

An Evaluation of Some of the Relationships Between Thought-Action Fusion, Attributional Styles, and Depressive and Obsessive-Compulsive Symptoms

Serap PİRİ, Elif KABAKÇI

Abstract

Objective: Thought-action fusion (TAF) is a cognitive bias presumed to underlie the development of obsessional problems. Two domains of TAF have been identified. The first, TAF-moral, is characterized by the belief that having morally unacceptable thoughts is as bad as actually carrying them out. The second, TAF-likelihood, refers to the belief that certain thoughts cause particular events. The event can be related to one's self (likelihood-self) or to someone else (likelihood-others). The other cognitive variable of the study is attributional style. The theory of attributional styles, in terms of the causes of good and bad events, is taken into account especially in the context of depression and has four dimensions: internality-externality, stability-instability, globality-specificity, and importance-unimportance. The first objective of the present study was to investigate the relationships between TAF, and attributional style, and depressive and obsessive-compulsive symptoms. The second objective was to determine the predictors of TAF when the effects of depressive and obsessive-compulsive symptoms are statistically controlled.

Method: The sample consisted of 312 students randomly selected from different departments at Hacettepe University. The Thought-Action Fusion Scale (TAFS), Attributional Style Questionnaire (ASQ), Maudsley Obsessive-Compulsive Inventory (MOCI), and Beck Depression Inventory (BDI) were administered to these students.

Results: The correlations among all the subtypes of TAF (TAF-moral, likelihood-self, and likelihood-others), and the global attributions for bad events, BDI, and MOCI were significant. In addition, the correlation between TAF-moral and the importance of the attribution for bad events was significant. TAF-likelihood-others and TAF-likelihood-self were predicted by global attributions for bad events and TAF-moral was predicted by the importance of the attributions for bad events.

Conclusion: TAF, and attributional styles, and depressive and obsessive-compulsive symptoms may be related to each other. The results also suggest a possible effect of other variables not controlled in this study, both on TAF and the dimensions of attributional styles.

Key Words: Thought-action fusion, attributional styles, depressive and obsessive-compulsive symptoms

INTRODUCTION

Thought-Action Fusion

Thought-action fusion (TAF) is a cognitive variable, which has been widely studied in recent years. Although the pace of research in this area has accelerated in the last 15 years, in fact, clinicians have been aware of TAF for more than 15 years. It is possible to say that the content of TAF, which is, in a general sense, described as confusion of thoughts and actions, was first considered by Bleuler (1934).

Bleuler (1934), making use of the term, omnipo-tence of thought, described patients with a fear of harming others through their thoughts. TAF, regarded rather in the context of magical ideation in the given sense, is subsequently considered within the modern approach by Rachman (1976) and Salkovskis (1985). These theorists reported that patients with obsessive-compulsive disorder (OCD) that hold unacceptable incentive, thoughts, or images also believe that they are inclined to harm other people unless they can change these thoughts. With the consideration of TAF in the context of OCD, studies

in this area have accelerated. Shafran et al. (1996) has described and started to examine TAF for the first time.

TAF refers to the special importance individuals attach to their unwanted, intrusive thoughts and a cognitive bias presumed to lead to their misinterpretation (Abramowitz et al., 2003). TAF consists of two domains, the first of which is TAF-moral, the belief that having a blasphemous thought is almost as sinful as a blasphemous action. For example, the thought of swearing in sacred places is perceived to be as negative as actually swearing in a sacred place.

The second domain of TAF is TAF-likelihood, the belief that unacceptable, unwanted intrusive thoughts increase the likelihood of the occurrence of that situation or negative event. Two subdomains of TAF-likelihood have been proposed: "likelihood self" refers to events occurring to oneself, and "likelihood others" refers to events occurring to others as a consequence of one's thoughts. For example thinking about an illness (either for one's self or others) may increase the likelihood of the illness (Shafran and Rachman, 2004).

According to the cognitive theory of OCD, these cognitive biases observed on the part of TAF trigger the perception of responsibility and eventually TAF gains importance for OCD, for two reasons. First, if an individual believes that thoughts of distressing events actually increase the likelihood that they will happen (TAF-likelihood), he/she could act in order to prevent the probable negative result (such as abstinence, compulsive rituals). Second, if an individual believes that to have intrusive thoughts is morally equal to acting out those thoughts (TAF-moral), he/she might be distressed because of such thoughts (Amir et al., 2001). Thus, the assumed responsibility for upcoming negative events and the two domains of TAF might play roles in the development and progression of OCD by causing a sense of guilt (Shafran et al., 1996).

In OCD, empirical studies regarding the phenomenon of TAF are substantially inclusive. In a study conducted by Shafran et al. (1996), the TAF scores of the OCD sample group were higher than those of the non-compulsive group. In the same study, the relationship between TAF and the subscales of the Maudsley Obsessive-Compulsive Inventory (MOCI) were evaluated, and it was found that the strongest relationship was between the TAF-likelihood-others and the "control" items of MOCI. It was reported that the relationship disappears when depression is controlled, while the relationship between TAF and MOCI was at an average level. Another

study found that while a significant relationship existed between obsessive symptoms and the TAF-likelihood dimension, there was no relationship between MOCI and the TAF-moral (Rassin et al., 2001b).

Studies have shown that TAF is not specific only to OCD. The study of TAF, which began with OCD, has been expanded to other psychological disorders, such as generalized anxiety disorder, social phobia, and eating disorders (Abramowitz et al., 2003; Berle and Starcevic, 2005). Research conducted in this area has given rise to the view that TAF is related to psychopathology in general, rather than being specific to OCD. In accordance with this view, in a study that compared TAF scores, with regard to OCD, and other anxiety disorders, Rassin et al., (2001a) found no difference among the sample groups. In another study, Muris et al. (2001) examined symptoms of TAF and anxiety in a normal adolescent sample and found that TAF is related not only to OCD, but also to other anxiety disorders and depression. Hazlett-Stevens et al., (2002) pointed out that TAF could be related to OCD and to the other anxiety disorders through a third variable, such as pathological anxiety, which is among the main characteristics of anxiety disorders.

TAF seems to be related not only to OCD, but also to depression. In a study conducted by Abramowitz et al. (2002), whereas the TAF-likelihood was found to be related more to anxiety, TAF-moral was directly related to depression. The relationship between TAF-moral and depression could have something to do with the cognitive processes observed in depression. Patients suffering from depression generally regard themselves as the cause of negative events (personification) and may have an intense feeling of guilt because of this. In this regard, TAF-moral could be related to such processes observed in depression as personification and feeling guilty.

In summary, in non-clinical student samples, whereas a relationship was observed between obsessive psychopathology and the TAF-likelihood, no significant relationship was observed between TAF-moral and obsessive complaints. Research has proven that the TAF-moral seems to be more related to depression (Shafran and Rachman, 2004).

Attributional Styles

Attributional styles are explanations regarding the causes of events. In accounting for different events and behaviors, people try to make similar explanations considering their past experiences and latest expectations (Volpe and Levin, 1998). According to Heider (1958),

Table 1. Pearson's correlation coefficients between TAF, and ASQ sub-dimensions, BDI,^a and MOCI^b.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. TAF total														
2. TAF-moral	0.92**													
3. TAF-likelihood	0.56**	0.18**												
4. TAF-likelihood-self	0.53**	0.18**	0.92**											
5. TAF-likelihood-self	0.51**	0.16**	0.93**	0.71**										
6. BDI	0.21**	0.18**	0.14*	0.13*	0.13*									
7. MOCI	0.40**	0.36**	0.25**	0.24**	0.23**	0.44**								
8. Internality-of negative events	-0.02	-0.17	-0.02	0.01	-0.05	0.07	-0.01							
9. Stability-of negative events	0.08	0.09	0.00	0.04	-0.05	0.03	0.07	0.18**						
10. Globality-of negative events	0.22**	0.17**	0.18**	0.21**	0.14*	0.20**	0.14*	0.23**	0.28**					
11. Importance-of negative events	0.21**	0.20**	0.94	0.10	0.08	0.27**	0.19**	0.15**	0.10	0.42**				
12. Internality-of positive events	0.04	0.05	-0.02	-0.03	-0.02	0.02	0.08	0.05	0.00	0.00	0.15**			
13. Stability-of positive events	-0.03	0.00	-0.07	-0.07	-0.06	-0.04	0.11	0.04	0.32**	0.08	0.17**	0.59**		
14. Globality-of negative events	0.07	0.03	0.09	0.07	0.09	0.09	0.22**	-0.01	0.02	0.38**	0.33**	0.34**	0.41**	
15. Importance-of negative events	0.07	0.06	0.05	0.03	0.07	0.16**	0.19**	0.02	-0.02	0.18**	0.54**	0.36**	0.38**	0.64**

^aBDI: Beck Depression Inventory; ^bMOCI: Maudsley Obsessive Compulsive Inventory; *p < 0.05, **p < 0.01

each person needs to explain the causes of both their own and others' behaviors, so that they have a consistent and balanced understanding of the world, making their environment and the world seem more controllable.

Attributional styles are defined by Abramson et al. (1978) in terms of 3 dimensions, internality-externality, stability-instability, and globality-specificity. Internality is the causation of an event by the individual. If an individual believes that events are caused by factors that lie outside him/herself, that is called externality. For example, if a person that fails a test regards their intelligence as the cause of the failure, it is an internal attribution. If the same person bases the failure on the test's level of difficulty, it is an external attribution (Hewitt et al., 2004). Stability is the consistency of the cause of events over time. In other words, if an individual thinks that the cause of an event is long-term and will recur repeatedly in the future, it is stability. If he/she thinks that the cause is short-term and will recur in the future intermittently, this is instability. For example, when somebody is praised by a friend, if the person bases this praise on the good nature of the friend, this is a stable attribution, but if they base this on the good mood of the friend

on that day, then it is an unstable attribution. Globality, falling within another dimension of attributional styles, is related to whether the cause of an event is valid in other circumstances. If an individual regards the cause of an event to be particular to a specific situation, that is specificity. For example, if test failure is attributed to a general factor, such as intellect, that is a global attribution, but if it is attributed to a limited factor, such as poor mathematics skills, specific attribution is taking place (Abramson et al., 1978).

Subsequently, a fourth dimension of attributional styles was introduced by Wortman and Dintzer (1978). In this dimension, importance-unimportance, the degree of importance that the result of the events carries for the individual is taken into account. If an event is given a high degree of importance, the attribution is said to be in the importance dimension, and if it is perceived to be of little importance, the attribution is in the unimportance dimension.

It is seen that the theories related to attributional styles and their study have a long history. Attributional styles have been the center of attention in many areas of psychology and are considered in relation to the de-

Table II. Predictors of TAF, TAF-moral, TAF-likelihood.

	Model	Predictors	β	t	R ²	SD	F
TAF total	1	BDI ^a	0.03	0.58	0.16	2.292	28.62
		MOCI ^b	0.39	6.5***			
	2	BDI	0.01	0.12	0.19	1.291	6.04
TAF-moral		MOCI	0.38	6.38***			
		Globality-of negative events	0.17	3.1**			
	1	BDI	0.02	0.37	0.13	2.292	21.62
		MOCI	0.35	5.72***			
		Importance-of negative events	0.14	2.46*			
TAF-likelihood		BDI	0.04	0.61	0.06	2.292	9.91
		MOCI	0.23	3.68***			
	2	BDI	0.01	0.22	0.08	1.291	6.77
		MOCI	0.22	3.54***			
		Globality-of negative events	0.15	2.6**			
TAF-likelihood-others	1	BDI	0.04	0.65	0.05	2.292	8.71
		MOCI	0.21	3.28**			
TAF-likelihood-self	1	BDI	0.03	0.48	0.06	2.292	8.71
		MOCI	0.22	3.5**			
	2	BDI	0.001	0.02	0.09	1.291	6.7
		MOCI	0.21	3.34***			
		Globality-of negative events	0.15	3.06**			

^aBDI: Beck Depression Inventory; ^bMOCI: Maudsley Obsessive Compulsive Inventory; *p < 0.05, **p < 0.01, ***p < 0.001

pression and hopelessness model in clinical psychology (Propat, 2002). According to the hopelessness theory of depression, individuals possess an attributional style that creates a tendency for depression. Individuals who adopt this style, which is called the depressive attributional style, attribute negative events more to internal, stable, and global causes. Within the boundaries of the susceptibility stress model, those who adopt this style will have a tendency for depression, will despair when faced with negative life events (stress), and this will result in depression. Furthermore, Wortman and Dintzer (1978) have pointed out that in addition to attributional style, the perception of negative events as important might also be a risk factor in the development of hopelessness and depression. Research results seem to support the hopelessness model of depression. It is seen that those who

believe that negative events are the result of internal, stable, and global causes are more depressive than those who regard negative events as caused by external, unstable, and specific causes (Alloy et al., 1992; Seligman et al., 1979).

In summary, when the related literature is analyzed, it can be argued that attributional style is an important cognitive variable providing useful information for understanding depression. On the other hand, TAF is another variable, which has gained importance in recent years, and its relationship to OCD and depression has been evaluated extensively. However, the literature contains no research that evaluates the relationships between TAF, and attributional styles, and depressive and obsessive-compulsive symptoms together. In this regard, the primary aim of the present research was to examine the

relationships between TAF, and attributional styles, and depressive and obsessive-compulsive symptoms. The second aim of the study was to determine which dimensions of the attributional styles predict TAF after the effects of depressive and obsessive-compulsive symptoms are statistically controlled.

METHOD

Sample

The study included 312 students from different faculties at Hacettepe University, Ankara, Turkey. After the marginal data that did not comply with the main assumption of the statistics were discarded, the analyses were conducted with the data gathered from the remaining 295 participants that met the main assumption. There were 104 (35.3%) male and 191 (64.7%) female participants (mean age: 20.81 years (SD: 1.99 years)).

Instruments

Demographic Information Form (DIF)

The researchers prepared an DIF in order to evaluate sociodemographic characteristics, such as age, sex, and place of residence.

Maudsley Obsessive Compulsive Inventory (MOCI)

MOCI is a self-report questionnaire used to evaluate obsessive-compulsive symptoms. The inventory, developed by Hodgson and Rachman (1977), consists of 30 true/false items. MOCI was adapted to Turkish by Erol and Savaşır (1988). In the adaptation phase, 7 more items were added to the original inventory, forming an inventory of 37 items.

Beck Depression Inventory (BDI)

BDI is a scale containing 21 items developed to measure the emotional, cognitive, somatic, and motivational symptoms of depression (Savaşır and Şahin, 1997). BDI was adapted to Turkish by Hisli (1988, 1989).

Thought-Action Fusion Scale (TAFS)

TAFS is a 19-item scale that measures the psychological fusion of thoughts and actions. In the scale developed by Shafran et al. (1996), items are evaluated with a 5-point Likert-type scale (0 = strongly disagree; 4 = totally agree). The scale's total score ranges from 0 to 76; the higher the score, the stronger level of TAF. In the original scale there are 3 sub-scales, TAF-moral, TAF-

likelihood-self and TAF-likelihood-others. The scale has been adapted to Turkish by Yorulmaz et al. (2004).

Attributional Style Questionnaire (ASQ)

ASQ was developed to evaluate the causal attributions individuals have concerning themselves and significant others. The scale was developed by Seligman et al. (1979) and was revised by Peterson et al. (1982).

The scale consists of 12 different hypothetical events, 6 positive and 6 negative. While filling in the form, participants imagine experiencing each event, indicate the cause of the event, and then evaluate this cause on a scale of 7, considering its internal-external, stable-unstable, global-specific, and important-unimportant dimensions.

Scores are calculated separately for positive and negative events related to each attribution dimension by combining the relevant questions. For each dimension, high scores indicate internality, stability, globality, and importance, whereas low scores indicate externality, unstability, specificity, and unimportance (Peterson et al., 1982). The scale was adapted to Turkish by Papatya (1987).

Procedure

In order to avoid possible biases arising from ranking, the scales in the study were administered through random order. The participants were informed about the objective of the study and asked not to provide their names. Scales were administered to the participants as a group during the class hours under the supervision of the researcher.

RESULTS

1. Correlation Analysis

In order to examine the relationships between TAF, and attributional styles, and depressive and obsessive-compulsive symptoms, Pearson product-moment correlation coefficients were calculated. Correlations between the variables are presented in Table I.

As seen in Table I, when the correlations between TAF and attributional style sub-dimensions were considered, the relationships between TAF total score, and the globality dimension ($r = 0.22$, $p < 0.01$) and importance dimension ($r = 0.21$, $p < 0.01$) of ASQ's for negative events were significant. The relationships between TAF-moral score, and the globality dimension ($r = 0.17$, $p < 0.01$) and importance dimension ($r = 0.20$, $p < 0.05$) of ASQ for negative events were also significant. Moreover,

the relationships between TAF-likelihood, TAF-likelihood-self, and TAF-likelihood-others, and the ASQ globality dimension for negative events were significant. Coefficients were 18.0 ($p < 0.01$), 0.21 ($p < 0.01$), and 0.14 ($p < 0.05$), respectively.

The relationships between BDI and all TAF scores were significant. While the relationship between TAF total score and BDI ($r = 0.21$, $p < 0.01$) was the strongest, the relationships between BDI and TAF-moral ($r = 0.18$, $p < 0.01$), TAF-likelihood ($r = 0.14$, $p < 0.05$), TAF-likelihood-self ($r = 0.13$, $p < 0.05$), and TAF-likelihood-others ($r = 0.13$, $p < 0.05$) were also significant.

The results also highlight the existence of strong relationships between MOCI and TAF scores. While the relationship between TAF total score and MOCI ($r = 0.40$, $p < 0.01$) was the strongest, the relationships between MOCI and the TAF-moral ($r = 0.36$, $p < 0.01$), TAF-likelihood ($r = 0.25$, $p < 0.01$), TAF likelihood-self ($r = 0.24$, $p < 0.01$), and TAF-likelihood-others ($r = 0.23$, $p < 0.01$) were also significant.

When we analyzed the relationships between BDI and attributional style, significant relationships between BDI and globality ($r = 0.20$, $p < 0.01$) and importance ($r = 0.27$, $p < 0.01$) for negative events, as well as the importance ($r = 0.27$, $p < 0.01$) for positive events, were found.

In terms of defining the correlations among the attributional style and MOCI, explicit relationships existed between MOCI and the ASQ globality dimension ($r = 0.14$, $p < 0.05$) and importance dimension ($r = 0.19$, $p < 0.01$) for negative events, and also between the globality ($r = 0.22$, $p < 0.01$) and importance ($r = 0.19$, $p < 0.01$) for positive events. A significant relationship ($r = 0.44$, $p < 0.01$) was also found between BDI and MOCI.

2. Regression Analysis

Multiple regression analyses were applied in order to reveal the predictor variables of TAF scores after controlling for the effects of depressive and obsessive-compulsive symptoms. ASQ scores (internality, stability, globality, importance) both for negative and positive events were the independent variables. Five separate regression analyses were conducted. While the first one was carried out for TAF total score, the others were performed for TAF-moral, TAF-likelihood, TAF-likelihood-others, and TAF-likelihood-self. As independent variables, the same variable set was used in all analyses. These predictive variables were entered into analyses in 2 blocks. BDI

and MOCI scores were entered in the first block to control for the effects of depressive and obsessive symptoms. In the second block, the internality, stability, globality, and importance scores of ASQ for positive and negative events were entered. The variables of the second block were entered through the stepwise method. Consequently, 5 different regression analyses were conducted with a total of 10 independent variables in 2 blocks. Results related to regression analyses are presented in Table II.

It is shown in Table II that BDI and MOCI scores significantly predicted the TAF total score ($F(2,292) = 28.62$, $p < 0.001$) and accounted for 16% of the variance. After controlling the effects of MOCI and BDI, only the globality dimension of attributional styles related to negative events predicted the TAF-total score ($F(1,291) = 9.52$, $p = 0.002$) and accounted for 3% of the variance.

In terms of TAF-moral, the BDI and MOCI scores were significant predictors ($F(2,292) = 21.62$, $p < 0.001$) and accounted for 13% of the variance. After controlling the effects of MOCI and BDI, only the ASQ importance dimension for negative events significantly predicted the TAF-moral score ($F(1,291) = 6.04$, $p = 0.015$) and explained 2% of the variance. When the TAF-likelihood was considered, it was found that the BDI and MOCI significantly predicted the TAF-likelihood score ($F(2,292) = 9.91$, $p < 0.001$) and accounted for 0.06% of the variance. Only the ASQ globality dimension for negative events significantly predicted the TAF-likelihood score ($F(1,291) = 6.77$, $p = 0.01$) and accounted for 0.02% of the variance after controlling for the BDI and MOCI.

The BDI and MOCI predicted TAF-likelihood-others ($F(2,292) = 8.15$, $p < 0.001$) and explained for the 0.05% of the variance. None of the ASQ score could enter into the equation. For TAF-likelihood-self, BDI and MOCI were the significant predictors ($F(2,292) = 8.71$, $p < 0.001$) and accounted for 0.06% of the variance. The ASQ globality for negative events also significantly predicted TAF-likelihood self ($F(1,291) = 9.37$, $p = 0.002$) and accounted for 0.03% of the variance.

DISCUSSION

As stated earlier, the primary objective of this study was to examine the relationships between TAF, and attributional styles, and depressive and obsessive compulsive symptoms. The analyses performed showed significant correlations between TAF and some attributional style dimensions. Below, the findings regarding correlations

between TAF and attributional style dimensions are discussed together with the findings of regression analyses. All these results clearly demonstrated that significant relationships existed between TAF, and some attributional style dimensions, and both depressive and obsessive-compulsive symptoms.

The total score and all types of TAF were related to MOCI and BDI; however, the TAF-moral had a stronger connection to MOCI than the other types of TAF. This result contradicts the findings of Shafran (1996) and Rassin et al. (2001a-2001b). In their studies, a stronger correlation was reported between TAF-likelihood and obsessive symptoms than between TAF-moral. In addition, another study carried out by Yorulmaz et al. (2004) showed a higher level of connection between TAF-moral and MOCI than between TAF-likelihood. Yorulmaz et al. claimed that the said contradictions stemmed from the differences between Western and Turkish culture. They also stated that this discrepancy might be the result of the importance given to greater social acceptance in Turkish society, together with some religious differences. In a way, the present study supports the findings of Yorulmaz et al. (2004).

If we analyze TAF in terms of depression, we again come across a stronger connection between TAF-moral and BDI than the other types of TAF. This result partially upholds the findings of Abramowitz et al. (2003). While highlighting the relationship between TAF-moral and BDI, Abramowitz et al. reported that there was no sound relationship between TAF-likelihood and BDI. Shafran and Rachman (2004), on the other hand, asserted that obsessive complaints were related to the TAF-likelihood and that TAF-moral might be linked to depression directly. The findings of the present study showed relationships between all types of TAF and BDI. In this context, it is suggested that the relationships between TAF-likelihood and BDI may be influenced by probable shared variables. While Amir et al. (2004) emphasized the relationships between TAF-likelihood and the perception of responsibility and guilt feelings, Abramowitz et al., (2003) drew our attention to the relationship between TAF-likelihood and negative feelings. In fact, the said variables (negative feelings, perception of responsibility, and guilt feelings) are also related to depression. Thinking about a potential negative event, the likelihood of its materialization, increased perception of responsibility, guilt feelings, and negative feelings may result in depressive symptoms. However, this theory should be tested with another research design.

The study also revealed direct relationships between some ASQ dimensions and both MOCI and BDI. Significant relationships were found between MOCI and globality and importance dimensions of attributional styles for negative events, and the globality and importance for positive events. However, no relationship was found between compulsive symptoms and attributional style. When the findings are considered, it can be suggested that when compulsive symptoms increase, individuals tend to face more general and important attributions, regardless of the nature of the event. From this point of view, an event's level of importance may be connected to perfectionism and the perception of responsibility in OCD and TAF (Rassin and Koster, 2003). The more general attributions, which indicate that the nature of events may influence all the results, can also be associated with the perception based on the invariability of the cause of events, leading to the rigid cognitive schemas found in OCD (Berle and Starcević, 2005).

In terms of attributional style and depression, positive relationships were found between BDI and the ASQ importance and globality dimensions for both negative and positive events. It appears that these findings are partially consistent with the literature (Alloy et al., 1992; Seligman et al., 1979; Wortman and Dintzer, 1978). These studies have indicated that depressive individuals generally tend to attribute negative events more to internal, stable, global, and important causes, while they attribute positive events more to external, unstable, specific, and unimportant causes. The present study's results can be defined as consistent with previous studies, based on analyzing the relationship between attributional style concerning negative events and BDI. The present study's finding of the relationship between the importance of positive events and depression is in contrast to the literature, but it is also noted that the above explanations relevant to OCD may also be valid for depression. It is stated that the importance of the cause for both positive and negative events has a positive correlation with BDI. From this aspect, in terms of depression, attributing higher importance to the causes of events regardless of their nature may be interrelated to cognitive processes, such as perfection and perceptions of responsibility.

Attributional styles also display similar relationships with BDI and MOCI. When this result is considered, it can be proposed that attributional style is not sufficient in differentiating depressive and obsessive-compulsive symptoms. This condition may be interconnected to the shared psychopathological processes of OCD and depression. In accordance with this view, the present study

found a moderately strong relationship between BDI and MOCI. This relationship between depressive and obsessive-compulsive symptoms may be linked to factors, such as negative affect, perfectionism, and guilt feelings, which are considered to be shared by both pathologies. Evidence obtained from clinical observations also upholds this point of view. During the beginning of cognitive behavioral treatment for OCD, behavioral interventions directed to compulsions are carried out and then common cognitive thinking style of depression, such as “all or none thinking” and “shoulds”, are evaluated in detail (Sayilgan, 2003). From this point of view, some fundamental and shared processes (e.g. depressive cognitions) underlying depressive and obsessive-compulsive symptomatology are taken into account.

As mentioned earlier, the second objective of this study was to determine the dimensions of attributional style that best predict TAF after statistically controlling the effects of depressive and obsessive-compulsive symptoms. At the end of the regression analysis, it was noted that the MOCI predicted the TAF the best. Although a relationship between TAF and BDI was found according to the correlation analyses, there was no predictive effect of BDI in the regression analysis. In addition to its presence in all analyses as a control variable, MOCI predicted the TAF at the first degree. This finding is consistent with the literature that suggests a relationship between TAF and obsessive-compulsive symptoms (Amir et al., 2001; Shafran et al., 1996). In this context, TAF can be defined as a valuable cognitive variable that helps in understanding the development and progression of OCD.

According to the regression analysis, the second variable that best predicted the TAF total score, and TAF-likelihood, and TAF-likelihood-self after MOCI was the ASQ globality dimension for negative events. It can also be stated that when the global attribution score for negative events increased, in other words, when the cause of negative events affect all other results, TAF total, TAF-likelihood, and TAF-likelihood-self scores may increase as well. In fact, when the relevant literature was inspected in detail, we came across a limited number of studies on the attributional style of individuals with anxiety disorders (Michelson et al., 1997). A significant portion of these show that patients with anxiety attribute negative events mainly to global causes; therefore, the condition of attributing negative events to global causes may have a relationship with anxiety. Additionally, there are other studies showing the relationship between the TAF-likelihood and anxiety in general (Abramovitz et al., 2003; Hazlett-Stevens et al., 2002). Consequently,

there may be relationships, at some level, between the global attributions for negative events, and the TAF-likelihood and TAF-likelihood-self, through their individual relationships with anxiety.

It was found that in addition to MOCI, no dimension of ASQ predicted the TAF-likelihood-others score. One may assert that, as stated by Shafran and Rachman (2004), the TAF-likelihood-others may have a stronger relationship to OCD than the other types of TAF, and also acts as a psychopathology indicator for OCD.

The variable that predicted the TAF-moral second best, following MOCI, was the ASQ importance dimension for negative events. It is also suggested that when the importance level of negative events increases, the TAF-moral score increases as well. As it is already known, TAF-moral is a bias based on the special importance that individuals give to their thoughts and the perceived relationship between negative thoughts and behavior. If an individual attributes great importance to thoughts related to morality, these thoughts may gradually create serious distress and feelings of inflated responsibility for the individual (Amir et al., 2001). From this point of view, the degree of importance an individual attributes to the causes of negative events can be a variable effecting the development and progression of OCD, through perception of responsibility and the distressful emotions it creates. However, other kinds of cognitive biases may play a role in the said relationship. Rachman (1997) reported that faulty perception of a normal obsession being important, threatening, and disastrous might convert that obsession into an abnormal one. In this context, factors, such as threat, inflated responsibility, psychological distress, and disaster obsession, stemming from attributing increased importance to negative events might act as variables that influence the development and progression of OCD.

In conclusion, it is seen that TAF and ASQ are not only interrelated, they are also related to depressive and obsessive-compulsive symptoms. However, these relationships may be influenced by other variables common to depression and OCD, such as anxiety, negative affect, and guilt feelings.

In summary, this study aimed to determine the relationships between TAF, and ASQ, and depressive and obsessive-compulsive symptoms, and was conducted with a large sample. The present study examined some variables that have not been previously reported in the literature. Nonetheless, not analyzing the effects of the above-mentioned common variables could be regarded

as one of the study's limitations. Therefore, it is thought to be more advantageous to examine the effects of the common variables, such as perception of responsibility, guilt feelings, and negative affect in future studies. More-

over, the repetition of this study with a clinical sample and testing the validity of the obtained results will also shed new light on this subject.

REFERENCES

- Abramowitz J S, Whiteside S, Lynam D ve ark. (2003) Is thought-action fusion specific to obsessive-compulsive disorder?: a mediating role of negative affect. *Behav Res and Ther*, 41: 1069-1079.
- Abramson LY, Seligman ME, Teasdale JD (1978) Learned helplessness in humans: Critique and reformulation. *J Abnorm Psychol*, 87(1): 49-74.
- Alloy LB, Lipman AJ, Abramson LY (1992) Attributional style as a factor for depression: validation by past history mood disorders. *Cognitive Ther Res*, 4: 391-407.
- Amir N, Freshman M, Ramsey ve ark. (2001) Thought-action fusion in individuals with OCD symptoms. *Behav Res Ther*, 39: 765-776.
- Berle D, Starcevic V (2005) Thought-action fusion: review of the literature and future directions. *Clin Psychol Rev*, 25: 263-284.
- Beuler E (1934) *Textbook of Psychiatry*. New York: Macmillan.
- Erol N, Savaşır I (1988) Maudsley Obsesif-Kompulsif Soru Listesi. 24. Ulusal Psikiyatri ve Nörolojik Bilimler Kongresi Bilimsel Araştırma El Kitabı. Ankara, s.107-114.
- Hazlett-Stevens H, Zucker BG, Craske MG (2002) The relationship of thought-action fusion to pathological worry and generalized anxiety disorder. *Behav Res Ther*, 40: 1199-1204.
- Heider F (1958) *The psychology of interpersonal relations*. New York: John Wiley.
- Hewitt AK, Foxcroft DR, MacDonald J (2004) Multitrait-multimethod confirmatory factor analysis of the attributional style questionnaire. *Pers Indiv Differ*, 37: 1483-1491.
- Hisli N (1988) Beck Depression Inventory'nin geçerliği üzerine bir çalışma. *Psikoloji Dergisi*, 6(22): 118-126.
- Hisli N (1989) Beck Depression Inventory'nin üniversite öğrencileri için geçerliği. *Psikoloji Dergisi*, 7(23): 3-13.
- Hodgson RJ, Rachman S (1977) Obsessional-compulsive complaints. *Behav Res Ther*, 15: 389-395.
- Michelson LK, Bellanti CJ, Testa, SM ve ark. (1997) The relationship of attributional style to agoraphobia severity, depression, and treatment outcome. *Behav Res Ther*, 35: 1061-1073.
- Muris P, Meesters C, Rassin E, Merckelbach H ve ark. (2001) Thought-action fusion and anxiety disorders symptoms in normal adolescents. *Behav Res and Ther*, 39: 843-852.
- Papatya I (1987) Depresif kişilerin kendilerine ve önem verdikleri bir kişiye ilişkin yüklemeleri. Yayınlanmış yüksek lisans tezi. Hacettepe Üniversitesi Psikoloji Bölümü.
- Peterson C, Semmel A, von Baeyer C ve ark. (1982) The Attributional Style Questionnaire. *Cognitive Ther Res*, 6(3): 287-300.
- Propat A (2002) The relationship between attributional style, gender and the five-factor model of personality. *Pers Indiv Differ*, 33:1185-1201.
- Rachman S (1976) The modification of obsessions: A new formulation. *Behav Res Ther*, 14: 437-443.
- Rachman S (1997) A cognitive theory of obsessions. *Behav Res Ther*, 35: 793-802.
- Rassin E, Diepstraten P, Merckelbach H ve ark. (2001a) Thought-action fusion and thought suppression in obsessive-compulsive disorder. *Behav Res Ther*, 39: 757-764.
- Rassin E, Koster E (2003) The correlation between thought-action fusion and religiosity in a normal sample. *Behav Res Ther*, 41: 361-368.
- Rassin E, Merckelbach H, Muris P ve ark. (2001b) Thought-action fusion scale: further evidence for its reliability and validity. *Behav Res Ther*, 39: 537-544.
- Salkovskis PM (1985) Obsessional-compulsive problems: A cognitive behavioural analysis. *Behav Res Ther*, 23: 571-583.
- Savaşır I, Şahin NH (1997) Bilişsel Davranışçı Tedavilerde Değerlendirme: Sık Kullanılan Ölçekler. Türk Psikologlar Derneği Yayınları, Ankara, 23-39.
- Sayılgan MA (2003) Obsesif Kompulsif Bozukluk ve bilişsel-davranışçı tedavi. I. Savaşır, G. Soygüt ve E. Kabakçı, (Eds.), *Bilişsel Davranışçı Terapiler içinde* (3. baskı) (71-90). Ankara: Türk Psikologlar Derneği Yayınları.
- Seligman MEP, Abramson LY, Semmel A ve ark. (1979) Depressive attributional style. *J Abnorm Psychol*, 88: 242-247.
- Shafran R, Rachman S (2004) Thought-action fusion: a review. *J Behav Ther Exp Psychiatry*, 35: 87-107.
- Shafran R, Thordarson DS, Rachman SR (1996) Thought-action fusion in obsessive compulsive disorder. *J Anx Disord*, 10(5): 379-391.
- Volpe N, Levin R (1998) Attributional style, dreaming and depression. *Pers Indiv Differ*, 25: 1051-1061.
- Wortman CB, Dintzer L (1978) Is an attributional analysis of the learned helplessness phenomenon viable? A critique of the Abramson, Seligman, Teasdale reformulation. *J Abnorm Psychol*, 87: 75-90.
- Yorulmaz O, Yılmaz AE, Gençöz T (2004) Psychometric properties of the Thought-Action Fusion Scale in a Turkish sample. *Behav Res Ther*, 42: 1203-1214.