

GO GREEN BUT WHY? THE DYNAMIC INTERPLAY BETWEEN  
MOTIVATIONAL REASONS AND  
PRO-ENVIRONMENTAL BEHAVIORS DISPLAYED IN PRIVATE  
AND PUBLIC SPHERES

A Master's Thesis

by  
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Ankara  
July 2022



To My Brother

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The Graduate School of Economics and Social Sciences  
of  
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by  
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THE DEPARTMENT OF  
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İHSAN DOĞRAMACI BİLKENT UNIVERSITY  
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By İlke Candar

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Psychology.

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## ABSTRACT

### GO GREEN, BUT WHY? THE DYNAMIC INTERPLAY BETWEEN MOTIVATIONAL REASONS AND PRO-ENVIRONMENTAL BEHAVIORS DISPLAYED IN PRIVATE AND PUBLIC SPHERES

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Grounded in Self-determination Theory (Deci & Ryan, 2000), this thesis investigated through two studies the reasons for which individuals engage in pro-environmental behaviors. Study 1 with  $N = 375$  Turkish young adults ( $M_{\text{age}} = 22.35$ ;  $SD = 2.38$ ), showed that after controlling for connectedness to nature and perceived environmental threat, autonomous reasons but not controlling reasons had unique associations with both private- and public-sphere behaviors and intentions. Building on Study 1, Study 2 employed a more dynamic approach to examine the week-to-week relations of autonomous and controlling reasons to pro-environmental behaviors. With the aid of a sample of young adults (total  $N = 160$ ;  $M_{\text{age}} = 23.55$ ;  $SD = 7.17$ ) who completed two sets of online surveys, a pre-diary part and a series of short questionnaires for six consecutive weeks, it was found, again, that weekly variation in autonomous

reasons (but not in controlling reasons) related positively to weekly fluctuation in private- and public-sphere pro-environmental behaviors. Further, perceived environmental threat predicted between-person differences in such behaviors exhibited in both realms. The findings and their implications were discussed within the framework of Self-determination Theory.

Keywords: Autonomous Reasons, Connectedness to Nature, Controlling Reasons, Perceived Environmental Threat, Pro-environmental Behaviors

## ÖZET

### ÇEVRECİ DAVRANMALI, FAKAT NİÇİN? MOTİVASYONEL SEBEPLER İLE ÖZEL VE KAMUSAL ALANDA SERGİLENEN ÇEVRECİ DAVRANIŞLAR ARASINDAKİ DİNAMİK ETKİLEŞİM

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Öz-belirleme kuramına dayanarak bu tez, bireylerin çevre yanlısı davranışlarda bulunma kararlarının arkasında yatan nedenleri iki farklı çalışma aracılığıyla araştırmaktadır. Toplamda  $N = 375$  (Ortalama yaş = 22.35;  $SS = 2.38$ ) Türkiye örneklemini ile yapılan Çalışma 1, doğaya bağlılık ve algılanan çevresel tehdit kontrol edildikten sonra, kontrol edici nedenlerin değil de otonom nedenlerin kamusal ve özel alanda sergilenen çevre yanlısı davranışlar ve bu alanlarda çevre yanlısı davranışlar sergilemeye yönelik niyetler ile özel bir ilişkiye sahip olduğunu göstermiştir. Çalışma 1'i temel alan Çalışma 2'de, otonom ve kontrol edici nedenlerin özel ve kamusal alanda sergilenen çevre yanlısı davranışlar ile haftalık ilişkilerini incelemek için daha dinamik bir yaklaşım kullanılmıştır. Bir ön günlük bölümü ve bir



de altı haftalık bir dizi kısa anketi içeren iki set çevrimiçi anketi tamamlamış olan genç yetişkin örnekleme yardımıyla ( $N = 160$ ; Ortalama yaş = 23.55;  $SS = 7.17$ ) yine otonom nedenlerdeki (fakat kontrol edici nedenler değil) haftalık varyasyonun özel ve kamusal alanda sergilenen çevre yanlısı davranışlardaki haftalık dalgalanmayla pozitif olarak ilişkilendiği bulunmuştur. Ayrıca, algılanan çevresel tehdit her iki alanda sergilenen bu tür davranışlardaki kişiler arası farklılığı yordalamaktadır. Bulgular ve çıkarımlar öz-belirleme kuramı çerçevesinde tartışılmıştır.

Anahtar Kelimeler: Algılanan Çevresel Tehdit, Çevre Yanlısı Davranışlar, Doğaya Bağlılık, Kontrol Edici Nedenler, Otonom Nedenler

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## CHAPTER ONE

### SCRUTINIZING PRO-ENVIRONMENTAL BEHAVIORS

We stand now where two roads diverge. But unlike the roads in Robert Frost's familiar poem, they are not equally fair. The road we have long been traveling is deceptively easy, a smooth superhighway on which we progress with great speed, but at its end lies disaster. The other fork of the road — the one "less traveled by" — offers our last, our only chance to reach a destination that assures the preservation of our earth. (Carson, 1987, p.277)

Human actions seem responsible not only for global warming, but also for deforestation, biodiversity loss, land degradation, water scarcity, and extreme weather conditions (IPCC, 2018). To mitigate the problem of environmental degradation, individuals need to effectively and systematically reverse their destructive acts and engage in more *pro-environmental behaviors* (Osaldiston, R. & Sheldon, 2003), including, but not limited to recycling, sustainable consumerism, and ecological activism. If we are to switch from what Carson describes as a disastrous path to the one that is environmentally friendly, we need to discuss the elements that designate that direction. Do we need, among others, to stay connected to nature and understand the environmental threat we face, or should we also include the reason for which we ought to act pro-environmentally? In my thesis, I investigated how private- and

public-sphere pro-environmental behaviors are affected by motivational reasons, connectedness to nature, and perceived environmental threat through two different studies.

### **1.1 Private-sphere and Public-sphere Pro-environmental Behaviors**

Pro-environmental behaviors (PEB) refer to the practices that aim to safeguard and benefit the natural environment (e.g., driving less, composting) (Lange & Dewitte, 2019). This class of behaviors has the potential to increase the quality of the nature and minimize the harm done to it (Steg & Vlek, 2009). Over the past few decades, researchers have used a variety of strategies to distinguish between different pro-environmental acts and sort them into separate categories (e.g., Larson et al., 2015; Lavelle et al., 2015; Smith-Sebasto & D'Costa, 1995; Stern, 2000). Discerning PEBs according to the realms in which they are displayed, many of the scholars studied different types of PEBs under two broad categories: *Private-sphere PEBs* and *public-sphere PEBs*. The first category includes the acts that occur in private realms, such as purchasing eco-friendly products and services, reducing energy usage, recycling, decreasing water consumption, using public transportation, and traveling short distances by bike or on foot (e.g., Ertz et al., 2016; Homburg & Stolberg, 2006; Liobikienė & Poškus, 2019; Lu et al., 2017; Mi et al., 2020; Mobley et al., 2010; Pisano & Lubell, 2017; Stern, 2000; Tam & Chan, 2017). In contrast, the second category encompasses activities that individuals engage in public areas, namely participating in environmental activism, supporting environmental policies, petitioning for environmental protection, taking part in an environmental protest, or demonstration, being a member of an environmental organization or donating money (e.g., Homburg & Stolberg, 2006; Liobikienė & Poškus, 2019; Lu et al., 2017; Mi et al., 2020; Pisano & Lubell, 2017; Stern, 2000).

In private realms, people mainly rely on their individual resources (e.g. time and energy) to directly improve environmental quality (Stern, 2000), yet their public-sphere PEBs might facilitate a change in attitudes toward or concerns over natural degradation and thus, have a more long-term and indirect effect on the environment (Lu et al., 2017; Tam & Chan, 2017). To illustrate, signature-gathering efforts to ban deforestation might succeed if the members of the parliament decide to respond positively to the concerns of the signers. Therefore, signing a petition can facilitate environmental protection through the changes in policies, yet achieving these alterations can be difficult and slow. Moreover, private-sphere PEBs (e.g., energy consumption) might be more likely to become habitual (Whitmarsh, 2009) compared to the ones displayed in public areas as such behaviors usually require higher consciousness and active engagement (Liobikienė & Poškus, 2019). One might take these differences in the characteristics of private- and public-sphere PEBs into account to understand why some factors predict private-sphere PEBs, but not public ones or vice versa. For instance, societies composed of individuals prioritizing their present lifestyles over future environmental outcomes were less likely to display public-sphere PEBs, but not private-sphere ones (Tam & Chan, 2017). Interestingly, having traditional masculinity characteristics, such as striving for wealth, success, and self-confidence was significantly associated with the higher implementation of PEB in public, but not in private spheres (Mi et al., 2020). Albeit the characteristics and thus, the determinants of private- and public-sphere PEBs differ considerably, individuals can effectively tackle a wide range of environmental problems while displaying both PEB types (Liobikienė & Poškus, 2019).

Beyond highlighting the positive impact of such behaviors on nature, some researchers pointed out that the vast majority of the studies in the field of PEB research focused on the conservation behaviors which were mainly displayed in private spheres (e.g., Lange &

Dewitte, 2019; Liobikienė & Poškus, 2019). In that regard, one might embrace a critical approach to the generalizability of the conclusions in that research area as the number of studies investigating public-sphere PEBs was limited. Concordantly, this thesis will include both private- and public-sphere PEBs in its conceptual framework while investigating the factors that might have a significant influence on them.

## **1.2 Long-term Assessment of Pro-environmental Behaviors**

Apart from exploring the complex nature of PEBs based on several categorizations, as Lange and Dewitte (2019) indicated, such behaviors could also be examined in a dimension of time, more specifically through questions referring to different periods in which they were displayed (e.g., in the past, present, or unspecified time intervals). Studies investigating the longitudinal patterns focused on various environmentally friendly behaviors that occurred in different domains, such as household waste recycling, lighting-use-related activities, traveling, and in the workplace. Collecting data from residents in Taiwan for one week, Chu and Chiu (2003) pointed out that household recycling behaviors fluctuated significantly from day to day. Also, Hilgert et al.'s longitudinal investigation (2018) on the traveling patterns of individuals supported the findings of previous studies: Twenty percent of their participants experienced a change in their accessibilities to their works or schools by public transportation. Conducting research in another field, Maleetipwan-Mattsson et al. (2013) tracked office occupants' lighting-use-related activities (e.g., lowering the lighting level, adjusting window blinds, etc.) for one workday in every two months from June 2009 to May 2010. Their results revealed that light-on time during a workday was significantly correlated with occupancy time of the office only in the first two data collection sessions. In this regard, one might argue that participants' lighting-use-related activities and the time that they spent in their offices could show different trends from one measurement point to the next. Similarly, when Bissing-Olson

et al., (2013) measured employees' different green behaviors at work, such as completing assigned jobs in a pro-environmental way and actively involving in environmental protection over ten working days, they showed that the majority of the variance within such behaviors could be attributed to the differences among employees. Albeit the above-mentioned longitudinal studies investigated the changes in different types of PEBs, all of them reached the same conclusion: both within- and between-person differences could explain significant variance in PEBs measured over time. To illustrate, a person might recycle a plastic water bottle in the morning and later a paper lunch, but that does not necessarily show that she will recycle the next day, or on the same rainy day, one might decide to bike to school, whereas the other one may drive. Hence, by investigating merely within- or between-person differences, researchers might overlook possible reasons which might explain pro-environmental behaviors.

Despite previous diary studies focused on some specific environmentally friendly behaviors, such as household recycling or green employee behaviors, Richter and Hunecke (2022) approached this class of behaviors as a multidimensional construct composed of divergent practices in different domains, such as nutritional choices, energy usage, food consumption, and mobility. For ten days, the researchers requested participants to fill out daily questionnaires assessing the extent to which they displayed different types of PEBs on that specific day. While designing these surveys, they had chosen certain PEBs that individuals could display on a daily basis (e.g., choosing vegetarian food options, turning off the energy sources at home before leaving, etc.). Because the selected behaviors should fit the logic of daily measurement, the non-daily PEBs, such as participating in environmental protests or pinpointing someone his or her ecological behavior were automatically disregarded. For this reason, it seems likely that their results about the predictors of such behaviors might be solely



attributed to the PEBs that people can engage in on a daily basis. Beyond, as the researchers also acknowledged, their findings associated with a limited number of PEBs might hinder the diversity and the wide scope of such acts. Consequently, these limitations can be used as evidence to argue that long-term assessment of various types of green practices might be required to present a more comprehensive picture of PEBs and their determinants.

### **1.3 Summary**

There have been a number of studies aiming to divide various PEBs into two broad categories based on the realms in which individuals are engaged: Private-sphere and public-sphere PEBs. Questioning the differences in the characteristics of private- and public-sphere PEBs, several cross-sectional studies revealed that some factors predicted only private- but not public-sphere acts or vice-versa. Yet, the great majority of scientific inquiries in that field assessed only the private-sphere practices while investigating the determinants of PEBs. In a similar vein, the scope of PEBs can be narrowed down in longitudinal studies based on the ways that these behaviors are measured. As a result of these approaches, it seems likely that one might struggle to take a comprehensive view to understand the complexity of PEBs. Including both private- and public-sphere PEBs within its theoretical framework, this thesis examined such behaviors through an overarching lens.

And in doing so, it is crucial to explore the factors which may predict such behaviors (Steg & Vlek, 2009). This thesis adopted a social psychological perspective by questioning the possible effects of motivational reasons, connectedness to nature, and perceived environmental threat that may coincide with environmentally friendly practices in private and public realms. Initially, the discussions will be centered around the question of why people act pro-environmentally. Would it be the case that they personally value throwing their plastic

bottles in a recycling bin? Or are they afraid that their friends may isolate them if they do not join them in the climate protests to address the threat of global warming? Within the framework of Self-determination theory, the following chapter will focus on the discussions about the characteristics of motivational reasons behind exhibiting such behaviors.

## CHAPTER TWO

### SELF-DETERMINATION THEORY

One of the avenues of research exploring the determinants of PEBs was concerned with the influence of *reasons* to engage in such behaviors. Albeit various motivational taxonomies were developed to describe and classify different underlying reasons for exhibiting PEBs (Taufik et al., 2015; Turaga et al., 2010), this thesis relies specifically on Self-determination Theory (STD; Deci & Ryan, 2000; Vansteenkiste, et al., 2010; Vansteenkiste et al., 2014). Being one of the most prevailing theories in the motivation literature, STD shows that not only the quantity but also the quality of motivation matters for achieving an optimum level of motivation and outcome (Vansteenkiste et al., 2006). More specifically, individuals' activity engagement is significantly associated with the type (i.e., the quality) rather than the amount (i.e., the quantity) of motivation that they have. In STD, it is maintained that the higher the quality of motivation, the better the adjustment and outcomes. Yet, little has been known about the potential link between the types of motivation and PEBs displayed in private- and public spheres. The following sections will briefly represent the framework of STD, and outline studies that explored the interplay between the quality of motivation and PEBs.

#### **2.1 Quality of Motivation and Associated Reasons Underlying Behaviors**

Traditionally, STD proposes two main types of motivation: Autonomous motivation (i.e.,

experiencing volition and choice, feeling a sense of ownership over one's behavior) and controlled motivation (i.e., experiencing a sense of being pressured and coerced, feeling that one's behavior is controlled by either internal or external sources) (Vansteenkiste et al., 2006; Vansteenkiste et al., 2010). Rather than perceiving these types as exclusive, SDT researchers highlight that extrinsic motivation could coincide with autonomous reasons; that is, individuals may carry out an activity namely because they consider it important (autonomous motivation) but also partly because they feel coerced to do so (controlled motivation) (Vansteenkiste et al., 2006). The lack of sharp distinction between intrinsic and extrinsic motivation gave rise to the exploration of different types of motivation along a continuum in which one might engage in a behavior for different reasons, ranging from being intrinsically motivating (the most *autonomous* one) to external (the most *controlled* one) motivating.

On this continuum, SDT classifies three types of autonomous and two types of controlled behavioral regulation forms corresponding with the differences in degrees of *internalization* of the reasons underlying individuals' behaviors. The process of internalization represents the extent to which the extrinsic reasons are incorporated into one's values, beliefs, and norms (Vansteenkiste et al., 2006; Vansteenkiste et al., 2014). The two least integrated versions of extrinsic motivation, external regulation and introjected regulation, are associated with *controlling reasons*, whereas, with intrinsic motivation, the two most integrated versions of extrinsic motivation, integrated regulation and identified regulation constitute, along with intrinsic motivation, *autonomous reasons*. To illustrate, when acting for controlling reasons, people feel coerced to act pro-environmentally out of some psychological pressures, which could be either internal such as to avoid the feelings of guilt or shame or to boost their egos (*introjected reason*) or external such as to receive a promised reward (e.g., getting paid to

recycle by the local government) or to avoid a threatening sanction (e.g., to avoid a fine for not recycling; *external reason*) (Deci & Vansteenkiste, 2004). In contrast, when people act environmentally friendly for autonomous reasons, they truly endorse the value of that behavior (*identified reason*) or conceive such behaviors as parts of their value and belief systems (*integrated reasons*) or consider acts such as recycling as challenging, enjoyable and reviving practice (*intrinsic reasons*). Individuals tend to feel satisfied and challenged while exhibiting PEBs if they volitionally endorse such behaviors (Deci & Vansteenkiste, 2004). This classification demonstrated that STD assigns a greater role to the qualitative characteristics (i.e., the reasons) rather than the quantitative characteristics. For instance, two individuals might have an equal amount of motivation to join a protest against deforestation, yet, for different reasons. One may assign a value to environmental activism (i.e., identified reason), whereas the other may not want to feel guilty for not participating in that demonstration (i.e., introjected reason). Hence, people can be equally motivated for engaging in PEBs, but it does not necessarily imply that they display such behaviors for the same reasons.

## **2.2 Quality of Motivation and PEBs**

Within the framework of STD, correlational studies have confirmed that individuals having higher levels of self-determined motives (i.e., autonomous as compared to controlled motivation) are more likely to engage in PEBs. For instance, Green-Demers and her colleagues (1997) asked their participants to indicate how often they recycled, educated themselves on environmental issues, and purchased environmentally friendly products; more importantly, they asked their participants to what extent they displayed such behaviors according to the motivational subtypes defined by STD (e.g., “Because taking care of the environment is an integral part of my life” was related to the integrated reasons). Results

revealed that autonomously motivated people displayed PEBs more frequently compared to the ones who received higher scores in non-self-determined motives (i.e., introjected reasons, external reasons, and amotivation). Beyond, the association between self-motivation and the frequency of environmentally friendly practices was strengthened as the practices became more challenging. Likewise, having higher levels of intrinsic motivation, integrated and identified reasons (autonomous reasons) were strongly associated with the frequency of PEBs, including willingness to pay additional fees, environmental activism, recycling, energy conservation, environmentally friendly purchasing, and reusing materials, whereas the least self-determined motives (i.e., introjected reasons, external reasons, and amotivation) were negatively related or non-related to the frequency of such behaviors (Pelletier et al., 1998). These findings have been replicated also in a study dividing PEBs into two groups: the ones displayed at home and the others exhibited on-campus residence and investigating the degree to which they were associated with autonomous and controlling reasons (Lavergne et al., 2010). Although autonomous reasons directly predicted the frequency of PEBs, controlling reasons failed to do so. Overall, correlational studies have shown a link between PEBs and autonomous but not controlling reasons.

Next to the studies providing evidence for the association between PEBs and autonomous reasons, experimental studies also revealed that having autonomous reasons could lead to higher involvement in PEBs. Grounding their study on STD, Osbaldiston and Sheldon (2003) invited college students to the laboratory and requested them to select three environmental goals which they could follow during the next seven days. For the following seven days, they rated the extent to which they successfully pursued their green goals. Their responses confirmed the existing results that individuals having a higher level of internalized motivation were more likely to follow their self-selected environmental behavioral goals (i.e., recycling,

reducing meat consumption, convincing others to recycle more, etc.), as opposed to ones who followed their green goals out of a feeling of guilt (and thus, controlling reasons). Also, participants were invited to the lab at the end of the same week and asked to fill the scales that measured their intentions to keep exhibiting such behaviors matching their goals. Their answers demonstrated that people having internalized reasons to achieve their environmental goals were more willing to pursue their green goals in the future. In a similar vein, Vansteenkiste et al. (2004) randomly assigned first-year college students into three conditions in which a learning activity (i.e., reading texts about recycling) was framed in terms of intrinsic goal (such as, foreseeing the value of reading recycling for contributing to the community), extrinsic goals (such as saving money through recycling), or both intrinsic and extrinsic goals. Then, they were informed that some additional materials would be available at the school library so if they wanted, they could learn more about this issue. According to the findings, the persistence of acquiring more information about recycling was significantly predicted by intrinsic reasons (but not by extrinsic ones). Hence, similar to the results of correlational studies, experimental ones also highlighted that individuals were more likely to engage in PEBs for autonomous rather than controlling reasons.

The previous results demonstrate the positive link between some behavioral outcomes and autonomous (but not controlling) reasons and are noteworthy for two reasons. First, because they show that our understanding of PEBs could be further enriched if motivational reasons are taken into consideration. Second, they can contribute to the current discussions on whether they would still have predictive power in explaining PEBs after controlling for some other critical determinants. Nevertheless, to my knowledge, there is no scientific study investigating whether autonomous and controlling reasons are differentially related to private- and public-sphere PEBs. Therefore, it seems valuable to explore how autonomous and

controlling reasons are associated with PEBs displayed in private and public realms. Further, to reveal the direction of this relation, it would be interesting to explore whether week-to-week private- and public-sphere PEBs were predicted by week-to-week fluctuations in autonomous and controlling reasons.

### **2.3 Summary**

Within the framework of STD, a more recent conceptualization focused on the degree of identification with reasons underlying behaviors that varied in its sense of autonomy. To exemplify, individuals choose biking instead of driving as they feel pressured by their environmental neighbors (controlling reason) or because they value using bicycle to reduce carbon footprint (autonomous reasons). As far less attention has been paid to PEBs from the SDT approach, a critical question was whether environmentally friendly behaviors in private and public realms are executed mainly for autonomous or controlling reasons. As this brief overview suggests, individuals reported autonomous reasons (but not controlling reasons) tend to execute different types of environmentally friendly actions, ranging from purchasing environmentally friendly products to engaging in environmental activism. From the point of SDT, it is not surprising that not only correlational studies but also the experimental ones pointed out the same pattern of relationship between autonomous reasons and environmentally friendly practices. Yet, the question of whether the relation between motivational reasons and PEBs still persists after controlling for some critical determinants (i.e., connectedness to nature and perceived environmental threat) has remained unanswered. That is, will autonomous reasons still predict the changes in PEBs even after we include connectedness to nature and perceived environmental threat in this model? Taking into account the key role of motivational reasons underlying PEBs, this thesis aimed to expand our understanding about correlates that are significantly related to such behaviors. The next



section will briefly outline the studies that explored how PEBs were affected by the two critical elements discussed in the literature: *Connectedness to nature* and *Perceived environmental threat*.

## CHAPTER THREE

### TWO CRITICAL DETERMINANTS OF PRO-ENVIRONMENTAL BEHAVIORS

Understanding which psychological factors facilitate the engagement in PEBs may provide valuable insight into the psychological processes underlying such behaviors. A substantial body of literature has been published over the last years exploring the important drivers of environmentally friendly actions such as response efficacy (i.e., the belief that one's behaviors will be effective) (Bradley et al., 2020), perceived ecological resource shortage (Gu et al., 2020), the experience of pride about PEBs (Bissing-Olson et al., 2016), environmental self-identity (Whitmarsh & O'Neill, 2010), and environmental values (Gatersleben et al., 2014). Due to their systematic relation with PEBs, two determinants attracted great attention of the researchers: *Connectedness to nature* and *perceived environmental threat*. The following sections will provide a brief overview of empirical evidence on how these two critical factors are associated with PEBs.

#### **3.1 Connectedness to Nature**

Connectedness to nature was conceptualized as the sense of affective and experiential closeness with nature, which usually arose from integrating this relationship into one's self-definition (Mayer & Frantz, 2004; Schultz, 2001). This concept might trace its roots to

Leopold's premise (1970) that a person with stronger connections to nature experience a sense of relatedness to the natural environment and establish egalitarian relations with all elements of the broader ecosystem. In their recent investigations of the sense of interconnectedness with nature, researchers put emphasis on the different aspects of this relation. For instance, in his theoretical model, Schultz (2001) argued that the degree to which one integrates nature into their sense of self strengthens the relation that they have with the natural environment. Aiming to measure the cognitive mechanisms underlying this connection, he developed a one-dimensional, graphical scale named "Inclusion of Nature in Self", in which he requested participants to choose a pair of circles, which described the extent to which they viewed nature as a part of their sense of self. Mayer and Frantz (2004) expanded Schultz's perspective by highlighting the importance of emotions and affective experiences in establishing closeness with nature. Also, because of the methodological limitations that single-item measures have, they designed a multi-item scale titled "Connectedness to Nature". Mayer and Frantz (2004) proposed that if one had a strong sense of oneness with nature, they were more likely to consider the influences of their actions on the natural environment as nature became an integral part of who they are. Thus, for people who feel close to the nature, environmentally harmful actions could be perceived as similar to self-harming behaviors. Indeed, a considerable number of scholars tested the predictive power of connectedness to nature in PEBs and documented the positive relation between them (e.g., Barbaro & Pickett, 2016; Davis et al., 2009; Martin, et al., 2020; Tam et al., 2013). Beyond, a recent meta-analysis showed that connectedness to nature was significantly related to PEBs across different assessment techniques with various sample groups having diverse demographic features (Mackay & Schmitt, 2019).

While examining the link between connectedness to nature and PEBs, researchers utilized both correlational and experimental research designs. For instance, Barbaro and Pickett (2016) requested their participants to complete questionnaires on mindfulness, connectedness to nature, and daily PEBs to explore the potential mediating role of connectedness to nature on the relation between mindfulness and PEBs. Their results showed that as the level of mindfulness increased, the sense of connectedness to nature got stronger, which in turn enhanced engagement in PEBs. In a similar vein, Tam et al. (2013) examined whether the association of anthropomorphism (i.e., attributing human characteristics to the natural world) and conservation behaviors in public (i.e., supporting environmental movement) and private spheres (i.e., purchasing green products) was mediated by one's sense of connectedness to nature. In support of their expectations, the researchers found that a greater level of anthropomorphism could facilitate a stronger feeling of relatedness to nature, which in turn predicted more protective behaviors towards environment. In a recent cross-sectional study, Martin, et al. (2020) approached the concept of connectedness to nature as an individual trait, and they observed a positive association between the sense of connectedness with the natural world and environmentally friendly practices.

Moving one step further, Davis et al. (2009) manipulated individuals' sense of relatedness to nature to test the causal impact of connectedness to nature on PEBs. Assigning participants into the high- and low commitment to nature prime conditions, the researchers asked the first group to respond to some open-ended questions about the ways that they felt connected to the natural world, whereas they requested the second group to indicate their environmentally harmful behaviors. Their analysis revealed that participants in the high-commitment prime group were more likely to exhibit PEBs compared to the ones in the low-commitment condition. In line with these findings, a recent meta-analysis supported the significant relation

between connectedness to nature and PEBs in correlational studies, and also the causal effect of connectedness to nature on PEBs in experimental research (Mackay & Schmitt, 2019).

Expanding on these previous results, this thesis utilized both correlational and diary designs to investigate the possible differences between the relations that connectedness to nature could have with self-reported PEBs displayed in private and public realms. Further, because perceived-environmental threat is considered as another critical determinant of PEBs, I took also into account its role as a possible predictor of pro-environmental behaviors.

### **3.2 Perceived Environmental Threat**

Imagine one who feel deeply connected with their natural environment, perceives themselves as a part of a natural community, and recognizes the rights of other living organisms in the web of life. Could that person tend to underestimate the harm of the environmental deterioration and believe that the damage that humans have done could be repaired in a short term? In that case, is she likely to engage in PEBs in private and public realms? The stronger feelings of connectedness might increase the likelihood that she exhibits such behaviors whereas the lower level of threat perception may hamper her to display the environmentally friendly acts. Therefore, it might be a robust theoretical strategy to investigate the possible relation of perceived environmental threat to PEBs as well.

Perceived environmental threat refers to the extent to which people perceive the harms of environmental degradation on the well-being of humans, non-humans, and the ecosystem (Johnson & Frickel, 2011). These threats could range from declining bee population or plant diversity to increasing plastic waste in the oceans or carbon emissions. Despite the seriousness of these threats, the way that people perceive the harm might have an impact on their environmentally-friendly actions. For instance, Lubell et al. (2007) utilized

psychological theories and methodologies to explore how perceived environmental threat influenced the global warming movement, which was measured through policy support, participation in environmental political activities, and engagement in PEBs for combating the risks of global warming. Collecting data from adults living in the USA through telephone surveys, they found that perceived environmental risks was a stronger predictor of policy support, political activism, and, relevant to the focus of this thesis, PEBs. Similar results were reported by another study with Chinese farmers where soil pollution is considered one of the serious environmental problems in China (Zhou et al., 2020) and where farmers can protect soil fertility through some practices such as limited use of pesticides, chemical fertilizers, and plastic films. As Zhou et al. (2020) have proposed, the farmers who had stronger environmental-related risk perceptions were more likely to take such protective measures and actions to cope with soil pollution compared to the ones who had lower levels. Interestingly, the types of PEBs that the researchers measured in the above-mentioned studies could be mainly associated with environmentally friendly actions displayed in public -but not in private- realms (e.g., organizing environmental movements, supporting green policies, and using environmental agricultural practices). Given this difference, one might argue that perceived environmental threat could have a significant relation only with public-sphere PEBs but not with private ones. Nevertheless, Schmitt et al. (2018) assessed a wide range of PEBs, including both the private and public ones, to capture the characteristics of having an ecological living style. The responses of their large sample revealed that the stronger the perceived ecological threat, the higher their likelihood to engage in such behaviors. Hence, taking into account the key role of perceived environmental threat on various PEBs, this thesis acknowledges the importance of investigating its possible relation with environmentally friendly behaviors displayed in private and public spheres, specifically. Because of the lack of

research exploring how perceived environmental threat affects between-person differences in such practices, this question deserves a closer examination as well.

Albeit our understanding of how connectedness to nature and perceived environmental threat are associated with PEBs has been considerably increased, several issues need further inquiry, for instance, whether they would have similar relations with private- and public-sphere PEBs. Moreover, by controlling the possible role of each factor that could account for the variance of PEBs, we might also get the opportunity to gain a deeper insight into the underlying psychological mechanisms fostering such behaviors. On top of that, little research has been done to explore the extent to which possible between-person fluctuations in PEBs displayed in both spheres coincide with inter-personal differences in connectedness to nature and perceived environmental threat. Therefore, these two possible determinants of PEBs were included in both cross-sectional and longitudinal theoretical models developed for this current MA project.

### **3.3 The Present Study**

Through two studies, this thesis aimed to investigate the degree to which autonomous and controlling reasons were associated with private- and public-sphere PEBs, after controlling for connectedness to nature and perceived environmental threat.

For the first study, a sample of young adults were recruited to examine through a cross-sectional design whether such reasons would be related to PEBs displayed in private and public realms over and above connectedness to nature and perceived environmental threat. Expanding on prior research, not only PEBs (through self-reports) but also the respective intentions through a series of vignettes were assessed which were pilot-tested beforehand.

In the second study, with another population sample, a diary design was employed to examine the degree to which private- and public-sphere PEBs fluctuated from week to week, covaried with week-to-week autonomous and controlling reasons for such behaviors, and, aside the week-to-week fluctuations, whether interpersonal differences in mean levels of private- and public-sphere PEBs could be explained by between-person variability in connectedness to nature and perceived environmental threat.

In light of the prior research on the relation between the quality of motivation and PEBs, it is hypothesized that only autonomous (but not controlling) reasons would positively predict private- and public-sphere PEBs. Also, it is presumed that a stronger connection with nature would positively predict both private- and public-sphere practices. Lastly, it is anticipated that individuals holding higher levels of environmental threat perceptions would display more environmentally responsible behaviors in both spheres.



## CHAPTER FOUR

### THE DETERMINANTS OF PRIVATE- AND PUBLIC-SPHERE PRO-ENVIRONMENTAL BEHAVIORS: A CROSS-SECTIONAL STUDY

In this study, an online survey was prepared to assess the degree to which autonomous and controlling reasons would be associated with the frequency of self-reported PEBs displayed in both private and public realms. Pro-environmental behavioral tendencies were also examined through some vignettes in which a practical dilemma was presented such as acting environmentally friendly at the cost of arriving late to class. In doing so, this study aimed to explore the extent to which young individuals would incline to display PEBs under conditions which may bear a personal cost for them. Unlike any prior research on the quality of motivation and PEBs, it was also examined whether autonomous and controlling reasons would be still related to the pro-environmental tendencies and behaviors, even after statistically controlling for connectedness to nature and perceived environmental threat. The research hypotheses, depicted in Figure 1, were as follows.

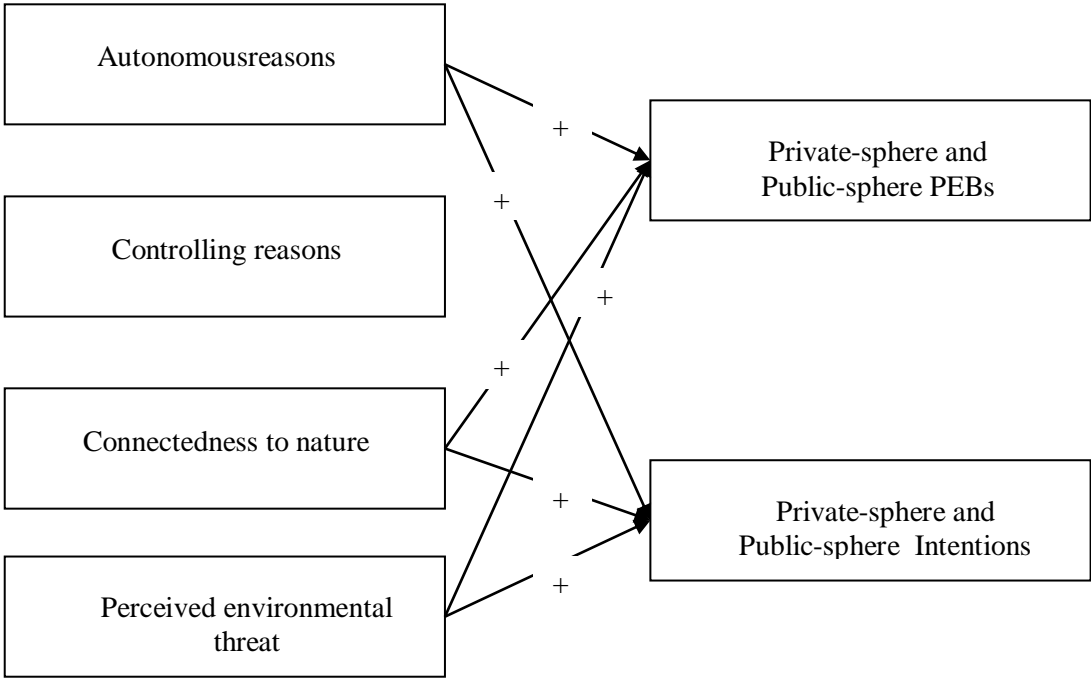
**Hypothesis 1a.** When considered simultaneously, and controlled for connectedness to nature and perceived environmental threat, autonomous reasons will be positively related to both

private- and public-sphere pro-environmental self-reported behaviors (as assessed through an existent scale) and intentions (as assessed through vignettes).

**Hypothesis 1b.** No association will be found between controlling reasons and both PEBs and environmentally friendly intentions.

**Hypothesis 2.** Consistent with the previous findings, individuals reporting stronger connections with nature will be more likely to display PEBs in both spheres and have higher intentions to engage in such behaviors.

**Hypothesis 3.** Higher degrees of perceived environmental threat will yield positive association with PEBs exhibited in private and public realms and also environmentally friendly intentions.



*Figure 1:* The hypothesized relation between the qualities of motivation, connectedness to nature, perceived environmental threat to private-sphere and public-sphere PEBs and intentions

## 4.1 Method

### 4.1.1 Participants

Four hundred and fifty-one Turkish young adults participated in this study. However,  $n = 39$  individuals were excluded from the analysis as they failed to correctly respond to two attention check items embedded into the online survey. The final sample therefore included 375 (65.1% females) native Turkish speakers ( $M_{\text{age}} = 22.35$ ;  $SD = 2.38$  years; age range = 18-35 years). Among them, 31 participants (8.3%) were high school graduates, 230 (61.3%) were undergraduate university students, 89 (23.7%) graduates, and 21 (5.6%) had a Master's degree. There were also four individuals (1.1%) who omitted to share the information about their educational background. Regarding their financial status, 188 participants (50.1%) reported earning less, and 141 participants (37.6%) reported earning more than the minimum wage (as defined through the Republic of Turkey Ministry of Treasury and Finance); 48 individuals (12.3%) omitted this information. The majority of the respondents (88.8%) were living in urban areas.

The procedures of collecting data started after the fulfillment of the ethical standards of the host University Ethical Committee. Participants were informed that participation in the study was voluntary, and they could leave the research at any time. Also, their responses were kept confidential, and they had full anonymity. All questionnaires were presented in Turkish and shared online via Qualtrics.

### 4.1.2 Measures

All original English instruments were translated into Turkish by me and back-translated by a Turkish psychologist fluent in English. After discussing the non-equivalent translations, we reached a consensus in cases where a discrepancy occurred between the original and the back-translated version. For all scales, a five-point Likert scale type (1 = *Strongly disagree* to 5 = *Strongly agree*) was used unless otherwise specified.

#### 4.1.2.1 Private-sphere and Public-Sphere PEBs Scale

To measure the pro-environmental actions that people mainly carry out in their private life (e.g., to throw trash in recycling bins, reuse recyclable materials, purchase green products and services, etc.) and public realms (e.g., to participate in environmental protests, sign petitions on environmental issues lives, etc.), I adjusted six items of the private- and public-sphere Pro-environmental Behaviors Scale (Lu et al., 2017), which was originally designed to assess employees' green actions in the workplaces. To increase the stability and conceptual breadth of the two subscales, I added one item that I borrowed from the work of Pedersen et al. (2018), one tapping into the private-sphere ("I am an active energy conserver who looks for opportunities to save energy in everything I do") and created a new item targeting public-sphere ("I participate in protests and demonstrations for environmental protection and sustainable living") PEBs (See Appendix A). The responses were provided on a 5-point Likert-type scale (1 = "Very untrue of me" to 5 = "Very true of me"). The internal consistencies of private and public sphere subscales were satisfactory, both in terms of Cronbach alphas, (respectively,  $\alpha = .66$  and  $\alpha = .81$ ). Also, the Confirmatory Factor Analysis for a two-factor model yielded acceptable fit:  $S-B\chi^2(19, N = 286) = 43.63, p < .01, CFI = .954, RMSEA = .074, (90\%-CI:.045-.103), SRMR = .054$ , with the loading of items ranging between .41 and .80.

#### ***4.1.2.2 Autonomous and Controlling Reasons***

Immediately after the items referring to PEBs displayed in private and public realms, 5 items were presented that had been borrowed from a 7-item measure used in Michou et al. (2014), to examine the degree to which individuals engaged in such behaviors for either autonomous reasons (two items; e.g., “because I personally valued to display this behavior/these behaviors;  $\alpha = .53$ ) or controlling reasons (three items; e.g., “because others (e.g., parents, friends, teachers) would otherwise get mad at me”;  $\alpha = .81$ ). The CFA for a modified, 2-factor model in which the second item (“because I would feel bad, guilty or ashamed if didn’t display this behavior/these behaviors”) and the fifth item (“because I had to prove myself I am capable of displaying this behavior/these behaviors”) in controlling reasons subscale were excluded from the analyses as they poorly loaded ( $\lambda = .10$  and  $\lambda = .29$ , respectively) on the corresponding construct provided acceptable fit:  $S-B\chi^2 (5, N = 276) = 9.54, p > .05, CFI = .985, RMSEA = .059, (90\%-CI: .000-.115), SRMR = .053$  (See Appendix B).

#### ***4.1.2.3 Connectedness to Nature***

Six items that were adapted from the Connectedness to Nature Scale (Mayer & Frantz, 2004) were used to measure individuals’ emotional and experiential connection to the environment (e.g., “I think of the natural world as a community to which I belong”) (See Appendix C). The internal consistency was  $\alpha = .81$  and the CFA yielded acceptable fit:  $S-B\chi^2 (9, N = 303) = 22.16, p < .01, CFI = .967, RMSEA = .082, (90\%-CI:.039-.126), SRMR = .041$ .

#### ***4.1.2.4 Perceived Environmental Threat Scale***

To assess perceived environmental threat, the four-item measure used in Schmitt and his colleagues’ study (2019) was borrowed. A sample item reads as “If humans don’t dramatically change their relationship to the earth, the damage done will be beyond repair”. The internal

consistency of this four-item measure was 0.73. However, by dropping the reverse coded item (e.g., “The likelihood of global environmental devastation is low”), the Cronbach’s alpha increased from 0.73 to 0.79 (See Appendix D).

#### ***4.1.2.5 Private-sphere and Public-Sphere Pro-environmental Intentions***

Based on the corresponding scale of private and public-sphere PEBs (Lu et al., 2017), eight private-sphere and seven public-sphere vignettes were constructed to assess participants’ intentions for displaying green behavior at the expense of personal cost. Each hypothetical vignette represented different versions of everyday dilemmas involving a conflict between environmentally friendly but effortful and time-consuming behaviors and non-green but cost-free behaviors. Initially, the vignettes had been pilot-tested, by recruiting ten participants who indicated on a 4-point Likert scale the extent to which they were realistic and dilemmatic. The participants were encouraged to comment on the initial scenarios and suggest ways that these could be improved. Based on their responses, the vignettes were reconstructed and another ten participants were asked to rate to what extent the revised scenarios were realistic and dilemmatic. After this two-stage pilot testing, three private-sphere and two public-sphere vignettes were selected as the main research materials. Through these vignettes, participants rated their willingness to engage in certain green and non-green behaviors on a 5-point-scale, which varied from 1 (*not willing at all*) to 5 (*very much willing*). The internal consistency of vignettes was .66 and the CFA for this 2-factor model provided acceptable fit:  $S-B\chi^2(5, N = 273) = 6.70, p > .05, CFI = 0.988, RMSEA = .037, (90\%-CI:.000-.101), SRMR = .042$ . The full set of vignettes was provided in Appendix E.

### **4.1.3 Plan of Analysis**

Preliminary analysis was conducted to yield descriptive statistics and bivariate correlations among the variables. Then, the main hypotheses were tested through structural equation model (SEM) in which the latent factors autonomous and controlling reasons, connectedness to nature, and perceived environmental threat served as predictors of private- and public-sphere self-reported behaviors and intentions. To assess the adequacy of the model fit, the standardized root-mean-square residual (SRMR), the root-mean-square error of approximation (RMSEA), and Comparison Fit Index (CFI) were used. According to Hu and Bentler (1999), acceptable values are those with CFI scores higher than .95, SRMR lower than .08, and RMSEA lower than .05, with its 95% confidence interval however not exceeding the value of .08.

## **4.2 Results**

### **4.2.1 Descriptive Statistics**

Descriptive statistics and bivariate correlations of the measured variables of the study are presented in Table 1. As expected, both private- and public-sphere behaviors, as assessed through the scales, and intentions, as assessed through vignettes, were positively associated with one another, and they were all positively linked to autonomous reasons, connectedness to nature, and perceived-environmental threat. Unlike autonomous reasons, controlling reasons did not co-vary with any variable, but public-sphere vignettes.

Regarding the demographic variables, no significant relation between residential areas and main variables was found. Additionally, females reported more autonomous reasons when

undertaking PEBs, stronger connections to nature, perceived higher degrees of an environmental threat, more PEBs, and green intentions than their male counterparts. Interestingly, older participants tended to have stronger connection with nature compared to the younger ones. No association was found between socioeconomic levels and any of the study variables.

#### **4.2.2 Primary Analyses**

Because preliminary analyses showed that private- and public- behaviors and vignettes were highly correlated to one another (Table 1), this thesis investigated their relations with motivational factors, connectedness to nature, and perceived environmental threat in four separate models. Aiming to address the potential problems in these models caused by multicollinearity, private-sphere PEBs, public-sphere PEBs, private-sphere vignettes, and public-sphere vignettes served as single dependent variables.

##### ***4.2.2.1 Private-and Public-sphere PEBs***

The hypothesized model where private-sphere behaviors were predicted by autonomous and controlling reasons, connectedness to nature, and perceived environmental threat showed acceptable fit:  $S-B\chi^2(126, N = 276) = 166.13, p = .010, CFI = .967, RMSEA = .036, (90\% - CI: .019-.050), SRMR = .051$ . In support of Hypothesis 1a and Hypothesis 1b, autonomous but not controlling reasons were positively linked to private-sphere behaviors ( $B = 1.56, SE = 0.70, z = 2.23, p = .026, \beta = .84$ ). Interestingly, connectedness to nature and perceived environmental threat did not emerge as predictors of private-sphere PEBs, despite their positive bivariate relations to it (see Table 1). These findings contradicted Hypothesis 2 and Hypothesis 3.



The similar hypothesized model with public-sphere behaviors provided good fit indices as well:  $S-B\chi^2 (126, N = 276) = 164.41, p = .012, CFI = .973, RMSEA = .035, (90\%-CI:.017-.049), SRMR = .050$ . In line with private-sphere behaviors model, public-sphere PEBs significantly co-varied only with autonomous reasons ( $B = 0.83, SE = 0.19, z = 4.47, p < .001, \beta = 0.59$ ) but not with controlling reasons, connectedness to nature, and perceived environmental threat.

#### ***4.2.2.2 Private-and Public-sphere Intentions***

Both hypothesized models in which private- and public-sphere intentions served as dependent variables provided adequate fit indices:  $S-B\chi^2 (110, N = 274) = 133.87, p > .05, CFI = .979, RMSEA = .029, (90\%-CI:.000-.045), SRMR = .047$  and  $S-B\chi^2 (96, N = 274) = 140.13, p < .01, CFI = .959, RMSEA = .043, (90\%-CI:.026-.057), SRMR = .052$ , respectively. Inspection of the role of motivational reasons, connectedness to nature and perceived environmental threat in predicting private-sphere intentions (as assessed through the vignettes) suggests that people having stronger autonomous reasons tended to opt to act more pro-environmentally in private-sphere ( $B = 0.58, SE = 0.18, z = 3.19, p = .001, \beta = .45$ ), and the same was true for connectedness to nature ( $B = 0.28, SE = 0.13, z = 2.08, p = .038, \beta = .22$ ). Similar to self-reported behaviors, their intentions were not predicted by controlling reasons or perceived environmental threat. In support of Hypothesis 1a and 3, public-sphere pro-environmental intentions were significantly predicted by autonomous reasons ( $B = 0.79, SE = 0.28, z = 2.78, p = .005, \beta = .58$ ) and perceived environmental threat ( $B = 0.31, SE = 0.15, z = 2.03, p = .043, \beta = .22$ , respectively). Conversely, both controlling reasons and connectedness to nature were not associated with public-sphere pro-environmental intentions.

Table 1

*Means, standard deviations, and correlations with confidence intervals in Study 1 (N = 375)*

Covariates	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Gender	0.32	0.47	-										
2. SES <sup>†</sup>	2.72	1.81	.03	-									
3. Residence <sup>††</sup>	0.11	0.31	-.03	-.04	-								
4. Age <sup>†††</sup>	22.35	2.38	-.03	.38**	-.04								
<b>Main variables</b>													
5. Autonomous reasons	3.85	0.71	-.27**	.09	.07	.09	-						
6. Controlling reasons	1.63	0.71	-.00	.11	.04	.10	-.05	-					
7. Con. to Nature	3.78	0.66	-.17**	.03	-.04	.14*	.34**	.00	-				
8. Perceived Env. Threat	4.42	0.59	-.28**	-.05	.05	.06	.17**	-.01	.26**	-			
9. Private PEBs	3.56	0.67	-.23**	.02	-.07	.04	.47**	-.04	.29**	.15*	-		
10. Public PEBs	2.86	0.87	-.31**	.05	.01	.03	.44**	.02	.37**	.21**	.51**	-	
11. Private Intentions	3.27	1.06	-.21**	-.02	-.03	.11	.34**	-.10	.34**	.20**	.50**	.44**	-
12. Public Intentions	4.61	1.11	-.19**	-.02	.03	-.01	.32**	-.13*	.22**	.24**	.31**	.42**	.38**

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . Gender, SES, and Residence were dummy coded (0 = females, 1 = males; 0 = lower than minimum wage, 1 = higher than minimum wage; 0 = urban, 1 = rural, respectively). The relation between Gender and main variables was based on 360 observations.

<sup>†</sup>Based on N = 329 observations; <sup>††</sup>Based on N = 373 observations; <sup>†††</sup>Based on N = 364 observations

### **4.3 Summary and Brief Discussion of Study 1**

In line with Hypothesis 1a, it was found that young adults who reported stronger autonomous reasons reported also more PEBs in both private and public realms, just as occurs in the previous studies (e.g., Green-Demers et al., 1997; Lavergne et al., 2010; Pelletier et al., 1998). As was expected, controlling reasons failed to predict pro-environmental self-reported behaviors, a finding which seems to favor the existing literature (e.g., Green-Demers et al., 1997; Lavergne et al., 2010; Pelletier et al., 1998). Interestingly, the differences in connectedness to nature and threat perception did not account for the variance in private- and public-sphere green practices. Even though these associations contradicted the results of earlier research yielded that people who feel connected to nature (e.g., Barbaro & Pickett, 2016; Martin, et al., 2020; Tam et al., 2013) and perceive a higher environmental threat (e.g., Lubell et al., 2007; Schmitt et al., 2018; Zhou et al., 2020) had increased propensity for engaging in green practices, some possible explanations for these non-significant relations could be outlined. First, previous research did not explore the autonomous and controlling reasons underlying green practices while investigating how connectedness to nature and perceived environmental threat were associated with PEBs. Hence, endorsing the value of displaying green practices or integrating the meaning of green actions into one's sense of self might play a more decisive role in engagement in PEBs compared to having stronger bonds with nature and higher threat perception. The second alternative explanation might be that the items used to assess autonomous reasons might also measure, to a certain extent, the level of connectedness to nature and perceived environmental threat. This might cause the significant relation that connectedness to nature and perceived environmental threat have with PEBs to disappear. In either case, these findings revealed a piece of primary evidence for the existence of a consistent association between autonomous reasons and self-reported PEBs as well as respective intentions under dilemmas. Unlike autonomous reasons, no similar systematic

relation could be found, not only for controlling reasons but also for connectedness to nature, and perceived environmental threat.

The current results concerning the relation between autonomous reasons and pro-environmental behavioral intentions measured through vignettes were in line with the previous research investigating the role of motivational reasons on PEBs (Green-Demers et al., 1997; Lavergne et al., 2010; Pelletier et al., 1998). As expected, individuals who reported stronger relations with nature were more likely to display PEBs in private spheres (but not in public areas), whereas the ones perceiving higher environmental threat tended to exhibit public-sphere PEBs but not private-sphere ones. One possible explanation for these mixed results is that both private- and public-sphere vignettes are built on specific environmentally friendly actions. For instance, although private-sphere vignettes assess the degrees to which individuals tend to limit their consumption, save energy, and buy organic food; public-sphere vignettes focus on the willingness to participate in a protest and a garbage collection event. Indeed, connectedness to nature was positively associated with intentions to reduce energy consumption (Sparks et al., 2014), green purchasing, and reusability (Dong et al., 2020). In a similar vein, individuals perceiving higher environmental threat intended to engage in environmental activism, which was operationalized through individuals' willingness to clean-up of a bay (Lubell, 2002) and to go to a political demonstration to support environmental conservation (Schmitt et al., 2019). Therefore, the limited range of behavioral intentions presented in vignettes might allow us to get inconsistent results in terms of the relation that connectedness to nature and perceived environmental threat have with such intentions.

Another possible explanation might be associated with the use of vignettes as complementary research materials. Different from responses given to the items, answers collected through

dilemmatic short texts in which individuals are asked to indicate their willingness to display either environmentally friendly or non-friendly actions might offer a more precise insight into the psychological mechanisms underlying green decisions. Notably, vignettes can provide the opportunity for researchers to examine the extent to which individuals differ in terms of their pro-environmental behavioral intentions, and also whether they behave similarly in dilemmatic situations targeting different types of green practices (Tarditi et al., 2020). Undoubtedly, further research that will validate these relations that pro-environmental behavioral intentions have with autonomous reasons, connectedness to nature, and perceived environmental threat in real-life situations is needed. Such research should focus on creating theoretically-solid vignettes that will examine the above-mentioned associations through reliable and valid green dilemmas.

An interesting question is whether these relations will continue to hold when they were examined on a more dynamic way – for example on a day-to-day or week-to-week basis. It is quite possible that people may provide a more inaccurate picture when they provide summary accounts of their past behaviors, thoughts, and emotions, that span for an extended period of time. In contrast, they could be more precise when they are asked similar questions that refer to the current day or the current week of their life. Will similar relations between autonomous and controlling reasons on the one hand and PEBs on the other emerge when we focus on week-to-week behaviors? Equally important, will such a relation remain the same across people who may feel loosely connected to nature or believe that the environment is not under considerable threat? To address this question and to replicate the findings from Study 1, a diary study was conducted to investigate the extent to which a week-to-week relation of autonomous reasons and PEBs would indeed relate positively and whether this pattern would

remain invariant among people who differ in connectedness to nature or perceived environmental threat.

## CHAPTER FIVE

### WEEK-TO-WEEK REASONS UNDERLYING PRIVATE- AND PUBLIC-SPHERE PRO-ENVIRONMENTAL BEHAVIORS: A DIARY STUDY

The main objective of Study 2 was to investigate week-to-week relations among autonomous reasons, controlling reasons, and private- and public-sphere PEBs, after controlling for the general levels of connectedness to nature and perceived environmental threat. In this six-week diary study, it was assessed whether week-to-week variability in autonomous and controlling reasons would predict a respective weekly variation in private- and public-sphere PEBs. Also, it was examined whether connectedness to nature and perceived environmental threat would predict between-person differences in the mean levels of such behaviors and would moderate the expected week-to-week relation of autonomous and controlling reasons to PEBs. In that way, the dynamic interplay of motivational factors, connectedness to nature, and perceived environmental threat to desirable pro-environmental actions was explored.

Considering the lack of previous studies examining the predictors of week-to-week variation in pro-environmental behaviors, Study 2 builds on the cross-sectional Study 1 in three ways.

First, by undertaking a more dynamic perspective to assess how autonomous and controlling reasons predict green actions. Second, by examining whether week-by-week mean levels of PEBs could be attributed to between-person differences in connectedness to nature and perceived environmental threat, as measured one week before the diary phase. Finally, by testing whether the initial levels of connectedness to nature and perceived environmental threat would moderate the week-to-week relations of autonomous and controlling reasons to private- and public-sphere PEBs.

Based on the findings of our cross-sectional research, the following hypotheses were tested (see Figure 2).

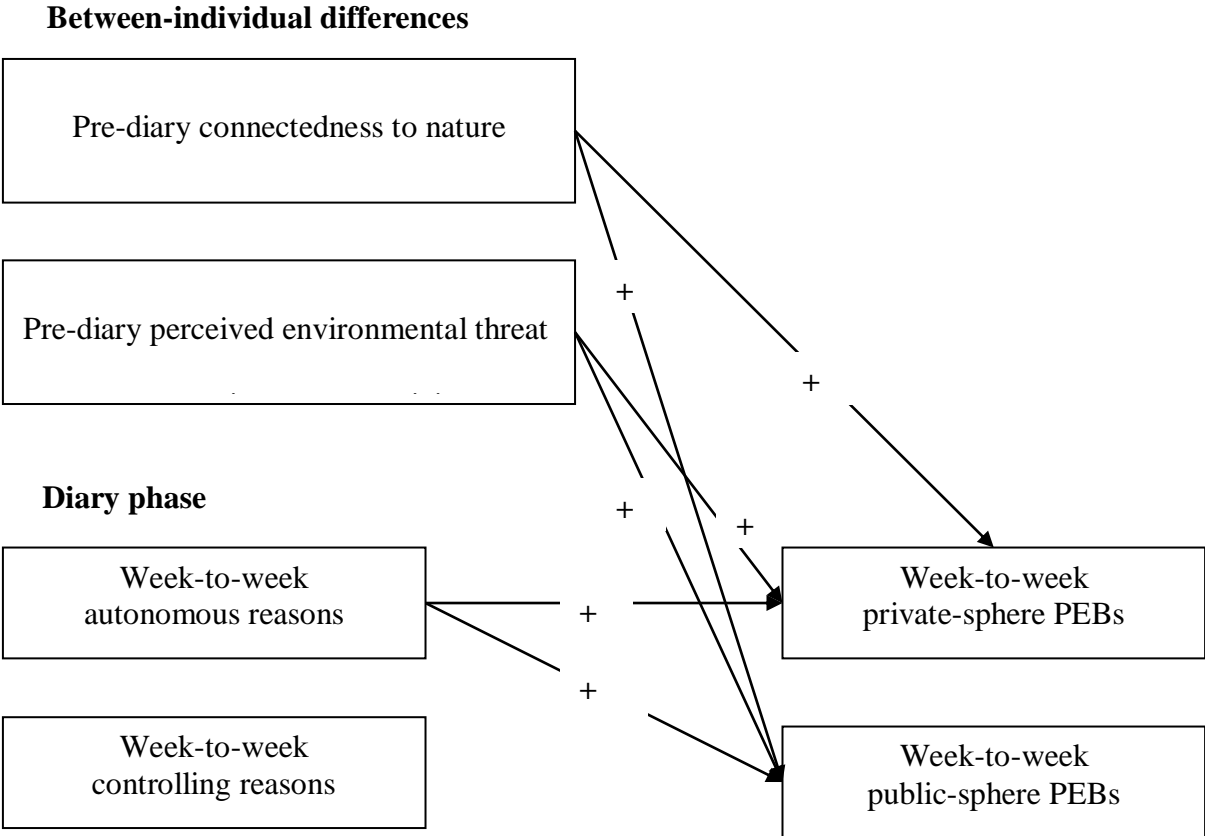


Figure 2: Week-to-week autonomous reasons and the general levels of connectedness to nature and perceived environmental threat predicting week-to-week fluctuations in PEBs in private and public realms.



**Hypothesis 1a.** People who reported stronger autonomous reasons on a weekly basis would report more green behaviors in private realms.

**Hypothesis 1b.** Week-to-week public-sphere PEBs would be predicted by week-to-week autonomous reasons.

**Hypothesis 2a.** No week-to-week relation would be found between controlling reasons and private-sphere PEBs.

**Hypothesis 2b.** On a weekly basis, public-sphere PEBs would not be predicted by controlling reasons.

**Hypothesis 3.** Connectedness to nature would positively predict the mean levels of both private-sphere and public-sphere PEBs.

**Hypothesis 4.** In general, individuals reporting higher levels of perceived environmental threat would be more likely to display PEBs in both spheres.

Finally, this study explored the extent to which the hypothesized week-to-week relations between autonomous reasons and PEBs would be stronger among people with higher levels of connectedness to nature (**Hypothesis 5**) and perceived environmental threat (**Hypothesis 6**).

## 5.1. Method

### 5.1.1 Participants

A total of one hundred sixty Turkish adults were recruited for this six-week diary study ( $M_{\text{age}} = 23.55$ ;  $SD = 7.17$  years; 69.38 % females; age range = 18-64 years). Among them,  $n = 9$  individuals provided wrong answers to the attention check question included in the pre-diary part, yet they were not excluded from the data set as the results were not affected. 105 participants filled out the first wave, 85 both the first and the second wave, 72 up to the third wave, 65 up to the fourth, 55 up to the fifth, and 42 participants all the six waves.

Eleven individuals (6.88 %) graduated from high school and 149 (93.13 %) of them from universities or above. The amounts of monthly income revealed that 92 of participants (57.5 %) were paid less and 49 of them (30.63 %) were received more than the minimum wage (as defined through the Republic of Turkey Ministry of Treasury and Finance); 19 individuals (11.88%) refused to share this information. Similar to Study 1, the great majority of participants were living in cities (89.38 %) instead of rural areas.

Before data collection, the ethical requirements of the host University Ethical Committee were fulfilled. Individuals were assured that participation in the study was voluntary, they could withdraw at any time, and their responses remained anonymous and confidential. All measures were presented in Turkish and distributed online via Qualtrics. The data collection process consisted of two phases: a pre-diary phase and a 6-week diary phase which started one week later. In the pre-diary phase, participants were kindly asked to fill out the informed consent and demographic forms and provide their responses for connectedness to nature and perceived environmental threat scales. In the diary phase, they received weekly questionnaire

packets including measures of private- and public-sphere PEBs, autonomous reasons and controlling reasons to display these behaviors.

### **5.1.2 Measures**

As in Study 1, all the instruments of Study 2 were adapted and translated and then back-translated by the same persons involved in Study 1. Unless otherwise indicated, a five-point Likert scale type (1 = *Strongly disagree* to 5 = *Strongly agree*) was used for all items.

#### ***5.1.2.1 Week-to-week Private-sphere and Public-Sphere PEBs***

The same eight items used in Study 1 were adjusted (Lu et al., 2017; Pederson, et al., 2018) to assess the frequency of individuals' private and public PEBs each week for six consecutive weeks. Each item was starting with the stem, last week, ..., and the responses were given on a 7-point Likert-type scale (1 = "Never" to 7 = "More than 5 times in a week"). The internal consistency of the four-item private-sphere subscale at the between-person level (i.e., after accounting for the nested structure of the data, given that each participant filled out the same survey multiple times) was acceptable ( $\alpha = .79$ ) and the same was true for the four-item public-sphere subscale ( $\alpha = .80$ ) (See Appendix F).

#### ***5.1.2.2 Week-to-week Autonomous and Controlling Reasons Underlying PEBs***

Five items from Michou et al. (2014) were used to examine autonomous and controlling reasons with respect to engaging in PEBs in private- and public realms on a weekly basis. After receiving the stem question "What were the reasons for displaying these behaviors during this week?", participants provided their responses for two items tapping into

autonomous reasons (e.g., “because I found it pleasant display this behavior/these behaviors even though it/they can challenge me in some cases”; (between-person  $\alpha = .79$ ) and three items associated with controlling reasons (e.g., “because others [e.g., parents, friends, teachers] pressured me to display this behavior/these behaviors”; between-person  $\alpha = .98$ ) (See Appendix G).

#### ***5.1.2.3 Pre-diary Connectedness to Nature***

Through six items taken from the Connectedness to Nature Scale (Mayer & Frantz, 2004), it was examined the extent to which individuals had emotional and experiential bonds with nature (e.g., “I feel as though I belong to the Earth as equally as it belongs to me”). The internal consistency of this scale was  $\alpha = .84$  (See Appendix C).

#### ***5.1.2.4 Pre-diary Perceived Environmental Threat***

Participants answered three items from the measure utilized by Schmitt et al. (2019). An example item reads, “Over-consumption is posing a serious risk to humankind and life on planet earth” and the internal consistency of this pre-diary measure was  $\alpha = .68$  (See Appendix D).

### **5.1.3 Plan of Analysis**

Because the data were hierarchically structured (i.e., repeated reports nested within persons), multilevel analyses were used to test the main hypotheses. To properly interpret the derived coefficients, within-person predictors (i.e., autonomous and controlling reasons) were group-mean centered and between-person ones (i.e., connectedness to nature and perceived environmental threat) were grand-mean centered. At the intrapersonal level, the slopes were

let to randomly vary from person-to-person to assess the variation of week-to-week fluctuations among studied variables and the possible cross-level interactions among them. Nevertheless, they were fixed in case they were non-significant to ease model convergence. All model equations were set up and calculated using R Studio.

The construction of this multilevel model was carried out in a stepwise fashion. In the first step, it was aimed to examine in a null model (i.e., without any predictor) the degree of variability in private- and public-sphere PEBs at within- and between-person levels. Next, the week-to-week predictors of autonomous and controlling reasons were entered to assess the extent to which these two variables predicted week-to-week variability in PEBs. Then, in Step 3, the interpersonal predictors of connectedness to nature and perceived environmental threat were included to examine the degree to which these two variables could explain interpersonal (i.e., mean-level) differences in PEBs. Finally, it was explored whether the two interpersonal predictors moderated the week-to-week relations of autonomous and controlling reasons to private- and public-sphere PEBs. This step-by-step approach enabled us to detect how much variance was partitioned into intrapersonal and interpersonal levels and then how much variance each set of predictors could explain first at the intrapersonal level and then at the interpersonal one.

## **5.2 Results**

### **5.2.1 Descriptive Statistics**

Little's MCAR test (1988) demonstrated that participants filled only the first week's survey versus the participants who responded to the daily questionnaires at least more than once did

not differ in term of interpersonal level (i.e., connectedness to nature and perceived environmental threat), intrapersonal level (i.e., autonomous reasons, controlling reasons, private-sphere PEBs, and public-sphere PEBs), and sociodemographic characteristics (i.e., gender, age, SES, and living place) ( $\chi^2(10) = 16.10, p = .096$ ). Nevertheless, post-hoc analyses indicated some differences in controlled motivation ( $F[1, 100] = 7.29, p = .008, \eta^2 = .07$ ) with the participants who filled out only the first week survey reporting, on average, higher levels of controlled motivation ( $M = 1.75, SD = 1.00$ ) than those who filled out subsequent surveys as well ( $M = 1.32, SD = 0.48$ ).

The means, standard deviations, and correlations between the diary variables at the within- and between-person level are presented in Table 2. Within-person correlations revealed that weekly autonomous reasons were positively related to weekly private- and public-sphere PEBs. The between-person differences in autonomous reasons displayed similar associations with green behaviors displayed in both private and public realms. At the intrapersonal level, week-to-week fluctuations in controlling reasons were positively associated with weekly PEBs in private and public spheres. However, at the interpersonal level, different from the weekly associations, controlling reasons were negatively related to the private-sphere PEBs but uncorrelated with public-sphere ones at the between-person level. Similar to the findings of Study 1, older participants were more likely to report stronger bonds with nature compared to the younger ones. Gender was negatively and significantly related to some of the study variables, for instance connectedness to nature and PEBs displayed in the private sphere. Also, socioeconomic status (SES) was negatively and significantly associated with perceived environmental threat and public-sphere PEBs; nevertheless, the demographic variables (e.g., gender, SES, and residential area) were not included in the final models as the main findings remained practically the same.

Table 2

*Means, standard deviations, and bivariate correlations of Study 2 at the between-person level (lower diagonal) and the within-person level (upper diagonal)*

Variables	<i>M</i>	<i>SD</i>	<i>ICC</i>	1	2	3	4	5	6	7	8	9	10
Between-person													
1. Gender	0.30	0.46	-	-									
2. SES	2.24	1.90	-	.16	-								
3. Residence	0.09	0.29	-	.00	-.21**	-							
4. Age	23.55	7.17	-	.13	.52**	.01	-						
5. Perceived environmental threat	4.42	0.59	-	-.15	-.17*	-.08	.04	-					
6. Connectedness to nature	3.76	0.66	-	-.18*	.09	.01	.28**	.40**	-				
Within-person													
7. Autonomous reasons	3.87	0.85	0.58	-.15	-.15	.14	.15	.27**	.21**	-	.07	.29**	.17**
8. Controlling reasons	1.33	0.52	0.54	.19	.08	.13	-.06	-.24**	-.13	-.29**	-	.11*	.16**
9. Private PEBs	3.46	1.34	0.70	-.20*	-.12	.05	.10	.35**	.27**	.59**	-.25**	-	.26**
10. Public PEBs	1.94	0.95	0.59	-.19	-.27**	.01	-.14	.35**	.36**	.52**	.12	.63**	-

*Note.* \*  $p < .05$ . \*\*  $p < .01$

## 5.2.2 Primary Analyses

### *5.2.2.1 Within-Person and Between-Person Variation in Autonomous Reasons, Controlling Reasons and PEBs Displayed in Both Spheres*

Intra class Correlation Coefficient (ICC) for the diary measures revealed considerable variability at the within-person level for the four diary measures. Specifically, the ICC for autonomous reasons was .58, suggesting that approximately 42% of its variability was due to week-to-week fluctuations of autonomous reasons. Accordingly, the ICC for controlling reasons was .54, and for PEBs in the private and public sphere was, respectively, .70 and .59. These values imply that approximately 30% of the variation in the private sphere and 41% of the variance in the public sphere was situated within individuals. These significant amounts of within-person variability highlighted the fluctuating nature of motivating reasons and PEBs and revealed the importance of taking a more dynamic week-to-week approach in addition to a between-person approach while investigating such phenomena.

### *5.2.2.2 Week-to-week Fluctuations in Private-sphere PEBs*

When week-to-week autonomous and controlling reasons were entered as predictors in Step 2 (see Table 3), it was found that, in support of Hypothesis 1a, autonomous reasons were positively related to week-to-week private-sphere PEBs ( $B = 0.37, SE = 0.07, p < .001$ ). In contrast, and as anticipated, controlling reasons failed to predict PEBs displayed in private realms ( $B = 0.18, SE = 0.11, p = .11$ ). The reasons explained approximately 2.7 % of the within-person variability of private-sphere PEBs. Further, when connectedness to nature and perceived ecological threat were entered as between-person predictors in Step 3, it was found that perceived threat positively predicted between-person differences in PEBs executed in



private areas. Unlike perceived environmental threat, connectedness to nature failed to emerge as a statistically significant predictor. Taken together, these findings were in line with Hypothesis 3, yet did not confirm Hypothesis 4.

Through the cross-level interactions, it was investigated whether connectedness to nature and perceived environmental threat moderated the week-to-week relations of autonomous and controlling reasons to PEBs exhibited in private realms. Intriguingly, the findings revealed that connectedness to nature (but not perceived environmental threat) strengthened the week-to-week relation between controlling reasons and such behaviors ( $B = 0.54, SE = 0.27, p = .045$ ). In particular, a test of simple slopes revealed that the week-to-week relation between controlled motivation and private PEB was positive when connectedness to nature was relatively high (i.e., 1 *SD* above the mean) ( $B = 0.44, SE = 0.17, t = 2.52, p = .012$ ). Instead, it was non-significant when connectedness to nature was either low (i.e., 1 *SD* below the mean), or moderate (respectively,  $B = -0.26, SE = 0.25, t = -1.05, p = .29$ ;  $B = 0.09, SE = 0.13, t = 0.69, p = .49$ )

### ***5.2.2.3 Week-to-week Fluctuations in Public-sphere PEBs***

After defining week-to-week autonomous and controlling reasons as predictors in Step 2 (see Table 3), as hypothesized, it was found that the week-to-week autonomous reasons positively predicted public-sphere PEBs ( $B = 0.17, SE = 0.06, p = .004$ ). Interestingly, controlling reasons were also significantly associated with such behaviors ( $B = 0.25, SE = 0.09, p = .009$ ). About 1.6 % of the within-person variability of public-sphere PEBs was attributed to the changes in autonomous and controlling reasons. Moreover, in Step 3, connectedness and perceived threat were added as between-person predictors in our model. The results provided

support for Hypothesis 3 and Hypothesis 4: Connectedness to nature and perceived threat positively predicted between-person differences in public-sphere PEBs.

Whether connectedness to nature and perceived environmental threat moderated the week-to-week relations of public-sphere PEBs to autonomous and controlling reasons was assessed through cross-level interactions. Neither connectedness to nature nor perceived environmental threat moderated the week-to-week relations of autonomous or controlled motivation and public PEB.

Table 3

*Week-to-week private- and public-sphere PEBs in Study 2*

Fixed coefficients		Private-sphere behaviors						Public-sphere behaviors					
		Step 1		Step 2		Step 3		Step 1		Step 2		Step 3	
		<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>
Intercept $\gamma_{000}$		3.47	(0.12)	3.44	(0.12)	3.45	(0.11)	1.99	(0.08)	1.98	(0.08)	1.98	(0.08)
<i>Within-person predictors</i>													
Autonomous reasons	$\gamma_{10}$			0.37**	(0.07)	0.40**	(0.07)	-	-	0.17**	(0.06)	0.19**	(0.06)
Controlling reasons	$\gamma_{20}$			0.18	(0.11)	0.09	(0.13)	-	-	0.25**	(0.09)	0.18	(0.11)
<i>Between-person predictors</i>													
Connectedness	$\gamma_{01}$					0.29	(0.18)	-	-	-	-	0.39**	(0.12)
Perceived threat	$\gamma_{02}$					0.60**	(0.21)	-	-	-	-	0.32*	(0.14)
<i>Cross-level interactions</i>													
Autonomous X Connectedness,	$\gamma_{11}$					0.11	(0.13)	-	-	-	-	0.02	(0.11)
Autonomous X Threat	$\gamma_{12}$					0.18	(0.13)	-	-	-	-	0.10	(0.11)
Controlling X Connectedness	$\gamma_{21}$					0.54*	(0.27)	-	-	-	-	0.41	(0.22)
Controlling X Threat,	$\gamma_{22}$					0.26	(0.21)	-	-	-	-	0.20	(0.18)
Random slopes		Variance components						Variance components					
Intercept $u_{0j}$		1.17**		1.17**		1.09**		0.79**		0.78**		0.69**	
Autonomous reasons	$r_{1j}$	-		-		-		-		-		-	
Controlling reasons	$r_{2j}$	-		-		-		-		-		-	
Level 1 residuals	$e_{ij}$	0.73		0.71		0.71		0.61		0.60		0.60	

*Note.* \* indicates  $p < .05$ . \*\* indicates  $p < .01$ .

### **5.3 Summary and Brief Discussion of Study 2**

The results from Study 2 partially replicated and supported those revealed in Study 1. In line with the findings of Study 1 and also previous research (e.g., Osbaldiston & Sheldon, 2003; Vansteenkiste et al., 2004), weekly variation in autonomous reasons (but not in controlling reasons) related positively to weekly variation in private- and public-sphere PEBs. As expected, week-to-week fluctuations of controlling reasons were unrelated to the respective fluctuation of green behaviors displayed in both realms. Providing partial support for the studies emphasizing that individuals having stronger bonds with nature tended to engage in environmentally friendly practices (e.g., Barbaro & Pickett, 2016; Martin, et al., 2020; Tam et al., 2013), this study also revealed that between-person differences in connectedness to nature positively predicted mean levels of public-sphere PEBs but not private ones. Nevertheless, different from Study 1 but supporting the existing findings (e.g., Lubell et al., 2007; Schmitt et al., 2018; Zhou et al., 2020), between-person differences in perceived environmental threat positively predicted mean levels of PEBs displayed both in private and public spheres. It seems that regardless of the week-to-week fluctuations in PEBs, people who felt that the environment was under siege tended to report more PEB than people who did not hold such beliefs.

Beyond, further analyses of cross-level interactions indicated that the week-to-week relation between controlling reasons and private-sphere PEBs (but not public-sphere ones) was positive for individuals who were higher in connectedness to nature. The theoretical question of why feeling connected to nature rendered the null relation between controlling reasons and private-sphere PEBs to positive one when connectedness to nature was relatively high has not been addressed in both motivation and environmental psychology literature. A possible explanation for this unexpected finding might reside in the feeling of guilt. In line with Mayer

and Frantz's approach (2004), practices facilitating environmental degradation can be perceived as self-harming behaviors for individuals having stronger bonds with nature. Displaying non-green actions, and thus self-harming behaviors, can trigger the feeling of guilt as one blames herself for the consequences of these environmentally harmful practices (Lindqvist & Hallberg, 2010). Related to taking responsibility for one's own actions, this feeling can be strongly associated with moral values highlighting what should and should not be done (Lindqvist & Hallberg, 2010). In that regard, doing what one morally ought to do, such as engaging in environmentally friendly actions, can help people who feel connected to nature prevent this negative emotion. This emphasis on avoiding the feeling of guilt can be considered in line with having controlling reasons for displaying PEBs because when individuals who feel strong connection to nature behave environmentally friendly for controlling reasons, one of their aims is to avoid the feeling of guilt or shame. To illustrate, one can purchase food in sustainable packaging as she does not want to feel guilty while sharing it with her environmental partner. Hence, the overlapping psychological mechanism of dealing with guilt might strongly link the controlling reasons to private-sphere PEBs, especially for people having a stronger bond with nature.

## CHAPTER SIX

### SUMMARY AND GENERAL DISCUSSION:

#### WHAT DO THE OUTCOMES OF THESE TWO STUDIES SHOW US?

This thesis investigated the extent to which autonomous and controlling reasons pertain to PEBs exhibited in private and public realms after controlling for connectedness to nature and perceived environmental threat. The conceptual and empirical separation of underlying reasons and the realms where PEBs are displayed enables us to explore whether different reasons underlying environmentally friendly practices could reliably predict such behaviors and intentions. By relying on SDT (Deci & Ryan, 2000; Vansteenkiste, et al., 2010), which highlights the importance of reasons underlying behaviors, this thesis considered both autonomous (i.e., volitional) and controlling (i.e. coercive) reasons for engaging in green actions in both private and public spheres. As the names imply, private-sphere PEBs include the acts that are exhibited in private realms (e.g., purchasing green products and services, reducing energy consumption, etc.) whereas public-sphere PEBs are composed of practices (e.g., participating in an environmental protest, being a member of an environmental group, etc.) that individuals display in public areas (e.g., Liobikienė & Poškus, 2019; Lu et al., 2017; Mi et al., 2020). Looking at these two distinct realms of human behavior could give us a more nuanced view of how motives may predict certain behaviors but not others. This is because a

person may act more pro-environmentally at the individual level – for example by recycling their waste or buying more green products – but remain indifferent to environmental issues that require social action. Hence, this thesis considered the possible differences between these two types of green practices in relation to underlying motivations.

In line with the premises of SDT, it was found that autonomous but not controlling reasons were positively related to both private-sphere and public-sphere environmentally friendly intentions and behaviors. To illustrate, when people personally valued green actions and found them pleasant even if they could be challenging, their likelihood to engage in such behaviors significantly increased. On the contrary, individuals did not tend to exhibit environmentally friendly behaviors in cases in which they felt pressured to do so by their friends, parents, or teachers. Therefore, the main hypotheses about the role of autonomous reasons (but not controlling reasons) for the engagement in PEBs were supported to large extent. This pattern was found through two different research designs, a cross-sectional study (Study 1) and a diary one (Study 2). Albeit the ample evidence revealed that PEBs were positively linked with autonomous reasons, connectedness to nature, and perceived environmental threat, the present results extend previous findings as they demonstrate that the positive association between autonomous reasons and PEBs displayed in private and public spheres still holds in instances, even when connectedness to nature and perceived environmental threat are statistically controlled. This is an intriguing conclusion because it points out the importance of autonomous reasons for environmentally friendly practices even if individuals do or do not have a stronger connection with nature or perceive a higher or lower degree of threat. It also implies that individuals' engagement in PEBs in different spheres may not be solely explained by the bonds that they develop with the nature or the threats they believe that environmental problems pose in life.

In Study 1, both connectedness to nature and perceived environmental threat did not appear to be associated with PEBs occurring in private and public realms when the motivational reasons were taken into account. Hence, the hypotheses that having a stronger bond with nature and perceiving higher degrees of environmental threat would relate positively to private- and public-sphere PEBs were disconfirmed. Yet, the lack of relation between connectedness to nature and perceived environmental threat on the one hand and PEB on the other, once autonomous reasons are taken into account, might be noteworthy for two reasons. First, it seems that autonomous reasons have a more independent association with PEBs above and beyond these two factors. Even though abundant evidence in the literature highlighted the positive association that PEBs have with both connectedness to nature (e.g., Mackay & Schmitt, 2019; Martin, et al., 2020) and perceived environmental threat (e.g., Lubell et al., 2007; Schmitt et al., 2018), such pattern did not hold when autonomous and controlling reasons were added in the tested model. It appears that connection with nature and threat perception associated with environmental issues can lose their key roles on PEBs when individuals are asked to express why they display such behaviors. However, as far as I know, no study to date has investigated whether these two factors are related to PEBs when reasons underlying such behaviors are also assessed.

Second, some conceptual overlaps between autonomous reasons and the two covariates in Study 1 might weaken the relations that PEBs had with connectedness to nature and perceived environmental threat. More specifically, one of the two items measured autonomous reasons is "...because I personally valued to display this behavior/these behaviors" (See Appendix B), which seems to communicate with the Value-Belief-Norm model of PEBs (Liobikienė & Poškus, 2019). According to this model, values had a significant influence on environmental worldviews, which in turn affect awareness of the likely impact that one can have on the



natural environment. It appears that ecological worldviews (as assessed through some items such as “The so-called ‘ecological crisis’ facing humankind is real”) and awareness of behavioral consequences (as assessed through some items such as “My existence and behavior are connected with nature”) can encompass the sense of feeling connected to nature and also the threat perception regarding environmental issues. Therefore, the conceptualization of autonomous reasons underlying PEBs through personal values -and thus, through environmental worldviews and awareness of behavioral outcomes- might not significantly differ from that of connectedness to nature and environmental threat perception. Besides, Liobikienė and Poškus’ (2019) finding that such behaviors are positively predicted by environmental worldviews and awareness of environmental problems can be perceived in line with our emphasis on the positive relation between autonomous reasons and PEBs. Clearly, the question of how PEBs are associated with connectedness to nature, perceived environmental threat, and autonomous reasons requires a more detailed elaboration after further conceptualization of these three factors associated with such behaviors.

Building on the cross-sectional Study 1, the diary design in Study 2 allowed us to explore the extent to which PEBs displayed in private and public realms fluctuated from week to week and whether they covaried with the week-to-week variability in autonomous and controlling reasons. This design enabled us taking a more dynamic approach to examine the interplay between motivational reasons and PEBs, thereby capturing the essence of everyday life. The a priori hypotheses that week-to-week variability in private-sphere PEBs would relate positively to the weekly fluctuations in autonomous but not controlling reasons were fully supported. Contrary to my expectations, not only the week-to-week differences in autonomous reasons but also in controlling reasons predicted the fluctuations in public-sphere PEBs on a weekly basis. Although it is unclear why controlling reasons yielded a significant

relation with public-sphere PEBs at the within-person level, perhaps providing weekly responses on such behaviors gives people the opportunity to think about the appropriateness of pinpointing one's environmentally destructive behavior or participating in environmental campaigns. Perceiving such behaviors as normative practices, individuals might exhibit them on a weekly basis simply because they believe that one "should" engage in such "proper" practices in public areas (Lindenberg & Steg, 2007). Stated differently, individuals can become sensitive to what others think about public-sphere PEBs, and whether others exhibit such behaviors and then, become motivated to act in similar ways (Lindenberg & Steg, 2007). This emphasis on contemplating others' ideas and observing their practices can be considered in line with controlling reasons underlying PEBs such as having a sense of being pressured or feeling that one's behavior is guided by others (Vansteenkiste et al., 2006; Vansteenkiste et al., 2010). Therefore, individuals having controlling reasons might engage in public-sphere PEBs more frequently because they perceive such practices as normative. Yet, controlling reasons no longer predicted both private- and public-sphere PEBs after controlling for individual differences in connectedness to nature and perceived environmental threat. Perhaps, other people's thoughts and practices may lose their significance when one focuses on her personal connection with nature and threat perception related to environmental problems. Albeit this elucidation requires further investigation as the question of when and to what extent PEBs are considered normative lies beyond the scope of this master project, multilevel analyses unveiled an interesting story about the relation between motivational reasons and PEBs, which could not be shown by the other ordinary statistical methods.

Additionally, Study 2 demonstrated that almost half of the variance situated in autonomous and controlling reasons came from intra-individual differences. In that regard, the differences in motivational reasons are attributed both to the differences between individuals and, more

interestingly, to the fluctuations within individuals themselves. To illustrate, in one week, one can participate in seminars as she feels challenged while acquiring new knowledge. Yet, next week, she might skip listening to the environmental talks since she suffers from work fatigue. Given that individuals experience often non-linear changes in motivation from one week to the next one, this further highlights the importance of additional research on the factors that constantly change, and which can influence autonomous and controlling reasons underlying PEBs, such as the feeling of exhaustion (Roth et al., 2007).

Beyond, multilevel analyses allowed testing whether between-person differences in PEBs exhibited in private and public realms were predicted by connectedness to nature and perceived environmental threat. This is a noteworthy issue as it can help researchers investigate whether one's sense of feeling connected to nature in general and overall threat perception predict PEBs occurring in different spheres. Consistent with the formulated hypothesis and previous research on the positive association between threat perception related to environmental problems and ecological actions, the present findings indicate that individuals perceiving higher threat tend to exhibit PEBs in both realms. Nevertheless, the hypothesis that connectedness to nature would positively predict PEBs exhibited in private and public spheres was partially supported. Inter-individual variation in connectedness to nature was related only to between-person fluctuations in public-sphere PEBs but not in private ones. One of the explanations might reside in the conceptual similarities that connectedness to nature had with social connectedness (Schultz, 2002) as both can satisfy one of the psychological basic needs of humans: the sense of relatedness (Cleary et al., 2017). Within SDT, the sub-theory of Basic Psychological Needs Theory claims that individuals' psychological wellbeing and sense of integrity could be enhanced through the satisfaction of three innate needs: autonomy, competence, and relatedness (Ryan & Deci, 2000). The need

for relatedness refers to the experience of belongingness and connectedness with other individuals (Ryan & Deci, 2000). Although feeling connected to nature and other individuals might have some unique characteristics, Zelenski and Nisbet (2014) used the “Nature Relatedness Scale” to assess connectedness to nature and their findings revealed that individuals having a strong sense of relatedness to nature reported higher levels of happiness compared to those having weaker connections, even after controlling for other types of connections (e.g., family, friends, cultures, etc.). This result might be used as evidence to show that connectedness to nature could be seen as a unique form of relatedness, and thus, feeling connected to nature might facilitate the satisfaction of relatedness need (Cleary et al., 2017). In a similar vein, participating in environmental demonstrations, supporting environmental campaigns, and convincing significant others to act environmentally friendly might help individuals fulfill their relatedness needs as these activities offer them the opportunity to contact other environmental activists and volunteers or to spend more time with their families and friends. In that regard, the satisfaction of relatedness need might strengthen the relation that connectedness to nature has with public-sphere PEBs, specifically. Obviously, a more in-depth examination is needed to explore how supporting basic needs influences the relation between connectedness to nature and PEBs displayed in both realms.

The final goal was to explore whether connectedness to nature and perceived environmental threat influenced week-to-week relations between motivational reasons and PEBs occurred in public and private spheres. The data revealed that only connectedness to nature moderated the weekly association between controlling reasons and private-sphere PEBs (but not public-sphere ones). In particular, it was found that week-to-week controlling reasons predicted private PEB among participants who scored high in connectedness to nature, though this relation was marginally significant. To the best of my knowledge, no previous study has

investigated the moderating role of connectedness to nature and perceived environmental threat in the week-to-week relation of motivational reasons to environmentally friendly practices through a diary study. Even though this association can be explained by the aim to avoid feeling guilty after engaging in non-green, and thus self-harming behaviors (Lindqvist & Hallberg, 2010), the present findings warrant further investigation. Moreover, researchers investigating cross-level interactions usually face some challenges because of the scarcity of theoretical framework for hypotheses generating and testing in multilevel modeling (Milfont & Markowitz, 2016). Undoubtedly, the development of cross-level theories in the area of PEBs can enable researchers to capture and disentangle the complexity of such practices.

Concerning gender differences, females reported higher levels of connectedness to nature and private-sphere PEBs than males in both studies; yet, they also tend to have more autonomous reasons, perceive higher degrees of threat, green intentions, and engage in more public-sphere PEBs than their male counterparts as demonstrated in Study 1. Prior large-scale investigations conducted in different fields have revealed that women were more likely to exhibit PEBs than males (e.g., Hunter et al., 2004; Zelezny et al., 2000); however, underlying psychological mechanisms that might create and expand this gender gap received little attention. Besides, among 30 countries, Turkey was found as the only place in which males tended to make more sustainable purchasing decisions than females (Dizialo, 2017). These contradictory results regarding the gender differences in green practices and Turkey's interesting position among different countries might appear fruitful in better understanding the reasons behind engaging in PEBs.

## **6.1 Limitations and Further Directions**

The findings should be evaluated within the context of some limitations. Although the results yielded acceptable fit indices in Study 1, the data was correlational. It is likely that executing environmentally friendly behaviors at higher levels might also increase one's connection to nature or strengthen threat perception. Thus, while taking the results of Study 1 into consideration, caution should be taken to infer causal links between PEBs and their determinants. Furthermore, I also prepared my own vignettes to measure private- and public-sphere pro-environmental intentions in Study 1. Despite the fact that the reliability scores of the scales were adequate, further studies are needed to develop a reliable and valid measure of vignette-based scales in order to assess the extent to which people would be willing to spend additional effort or time to execute PEBs in their everyday lives. The development of new assessment tools and their applications can enable us to identify and understand the factors that influence green intentions.

It is also important to remember that the data for both studies was collected through self-reports and thus, individuals might provide socially desirable responses (e.g., behaving environmentally friendly) instead of giving answers that reflected their genuine ideas and feelings. Also, due to the COVID-related restrictions, participants filled out online questionnaires perhaps under non-optimal conditions, which might influence their answers. Hence, controlled experimental studies can offer researchers the opportunity to analyze more thoroughly the degree to which motives do influence PEB.

Despite my endeavor to include participants from different backgrounds, the vast majority of both samples was composed of university students living in cities. This shared characteristic among participants might jeopardize the generalizability of the research findings to a larger

population. Given that individuals' environmentally friendly practices significantly varied based on their socio-demographic profiles (Lavelle et al., 2015), collecting data from representative samples can allow researchers to ensure the external validity of future results, which has critical value in designing environmental campaigns and contributing to the development of environmental policies and regulations, especially. Besides, individuals tend to provide responses that significantly overlap with the standards and values of their cultural groups (Heine et al. 2002). In our case, they might attribute different meanings to the items due to their culture or their cultural knowledge about environmental issues, which could vary significantly. In that regard, cross-cultural analysis can yield a more comprehensive picture of the determinants of PEBs than what currently exists.

Another limitation might be associated with the way that public-sphere PEB items were framed. Even though they highlight the practices specifically occurring in public realms such as participating in ecological protests or supporting an environmental campaign, one might question the content and messages embraced within these events. For instance, while reading the public-sphere PEB items, one might remember the campaign for organic food that she signed or the march for the global recycling day that she joined, both of which are related to private-sphere PEBs as well. As the public-sphere PEB items do not include any detail about the content or messages of campaigns and protests, it is possible that the conceptual differentiation between PEBs exhibited in private and public realms might get blurred. Therefore, public-sphere PEB items capturing more detail can generate greater empirical insight while allowing researchers to systematically categorize different types of PEBs.

## 6.2 Conclusion

All in all, this thesis reveals that individuals having autonomous reasons (but not controlling reasons) tend to display more private- and public-sphere PEBs and have stronger intentions to engage in such behaviors after controlling for their connectedness to nature and threat perception levels. Likewise, the week-to-week variability in autonomous reasons has predictive power to explain the weekly fluctuations in PEBs occurring in both private and public realms. Also, perceived environmental threat predicted inter-person differences in both private- and public-sphere PEBs. Although feeling connected to nature in general predicted between-person differences in private-sphere PEBs, the same pattern of results was not confirmed for public-sphere ones. Concurrently, diary design research that investigated weekly changes in motivational reasons and PEBs drew a slightly different picture from the one yielded by the first study having cross-sectional design. Based on the findings presented here, PEBs exhibited in private and public realms might be efficiently facilitated using messages and slogans by addressing actions posing threat to the ecosystem, whereas for promoting public-sphere PEBs, elements fostering connectedness to nature could be used as well. Unique relations that private- and public-sphere PEBs have with some crucial determinants could be perceived as evidence that such behaviors might fundamentally differ. Future research might attempt to replicate these findings and further explore the characteristics of environmentally friendly practices occurring in private and public realms. Their results help scholars develop unique campaigns and messages targeting specifically the promotion of private and public sphere environmentally friendly acts.

To mitigate climate crisis and other environmental problems, the need for adopting policies that enable individuals to approach sustainable behavior as challenging, enjoyable, and



reviving practices seem critical. Although the results of this thesis point out the importance of motivational reasons underlying PEBs and threat perception, they also reveal the possibility to adopt such policies for some permanent lifestyle changes, which are necessary for a successful transition to sustainable societies. In the long run, it might be also speculated that attempts to encourage autonomous reasons underlying PEBs might foster the establishment of a well-developed intervention programs and strategies that can help future generations face upcoming environmental threats and tackle them. Undoubtedly, future research will explore the potential long-term impact of having autonomous reasons to engage in PEBs and higher levels of threat perception on individuals' behavioral patterns. This accumulated insight of PEBs might grab not only the attention of academics but also enable them to engage and communicate with policymakers for green transformation.

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## APPENDICES

### APPENDIX A: PRIVATE- AND PUBLIC-SPHERE PEBS SCALE

	Very untrue of me	Untrue of me	Neutral	True of me	Very true of me
1. I separate my waste (e.g. plastic, glass, cartoon, etc.) and throw it into the proper recycling bins. (private sphere)	1	2	3	4	5
2. I reuse recyclable materials (e.g., papers/plastic packaging). (private sphere)	1	2	3	4	5
3. I purchase green products and services. (private sphere)	1	2	3	4	5
4. I am an active energy conserver who looks for opportunities to save energy in everything I do. (private sphere)	1	2	3	4	5
5. I participate in campaigns that promote environmental protection and sustainable living (e.g. signing or writing a petition, etc.). (public sphere)	1	2	3	4	5
6. I participate in protests and demonstrations for environmental protection and sustainable living. (public sphere)	1	2	3	4	5
7. I make suggestions about environmental protection and sustainable living for people around me (e.g. family members, friends, instructors, etc.). (public-sphere)	1	2	3	4	5
8. I am a member of a group/ several groups that aim(s) to protect the environment and build sustainable living. (public sphere)	1	2	3	4	5

#### *In Turkish*

	Beni hiç yansıtmıyor.	Beni yansıtmıyor.	Beni ne yansıtır ne yansıtmıyor.	Beni yansıtıyor.	Beni çok yansıtır.
1.Çöplerimi ayrıştırıp (örneğin: cam, kağıt, plastik, vb.) ilgili geri dönüşüm kutularına atıyorum.	1	2	3	4	5
2.Geri dönüştürülebilir materyalleri yeniden kullanıyorum (örneğin: plastik ve karton poşetleri tekrar tekrar kullanmak).	1	2	3	4	5
3.Çevreci ürünler ve hizmetler satın alıyorum.	1	2	3	4	5
4.Yaptığım her şeyde enerji tasarrufu için fırsatlar arayan aktif bir enerji koruyucusuyum.	1	2	3	4	5
5. Çevreyi korumaya ve sürdürülebilir yaşama yönelik başlatılan kampanyalara katılıyorum (örneğin: imzavermek, dilekçe yazmak).	1	2	3	4	5
6. Çevreyi korumaya ve sürdürülebilir yaşama yönelik eylemler ve protestolara katılıyorum.	1	2	3	4	5
7. Çevreyi korumaya ve sürdürülebilir yaşama yönelik çevremdeki insanlara (örneğin: arkadaşlar, aile bireyleri, öğretmenler, vb.) önerilerde/tavsiyelerde bulunuyorum.	1	2	3	4	5
8. Çevreyi korumaya ve sürdürülebilir yaşama inşa etme amacı güden gruba/gruplara üyeyim.	1	2	3	4	5

APPENDIX B: AUTONOMOUS AND CONTROLLING REASONS

Why did you endorse those behaviors?	Strongly disagree	Disagree	Neiter agree nor disagree	Agree	Strongly agree
1. ... because others (e.g., parents, friends, teachers) pressured me to display this behavior/these behaviors. (controlling)	1	2	3	4	5
2. ... because I found it pleasant display this behavior/these behaviors even though it/they can challenge me in some cases. (autonomous)	1	2	3	4	5
3. ... because others (e.g., parents, friends, teachers) would only reward me if I displayed this behavior/these behaviors. (controlling)	1	2	3	4	5
4. ... because others (e.g., parents, friends, teachers) would otherwise get mad at me. (controlling)	1	2	3	4	5
5. ... because I personally valued to display this behavior/these behaviors. (autonomous)	1	2	3	4	5

*In Turkish*

Sizce bu davranışları sergileme sebepleriniz neler?	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne atılmıyorum	Katılıyorum	Kesinlikle katılıyorum
1. ... Çünkü çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) bu davranışı/davranışları sergilemem konusunda bana baskı yapıyorlar.	1	2	3	4	5
2. ... Çünkü bu davranışı/davranışları sergilemenin –bazı durumlarda beni zorlamasına rağmen- keyifli olduğunu düşünüyorum.	1	2	3	4	5
3. ... Çünkü bu davranışı/davranışları sergilersem çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) beni ödüllendirecek.	1	2	3	4	5
4. ... Çünkü bu davranışı/davranışları sergilemezsem çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) bana sinirlenecek.	1	2	3	4	5
5. ... Çünkü kişisel olarak bu davranışa/davranışlara değer veriyorum.	1	2	3	4	5

APPENDIX C: CONNECTEDNESS TO NATURE

	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. I often feel disconnected from nature. [R]	1	2	3	4	5
2. Like a tree can be part of a forest, I feel embedded within the broader natural world.	1	2	3	4	5
3. I think of the natural world as a community to which I belong.	1	2	3	4	5
4. When I think of my life, I imagine myself to be a part of a larger cyclical process of living.	1	2	3	4	5
5. I feel as though I belong to the Earth as equally as it belongs to me.	1	2	3	4	5
6. I often feel a part of the web of life.	1	2	3	4	5

*In Turkish*

	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Genellikle kendimi doğadan kopuk hissediyorum.	1	2	3	4	5
2. Tıpkı bir ağacın bir ormanın parçası olması gibi, ben de kendimi daha büyük bir doğal hayatın parçası olarak hissediyorum.	1	2	3	4	5
3. Doğayı, parçası olduğum bir topluluk olarak düşünüyorum.	1	2	3	4	5
4. Hayatımı düşündüğümde kendimi, daha büyük bir döngüsel yaşam sürecinin parçası olarak görüyorum.	1	2	3	4	5
5. Dünya bana ait olduğu kadar ben de dünyaya aitim.	1	2	3	4	5
6. Sık sık, hayat ağının bir parçası olduğumu hissediyorum.	1	2	3	4	5

APPENDIX D: PERCEIVED ENVIRONMENTAL THREAT

	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. If humans don't dramatically change their relationship to the earth, the damage done will be beyond repair.	1	2	3	4	5
2. Over-consumption is posing a serious risk to humankind and life on planet earth.	1	2	3	4	5
3. Life, as we know, is under imminent threat due to environmental problems.	1	2	3	4	5

*In Turkish*

	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne katılmıyorum	Katılıyorum	Kesinlikle katılıyorum
1. İnsanlar dünya ile olan ilişkilerini önemli ölçüde deęiřtirmezse verilen hasar onarılamayacak kadar büyük olacaktır.	1	2	3	4	5
2. Ařırı tüketim, insanlık ve dünya üzerindeki yařam için ciddi bir risk oluřturmaktadır.	1	2	3	4	5
3. Bildiđimiz gibi yařam, çevresel sorunlardan dolayı yakın bir tehdit altında.	1	2	3	4	5



## APPENDIX E: PRIVATE- AND PUBLIC-SPHERE VIGNETTES

### A) Private-sphere vignettes

1) There is very little time left to start the lesson, and it is forbidden to enter the class with food/beverage waste. There is a dustbin in front of the classroom where you can throw the paper cup in your hand. It is possible to throw your paper cup in this dustbin and enter the class. But there are recycling bins on the upper floor. If you want to throw your paper cup into the recycling bins, you will be 1-2 minutes late to the class even if you run. To what extent would you be willing to throw your paper cup in the dustbin in front of the classroom? (R)

- a) Not willing at all
- b) Very slightly willing
- c) Moderately willing
- d) Quite willing
- e) Very much willing

2) You came to a restaurant where you often eat, but you saw that it was full due to a birthday event. Since the weather was cold, the service staff said they could turn on the outside heaters and host you in the garden. The heaters used by the space are central, and thus, all the heaters will be turned on even though you will be the only one outside. But there are other restaurants within a 15-20 minute walk that you haven't tried before. To what extent would you be willing to ask for the heaters to be turned on? (R)

- a) Not willing at all
- b) Very slightly willing
- c) Moderately willing
- d) Quite willing
- e) Very much willing

3) Today is a public day at a supermarket chain, and fresh fruits and vegetables come. To go to this supermarket, you have to take a 5-minute walk. Even though you have recently read some articles on the damage caused by pesticides to nature, the organic bazaar, which is also set today, is a 15-20 minute walk from where you live. As there is no public transport to this organic bazaar, you have to take this 15-20 minute walk. Besides, there is no price difference between the products in the supermarket and organic bazaar. To what extent would you be willing to shop from the supermarket? (R)

- a) Not willing at all
- b) Very slightly willing
- c) Moderately willing
- d) Quite willing
- e) Very much willing

### B) Public-sphere vignettes

1) You had a busy year and booked a five-star hotel room months ago for your summer vacation. But when you arrive at the hotel, you saw a few people gathering in front of the hotel. When talking to protesters, you learned that the hotel management decided to cut down the trees on the side plot to enlarge the hotel, and they were protesting the hotel by cancelling their reservations and taking back the money they paid. Although you have

dreamed of a five-star hotel holiday, other accommodation options in the region are hostels and campsites. Other than this hotel, there are no five-star hotels in the immediate vicinity. To what extent would you be willing to stay at the hotel, and not attend the protest? (R)

- a)Not willing at all
- b)Very slightly willing
- c)Moderately willing
- d)Quite willing
- e)Very much willing

2) You got your name signed in to participate in the garbage collection event in a beach which is organized by the environmental club at your school. Since there is no public transport to the beach and no one has a personal vehicle, the club management announced that they had arranged a shuttle service for the event. However, you learned that the shuttle would depart at 6:00 on Sunday morning. To what extent would you be willing to attend the garbage collection event?

*In Turkish*

A) Özel alan senaryoları

1) Dersin başlamasına çok az bir süre kaldı ve sınıfa yiyecek/içecek çöpleri ile girilmesi yasak. Sınıfın önünde, elindeki kağıt bardağı atabileceğin bir çöp kovası var. Kağıt bardağı bu çöp kovasına atıp derse girmen mümkün. Fakat bir üst katta geri dönüşüm kutuları mevcut. Kağıt bardağı geri dönüşüm kutularına atmak istediğin koşulda derse -koşar adım gidip gelsen bile- 1-2 dakika geç kalacaksın. Böylesi bir durumda, kağıt bardağını sınıfın önündeki çöp kutusuna atmak için ne kadar istekli olurdun?

- a)Hiç istekli olmazdım
- b)Çok az istekli olurdum
- c)Orta derecede istekli olurdum
- d)İstekli olurdum
- e)Çok istekli olurdum

2) Sıklıkla yemek yediğin bir restorana geldin fakat bir doğum günü organizasyonu sebebiyle içerisinin tamamen dolu olduğunu gördün. Hava oldukça soğuk olduğu için servis personelleri dışarıdaki ısıtıcıları çalıştırabileceklerini ve seni bahçede ağırlayabileceklerini söylediler. Mekanın kullandığı ısıtıcılar merkezi; dolayısıyla dışarıda bir tek sen olmana rağmen tüm ısıtıcılar çalıştırılacak. Fakat çevrede, 15-20 dakikalık bir yürüme mesafesinde, daha önce denemediğiniz başka restoranlar da bulunmakta. Böylesi bir durumda, ısıtıcılar eşliğinde dışarıda oturmak için ne kadar istekli olurdun?

- a)Hiç istekli olmazdım
- b)Çok az istekli olurdum
- c)Orta derecede istekli olurdum
- d)İstekli olurdum
- e)Çok istekli olurdum

3) Bugün, 5 dakikalık bir yürüme mesafesinde bulunan bir süpermarket zincirinde halk günü ve markete taze meyve ve sebzeler gelmekte. Sen, kısa bir süre önce tarım ilaçlarının doğaya verdiği zarara dair metinler okumuş olsan da yine bugün kurulan organik pazar, yaşadığın yere 15-20 dakikalık bir yürüme mesafesi uzaklığında. Organik Pazar alanına giden herhangi bir toplu taşıma aracı ise mevcut değil ve alışverişini marketten de pazardan da yapsan hemen hemen aynı parayı harcayacaksın. Böylesi bir durumda, süpermarketten alışveriş yapmak için ne kadar istekli olurdun?

- a)Hiç istekli olmazdım
- b)Çok az istekli olurdum
- c)Orta derecede istekli olurdum
- d)İstekli olurdum
- e)Çok istekli olurdum

#### B) Kamusal alan senaryoları

1) Yoğun bir sene geçirdin ve yaz tatili için aylar öncesinden beş yıldızlı bir otele rezervasyon yaptırdın. Fakat otele vardığında; birkaç kişinin otelin önünde toplandığını gördün. İnsanlarla konuştuğunda otel yönetiminin, oteli büyütmek adına yan arsada bulunan ağaçları kesme kararı aldığını; bu kişilerin de rezervasyonlarını iptal ederek ve ödedikleri paraları geri alarak oteli protesto ettiğini öğrendin. Sen her ne kadar beş yıldızlı bir otel tatilinin hayalini kurmuş olsan da bölgedeki diğer konaklama seçenekleri pansiyonlar ve kamp alanları. Bu otel dışında yakın civarda herhangi bir beş yıldızlı otel mevcut değil. Böylesi bir durumda, protestoya katılmayıp otelde kalmak için ne kadar istekli olurdun?

- a)Hiç istekli olmazdım
- b)Çok az istekli olurdum
- c)Orta derecede istekli olurdum
- d)İstekli olurdum
- e)Çok istekli olurdum

2) Okulundaki çevre kulübünün düzenlediği, sahildeki çöpleri toplama etkinliğine katılmak için adını yazdırdın. Sahile toplu taşıma ile ulaşım gerçekleştirilemediği ve kimsenin şahsi aracı olmadığı için kulüp yönetimi etkinlik için bir servis ayarladığını duyurdu. Ancak servisin pazar sabahı saat 6.00'da yola koyulacağını öğrendin. Böylesi bir durumda, çöp toplama etkinliğine katılmak için ne kadar istekli olurdun?

- a)Hiç istekli olmazdım
- b)Çok az istekli olurdum
- c)Orta derecede istekli olurdum
- d)İstekli olurdum
- e)Çok istekli olurdum

## APPENDIX F: WEEK-TO-WEEK PRIVATE- AND PUBLIC-SPHERE PEBS

During the last week,

	Never	Rarely (Once)	Occasionally (Twice)	Sometimes (Three times)	Frequently (Four times)	Usually (Five times)	Very often (more than five times)
1.I separated my waste (e.g. plastic, glass, cartoon, etc.) and throw it into the proper recycling bins. (private sphere)	1	2	3	4	5	6	7
2.I reused recyclable materials (e.g., papers/plastic packaging). (private sphere)	1	2	3	4	5	6	7
3.I talked with people around me (e.g. family members, friends, instructors, etc.) about problems related to environment. (public sphere)	1	2	3	4	5	6	7
4.I pinpointed out to someone his or her unecological behavior. (public sphere)	1	2	3	4	5	6	7
5.I purchased green products and services. (private sphere)	1	2	3	4	5	6	7
6.I participated in campaigns that promote environmental protection and sustainable living (e.g. signing/ writing a petition, joining a protest, etc.). (public sphere)	1	2	3	4	5	6	7
7.I took steps to reduce energy and water consumption.(private sphere)	1	2	3	4	5	6	7
8.I participated in seminars, conferences, webinars for environmental protection and sustainable living. (public sphere)	1	2	3	4	5	6	7

### *In Turkish*

Geçtiğimiz hafta,

	Hiç	Nadiren (Bir kere)	Ara sıra (İkikere)	Bazen (Üçkere)	Sıklıkla (Dörtkere)	Genellikle (Beşkere)	Her zaman (Beşkerede nfazla)
1. Çöplerimi ayrıştırıp (örneğin: cam, kağıt, plastik, vb.) ilgili geri dönüşüm kutularına attım.	1	2	3	4	5	6	7
2. Geri dönüştürülebilir materyalleri yeniden kullandım (örneğin: plastik ve karton poşetleri tekrar tekrar kullanmak).	1	2	3	4	5	6	7
3. Çevreyi korumaya ve sürdürülebilir yaşama yönelik çevremdeki insanlara (örneğin: arkadaşlar, aile bireyleri, öğretmenler, vb.) önerilerde/tavsiyelerde bulundum.	1	2	3	4	5	6	7
4. Birine çevreci olmayan davranışını gösterdim.	1	2	3	4	5	6	7
5. Çevreci ürünler ve hizmetler satın aldım.	1	2	3	4	5	6	7
6. Çevreyi korumaya ve sürdürülebilir yaşama yönelik başlatılan kampanyalara katıldım (örneğin: imza vermek, dilekçe yazmak, eylem ve protestolara katılmak).	1	2	3	4	5	6	7
7. Enerji ve su tüketimini azaltmak için adımlar attım.	1	2	3	4	5	6	7
8.Çevreyi korumaya ve sürdürülebilir yaşama yönelik verilen seminerlere, konferanslara katıldım.	1	2	3	4	5	6	7

APPENDIX G: WEEK-TO-WEEK AUTONOMOUS AND CONTROLLING

REASONS UNDERLYING PEBS

What were the reasons for displaying these behaviors during this week?	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
1. ... because others (e.g., parents, friends, teachers) pressured me to display this behavior/these behaviors.	1	2	3	4	5
2. ... because I found it pleasant display this behavior/these behaviors even though it/they can challenge me in some cases.	1	2	3	4	5
3. ... because others (e.g., parents, friends, teachers) would only reward me if I displayed this behavior/these behaviors.	1	2	3	4	5
4. ... because others (e.g., parents, friends, teachers) would otherwise get mad at me.	1	2	3	4	5
5. ... because I personally valued to display this behavior/these behaviors.	1	2	3	4	5

*In Turkish*

Sizece bu hafta bu davranışları sergileme sebepleriniz neler?	Kesinlikle katılmıyorum	Katılmıyorum	Ne katılıyorum ne atılmıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Çünkü çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) bu davranışı/davranışları sergilemem konusunda bana baskı yaptı.	1	2	3	4	5
2. Çünkü bu davranışı/davranışları sergilemenin -bazı durumlarda beni zorlamasına rağmen- keyifli olduğumu düşündüm.	1	2	3	4	5
3. Çünkü bu davranışı/davranışları sergilersem çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) beni ödüllendirecekti.	1	2	3	4	5
4. Çünkü bu davranışı/davranışları sergilemezsem çevremdeki diğer insanlar (örneğin, ailem, arkadaşlarım, öğretmenlerim) bana sinirlenecekti.	1	2	3	4	5
5. Çünkü kişisel olarak bu davranışa/davranışlara değer verdim.	1	2	3	4	5