı sıra kadının aldığı sosyal destek ve kocanın hassasiyet seviyesi arasındaki ortak etki ve kocanın aldığı sosyal destek ve kadının hassasiyet düzeyleri arasındaki ortak etki kadının olumsuz iletişim stili kullanmasını anlamlı olarak yordamıştır. Anlamlı ortak etkilerinin örüntüsünü ve ilişki yönünü incelemek için SPSS aracılığıyla hiyerarşik regresyon analizi yapılmıştır. Bulgular her iki ortak etki içinde düşük düzeyde hassasiyet özelliği olan grubun ve düşük seviye sosyal destek alan grubun istatistiksel olarak anlamlı olduğu ortaya çıkmıştır. Anlamlı ortak etkilerine göre ortaya çıkan bulgular şu şekildedir: (1) eşlerinden düşük düzeyde sosyal destek alan kadınların kocaları düşük düzeyde uyarıcı hassasiyetine sahipse, olumsuz iletişim şekillerini kullanımı daha yüksek olmaktadır. (2) düşük düzey uyarıcı hassasiyetine sahip kadınlar eşleri düşük düzey sosyal destek aldıklarında olumsuz iletişim şekillerini daha az kullanmaktadırlar.

İkinci Çalışma: Tartışma

Bu çalışmanın genel amacı kişilik-çevre kuramsal ikilemi kapsamında uyarıcı işleme hassasiyetinin, eş bakımı, algılanan sosyal destek, evlilik doyumu ve evlilik iletişim kalitesi arasındaki ilişkideki düzenleyici rolünü araştırmaktır. Araştırmanın evlilik içi dinamikleri kapsayacak şekilde tasarlanması, veri toplama yöntemlerinin ve analizlerin hem kadının hem de kocanın beyanlarını kapsayacak şekilde ikili analiz düzeyinde yapılmasını gerektirmiştir.

Uyarıcı işleme hassasiyetinin beklenen düzenleyici rolünün çıkması halinde bu rolün yatkınlık-stres modeli, ayırıcı yatkınlık hipotezi ya da avantajlı hassasiyet modellerinden birini destekleyici nitelikte olacağı düşünülmüş ve bu beklenti doğrultusunda bir dizi aktör-partner bağımlılık modeli uyarıcı hassasiyeti ve eş bakımı ve sosyal destek değişkenlerinin ortak etkileri ile birlikte analiz edilmiştir. Araştırma değişkenleriyle oluşturulan dört modelden üçü uyarıcı işleme hassasiyetinin düzenleyici rolünü desteklememiştir. Test edilen son modelde ise bulgular beklenenin aksine, yüksek düzey uyarıcı işleme hassasiyetinin değil, düşük düzey uyarıcı işleme hassasiyetinin düzenleyici rolünü desteklenmiştir. Bu durumda ayırıcı yatkınlık hipotezi ve avantajlı hassasiyet modelleri desteklenmemik, fakat yatkınlık-stres modeli kısmi olarak desteklenmiştir. Sonuçlara göre kadınların olumsuz iletişim şekillerini kullanmaları düşük düzey uyarıcı işleme hassasiyetine sahip evli kadın ve kocaların olumlu ya da olumsuz çevresel durumlara maruz kalmalarına bağlı olarak değişmiştir. Özellikle kadınların evlilik içerisinde kullandıkları iletişim stilleri, kocanın yarattığı olumsuz çevresel koşullarda kadın düşük düzey uyarıcı hassasiyetine sahipse olumlu olarak etkilenirken, kadının yarattığı olumsuz çevresel koşullarda kocanın düşük düzey uyarıcı hassasiyeti göstermesi ise kadının iletişim kalitesini olumsuz olarak etkilemektedir.

Araştırma bulguları kadınların evlilikteki iletişim kalitelerini etkileyen faktörlerin kimin uyarıcı hassasiyeti özelliğinin olmadığına ve kimin olumsuz çevresel koşulları ortaya çıkardığına göre değişkenlik gösterdiğine işaret etmektedir. Yani kadının iletişim kalitesini etkileyen faktörler kişilik ve çevresel faktörlerin birleşimi sonucu ortaya çıkan etki ile açıklanabilmektedir. Bulgular genel olarak kişilik-çevre etkileşimi çerçevesinde değerlendirildiğinde sonuçlar ne yatkınlık-stres modelini, ne

ayırıcı yatkınlık hipotezini ne de avantajlı hassasiyet modelini destekleyici niteliktedir. Çünkü bu modeller ışığında, çevresel koşullara hassasiyet gösteren grubun uyarıcı hassasiyeti yüksek olan kadın ya da koca olması beklenmektedir. Fakat bulgular uyarıcı hassasiyeti olmayan kadın ya da kocanın ayırıcı sonuçlar ortaya çıkmasına neden olduğu görülmektedir. Bu anlamda yatkınlık-stres kuramına kısmi de olsa bir destek bulunduğu söylenebilir. Çünkü uyarıcı hassasiyeti düşük olan kadınlar kötü çevresel koşullarda dirençlilik, uyarıcı hassasiyeti düşük olan kocalar ise kötü çevresel koşullarda zayıflılık durumu göstermektedirler. Genel olarak kadının düşük seviye uyarıcı hassasiyetine sahip olmasının bir nevi tampon etkisi, kocanın düşük seviye uyarıcı hassasiyetine sahip olmasının ise ilişki için bir nevi kırılganlık etkisi olduğu söylenebilir.

Sonuç olarak, bu tezde elde edilen bulgular uyarıcı işleme hassasiyetinin düzenleyici rolünün kişilik-çevre etkileşimi kapsamında aktör ve partner etkisine bakılarak evli çiftlerde ilişki dinamiklerinin incelenebileceğini göstermiş ve alana önemli bir katkıda bulunmuştur. Uyarıcı işleme hassasiyetinin ölçüm aracı olan Uyarıcı İşleme Hassasiyeti Ölçeğinin Türkçeye uyarlanmasının yapılması bu tezin önemli katkılarından biridir. Kişilik-çevre etkileşimi modellerinin bu tez kapsamında evli çiftler üzerinde test edilmesi, çift terapistlerinin ve aile danışmanlarının evli çiftlerin evlilik doyumlarını yükseltmek için yararlanabilecekleri bir model sunmuştur. Bu önemli katkı bu tezin bir diğer önemli çıkarımıdır.

Özetlenecek olursa, evlilik kalitesinin belirlenmesinde etkili olan faktörlerin tek yönlü değil çok yönlü olduğu, bu nedenle de evli çiftlerin hem kişilik özelliklerinin hem de maruz kaldıkları çevresel ortamın hem temel hem de ortak etkileri dikkate alınarak detaylı olarak araştırılmasının gerekli olduğu görülmüştür.

APPENDIX N. Tez Fotokopisi İzin Formu

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü	
Sosyal Bilimler Enstitüsü	X
Uygulamalı Matematik Enstitüsü	
Enformatik Enstitüsü	
Deniz Bilimleri Enstitüsü	

YAZARIN

Soyadı : Şengül İnal
Adı : Gülbin
Bölümü : Psikoloji

TEZİN ADI (İngilizce) : THE MODERATING ROLE OF SENSORY-PROCESSING SENSITIVITY IN THE RELATIONSHIP BETWEEN SPOUSAL CAREGIVING, PERCEIVED SOCIAL SUPPORT AND MARITAL QUALITY

TEZİN TÜRÜ : Yüksek Lisans [X] Doktora [ ]

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. [X]
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. [ ]
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. [ ]

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: