

**Association of Time Perspective with Depression and
Anxiety: The Role of Repetitive Negative Thinking and
Humor Styles**

by

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The Role of Repetitive Negative Thinking and Humor Styles

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To my dear family, Semra, Numan, and Freddy



ABSTRACT

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Time perspective (TP) refers to how individuals allocate their attention across different temporal categories. By doing so, they give meaning to those experiences. Deviance from Balanced Time Perspective (dBTP), on the other hand, refers to temporal biases resulting from the overuse/underuse of one or more temporal frames, especially the negative TPs. It has been consistently documented that such biases may result in adverse mental health consequences such as depression and anxiety. Repetitive negative thinking (i.e., rumination and worry), which is related to depression and anxiety, broadly refers to a thinking pattern by which individuals engage in repetitive, abstract, uncontrollable, pessimistic thoughts about past or future events. In contrast, the adaptive humor styles (affiliative and self-enhancing) can act as a coping strategy by finding a humorous aspect of negative life events. Although robust evidence exists regarding the association between TP and numerous mental health outcomes, the underlying mechanism through which TPs are related to psychological distress has received little empirical attention. Similarly, the role of humor style as a moderating phenomenon has not been investigated much in the Turkish sample. Moreover, the buffering role of humor did not receive adequate attention in lessening the negative effect of repetitive negative thinking and deviation from balanced time perspective. The current study, therefore, aimed to explore the mediating role of worry/rumination on the association of dBTP with depression and anxiety and the moderating role of adaptive humor styles on the association of dBTP and RNT with depression and anxiety. The data were collected from 563 (483 women) individuals aged between 18 and 69 ($M = 29.04$, $SD = 9.22$) through scales assessing TP, worry, rumination, humor styles, depression, and anxiety. The findings indicated that the moderator role of adaptive humor styles was not significant. Furthermore, adaptive humor styles buffered the negative impact of neither dBTP nor rumination on depression and anxiety. However, both rumination and worry significantly mediated the association of dBTP with depression and anxiety. Deviation from balanced TP, which was linked with RNT, turned out to be associated with elevated levels of depression and anxiety. As a clinical implication, the findings of the current study may help clinicians shape their growing therapy technique, Time Perspective Therapy (TPT), considering depression and anxiety.

Keywords: Time Perspective, Deviance from Balanced Time Perspective, Worry, Rumination, Adaptive humor styles, Depression, Anxiety

ÖZETÇE

Zaman Perspektifinin Depresyon ve Anksiyete ile ilişkisi: Tekrarlayan Olumsuz

Düşünce ve Mizah Tarzlarının Rolü

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Zaman perspektifi (ZP), bireylerin dikkatlerini farklı zamansal kategorilere nasıl tahsis ettiğini ifade eder. Bunu yaparak bu deneyimlere anlam katarlar. Dengeli Zaman Perspektifinden Sapma (DZPS), bir veya daha fazla zamansal yapının, özellikle de negatif ZP'lerin aşırı/yetersiz kullanımından kaynaklanan zamansal önyargıları ifade eder. Bu tür önyargıların, depresyon ve anksiyete gibi olumsuz sonuçlara yol açabileceği tutarlı bir şekilde gösterilmiştir. Depresyon ve anksiyete ile bağlantılı olan tekrarlayan olumsuz düşünme (ruminasyon ve kaygı), genel olarak bireylerin geçmiş veya gelecekteki olaylar hakkında tekrarlayan, soyut, kontrol edilemeyen, karamsar düşüncelere girdiği bir düşünme modelini ifade eder. Buna karşılık, olumlu mizah tarzları (katılımcı ve kendini geliştirici), olumsuz yaşam olaylarının mizahi bir yönünü bularak bir başa çıkma stratejisi olarak kullanılabilir. Her ne kadar ZP ile çok sayıda ruh sağlığı sonucu arasındaki ilişkiye ilişkin sağlam kanıtlar mevcut olsa da ZP'lerin psikolojik sıkıntıyla ilişkisindeki altta yatan mekanizma çok az ampirik ilgi görmüştür. Benzer şekilde mizah tarzının düzenleyici rolü de Türk örneğinde pek araştırılmamıştır. Tekrarlayan olumsuz düşünmenin ve dengeli zaman perspektifinden sapmanın olumsuz etkisini azaltmada mizahın koruyucu rolü yeterince ilgi görmemiştir. Bu nedenle bu çalışma, kaygı/ruminasyonun, DZPS'nın depresyon ve anksiyete ile ilişkisinde aracı rolünü ve olumlu mizah tarzlarının DZPS ve TOD'nin depresyon ve anksiyete ile ilişkisindeki düzenleyici rolünü incelemeyi amaçlamıştır. Veriler, yaşları 18 ile 69 arasında değişen ($Ort. = 29.04$, $SS = 9.22$) 483'ü kadın olan 563 kişiden, ZP, kaygı, ruminasyon, mizah tarzları, depresyon ve anksiyeteyi değerlendiren ölçekler aracılığıyla toplanmıştır. Bulgular, olumlu mizah tarzlarının düzenleyici rolünün anlamlı olmadığını göstermiştir. Başka bir deyişle, olumlu mizah tarzları, DZPS ve ruminasyonun depresyon ve anksiyete üzerindeki olumsuz etkisini azaltmadığı bulunmuştur. Bununla birlikte hem ruminasyon hem de kaygı, DZPS'nın depresyon ve anksiyete ile ilişkisine anlamlı bir şekilde aracılık etmiştir. Yani TOD ile bağlantılı olan dengeli ZP'den sapmanın, yüksek düzeyde depresyon ve anksiyete ile ilişkili olduğu ortaya çıkmıştır. Klinik açıdan mevcut çalışmanın bulguları, gelişen bir terapi tekniği olan Zaman Perspektifi Terapisinin (ZPT) depresyon ve anksiyeteyi de göz önünde bulundurarak şekillendirilmesine yardımcı olabilir.

Anahtar Kelimeler: Zaman Perspektifi, Dengeli Zaman Perspektifinden Sapma, Kaygı, Ruminasyon, Olumlu Mizah Tarzları, Depresyon, Anksiyete

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ABBREVIATION

dBTP	Deviance from Balanced Time Perspective
BTP	Balanced Time Perspective
TP	Time Perspective
PP	Past-Positive
PN	Past-Negative
PF	Present-Fatalistic
PH	Present-Hedonistic
F	Future
FN	Future-Negative
RNT	Repetitive Negative Thinking
ZTPI	Zimbardo's Time Perspective Inventory
TPT	Time Perspective Therapy

Chapter 1:

INTRODUCTION

1.1 Time Perspective

Although psychological time, as a phenomenon, has been investigated by many researchers, Zimbardo and Boyd (1999) proposed one of the most widely accepted and contemporary approaches regarding how individuals encode, store, and recall time. Time perspective (TP) broadly refers to how people perceive and assign their unique experiences to different temporal categories, which in turn help them to give meaning to those experiences. Apart from allocating various meanings to those experiences, individuals establish their sense of self while assigning their experiences to different temporal categories (Keough et al., 1999)

Concerning temporal categories, Zimbardo and Boyd (1999) introduced five temporal dimensions as Past-Positive (an optimistic look at the past, e.g., enjoying stories depicting good old times), Past-Negative (aversive and pessimistic retrospection, e.g., remembering unpleasant memories that happened to in the past), Present-Hedonistic (tendency to pursue instant gratification and minimum planning for future, e.g., seizing the day and having little plans for tomorrow), Present-Fatalistic (feeling of lack of control over one's life and faith in destiny, e.g., having no power on life choices), and Future (a tendency to focus on future rewards and to achieve premeditated plans, e.g., little difficulty in resisting temptations when an individual has to work on another task). Although both Past and Present time perspectives have been investigated, considering both their positive and negative aspects, Future time perspective has only a positive dimension, making it positively biased toward the future. Therefore, Future dimension does not include possible negative thoughts about the future (e.g., expectations of adverse life events) (Papastamatelou et al., 2015). To overcome this limitation, Carelli et al. (2011) proposed Future-Negative (pessimistic views about the future, e.g., reflecting too much on tomorrow's challenges) subscale as an extension to the original inventory, ZTPI (Zimbardo & Boyd, 1999).

Research on each TP demonstrated that negative-oriented TPs (i.e., Past-Negative, Present-Fatalistic, Future-Negative) were associated with adverse mental health outcomes. More specifically, elevated scores from PN, PF, and FN were significantly associated with depression, anxiety, unhappiness, lower levels of self-esteem, emotional stability, subjective well-being, and life satisfaction. Positive TPs (i.e., Past-Positive, Future), on the other hand, were associated with pleasant psychological variables. That is, orientation toward positive

TPs was associated with lower levels of anxiety, depression, and higher levels of self-esteem, and conscientiousness (Carelli et al., 2011; Jankowski et al., 2020; Rönnlund et al., 2017; Zimbardo & Boyd, 1999; Zimbardo et al., 2012). Although Present-Hedonistic time perspective has been reported to have a negative association with depression (Zimbardo & Boyd, 1999), there have been mixed results on the relationship between PH and psychopathology, finding no association between them (Anagnostopoulos & Griva, 2012; Kaya-Levefre et al., 2019). However, it is evident that approaching one's history from a more pessimistic point of view, a sense of no free will at the moment, and viewing the future as unfavorable are related to psychological distress.

1.2 Deviance from Balanced Time Perspective and Psychopathology

As mentioned earlier, time perspective can function as an unconscious process in which one's attentional resources are allocated to various time dimensions (Zimbardo & Boyd, 2008). Such allocations may become more stable, with dispositional tendencies to overuse one dimension over the others, resulting in temporal biases. In relation to temporal biases, Zimbardo and Boyd (2008) conceptualized an optimal and balanced profile for Time Perspectives: low Past-Negative (PN), Present-Fatalistic (PF), moderately high Present-Hedonistic (PH) and Future (F), and high Past-Positive (PP) on ZTPI. Deviance from Balanced Time Perspective (dBTP), therefore, refers to focusing more on negative time perspectives (past-negative, present-fatalistic, future-negative). Therefore, any deviations from BTP could prevent individuals from switching effectively among different TPs, resulting in the aforementioned temporal biases. Such biases may act as risk factors for psychopathology (Barchetta et al., 2021; McKay et al., 2018; Oyanadel & Buela-Casal, 2014; Ranjbar et al., 2022). Indeed, research on the deviation from the Balanced Time Perspective (dBTP) indicates that it is significantly and positively associated with adverse mental health outcomes such as depression, anxiety, and negative affect (Mooney et al., 2017; Papastamatelou et al., 2015; van Beek et al., 2011). That is, the further individuals move away from the optimal time perspective profile, the more likely they become to experience mental health problems (Mooney et al., 2017; Papastamatelou et al., 2015). Although the association of dBTP with several mental health outcomes has been documented, the underlying mechanism of this relationship has not received much attention. Since dBTP is associated with various forms of psychopathologies, examining possible mediators may have beneficial therapeutic outcomes as well (e.g., developing effective interventions targeting such mediators).

As stated earlier, despite a substantial body of evidence showing a robust association between dBTP and psychological distress, mediators in this relationship have not been investigated much. In one study, however, it was documented that an underlying factor, “temporal negative affect” (i.e., anxiety and depression), mediated the relationship between BTP and life satisfaction (Chen et al., 2021). In another study (Ranjbar et al., 2022), experiential avoidance and cognitive fusion, the components of psychological inflexibility, were found to be mediators in the relationship between dBTP and depression/anxiety. As it can be characterized by cognitive and attentional inflexibility (Davis & Nolen-Hoeksema, 2000; Whitmer & Banich, 2007), repetitive negative thinking (RNT) may also mediate the relationship between dBTP and adverse mental outcomes. More specifically, as discussed by Davis and Nolen-Hoeksema (2000), perseveration might be a key element in explaining the relationship between cognitive inflexibility and RNT. Supported by several findings (Channon, 1996; Martin et al., 1991; Ruscio et al., 2011), one of the central characteristics depressed individuals exhibit is perseveration. In other words, people who show cognitive inflexibility or perseveration on negative thoughts are likely to ruminate since it is difficult for them to abandon their attention from negative thoughts. (Davis & Nolen-Hoeksema, 2000). Namely, perseveration on negatively valenced content can make one vulnerable to repetitive negative thinking, resulting in psychopathology.

1.3 Repetitive Negative Thinking (RNT) and its Correlates

Repetitive negative thinking (RNT) refers to repetitious and intrusive thinking patterns that capture mental capacity. RNT, while capturing mental resources, makes it difficult to disengage from the process (Ehring & Watkins, 2008). Specifically, individuals who engage in RNT end up failing to solve their problems due to the exact nature of RNT, as RNT is an uncontrolled and passive process that focuses on adverse themes such as past traumas, future threats, and depressive symptoms (Ehring & Watkins, 2008). The reason why people get stuck in the RNT could be that the RNT process may be perceived as a mental problem-solving strategy and can be useful in preventing future mistakes (Ehring et al., 2011; Watkins & Baracaia, 2001). RNT has been documented as one of the core features across several disorders (e.g., anxiety, depression, insomnia, psychosis, and affective disorder), claiming that the same processes can be applied to different forms of RNT (Ehring & Watkins, 2008). In line with this, it has been suggested in several studies that RNT can function as a transdiagnostic risk factor across different mental disorders (Gokdag et al., 2023; Harvey et al., 2004; Klemanski et al., 2016; McEvoy et al., 2013). More specifically, Wahl et al. (2019)

found that in addition to core features of RNT (uncontrollability, repetitiveness, and intrusiveness), the length of an RNT episode, use of mental sources, avoidance function of RNT, and unproductivity levels were rated higher among people with GAD, MDD or OCD than the control group. Thus, it has been posited that among individuals who suffer from psychological distress, RNT can function as long-lasting and time-consuming cognitive-emotional dysregulation, keeping an individual with a mental disorder from experiencing negative emotions in a dysfunctional and unhealthy way (Wahl et al., 2019).

A glance at the research focusing on the mechanisms underlying the inclination to experience intense RNT indicates a very crucial pattern, which is difficulty in distancing from negative thoughts. In line with this, it has been suggested that individual differences in RNT might be due to impaired disengagement from negatively valenced information rather than an intense attentional engagement with them (Koster et al., 2011). In other words, the impaired disengagement hypothesis (Koster et al., 2011) suggests that individuals with dispositional repetitive negative thinking are the ones who have difficulty detaching their attention from negative thoughts. On the other hand, individuals who are able to remove their attention from negative information are likely to reevaluate the situation by focusing more on other/positive stimuli. From a similar vein, it was reported that individuals with depressive symptoms have more difficulty detaching from negative thoughts compared to non-depressed individuals, supporting the impaired disengagement hypothesis (De Raedt & Koster, 2010; Koster et al., 2005; Leyman et al., 2006). Specifically, depressed people are likely to demonstrate difficulty in disengaging their attention from negatively valenced words and angry faces (Koster et al., 2005; Leyman et al., 2006).

Research on RNT has consistently reported that elevated levels of RNT patterns have been found in various disorders, including OCD, eating disorders, alcohol use disorder, social phobia, and bipolar disorder (Ehring & Watkins, 2008; Harvey et al., 2004). Considering the widespread existence of RNT among various disorders, as stated earlier, it has been suggested that RNT can function as a transdiagnostic risk factor showing the same characteristics across disorders (Ehring & Watkins, 2008; Harvey et al., 2004). In other words, while exhibiting disorder-specific contents, RNT is repetitive, uncontrollable, and negative in all forms. In addition, the rating of central characteristics of RNT (repetitive, intrusive, uncontrollable) has been reported to be the same across different clinical groups, supporting the transdiagnostic function of RNT (Wahl et al., 2019). In sum, RNT can serve as disorder-specific phenotypes among diverse disorders while being intrusive and cyclical.

Extant studies mostly focused on two discrete forms of RNT, which are disorder-specific: rumination and worry (Ehring & Watkins, 2008). Notably, rumination can be defined as repetitious, dysfunctional, and stereotypical thinking from which people have difficulty disengaging (Ehring et al., 2011). More specifically, studies on rumination consistently indicated that individuals who ruminate are likely to have negative interpretations of hypothetical situations and to have negative perceptions about self and interpersonal problems, which makes them less capable of providing adaptive solutions for demanding situations (Lyubomirsky & Nolen-Hoeksema, 1995; Rimes & Watkins, 2005). In addition, it was found that among people with ruminative tendencies and maladaptive self-focused thinking patterns, retrieving negative memories was far more common than recalling positive ones (Lyubomirsky et al., 1998). Individuals who exhibit ruminative tendencies are likely to focus on the distressful incidents and their consequences (e.g., reviewing all the mistakes and implications on one's life without taking any action to solve them). While doing so, they may concentrate and question their feelings. Such a vicious cycle, in turn, exacerbates and prolongs depressive mood (Nolen-Hoeksema et al., 2008). In contrast, the very central motivation for worry is to anticipate and prepare for a future threat. In addition, worry involves a negatively affect-laden continuum of images and thoughts, which are relatively difficult to control (McEvoy et al., 2017). Since worry includes an attempt to solve a problem with an uncertain outcome, the worry process is highly related to fear as well (Nolen-Hoeksema et al., 2008). As their conceptualization suggests, both rumination and worry share similar, if not the same, processes and features. In line with how they operate, studies on worry and rumination have reported that they are both closely linked with anxiety and depression (Ehring & Watkins, 2008; McEvoy et al., 2017). Other than being a predictor of anxiety and depression, rumination is found to act as a transdiagnostic mental health vulnerability associated with several mental disorders (e.g., psychosis, binge eating, binge drinking) (Nolen-Hoeksema et al., 2008; Watkins & Roberts, 2020).

Although rumination and worry share common features, rumination predominantly focuses on the past, whereas worry predominantly focuses on the future. In other words, ruminative tendencies are related to thinking about the meanings, causes, and consequences of past events or the current negative mood state. In worry, however, the focus shifts toward a possible threat that may occur in the future but has not yet happened (Nolen-Hoeksema et al., 2008). Taken together, rumination and worry differ significantly with respect to their temporal orientations. (Ehring & Watkins, 2008; McEvoy et al., 2019). The temporal difference between worry and rumination is evident among TPs as well. In the literature, it is

documented that both PN and FN TPs significantly predict rumination and worry. However, PN is more strongly associated with rumination, whereas FN is more strongly associated with worry (Åström et al., 2018; Gács et al., 2020). Therefore, individuals who have pessimistic views about the past tend to ruminate. Likewise, people who view the future as a potential threat are likely to worry.

From the single-disorder perspective, anxiety and depression can also be differentiated through their temporal differences. Specifically, it has been postulated that future and possible threats compose the central theme for individuals with anxiety disorders (Clark et al., 1994). Depression, on the other hand, excessively forces people to be inclined to reflect on past events (Habermas et al., 2008). Other than their temporal differences, according to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013), the very central features of major depressive disorder include depressive mood and loss of interest. In addition, sleep disturbances, feelings of worthlessness, and physical fatigue could be present during a depressive mood. In generalized anxiety disorder, however, overwhelming anxiety and worry interfere with daily functioning. While having difficulty controlling their worry, individuals with anxiety symptoms may experience irritability, restlessness, and muscle tension (American Psychiatric Association, 2013). However, worry and rumination are expected to relate to both depression and anxiety due to RNT's transdiagnostic function (Ehring & Watkins, 2008) and high comorbidity between depression and anxiety (Lamers et al., 2011). Considering overlapping risk factors for mental disorders, comorbidity among psychological disorders has been consistently documented as common, pervasive, and detrimental (Plana-Ripoll et al., 2019), especially among mood disorders.

Contrary to their temporal and diagnostic difference, one of the most prevalent comorbid disorders has been reported as depression and anxiety (de Graff et al., 2002; Lamers et al., 2011). More specifically, Lamers et al. (2011) reported that among individuals with anxiety disorder, 63% of them also had depressive disorder. Among people with depressive disorder, the rate of having an additional anxiety disorder was reported as 67%. Moreover, the comorbidity rates between anxiety and depression have been documented as even higher by Gorman (1996), suggesting a similar, if not the same, etiological pathway for anxiety and depression. Supporting the identical etiological pathway view, it has been demonstrated that both depression and anxiety share overlapping indexes in the landscape of environment, genetics, and risk factors (Anttila et al., 2018; de Graff et al., 2002).

1.4 *Humor and Emotion Regulation*

There has been an ever-lasting effort to define humor. “Anything comical or amusing which is intentionally done or said”, “a cognitive state of mirth”, “a pleasurable affect followed by laughter”, “non-serious social incongruity” reflects such effort (Gervais & Wilson, 2005; Long & Graessner, 1988; Meyer, 2000; Romero & Cruthirds, 2006; Weisfeld, 1993). Although there is no consensus for a fully satisfactory and comprehensive definition of humor in the literature, there has been an agreement among researchers regarding the idea that humor includes conveying incongruous meanings that might amuse others/self in some manner (Martin, 2007). By amusing others or self, humor can function as a coping mechanism as well, especially in coping with the negative impact of past events (Martin, 1996). Besides reducing anxiety and tension (Kuiper & Martin, 1998), humor also helps individuals distance themselves from negative experiences (Samson & Gross, 2014).

Although a substantial body of evidence suggests that people often utilize intrapersonal emotion regulation processes (e.g., suppressing emotion-expressive behavior, cognitive reappraisal), individuals often seek others to shape their affective states (Zaki & Williams, 2013). The phenomenon of interpersonal emotion regulation has been investigated by many researchers. However, these efforts have focused on different “unities” of interpersonal emotion regulation: motivation to help others results in improving one’s affective state (Goetz et al., 2010), the buffering effect of social contact (Bolger & Eckenrode, 1991), communicating emotional states with others (Rimé, 2009). Therefore, Zaki and Williams (2013) put forward a single conceptual framework for interpersonal emotion regulation. According to the framework, the target of regulation can be either intrinsic (i.e., individuals attempt social contact to regulate their unique experience) or extrinsic (i.e., individuals try to regulate other’s feelings in a social contact). In terms of the mechanism of interpersonal regulatory “space”, the process type can be either response-dependent, in which the process depends on the qualities of another person’s reaction, or response-independent, which is not dependent on another person’s feedback in any particular way (Zaki & Williams, 2013). Thus, the framework presents a 2 by-2 matrix (i.e., class of regulation and mechanism). However, it should be noted that as intra- and interpersonal emotion regulation lies on a continuum, people in a social interaction utilize both intrinsic and extrinsic regulation in tandem.

1.5 *Humor Styles and Mental Health Outcomes*

Considering humor as a way of both intra- and interpersonal emotion regulation strategy, Martin et al. (2003) introduced a multidimensional model of humor styles that classifies humor styles into two higher-order subtypes as adaptive (subsuming affiliative and self-enhancing) and maladaptive (subsuming self-defeating and aggressive) humor. While classifying humor styles as adaptive and maladaptive, Martin et al. (2003) examined their associations with well-being. In other words, the humor styles that are potentially beneficial for individual and social well-being are identified as adaptive; the ones that are perceived as harmful and destructive to self or others are grouped under maladaptive humor styles.

Affiliative humor includes using humor (e.g., joking, or telling funny things) to make others laugh and enhance relationships with others (e.g., having fun with close friends). In other words, by engaging in affiliative humor, the individual aims to enhance social bonds and group cohesion. Similar to the conceptualization of Zaki and Williams (2013), the affiliative humor style can function as an intrinsic type of interpersonal emotion regulation strategy by allowing one to regulate negative affect through social interaction. Self-enhancing humor style is related to using humor for emotion regulation purposes (intrapersonal emotion regulation) through finding something humorous in a stressful and challenging situation (e.g., cheering oneself up with humor when feeling bad). Self-defeating humor, on the other hand, is an attempt to amuse others at one's expense (similar to the extrinsic type of interpersonal emotion regulation), laughing with others when being ridiculed to gain approval or to be seen as a part of a group (e.g., trying to be accepted by saying one's own flaw). Finally, aggressive humor involves hostility, sarcasm, and teasing to attack other people (Martin et al., 2003) (e.g., making fun of others in an unkind manner).

More specifically, Samson and Gross (2012) found that compared to maladaptive humor, adaptive humor was effective at regulating both negative and positive emotions. Similar findings were reported by Mathews (2016), who emphasized that people utilizing a more adaptive style of humor experienced less difficulty in emotion regulation. Unsurprisingly, individuals who endorse maladaptive styles of humor have more difficulty in emotion regulation. Additionally, maladaptive humor styles were found to be positively associated with inhibiting emotions and negatively associated with cognitive reappraisal (Poncy, 2017). Therefore, using adaptive humor styles can act as an adaptive emotional regulation strategy, much like cognitive reappraisal, in that it assists people in distancing themselves from an adverse emotional state. (Braniecka et al., 2019; Samson & Gross, 2014). Furthermore, Braniecka et al. (2019) reported humor to be more helpful in regulating negative

emotions than spontaneous emotion regulation and similarly as effective as positive reappraisal, which is considered one of the most effective emotion regulation strategies. Supporting this idea, Amjad and Dasti (2020) reported that adaptive emotion regulation strategies mediated the association of adaptive humor styles with positive affect and elevated levels of life satisfaction. In addition, it is suggested that adaptive humor styles might help individuals accept their negative emotions, reappraise the meaning of negative life events, and reconstruct their perspective in a way so that they can distance themselves from negative emotions (Amjad & Dasti, 2020). Altogether, there is good reason to believe that humor might function as an adaptive emotion regulation strategy for people facing distressful events by enhancing positive emotions, reducing negative emotions, and increasing distance from negative affect.

In the literature, the relationship between humor styles and certain mental health variables is evident. It has consistently been documented that self-enhancing and affiliative humor were negatively associated with depressive symptoms, suicide ideation, loneliness, perceived stress, hostility, and aggression and positively associated with happiness and life satisfaction. On the other hand, self-defeating humor was positively associated with worse well-being, depressive symptoms, and social anxiety (Chuang et al., 2021; Kazarian & Martin, 2004; Kazarian et al., 2010; Tucker et al., 2013). In addition, a recent study (Altan-Atalay & Boluvat, *under review*) indicated that adaptive humor styles (affiliative and self-enhancing) are significantly and negatively associated with depression and anxiety. It also found maladaptive humor styles (self-defeating and aggressive) to be positively associated with depression and anxiety.

1.6 Humor Styles, Time Perspective, and Repetitive Negative Thinking

There is a paucity of literature on the relationship between humor styles and TP. However, limited findings have illustrated the association between humor styles and Time Perspective. More specifically, research on humor styles highlights a significantly negative association between self-enhancing humor style and PN. Also, there is a positive association between self-defeating humor style and PN (Hampes, 2013). According to Shores and Scott (2007), TPs can impact the decision of how we spend our spare time. And it has been reported that individuals who perceive the past as “negative” tend to have less fun in their free time (Zimbardo & Boyd, 1999). Connecting and expanding these points, Gibson (2019) argued that there could be a link between TPs and humor if we consider humor as an aspect of leisure

time. Furthermore, as individual differences in utilizing humor can be explained by the capacity of mental resources to detect the incongruity of a situation, the same mental resources may also be absorbed when we travel between different TPs as well (Gibson, 2019). That is, the possible interaction between TPs and detecting and producing humor might be promising for further investigations.

Moreover, the role of humor style in the association of rumination and psychopathology did not receive adequate empirical attention. However, Olson et al. (2005), in their cross-sectional study, found that both self-enhancing and affiliative humor styles buffer the negative impact of rumination on the individuals' dysphoria levels. In other words, among people who tend to ruminate frequently, utilizing an adaptive humor style was significantly associated with lower levels of depressive symptoms. One possible explanation that may imply the underlying mechanism of the interaction is that when people with ruminative tendencies utilize self-enhancing or affiliative humor style, they are able to shift their focus toward a funny and amusing aspect of a stressful incident to reduce the level of distress they are experiencing (i.e., using self-enhancing humor style) or they are able to find an amusing aspect of the stressful condition to make self and others laugh (i.e., affiliative humor style). Similarly, people who use adaptive humor styles less miss the opportunity to have the buffering impact of adaptive humor styles on rumination, resulting in higher levels of dysphoria (Olson et al., 2005). Furthermore, Chuang et al. (2021) found that among people with high rumination levels, those who utilize the adaptive (i.e., affiliative and self-enhancing) humor styles reported fewer depressive symptoms than those who utilize less adaptive humor styles. Thus, adaptive humor styles have a buffering impact on the relationship between rumination and mental health variables. In other words, adaptive humor styles (i.e., affiliative and self-enhancing) could ameliorate the negative effect of rumination on depressive symptoms. Additionally, it is documented that among individuals with high ruminative tendencies, people who utilize adaptive humor styles have better mental health and elevated levels of satisfaction with life compared to those who utilize adaptive humor styles less. Again, it suggested that using adaptive humor styles can act as a protective factor against the adverse impact of rumination on depressive symptoms by minimizing social tension (affiliative) and taking a cheerful outlook on life's incongruities (self-enhancing) (Chuang et al., 2021).

1.7 *The Current Study*

Although a substantial body of research suggests a positive association between dBTP and psychopathology (Barchetta et al., 2021; McKay et al., 2018; Oyanadel & Buéla-Casal, 2014), there is limited research in the literature indicating how this association occurs. Moreover, studies focusing on dBTP mostly investigate its mediator role, rather than the factors that mediate the association of dBTP with psychological distress. The present study, therefore, will contribute to the literature by examining worry and rumination as mediators of the association. In other words, the study aims to investigate the association of TP with depression and anxiety by assessing the potential mediator roles of both rumination and worry. More specifically, it is expected that individuals who view the past and future as negative and perceive no sense of control in the present moment tend to show repetitive negative thinking patterns. Particularly, as people deviate from an optimum level of time perspective, they are likely to ruminate about the past and worry about possible and future circumstances.

Considering risk factors underlying the high comorbidity between anxiety and depression, ter Meulen et al. (2021) found that neuroticism, childhood trauma, and an early onset were the significant predictors. In addition, Gokdag et al. (2023) documented that, apart from childhood and emotion regulation difficulties, RNT could also function as a shared vulnerability factor among people suffering from depression and anxiety. In that respect, the current study will contribute to the literature by investigating the mediating role of one of the transdiagnostic risk factors (RNT) underlying depression and anxiety. The literature on the moderator role of humor in the relationship between RNT and psychopathology is still in its infancy. Thus, the present study aims to contribute to the understanding of how humor styles interact with several risk factors by investigating the potential protective role of adaptive humor styles. Considering the conceptual links mentioned above, it seems legitimate to propose that especially shifting toward negative time perspectives (i.e., past-negative, present-fatalistic, future-negative) will be positively associated with worry and rumination. Elevated levels of worry and rumination, associated with a negative time perspective, will, in turn, be associated with elevated levels of anxiety and depression. In addition, adaptive humor styles are expected to buffer the negative impact of negative TPs on mental health outcomes. Lastly, adaptive humor styles are also expected to lessen the association of rumination, not worry, with psychopathology since, as Martin (1996) suggests, humor may act as an effective coping mechanism for the aversive impact of a past event but not for the anticipation of negative experiences.

Given the information above, the hypotheses of the current study are as follows:

1. dBTP is expected to be positively associated with depression/anxiety.
2. The association of dBTP with depression (Hypothesis 2a) and anxiety (Hypothesis 2b) is expected to be mediated by RNT patterns: Rumination and Worry.
3. Adaptive humor styles are expected to be negatively associated with depression/anxiety.
4. Adaptive humor styles (affiliative and self-enhancing) are expected to act as moderators on the association of dBTP with depression/anxiety. In particular, adaptive humor styles are expected to buffer the negative impact of dBTP, leading to lower levels of depression and anxiety.
5. Adaptive humor styles are also expected to moderate the association of rumination with psychopathology. Specifically, affiliative and self-enhancing humor styles are anticipated to buffer the negative impact of rumination on depression/anxiety.

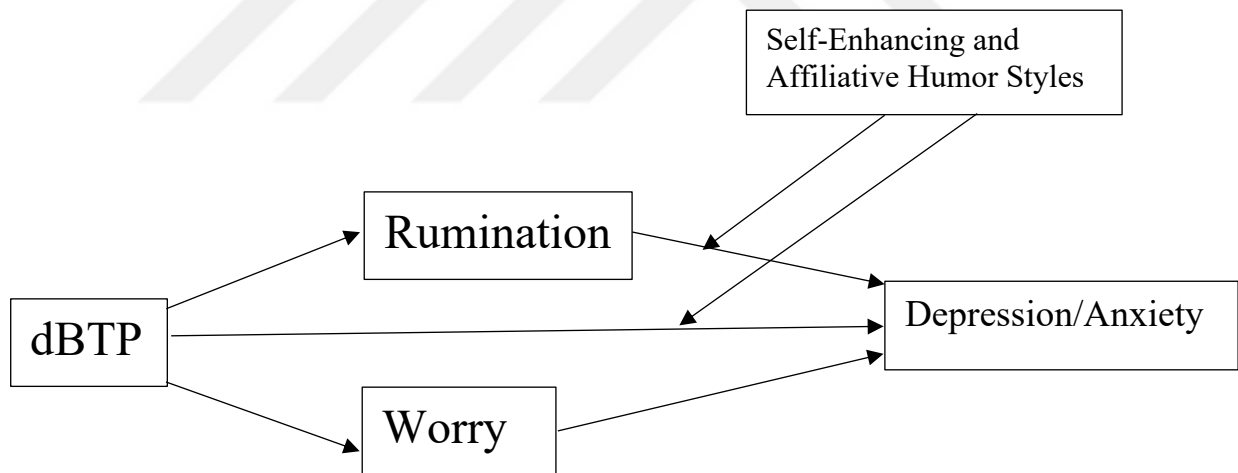


Figure 1.1: Hypothesized Moderated Mediation Model.

Chapter 2:

METHOD**2.1 Participants**

Participants were recruited via convenience sampling. The eligibility criteria of the study were being above the age of 18. The descriptive characteristics of the sample were presented in Table 2.1. The finalized sample of the study included 563 participants aged between 18 and 69 ($M = 29.04$, $SD = 9.22$). Among the whole sample, 483 participants (85.8%) were female, 77 participants (13.7%) were male, 2 participants (0.4%) were defined as other, and 1 participant (0.1%) chose not to define. In terms of marital status, 57% reported it as single ($N = 321$), 39.4% of them as married ($N = 222$), 2.1% of them as divorced ($N = 12$), and 1.4% of them as other ($N = 8$). Regarding education level, 3 of the participants (0.5%) reported themselves as having a middle school degree, 83 of the participants (14.7%) as having a high school degree, 381 of the participants (67.7%) as having an undergraduate degree, 72 of the participants (12.8%) as having a graduate degree, 12 of participants (2.1%) as having a doctorate degree, and 12 of them (2.1%) defined it as other. The financial status of the participants was distributed as follows: 9.8% of them ($N = 55$) described their financial status as low, 19.7% ($N = 111$) as lower-middle, 39.4% ($N = 222$) as middle, 26.3% ($N = 148$) as upper-middle, 4.8% ($N = 27$) as high.

Table 2.1 Demographic Characteristics ($N = 563$)

	<i>N</i>	%	Mean Age	<i>SD</i>
Gender				
Female	483	85.8	27.8	11.6
Male	77	13.7	29.2	8.8
Other	2	0.4	27	7.1
Not defined	1	0.1	34	
Total	563	100	29.04	9.22
Marital Status				
Single	321	57		
Married	222	39.4		
Divorced	12	2.1		
Other	8	1.4		
Education Level				

Middle School	3	0.5
High School	83	14.7
Undergraduate	381	67.7
Graduate	72	12.8
Doctorate	12	2.1
Other	12	2.1
Financial Status		
Low	55	9.8
Lower-Middle	111	19.7
Middle	222	39.4
Upper-Middle	148	26.3
High	27	4.8

2.2 Measures

2.2.1 The Demographic Form

The personal data sheet involves information regarding participants' age, sex, SES, education level, occupation, marital, and family status. In addition, it asks for any previous psychological diagnosis and any medication in current use due to a psychological disorder (see Appendix B).

Deviation from the Balanced Time Perspective

To assess Deviance from the Balanced Time Perspective (dBTP), two scales were utilized.

2.2.2 Zimbardo Time Perspective Inventory (ZTPI) and Future Negative Scale

ZTPI, which was developed by Zimbardo and Boyd (1999), aims to measure individuals' time orientation on five temporal dimensions: Past-Positive (9 items, e.g., "I enjoy stories about how things used to be in the good old times"), Past-Negative (10 items, e.g., "I think about the bad things that have happened to me in the past"), Present-Hedonistic (15 items, e.g., "I often follow my heart more than my head"), Present-Fatalistic (9 items, e.g., "My life path is controlled by forces I cannot influence"), Future (13 items, e.g., "I am able to resist temptations when I know that there is work to be done"). The scale is composed of 56 items, including a 5-Likert type scale (1= not at all, 5= very much). It has satisfactory test-retest reliability and internal consistency (alphas range between .70-.80 for test-retest reliability, and .74-.82 for internal consistency). Criterion and construct validity have been evidenced through its association with mental health outcomes and personality traits. The

original inventory was adapted to Turkish by Akirmak (2019). The Turkish version has acceptable psychometric properties (alphas range between .69-.84). Replicated factor structure of the original version of ZTPI provided evidence for cross-cultural validity. In addition to the five temporal dimensions listed above, Carelli et al. (2011) suggested a Future-Negative dimension, which reflects the pessimistic views about the future (8 items, e.g., “*At night I often reflect on tomorrow’s challenges*”) to extend the original version of ZTPI. It has satisfactory reliability in the Swedish context ($\alpha = .69$). It was adapted to Turkish by Ranjbar et al. (2022), and it demonstrated good internal consistency ($\alpha = .88$). In this study, alphas were as follows, PP ($\alpha = .77$), PN ($\alpha = .85$), PF ($\alpha = .67$), PH ($\alpha = .82$), FN ($\alpha = .85$), and F ($\alpha = .72$) which were acceptable reliability scores (see Appendix G).

2.2.3 Patient Health Questionnaire-9 (PHQ-9)

The Patient Health Questionnaire (PHQ-9), which aims to measure depressive symptoms’ severity according to the DSM-IV, was developed by Kroenke et al. (2001). The questionnaire has a 4-Likert-type format (1= never, 4= nearly every day), and it consists of 9 items. Apart from its satisfactory construct and criterion validity, the original scale has satisfactory psychometric properties ($\alpha = .89$). It was adapted to Turkish by Sarı et al. (2016), and it was found to be reliable ($\alpha = .84$) and provided good criterion validity (Yazıcı-Güleç et al., 2012) (see Appendix C).

2.2.4 Generalized Anxiety Disorder-7 (GAD-7)

Generalized Anxiety Disorder-7 (GAD-7) was developed by Spitzer et al. (2006) to evaluate anxiety symptoms within the past week according to the diagnostic criteria proposed in the Diagnostic and Statistical Manual of Mental Disorders - 4 (DSM-IV). It consists of 7 items and includes a 4-Likert-type format (1= never 4= nearly every day). The original version of the scale demonstrates good psychometric properties ($\alpha = .92$ for internal consistency, $r = .83$ for test-retest reliability). It was adapted to Turkish by Konkan et al. (2013). It demonstrated a high validity in the clinical sample and was found to be reliable ($\alpha = .85$) (see Appendix E).

2.2.5 Ruminative Response Scale-Short Form (RRS-SF)

The ruminative Response Scale (RRS-SF) was developed by Treynor et al. (2003) to measure individuals’ trait rumination (e.g., “*Think What am I doing to deserve this?*”) for the last two weeks. RRS-SF has a 4-Likert-type format (1= almost never 4= almost always) with

higher scores referring to higher rumination, and it consists of 10 items. The scale has two subscales: reflective pondering (i.e., utilizing problem-solving strategies to address depressive symptoms in an adaptive way) and brooding (i.e., an inclination to contrast one's current state with an ideal norm). The original scale has satisfactory psychometric properties (.85, .72, and .77 for total RRS score, brooding, and reflective pondering, respectively), and it was translated into Turkish by Erdur-Baker and Bugay (2012). RRS-SF appeared to be reliable (.85, .75, and .77 for the total score, brooding, and reflective pondering, respectively). The Turkish version also provided construct and convergent validity by its association with the scales of depression and the long version of RRS (see Appendix F).

2.2.6 *Penn State Worry Questionnaire (PSWQ)*

Penn State Worry Questionnaire was developed by Meyer et al. (1990) to aim to assess the severity of worry as a generalized trait. It also investigates to what extent worry can be controllable for an individual. It consists of 16 items having a 5-Likert-type format (1= not at all typical, 5= very typical of me) with higher scores meaning higher levels of pathological worry. The original version of the scale has satisfactory reliability ($\alpha = .91$) and validity scores. The scale was adapted to Turkish by Yılmaz et al. (2008). Similarly, it has satisfactory properties. The internal consistency score was reported as .91, and a test-retest reliability score was documented as .88, demonstrating that it is a reliable measure of pathological worry for the Turkish sample. Supporting its convergent validity, significant correlations were observed between PSWQ and measures of trait anxiety ($r = .67$) and depression ($r = .46$) (see Appendix H).

2.2.7 *Humor Style Questionnaire (HSQ)*

The Humor Style Questionnaire was developed by Martin et al. (2003) to explore through which motives individuals use humor in their daily life. The HSQ is composed of 32 items based on a 7-Likert-type format (1= completely disagree, 7= completely agree). The scale consists of eight-item subscales subsuming the four facets of humor: Self-defeating (e.g., "I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults"), Aggressive (e.g., "If someone makes a mistake, I will often tease them about it"), Affiliative (e.g., "I laugh and joke a lot with my closest friends"), and Self-enhancing (e.g., "If I am feeling depressed, I can usually cheer myself up with humor"). HSQ appeared to be a reliable measure (.80, .81, .77, .80 for affiliative, self-enhancing, aggressive, and self-defeating humor styles, respectively) in addition to promising

evidence for criterion and construct validity. The scale was adapted to Turkish by Yerlikaya (2003). The adapted version of the scale has satisfactory psychometric properties (alphas range between .67-.78). And its criterion validity was evidenced by its associations with measures of depression, self-esteem, negative and positive affect, dysfunctional attitude, and situational use of humor (see Appendix D).

2.3 Procedure

The study protocol was reviewed and approved (2022.292.IRB3.127) by Koç University's Institutional Review Board (IRB). All individuals above the age of 18 could participate in the study. The data were gathered via an internet-based data collection tool (Qualtrics) using the questionnaires at a single time point. The link for the survey was distributed through Koç University's subject pool and social media platforms such as Instagram, Twitter, and Facebook. The participants were, first, presented with the informed consent form (see Appendix A), followed by the demographic questions. Then, participants filled out the following questionnaires: Zimbardo Time Perspective Inventory (ZTPI), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Ruminative Response Scale-Short Form (RRS-SF), Penn State Worry Questionnaire (PSWQ), Humor Style Questionnaire (HSQ) in a counter-balanced fashion. The whole process took approximately 30 minutes. The participants were free to abandon the study without any penalty. The data collection process took around three months, from July 2022 to September 2022.

2.4 Statistical Analysis

The data were analyzed through SPSS (IBM SPSS Statistics for Macintosh, Version 28.0: IBM Corp, Armonk, NY, USA). Before conducting the main analysis, dBTP scores were computed according to what Rönnlund et al. (2017) described. dBTP Formula is as follows:

$$\sqrt{(oPN - ePN)^2 + (oPP - ePP)^2 + (oPF - ePF)^2 + (oPH - ePH)^2 + (oF - eF)^2 + (oFN - eFN)^2}$$

where o = observed and e = expected score; ePN = 1.95, ePP = 4.60, ePF = 1.50, ePH = 3.90, eF = 4.00, eFN = 1.80.

Descriptive and correlation analyses between dBTP, rumination, worry, depression, and anxiety were performed. To analyze parallel mediation (rumination and worry as mediators), PROCESS macro for SPSS with 5000 bootstrap resamples and a 95% confidence interval (Model 4; Hayes, 2022) was utilized. Intervals without zero is required to get a significant indirect effect. Then using the same software (Model 15; Hayes, 2002), moderated mediation analyses were performed, adding the adaptive humor styles as moderator. The sum of affiliative and self-enhancing humor styles subscores was calculated to obtain the adaptive humor styles score. Ultimately, sex and age were entered as covariates.



Chapter 3:

RESULTS

3.1 Descriptive Statistics and Zero-Order Correlations

Pearson correlation analysis was conducted to examine the relationship between age, sex, and study variables. Among the demographic variables, age was negatively correlated with all study variables. dBTP showed a positive association with rumination ($r = .543, p < .01$), worry ($r = .513, p < .01$), depression ($r = .602, p < .01$), and anxiety ($r = .538, p < .01$) supporting the hypothesis 1. Rumination showed a positive association with both depression ($r = .624, p < .01$) and anxiety ($r = .599, p < .01$). Similarly, worry had a positive association with depression ($r = .442, p < .01$) and anxiety ($r = .604, p < .01$). Adaptive humor styles are negatively associated with rumination ($r = -.119, p < .01$), worry ($r = -.229, p < .01$), depression ($r = -.209, p < .01$), and anxiety ($r = -.218, p < .01$), supporting the hypothesis 3 (see Table 3.1).

Results

Table 3.1: Descriptive Statistics and Correlation between all Study Variables.

Variables	1	2	3	4	5	6	7	8
1 Age	-							
2 Sex	.055							
3 dBTP	-.107*	.065						
4 Rumination	-.203**	.065	.543**					
5 Worry	-.167**	.147**	.513**	.446*				
6 AHS	-.083*	-.062	-.334**	-.119**	-.229**			
7 Depression	-.163**	.056	.602**	.624**	.442**	-.209**		
8 Anxiety	-.155**	.109**	.538**	.599**	.604**	-.218**	.736**	-
<i>M</i>	29.04	1.87	2.95	22.89	54.40	76.60	19.63	15.57
<i>SD</i>	9.22	.36	.90	6.13	14.10	15.91	6.25	5.58
α				.86	.93	.87	.87	.91
Min.	18		.79	10	16	20	9	7
Max.	69		5.68	40	80	112	36	28

Note. N = 563, * $p < .05$, ** $p < .01$.

dBTP = Deviance from balanced time perspective, AHS = Adaptive humor styles, *M* = Mean,

SD = Standard deviation, α = Cronbach's alpha, Min. = Minimum, Max. = Maximum

3.2 Mediation Analysis

Two separate mediation analyses were performed to examine the possible mediator role of RNT (rumination and worry) on the association between dBTP and depression/anxiety. Model 4 in PROCESS was utilized since it allows for examining the significance of parallel mediation.

Firstly, controlling for age, sex, and anxiety, the mediator role of RNT on the relationship between dBTP and depression was investigated. Results indicated that the total effect of dBTP on depression was significant ($b = 2.00$, $SE = .22$, $p < .0001$). The direct effect (c') of dBTP on depression was significant ($b = 1.75$, $SE = .23$, $p < .0001$). Since the confidence interval did not include zero, the total indirect effect of dBTP on depression was significant ($b = .25$, $SE = .11$, $95\%CI [.025, .466]$). In addition, the indirect effect of both rumination ($b = .44$, $SE = .093$, $95\%CI [.275, .635]$) and worry ($b = -.196$, $SE = .071$, $95\%CI [-.345, -.070]$) was significant. Therefore, it was found that the relationship between dBTP and depression proceeds through rumination and worry (Figure 3.1), supporting hypothesis 2a.

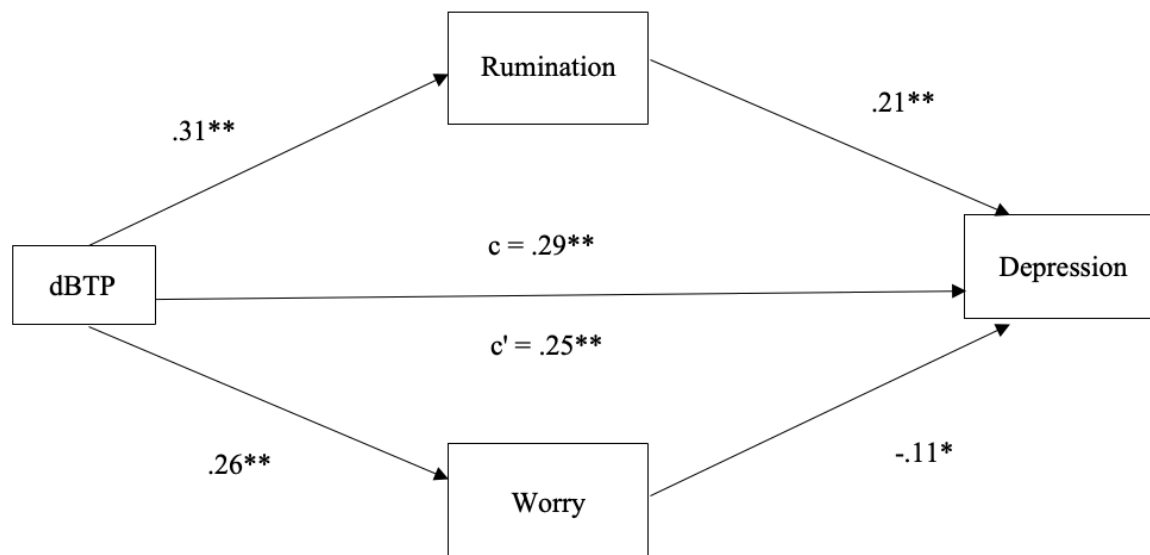


Figure 3.1: Standardized regression coefficients for the association of dBTP with depression mediated by rumination and worry.

Note. $*p < .05$, $**p < .001$

Second, controlling for age, sex, and depression, the mediator role of RNT on the relationship between dBTP and anxiety was examined. Results indicated that the total effect of dBTP on anxiety was significant ($b = .91$, $SE = .22$, $p < .0001$). The direct effect (c') of dBTP on anxiety was not significant ($b = -.07$, $SE = .21$, $p = .73$). Since the confidence interval did not include zero, the total indirect effect of dBTP on anxiety was significant ($b = .98$, $SE = .15$, $95\%CI [.693, 1.302]$). In addition, the indirect effect of both rumination ($b = .23$, $SE = .075$, $95\%CI [.100, .397]$) and worry ($b = .75$, $SE = .13$, $95\%CI [.510, 1.025]$) was significant. Therefore, it was found that the relationship between dBTP and anxiety proceeds through rumination and worry (Figure 3.2), supporting hypothesis 2b.

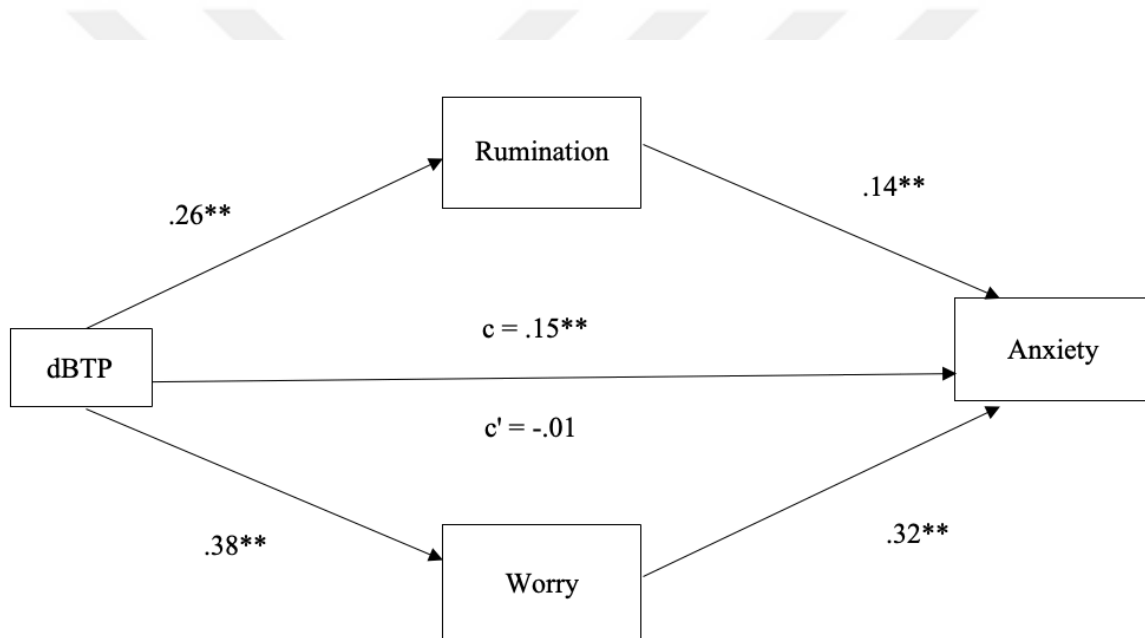


Figure 3.2: Standardized regression coefficients for the association of dBTP with anxiety mediated by rumination and worry.

Note. ** $p < .001$.

3.3 Moderation Analysis

The adaptive humor styles (self-enhancing and affiliative) were suggested to have a moderator role on the mediation model previously reported. The moderating

effect of adaptive humor styles was expected for both the indirect effect of rumination and the direct effect of dBTP on the outcome variables. Specifically, adaptive humor styles were expected to buffer the negative impact of both dBTP and rumination on depression and anxiety. To test the hypothesized moderated mediation model, PROCESS (Model 15) was utilized.

Findings showed that adaptive humor styles did not moderate the association of dBTP with depression ($b = .01$, $SE = .01$, $p = .60$), controlling for age, sex, and anxiety. Similarly, adaptive humor styles did not buffer the negative impact of rumination on depression ($b = .00$, $SE = .00$, $p = .93$), controlling for age, sex, and anxiety. Although the mediator roles of rumination and worry were evident, adaptive humor styles did not have a significant effect on the association of dBTP and rumination with depression, contrary to expectation. That is, the conditional indirect effect of dBTP on depression through rumination did not differ across the levels of adaptive humor styles (see Table 3.2).

Table 3.2: Moderation analysis of the relationship between dBTP, AHS, Rumination, Worry, and Depression.

Variable	B	SE	T	p	95%CI		F	R ²	
					LL	UL			
Outcome: Rumination								108.86	.44
dBTP	2.01	.26	8.13	.000***	1.58	2.59			
Age	-.070	.02	-3.29	.001**	-.11	-.028			
Sex	.09	.54	.161	.87	-.98	1.15			
Anxiety	.46	.04	10.97	.000***	.377	.542			
Outcome: Worry								103.67	.43
dBTP	4.07	.60	6.84	.000***	2.90	5.24			
Age	-.12	.05	-2.31	.021*	-.21	-.02			
Sex	3.33	1.26	2.65	.008**	.86	5.80			
Anxiety	1.12	.01	11.51	.000***	.93	1.31			
Outcome: Depression								95.77	.63
dBTP	1.21	1.04	1.16	.25	-.84	3.25			
Rumination	.19	.16	1.22	.22	-.12	.52			
Worry	.01	.06	.10	.92	-.12	.13			
AHS	.01	.05	.20	.84	-.08	.10			

dBTP X AHS	.01	.01	.52	.60	-.02	.03
Rumination X AHS	.00	.00	.09	.93	-.004	.004
Worry X AHS	-.00	.00	-.90	.37	-.002	.001
Age	-.02	.02	-1.14	.25	-.06	.02
Sex	-.26	.45	-.57	.57	-1.14	.63
Anxiety	.60	.04	14.39	.000***	.52	.68

Note. $N = 563$, * $p < .05$, ** $p < .01$, *** $p < .001$.

dBTP = Deviance from balanced time perspective, AHS = Adaptive humor styles.

Similarly, adaptive humor styles did not moderate the association of dBTP with anxiety ($b = -.01$, $SE = .01$, $p = .53$) controlling for age, sex, and depression. And adaptive humor styles did not moderate the relationship between rumination and anxiety either ($b = -.00$, $SE = .00$, $p = .12$), controlling for age, sex, and depression. Although the mediator roles of rumination and worry were evident, adaptive humor styles did not buffer the negative impact of dBTP and rumination on anxiety, contrary to expectation. In other words, the conditional indirect effect of dBTP on anxiety through rumination did not differ across the levels of adaptive humor styles (see Table 3.3).

Table 3.3: Moderation analysis of the relationship between dBTP, AHS, Rumination, Worry, and Anxiety.

Variable	B	SE	T	p	95%CI		F	R ²	
					LL	UL			
Outcome: Rumination								111.46	.44
dBTP	1.77	.27	6.56	.000***	1.24	2.30			
Age	-.07	.02	-3.24	.001**	-.11	-.03			
Sex	.48	.54	.89	.37	-.58	1.54			
Depression	.44	.04	11.29	.000***	.36	.52			
Outcome: Worry								63.49	.31
dBTP	5.94	.69	8.64	.000***	4.59	7.29			
Age	-.16	.05	-2.86	.004**	-.26	-.05			
Sex	4.54	1.37	3.31	.001**	1.85	7.23			
Depression	.43	.10	4.29	.000***	.23	.62			

Outcome: Anxiety							104.56	.65
dBTP	.43	.91	.48	.63	-1.35	2.21		
Rumination	.35	.14	2.47	.01*	.07	.63		
Worry	.10	.06	1.79	.08	-.01	.21		
AHS	.06	.04	1.45	.15	-.02	.14		
dBTP X AHS	-.01	.01	-.63	.53	-.03	.02		
Rumination X AHS	-.00	.00	-1.54	.12	-.01	.00		
Worry X AHS	.00	.00	.53	.60	-.00	.00		
Age	.00	.02	.25	.81	-.03	.04		
Sex	.36	.39	.91	.36	-.41	1.13		
Depression	.45	.03	14.39	.000***	.39	.52		

Note. N = 563, * $p < .05$, ** $p < .01$, *** $p < .001$.

dBTP = Deviance from balanced time perspective, AHS = Adaptive humor styles.

To conclude, the relationship between dBTP and both anxiety and depression were mediated through rumination and worry. However, adaptive humor styles (self-enhancing and affiliative) did not moderate the association of dBTP and rumination with anxiety and depression. In other words, adaptive humor styles did not buffer the negative impact of dBTP and rumination on depression and anxiety.

Chapter 4:

DISCUSSION

4.1 The Present Study

The major goal of the current study was to explore the mediator role of RNT (rumination and worry) on the association of deviation from balanced time perspective (dBTP) with mental health outcomes, namely, depression and anxiety. In addition to the mediator roles of RNT, we also examined the moderator roles of adaptive humor styles (self-enhancing and affiliative humor styles) on the association of dBTP and rumination with depression and anxiety. The findings supported the mediation hypothesis, suggesting that rumination and worry significantly mediated the association of dBTP with both depression and anxiety. In other words, as individuals deviated from an optimal level of time perspective, they were likely to ruminate and worry, which was linked to elevated levels of depression and anxiety. However, the hypothesized moderator role of adaptive humor styles was refuted. More specifically, the association of dBTP and rumination with mental health outcomes did not change across the levels of use of adaptive humor styles. Therefore, the adaptive humor style did not buffer the negative impact of dBTP or rumination on depression and anxiety.

4.2 The Direct Effect of dBTP and RNT

In the current study, correlational and mediation analysis revealed that both the relationship between dBTP and depression and the direct effect of dBTP on depression were significant, supporting the first hypothesis. In line with the literature (Mckay et al., 2018; Mooney et al., 2017; Ranjbar et al., 2022), the present study indicated that as individuals shifted away from an optimal profile of time perspective (Zimbardo & Boyd, 2008) (low Past-Negative (PN), Present-Fatalistic (PF), moderately high Present-Hedonistic (PH) and Future (F), and high Past-Positive (PP)), they were likely to demonstrate depressive symptoms. Parallel with what Zimbardo and Boyd (2008) argued, any deviation from balanced time perspective hinders individuals from utilizing different time perspectives in harmony, resulting in temporal biases. Consistent with the current findings (Mooney et al., 2017; Papastamatelou et al., 2015), such temporal biases, in turn, were linked to mental health problems. For example, a situation (e.g., an upcoming exam) requires an individual to use the Future time perspective (studying to

be able to graduate). In that case, the individual may shift toward the appropriate time perspective considering the situational demands, resulting in studying for the exam. However, if the same individual chooses to play video games (present-hedonistic) or may reflect too much on the exam (future-negative), then psychological distress could be inevitable since situational requirements and behaviors linked with time perspective are clearly in conflict. Therefore, in light of the conceptual connections mentioned above, it seems reasonable to suggest that people who exhibit non-optimal allocation of time perspective, namely deviation from balanced time perspective, may suffer from psychological distress, manifesting itself as depression and anxiety in the current study.

In the literature, the association of dBTP with anxiety has been consistently documented (Kaya Lefèvre et al., 2019; Mooney et al., 2017; Papastamatelou et al., 2015). Similar to the development of depression, temporal biases or the inability to travel between the optimal time perspectives could also underlie the development of anxiety. Supporting the relationship between dBTP and anxiety, the present study's findings indicated that they were significantly and positively related, confirming the first hypothesis. In other words, as people do not shift between different time perspectives considering situational demands, future threats would be more challenging to them. More specifically, it was reported that an inclination to deviate from BTP was higher among individuals with anxiety disorders (Papastamatelou et al., 2015). In addition, the future-negative time perspective was documented to be a robust predictor for affect (Stolarski & Matthews, 2016), especially for anxiety (Åström et al., 2014). Although correlational and mediation analysis indicated that dBTP and anxiety were positively related, the direct effect of dBTP on anxiety turned out to be not significant, contrary to previous findings and our expectations (McKay & Cole, 2023; Papastamatelou et al., 2015). This contradiction may stem from several factors, including a lack of an anxiety scale differentiating various dimensions of anxiety, such as affective, behavioral, and somatic anxiety. For example, previous studies (Akirmak et al., 2019; Kaya Lefèvre et al., 2019; Wu et al., 2019) indicating a robust association of dBTP with anxiety, utilized the measures of anxiety focusing on trait forms of anxiety, highlighting a more stable characteristic of anxiety symptoms.

In addition, it should be noted that time perspectives can function as a cognitive process; individuals can be aware of their current state of time perspective while shifting their attention to specific time dimensions. On the other hand, time perspective can also operate as a temporal bias, which is a trait-like, dispositional function

developed over time (Stolarski et al., 2020). In the current study, however, we asked for anxiety symptoms experienced during the previous week, which could be temporary, unstable, and state-like. Thus, the reason why we failed to replicate the previous findings may stem from investigating anxiety symptoms from a state-like perspective. Second, as documented by McKay and Cole (2020), while studying the relationship between optimal profile for time perspectives and mental health outcomes, approaching psychological time from a homogeneous perspective would sound more reasonable than addressing ZTPI as a compound construct. More specifically, as PN time frame appeared to have a more crucial role than the overall score from ZTPI regarding psychological distress (McKay & Cole, 2020), developing a profile using the FN time perspective and adding direct paths could be promising to study anxiety.

Furthermore, Repetitive Negative Thinking (RNT), which refers to intrusive and reiterative thinking patterns, is a dysfunctional problem-solving strategy. Apart from being repetitive, uncontrollable, and intrusive, RNT has been reported as a demanding mental process that is hard to disengage from (Ehring & Watkins, 2008). Documented as a core feature across different disorders, including depression and anxiety (Ehring & Watkins, 2008; Klemanski et al., 2016; McEvoy et al., 2013; Wahl et al., 2019), RNT has been defined as a transdiagnostic risk factor (Gokdag et al., 2023; Harvey et al., 2004; Klemanski et al., 2016). That is, while showing disorder-specific contents for different psychological disorders, the way RNT operates remains the same for several disorders, being repetitive, intrusive, and uncontrollable.

The two forms of RNT, namely rumination and worry, shared common characteristics such as being maladaptive, dysfunctional, and negatively valenced (Ehring & Watkins, 2008). However, rumination has been linked to reflecting and questioning too much about unpleasant past experiences, consequences, and emotions. Worry, conversely, differs from rumination in that its central theme is to prepare for a future threat, including negative-laden images and thoughts (Nolen-Hoeksema et al., 2008). Parallel with the literature (Ehring & Watkins, 2008; Gokdag et al., 2023; McEvoy et al., 2017; Wahl et al., 2019), the current study's findings indicated a robust association of RNT (rumination and worry) with depression and anxiety. This is consistent with what Nolen-Hoeksema et al. (2008) suggested: as participants ruminate about their past events, their consequences, and emotions, they are likely to develop depressive and anxiety symptoms. In other words, when individuals attempt to solve a problem, which could be about the past or an uncertain outcome, their mental capacity

is captured by long-lasting cognitive-emotional dysregulation (RNT). Since RNT is dysfunctional and maladaptive by nature, such a vicious cycle, in turn, exacerbates depressive and anxious mood. Lastly, the link between RNT and depression/anxiety could also be explained by the impaired disengagement hypothesis (Koster et al., 2011) that people with dispositional RNT tendencies are the ones who have difficulty shifting their attention away from negative thoughts, images, and feelings. Being excessively engaged with negative stimuli is, in turn, related to psychopathology. Overall, consistent with the literature, the current study supports the view that RNT is linked with elevated levels of psychological distress.

4.3 The mediator role of RNT and moderator role of Adaptive Humor Styles

The findings of the current study supported the mediator role of RNT (rumination and worry) on the association of dBTP with depression and anxiety. Put differently, dwelling too much on the negative time perspectives (e.g., PN, PF) could be linked to the emergence of maladaptive thinking patterns, namely rumination, and worry, resulting in elevated levels of depression and anxiety. As stated earlier, deviation from an optimal TP level simply indicates that an individual focuses on negative time frames (PN, PF, and FN) more, which is linked with temporal biases. Such temporal biases, in turn, may prevent individuals from shifting among different TPs, resulting in the neglect of the situational demands or effectively coping with the current problems. Having disregarded personal and situational demands, individuals may seek maladaptive thinking patterns such as RNT. It is plausible that excessive exposure to negative thoughts, images, and feelings, which is a typical pattern in rumination and worry (Ehring & Watkins, 2008), is, in turn, associated with elevated levels of psychological distress, anxiety, and depression. Thus, it is unsurprising to observe that people are inclined to ruminate and worry when they perceive the past as unfavorable, the present as uncontrollable, and the future as pessimistic. More specifically, as people recall their past as aversive, they will likely question their behaviors, consequences, and emotions. Similarly, seeing the future as dangerous and threatening may be linked with worry, which could be a maladaptive strategy for preparing for a future threat. Taken together, the inclination to travel between negative time perspectives could give rise to the onset of dysfunctional thinking patterns, rumination, and worry. Engaging too much in past experiences and future threats, in turn, is related to higher levels of psychopathology.

Consistent with the literature (Chuang et al., 2021; Olson et al., 2005; Tucker et al., 2013), current results indicated that adaptive humor styles (affiliative and self-enhancing) were negatively and significantly associated with dBTP, RNT, and mental disorders. That is, as people utilize humor functionally, distancing themselves from negative affect and establishing social bonds, they were likely to report lower levels of psychological distress. However, the current study failed to demonstrate the hypothesized moderator role of adaptive humor styles on the association of dBTP with depression and anxiety. Contrary to the hypothesis and the literature (Chuang et al., 2021), adaptive humor styles failed to buffer the negative impact of rumination on anxiety and depression either. In other words, the association of dBTP and rumination with depression and anxiety did not differ across the levels of adaptive humor styles.

The present study approached the adaptive humor styles as a compound variable. In other words, the sum of affiliative and self-enhancing humor styles was added as a single moderator on the associations. However, as Ruch and Heintz (2017) reported, non-humorous aspects of humor styles' items (e.g., context, situation) might dominate the humor-specific side of HSQ's items. More specifically, when the context was controlled, the predictive power for psychological distress through humor styles decreased. Therefore, while aiming to assess the moderator role of "humor styles," the present study could have examined the role of the contextual side of adaptive humor styles. Unsurprisingly, humor's "contextual side" could not help individuals who have already engaged with negative thoughts, with temporal biases or a tendency to ruminate. Second, parallel with the impaired disengagement hypothesis (Koster et al., 2011), individuals who are excessively engaged with negative stimuli might miss out on the possible protective factor of adaptive humor styles. More specifically, dBTP and rumination may keep individuals stuck in negative time dimensions, especially past-negative. Therefore, those individuals might be under the negative impact of temporal biases and RNT while utilizing adaptive humor styles. However, such temporal and cognitive biases could eliminate the buffering effect of adaptive humor styles. That is, as an emotion dysregulation, repetitive negative thinking patterns could dominate the adaptive emotion regulation strategies, as we consider self-enhancing humor style as intrapersonal, affiliative humor style as interpersonal emotion regulation strategies.

4.4 *Limitations and Future Studies*

To our knowledge, the present study was the first to investigate the mediator role of rumination and worry on the association of dBTP in the landscape of anxiety and depression. In addition to its novel findings, it is also the first study to explore the possible interaction between humor styles and other variables. However, the present study was not free of some limitations. Since it had a cross-sectional design, it was impossible to infer a causal relationship between variables. In addition, it should be noted that the relationship between dBTP and depression/anxiety could also operate as bidirectional; namely, negativity bias might occur. Thus, the outcomes of the study should be treated with caution. Second, with nearly 86% of participants being women, there was a significant gender imbalance among the sample, diminishing the representativeness of the population. Moreover, the dataset was susceptible to self-report biases since the data were obtained through an online data-gathering system using self-report instruments. Also, the study could only contact the population with internet access.

Measures used in the present study had acceptable psychometric properties. Further analysis, however, indicated that due to its high correlation with worry, adding anxiety as a covariate in the model might suppress the effect of worry on depression. In other words, anxiety in the model might act as a suppressor, changing and reducing the strength of the association of worry with depression. Second, the scale we used to measure time perspectives had certain limitations. Although there was no other well-established scale measuring psychological time as ZTPI, the internal consistency of the Present-Fatalistic TP has been documented to be relatively low. For example, Akirmak (2019) reported PF's alpha as .69, similar to what Carelli et al. (2011) and Seema and Sircova (2013) documented ($\alpha = .65$, $\alpha = .68$, respectively). In the current study, parallel with the previous studies, the internal consistency of PF was low ($\alpha = .67$). As Akirmak (2019) discussed, PF time perspective taps into different aspects of time perception (e.g., future, hopelessness, locus of control) which may threaten the integrity of PF items. Thus, the PF subscale might reduce the psychometric properties of ZTPI while investigating psychological time.

Aside from novel findings, multiple actions can be taken to overcome the mentioned limitations. First, experimental and/or longitudinal design could be employed to explore the possible cause-and-effect relationship between dBTP and mental disorders. In addition, due to the possible bidirectional nature of the relationship

between dBTP and psychological distress, testing the reversed model could give us a clear picture of the association between dBTP with depression and anxiety. Moreover, instead of approaching humor styles as trait-like moderators, observing them as behaviors or experimentally manipulating them would enhance our understanding, especially the humor-specific dimension of humor styles. To limit the possible suppressor effect scales other than PHQ-9 and GAD-7 could be administered. Thus, one can measure different aspects of depression and anxiety (e.g., anhedonic depression) while limiting overlapping one another. Apart from reaching a more representative sample, future studies might investigate the reliability and validity of the PF subscale to ensure that different subscales of ZTPI measure what they intend to measure.

4.5 Conclusion and Clinical Implications

In the literature, a substantial body of research documented the positive relationship between dBTP and psychological distress (Barchetta et al., 2021; McKay et al., 2018). In addition, most of the studies investigated the mediator role of dBTP rather than the variables mediating the association of dBTP with psychopathology. Therefore, the current study was the first to explore the mediator role of RNT between dBTP and mental health outcomes. Adaptive humor styles did not moderate the hypothesized mediation model; however, it was found that rumination and worry mediated the association of dBTP with psychological distress. As deviation from optimal TP increases, individuals are more likely to ruminate and worry, resulting in depression and anxiety. Therefore, findings from the current study may have clinical implications.

Cognitive-behavioral approaches have been documented to be effective in treating rumination and worry (Querstret & Cropley, 2013). Moreover, Time Perspective Therapy (TPT), derived from Zimbardo's Time Perspective Theory, suggests that individuals can ameliorate their daily functioning by building more optimal time perspectives (Sword et al., 2014). Steps of the TPT include determining individuals' TP, making them aware of their particular time fixation, balancing TPs, and reconstructing their time perception toward an optimal profile (i.e., High PP, moderately high PH and F, low PF and PN). Although, as a narrative therapy, TPT was designed to treat PTSD symptoms, it was also found to help treat depression and anxiety (Zimbardo et al., 2012). The current study documenting how dBTP is related to psychopathology may, therefore, help clinicians shape their newly established therapy technique. Further studies are required to integrate TPT into the current understanding

of psychotherapy in the landscape of other mental disorders, especially depression and anxiety.



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Appendix A: Informed Consent

Bilgilendirilmiş Gönüllü Onam Formu

Değerli Katılımcı,

Bu araştırma Koç Üniversitesi bünyesinde Klinik Psikoloji Yüksek Lisans öğrencisi Mustafa Fatih Boluvat tarafından Koç Üniversitesi Sosyal Bilimler Enstitüsü öğretim üyesi Dr. Ayşe Altan Atalay danışmanlığında sürmekte olan bir tez çalışmasıdır. Bu araştırmaya katıldığınız için teşekkür ederiz. Çalışmanın amacı zaman perspektifi, derin düşünme, endişe ve mizah gibi faktörlerin depresyon ve anksiyete üzerindeki etkilerinin araştırılmasıdır. Bu nedenle bu konulardaki eğiliminizi ölçmeye yönelik sorulardan oluşan anket formlarını doldurmanız istenmektedir.

Çalışmaya katılım tamamıyla gönüllülük esasına dayanmaktadır. Ankette, sizden kimlik belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecek ve elde edilecek bilgiler bilimsel yayınlarda kullanılacaktır. Araştırmanın sonuçları açısından sağlıklı bilgiler edinilmesi için yönergelerin dikkatlice okunması, verilen cevaplarda samimi olunması ve cevaplandırılmamış soru bırakılmaması son derece önemlidir. Sorulara verdiğiniz cevapların herhangi bir olumsuz duruma neden olması beklenmemektedir. Ancak, bir rahatsızlık hissedilmesi durumunda istediğiniz takdirde araştırmacıya başvurabilirsiniz. Katılım sırasında sorulardan ya da herhangi bir başka nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini herhangi bir yaptırımla karşılaşmadan yarıda bırakmakta serbestsiniz. Çalışmanın yaklaşık 40 dakika sürmesi beklenmektedir. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Bu araştırma ile ilgili soru veya endişeleriniz varsa lütfen araştırmacıyla iletişime geçiniz.

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Bu alıřmaya tamamen gnll olarak katılıyorum ve istediđim zaman yarıda kesip bırakabileceđimi biliyorum. Verdiđim bilgilerin bilimsel amalı olarak kullanılmasını kabul ediyorum.

Evet

Hayır



Appendix B: Demographic Form

Demografik Form

1. Yaşınız:
2. Cinsiyetiniz: _____
3. Medeni durumunuz:
 Bekar Evli Boşanmış Diğer: _____
4. Eğitim Durumunuz:
 İlkokul Lisans Diğer: _____
 Ortaokul Yüksek Lisans
 Lise Doktora
5. Mesleğiniz: _____
6. Hangi alanda eğitim aldınız veya almaktasınız? _____
7. Şu anda kiminle yaşıyorsunuz?
 Anne ve babanızla Evde tek başına
 Annenizle Evde arkadaşlarla
 Babanızla Yurtta
 Akrabaların yanında Diğer (lütfen açıklayın) _____
8. Ailenizin kaçınıcı çocuğusunuz? _____
9. Varsa kız kardeşlerinizin sayısı: _____
10. Varsa erkek kardeşlerinizin sayısı: _____
11. Kardeşleriniz arasında kendiniz de dahil olmak üzere üveylik var mı?
 Evet Hayır
12. Aylık gelir seviyenizi nasıl değerlendirirsiniz?
 Alt Alt-Orta Orta Üst-Orta Üst
13. Şu an yaşadığınız yeri nasıl tanımlarsınız?
 Şehir merkezi İlçe merkezi Köy veya kırsal alan
14. Şimdiye kadar hiç psikolojik bir rahatsızlık geçirdiniz ya da bir psikolojik rahatsızlık tanısı aldınız mı?
 Evet Hayır

15. Eęer 14. Soruyu ‘‘Evet’’ olarak yanıtladıysanız lütfen tanınızı ařaęıdaki boşluęa yazınız: _____

16. řu anda herhangi bir psikolojik rahatsızlıktan dolayı ilaç kullanıyor musunuz?

Evet Hayır

17. Eęer 16. Soruyu, ‘‘Evet’’ olarak yanıtladıysanız lütfen ilacın ismini ařaęıdaki boşluęa yazınız:



Appendix C: Patient Health Questionnaire

Hasta Sağlık Anketi

Son bir hafta içinde aşağıdaki problemler size ne sıklıkla rahatsız etti?

		Hiç	Birkaç gün	Günlerin yarısından fazlasında	Hemen hemen her gün
1	Bir şey yapmak konusunda ilgisizlik veya zevk almamak				
2	Üzgün, depresif veya umutsuz hissetmek				
3	Uykuya dalmada veya uyumaya devam etmekte zorluk veya çok fazla uyumak				
4	Yorgun hissetmek veya enerjinizin az olması				
5	İştahsızlık veya çok fazla yemek				
6	Kendinizi kötü hissetmeniz- veya kendinizi başarısız ya da kendinizi veya ailenizi hayal kırıklığına uğrattığınızı düşünmeniz.				
7	Gazete okumak veya televizyon seyretmek gibi faaliyetlerde dikkatinizi toparlamakta güçlük çekmeniz				
8	Başkalarının fark edeceği kadar yavaş hareket etmeniz veya konuşmanız. Veya tam aksine-normalden çok daha fazla hareket edecek kadar kıpır kıpır ve huzursuz olmanız.				
9	Ölmüş olsanız daha iyi olacağınız veya bir şekilde kendinize zarar verme düşünceleri				

Appendix D: Humor Style Questionnaire

Mizah Tarzları Ölçeği

İnsanlar mizahı çok farklı biçimlerde yaşar ve dışa vururlar. Aşağıdamizahın yaşanabileceği farklı biçimleri ifade eden cümleler yer almaktadır. Lütfen her bir cümleyi dikkatle okuyarak o ifadeye ne ölçüde katıldığınızı ya da katılmadığınızı belirtin. Lütfen mümkün olduğunca dürüst ve tarafsız olarak yanıtlamaya çalışın. Yanıtlarınız için aşağıdaki değerlendirme ölçeğini temel alın:

	Kesinlikle katılmıyorum	Katılmıyorum	Biraz Katılmıyorum	Kararsızım	Biraz Katılıyorum	Katılıyorum	Tamamıyla katılıyorum
1. Genellikle çok fazla gülmem ya da başkalarıyla şakalaşmam.	1	2	3	4	5	6	7
2. Moralim bozuk olduğunda genellikle kendimi mizahla neşelendirebilirim.	1	2	3	4	5	6	7
3. Birisi hata yaptığında çoğunlukla onunla bu konudadalga geçerim.	1	2	3	4	5	6	7
4. İnsanların benimle dalga geçmelerine ya da bana gülmelerine gereğinden fazla izin veriyorum.	1	2	3	4	5	6	7
5. İnsanları güldürmek için çok fazla uğraşmam gerekir - doğuştan esprili bir insan gibiyimdir.	1	2	3	4	5	6	7
6. Tek başıma bile olsam çoğunlukla yaşamıngariplikleriyle eğlenirim.	1	2	3	4	5	6	7
7. İnsanlar asla benim mizah anlayışım yüzündengücenmez ya da incinmezler.	1	2	3	4	5	6	7
8. Kendimi yermem ailemi ya da arkadaşlarımı güldürüyorsa eğer, çoğunlukla bu işi kendimden geçerek yaparım.	1	2	3	4	5	6	7
9. Başımdan geçen komik şeyleri anlatarak insanları pek güldürmem.	1	2	3	4	5	6	7
10. Üzgün ya da mutsuzsam, kendimi daha iyi hissetmek için genellikle o durumla ilgili gülünç bir şeyler düşünmeye çalışırım.	1	2	3	4	5	6	7
11. Espri yaparken ya da komik bir şey söylerken genellikle karşımdakilerin bunu nasıl kaldıracağınıpek önemsemem.	1	2	3	4	5	6	7

12. Çoğunlukla kendi güçsüzlüklerim, gaflarım ya da hatalarımla ilgili gülünç şeylerden söz ederek, insanların beni daha çok sevmesini ya da kabul etmesini sağlamaya çalışırım.	1	2	3	4	5	6	7
13. Yakın arkadaşlarımla çok sık şakalaşır ve gülerim.	1	2	3	4	5	6	7
14. Yaşama karşı takındığım mizahi bakış açısı, benim olaylar karşısında aşırı derecede üzülmemi ya da kederlenmemi önler.	1	2	3	4	5	6	7
15. İnsanların, mizahı başkalarını eleştirmek ya da aşağılamak için kullanmalarından hoşlanmam.	1	2	3	4	5	6	7
16. Çoğunlukla kendi kendimi kötüleyen ya da alaya alan espriler yapmam.	1	2	3	4	5	6	7
17. Genellikle fıkra anlatmaktan ve insanları eğlendirmekten hoşlanmam.	1	2	3	4	5	6	7
18. Tek başıyysam ve mutsuzsam, kendimi neşelendirecek gülünç şeyler düşünmeye çalışırım.	1	2	3	4	5	6	7
19. Bazen öyle komik şeyler gelir ki aklıma bunlar insanları incitebilecek, yakışık almaz şeyler olsa bile, kendimi tutamam söylerim.	1	2	3	4	5	6	7
20. Espriler yaparken ya da komik olmaya çalışırken çoğunlukla kendimi gereğinden fazla eleştiririm.	1	2	3	4	5	6	7
21. İnsanları güldürmekten hoşlanırım.	1	2	3	4	5	6	7
22. Kederli ya da üzgünsem genellikle mizahi bakış açımı kaybederim.	1	2	3	4	5	6	7
23. Bütün arkadaşlarım bunu yapıyor olsa bile, bir başkasıyla alay edip ona gülerlerken asla onlara eşlik etmem.	1	2	3	4	5	6	7
24. Arkadaşlarımla ya da ailemle birlikteyken çoğunlukla hakkında espri yapılan ya da dalgageçilen kişi ben olurum.	1	2	3	4	5	6	7
25. Arkadaşlarımla çok sık şakalaşmam.	1	2	3	4	5	6	7
26. Tecrübelerime göre bir durumun eğlendirici yanlarını düşünmek, sorunlarla başa çıkmada çoğunlukla etkili bir yoldur.	1	2	3	4	5	6	7
27. Birinden hoşlanmazsam çoğunlukla onu küçük düşürmek için hakkında espri yapar ya da alay ederim.	1	2	3	4	5	6	7
28. Sorunlarım varsa ya da üzgünsem, çoğunlukla gerçek duygularımı, en yakın arkadaşlarım bile anlamasın diye, espriler yaparak gizlerim.	1	2	3	4	5	6	7
29. Başkalarıyla birlikteyken genellikle aklımasöyleyecek esprili şeyler gelmez.	1	2	3	4	5	6	7
30. Neşelenmek için başkalarıyla birlikte olmam gerekmez, genellikle tek başıyysam bile gülecek şeyler bulabilirim.	1	2	3	4	5	6	7

31. Bir şey bana gerçekten gülünç gelse bile, birini gücendirecekse eğer, buna gülmem ya da bununla ilgili espri yapmam.	1	2	3	4	5	6	7
32. Başkalarının bana gülmesine izin vermek; benim, ailemi ve arkadaşlarımı neşelendirme tarzımdır.	1	2	3	4	5	6	7



Appendix E: GAD-7

Yaygın Anksiyete Bozukluğu-7

Son bir hafta içinde aşağıdaki problemler size ne sıklıkla rahatsız etti?

		Hiç	Birkaç gün	Günlerin yarısından fazlasında	Hemen hemen her gün
1	Kendini sinirli, kaygılı veya çok gergin hissetme				
2	Kaygılarını durduramama veya kontrol edememe				
3	Farklı şeylerden çok fazla endişelenme				
4	Gevşemede güçlük çekme				
5	Sakince oturamayacak kadar kendini huzursuz hissetme				
6	Kolayca kızma ve asabilleşme				
7	Sanki çok kötü bir şey olacakmış gibi korku duyma				

Herhangi bir problem işaretlediyseniz, bu problemler sizin için şunları ne kadar zorlaştırdı: İşinizi yapmak, evdeki işleri yapmak veya başkalarıyla geçinmek

Hiç	Biraz	Çok	Aşırı Derece
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Appendix F: Ruminative Response Scale-Short Form (RSS-SF)

Ruminatif Yanıt Ölçeđi – Kısa versiyon

İnsanlar kötü bir deneyim yaşadıklarında bir sürü farklı şey yapar ya da düşünürler. Lütfen aşağıdaki cümleleri okuyup, son iki hafta içinde, belirtilenleri ne kadar sıklıkta yaptığınızı işaretleyin. Lütfen, ne yapmanız gerektiğini değil, gerçekte ne yaptığınızı belirtin.

1= Hiçbir Zaman, 2= Bazen, 3= Çoğunlukla, 4= Her Zaman

1. ___ “Bunu hak etmek için ne yaptım” diye ne kadar sık düşünüyorsun?
2. ___ Son zamanlarda yaşadığın olayları analiz edip “Kendimi niye böyle üzgün hissediyorum” diye ne kadar sık düşünüyorsun?
3. ___ “Niye bu şekilde bir tepki gösteriyorum?” diye ne kadar sık düşünüyorsun?
4. ___ Bir köşeye çekilip “neden bu şekilde hissediyorum” diye ne kadar sık düşünüyorsun?
5. ___ Ne kadar sık, düşüncelerini yazıp, çözümlemeye ve anlamaya çalışıyorsun?
6. ___ Son zamanlarda yaşadığın olaylar hakkında “keşke daha iyi sonuçlansaydı” diye ne kadar sık düşünüyorsun?
7. ___ “Niye benim problemlerim var da, diğer insanların yok” diye ne kadar sık düşünüyorsun?
8. ___ ”Neden olayları daha iyi idare edemiyorum” diye ne kadar sık düşünüyorsun?
9. ___ Kişilik özelliklerini analiz edip, “Kendimi niye böyle üzgün hissediyorum” diye ne kadar sık düşünüyorsun?
10. ___ Ne kadar sık, tek başına bir yere gidip duygularını anlamaya çalışıyorsun?

Appendix G: Zimbardo Time Perspective Inventory (ZTPI)

Zimbardo Zaman Perspektifi Envanteri

Lütfen aşağıdaki her bir maddeyi okuyunuz ve "Bu benim için ne kadar geçerli?" sorusunu, ölçek üzerinde uygun kutucuğu işaretleyerek yanıtlayınız. Lütfen hiçbir maddeyi atlamayarak maddelerin tümünü işaretleyiniz.

- (1) Benim için hiç doğru değil (2) Benim için doğru değil
(3) Kararsızım (4) Benim için Doğru
(5) Benim için çok doğru

1. Kişinin, arkadaşlarıyla eğlenmek üzere bir araya gelmesinin, yaşamdaki en keyifli olaylardan birisi olduğuna inanıyorum.
2. Tanıdık çocukluk manzaraları, sesleri ve kokuları bir sürü harika anıyı geri getirir.
3. Kader, yaşamımdaki pek çok şeyi belirler.
4. Yaşamda neleri farklı yapmalıydım diye sık sık düşünürüm.
5. Kararlarım, çoğunlukla etrafımdaki insanlardan ve olaylardan etkilenir.
6. Bir günün, o günün sabahında planlanması gerektiğine inanırım.
7. Geçmişim hakkında düşünmek beni mutlu eder.
8. İçimden geldiği gibi davranırım.
9. Eğer işler zamanında hallolmazsa, bunu dert etmem.
10. Bir şeyi başarmak istediğim zaman, hedefler koyar ve o hedeflere ulaşmanın yollarını belirlerim.
11. Geçmişime baktığımda hatırlanacak iyi şeylerin kötü şeylerden daha fazla olduğunu görüyorum.
12. Sevdiğim bir müziği dinlerken zamanın farkına varmam.
13. Yarına hazır olması gereken işleri ve gerekli diğer şeyleri yapmak, bu gece eğlenmekten önce gelir.
14. Her şey olacağına varacağı için benim ne yaptığım pek de önemli değildir.
15. Eskiden yaşamın nasıl olduğuna ilişkin öykülere bayılırım.
16. Eski acı deneyimler kafamda durmadan tekrarlanır durur.
17. Yaşamımı olabildiğince dolu dolu ve günü gününe yaşamaya çalışırım.
18. Randevularıma geç kalmaktan rahatsız olurum.

19. Mmkn olsaydı her gnm sanki son gnmmş gibi yaşırdım.
20. Geirdiđim iyi zamanların mutlu anıları hemen aklıma gelir.
21. Dostlarıma ve yetkililere karşı olan sorumluluklarımı zamanında yerine getiririm.
22. Gemişte, reddedilmeye ve kullanılmaya iliřkin payıma dşeni aldım.
23. Kararlarımı, o an kafama estiđi gibi alırım.
24. Planlamaktansa, her gn olduđu gibi yaşıyorum.
25. Gemiřim, dřnmek istemediđim hoř olmayan hatıralarla dolu.
26. Yaşamıma heyecan katmak ok nemlidir.
27. Gemişte, bugn silebilmeyi istediđim hatalar yaptım.
28. Yaptıđın iřten keyif almanın, iřin zamanında bitirilmesinden daha nemli olduđunu dřnyorum.
29. ocukluđuma zlem duyarım.
30. Bir karar vermeden nce, artılarla eksileri tartarım.
31. Risk almak yaşamımı sıkıcı olmaktan kurtarır.
32. Yaşamın nereye gittiđine odaklanmaktansa, yaşam yolculuđunun kendisinin tadını ıkarmak benim iin daha nemlidir.
33. Olaylar nadiren beklediđim gibi gerekleřir.
34. Genliđimin tatsız grntlerini unutmak, benim iin ok zordur.
35. Eđer amalara, sonulara ya da rnlere odaklanmak zorunda kalırsam, yaptıđım iřin srecinden ve akıřından keyif alamam.
36. Bugnmden keyif alırken bile, kendimi benzer gemiř deneyimlerimle karşılařtırmalar yaparken bulurum.
37. Her řey o kadar ok deđiřiyor ki, gelecek iin gerekten bir plan yapılamaz.
38. Yaşamım, benim dıřımdaki řeyler tarafından kontrol ediliyor.
39. Nasıl olsa elimden bir řey gelmeyeceđi iin, gelecek hakkında kaygılanmanın lemi yok.
40. İstikrarlı řekilde ilerleyerek, iřleri zamanında bitiririm.
41. Aile yeleri eskiden yaşamın nasıl olduđundan bahsettiklerinde sıkılıyorum.
42. Yaşamıma heyecan katmak iin risk alırım.

43. Yapılacak işler listesi hazırlarım.
44. Aklımın sesinden çok, kalbimin sesini dinlerim.
45. Yapılması gereken işler varsa, beni yolumdan ayıracak şeylere karşı koyabilirim.
46. Anın heyecanıyla sürüklenir giderim.
47. Yaşam bugün çok karmaşık; geçmişin basit yaşamını tercih ederdim.
48. Davranışlarını tahmin edebildiğim arkadaşlardan çok, anlık ve içten geldiği gibi davranan arkadaşları tercih ederim.
49. Aile geleneklerini ve düzenli olarak tekrarlanan aile toplantılarını severim.
50. Geçmişte başıma gelen kötü şeyler hakkında düşünürüm.
51. Eğer ilerlememe yardım edecekse, zor ve ilgimi çekmeyen işleri yapmaya devam ederim.
53. Genellikle şans, sıkı çalışmaktan daha çok kazandırır.
54. Yaşamımda hep kaçırdığım güzellikleri düşünürüm.
55. Yakın ilişkilerimin tutkulu olmasını isterim.
56. Her zaman çalışmalarımı tamamlamaya yetecek zamanım olacaktır.
57. Sıklıkla bir günde yapmayı planladığım her şey için zamanımın olmadığını düşünürüm.
58. Hayattaki hedeflerime genellikle nasıl ulaşabileceğimi bilmem.
59. Geceleri sıklıkla bir sonraki gün karşılaştığım zorlukları düşünürüm.
60. Sıklıkla arkadaşlarıma ve yetkililere karşı zorunluluklarımı yerine getiremeyeceğimi hissedirim.
61. Eğer hızlı bir karar vermem gerekirse, aldığım kararın genellikle yanlış olduğundan endişelenirim.
62. Farklı projeleri zamanında bitiremezsem diye baskı hissedirim.
63. Geleceğim hakkında düşünmek beni üzer.
64. Gelecek, düşünmeyi istemediğim kadar çok fazla sıkıcı kararı içerir.

Appendix H: Penn State Worry Questionnaire (PSWQ)

Penn State Endişe Ölçeği

Her bir ifadenin sizi ne ölçüde tanımladığını, aşağıda verilen ölçekten yararlanarak değerlendiriniz ve uygun olan numarayı ilgili maddenin yanındaki boşluğa yazınız.

- | 1 | 2 | 3 | 4 | 5 |
|-----------------------|-----|--|---|-------------------------|
| Beni hiç tanımlamıyor | | Beni biraz tanımlıyor | | Beni çok iyi tanımlıyor |
| ___ | 1. | Her şeyi yapmaya yeterli zamanım yoksa bunun için endişelenmem. | | |
| ___ | 2. | Endişelerim beni bunaltır. | | |
| ___ | 3. | Yaşamakta olduğum şeyler hakkında endişelenme eğiliminde değilimdir. | | |
| ___ | 4. | Birçok durum beni endişelendirir. | | |
| ___ | 5. | Yaşamakta olduğum şeyler hakkında endişelenmem gerektiğini biliyorum ama kendime engel olamıyorum. | | |
| ___ | 6. | Baskı altında olduğumda çok endişelenirim. | | |
| ___ | 7. | Her zaman bir şeyler hakkında endişeleniyorum. | | |
| ___ | 8. | Endişe verici düşünceleri aklımdan kolaylıkla atarım. | | |
| ___ | 9. | Bir işi bitirir bitirmez, yapmak zorunda olduğum tüm diğer şeyler hakkında endişelenmeye başlarım. | | |
| ___ | 10. | Asla herhangi bir şey için endişelenmem. | | |
| ___ | 11. | Bir konu ile ilgili olarak yapabileceğim daha fazla bir şey olmadığında, artık o konu hakkında endişelenmem. | | |
| ___ | 12. | Tüm yaşamım boyunca endişeli biri olmuşumdur. | | |
| ___ | 13. | Yaşamakta olduğum şeyler hakkında endişeleniyor olduğumu fark ederim. | | |
| ___ | 14. | Bir kez endişelenmeye başladığımda, bunu durduramam. | | |
| ___ | 15. | Sürekli olarak endişeliyimdir. | | |
| ___ | 16. | Tamamen yapıp bitirene kadar tasarladığım işler hakkında endişelenirim. | | |