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ENTITY PERCEPTIONS OF MORALITY AND CHARACTER ARE ASSOCIATED WITH OBSESSIVE COMPULSIVE PHENOMENA

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Self-perceptions of moral deficiencies have previously been linked with obsessive-compulsive phenomena. However, beliefs about the nature of morality and character may determine how such deficiencies are perceived and handled. The current research examined the extent to which implicit perceptions about the stability of morality and character (entity theory of morality and character) are associated with OC symptoms in a nonclinical sample. For this purpose, we combined several existing implicit theories scales into a single measure of entity theory of morality and character (Study 1), and examined the hypotheses that holding an entity theory of morality and character is associated with obsessive-compulsive symptoms and that this association is mediated by obsessive-compulsive related beliefs (Study 2). Findings suggest that belief in the over-importance of thoughts and in the importance of controlling one's thoughts, an inflated sense of responsibility, and threat overestimation are reliable mediators of the relationship between entity theory of morality and obsessive-compulsive symptoms. Implications of these findings for theory and treatment of OCD are discussed.

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Obsessive Compulsive Disorder (OCD) is defined by persistent unwanted and disturbing intrusive thoughts, images or impulses (obsessions), and/or ritualistic and repetitive acts (compulsions), aimed at reducing anxiety or preventing feared events from happening (American Psychiatric Association, 1994). OCD is characterized by significant distress and interference with sufferers' social and emotional functioning. Indeed, OCD has been rated as a leading cause of disability by the World Health Organization (WHO, 1996), and is considered one of the most prevalent anxiety disorders (Angst et al., 2004; Weissman et al., 1994).

Although prevalent in OCD, intrusive thoughts are experienced by both clinical and nonclinical populations (Rachman & de Silva, 1978; Salkovskis & Harrison, 1984). However, according to cognitive-behavioral models of OCD, dysfunctional appraisals or catastrophic misinterpretation of these intrusive experiences and/or their feared consequences may lead to increased distress and more frequent use of cognitive (e.g., thought suppression) and behavioral (e.g., repetitive checking) strategies aimed at reducing anxiety and preventing harm. These strategies often prove counterproductive, in that they tend to exacerbate the frequency and impact of the intrusions (Salkovskis, 1985), ultimately resulting in obsessions.

Dysfunctional appraisals of intrusive phenomena are thought to arise from a wide range of dysfunctional beliefs. Research conducted by the Obsessive Compulsive Cognitions Working Group (OCCWG, 1997) has focused on six main belief domains underlying these appraisals: elevated responsibility, over-importance of thoughts, desire to control one's thoughts, overestimation of threat, need for certainty, and perfectionism. These beliefs have been found to be associated with OCD, although the variance in OCD symptoms has yet to be fully accounted for (for a review, see Clark, 2004; Frost & Steketee, 2002). Moreover, although some theoretical work has considered the origins of OCD-related beliefs (e.g., Doron, Moulding, Kyrios, Nedeljkovic, & Mikulincer, 2009; Salkovskis, Shafran, Rachman, & Freeston, 1999), it is unclear how and why these belief-systems develop in some individuals and not in others.

OC-related beliefs such as inflated sense of personal responsibility (e.g., "I have the responsibility to prevent harm from occurring"; Salkovskis, 1985, 1999), moral thought-action fusion (e.g., "immoral thoughts are as bad as immoral actions"; Shafran, Thordarson, & Rachman, 1996), and exaggerated beliefs regarding the importance of controlling one's thoughts (e.g., "I should control my thoughts";

Clark & Purdon, 1993) seem to entail an exaggerated emphasis on one's personal and moral character (Doron & Kyrios, 2005). Moreover, implicit in these beliefs is an assumption about the nature of character and its relation to one's thoughts and actions. We propose that individuals who believe that their thoughts and actions reflect inherent and unchangeable characteristics are more likely to assign significance to these thoughts and actions. In contrast, individuals who believe that character is malleable and subject to change are less likely to assign significance to thoughts and actions reflecting poorly on this character.

ENTITY THEORIES OF MORALITY AND CHARACTER AND OCD

Dweck and colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) have proposed a theoretical model pertaining to general beliefs about character as being more or less malleable and susceptible to change. According to this model, individuals hold implicit theories about the world and the self that influence their judgments and reactions, particularly in the face of negative events. Dweck and colleagues (e.g., Dweck, 1999) defined implicit theories as domain-specific lay-beliefs regarding the extent to which social reality is mutable. These domains broadly include attributes that are internal and within the self, such as one's own intelligence (Hong, Chiu, Dweck, Lin, & Wan, 1999) and abilities (Butler, 2000), as well as attributes that are external and beyond the self, such as other people's character (Levy, Stroessner, & Dweck, 1998), moral order (Chiu, Dweck, Tong, & Fu, 1997), and the social world people live in (Dweck et al., 1995).

This model identifies two implicit theories that people can hold: an *entity* theory, in which the world and human nature are seen as fixed entities, or an *incremental* theory, in which the world and human nature are perceived as more fluid, malleable variables (Dweck, 1991). For example, an entity theory of the world refers to the lay belief that the social world consists of static and fixed characteristics and thus cannot be changed. An incremental theory of the world refers to the lay belief that the social world consists of fluid and malleable characteristics and thus can be changed or improved (Chiu, Dweck, et al., 1997). Similarly, individuals holding an entity theory of character ("character entity theorists") believe that one's person-

ality consists of fixed, static traits, whereas individuals holding an incremental theory of character ("character incremental theorists") believe that one's personality consists of dynamic personal qualities that can be changed and developed (Chiu, Hong, & Dweck, 1997).

Importantly, research has shown that beliefs in the malleability of the world or the self have strong impact on a person's functioning and self-regulation (e.g., Molden & Dweck, 2006). Specifically, holding an entity theory of the self can render individuals vulnerable to helpless and defensive behavior when faced with a threat to their competence or a negative feedback about their performance (Dweck, 1999). Since entity theorists of self and character view attributes as fixed and unchangeable, it is critical for them to prove that they possess desirable attributes. Therefore, evidence that threatens their sense of competence would have particularly negative implications for their self-evaluation. In contrast, because incremental theorists view attributes as malleable, they are more likely to focus on developing desirable attributes and should feel less threatened by others' evaluations of their competence (Rudolph, 2010).

The potential importance of entity and incremental theories of character to the development of OC symptoms is illustrated by recent findings linking self-perceptions of immorality and OC phenomena. Several researchers have recently suggested that the development of intrusive thoughts into obsessions may be influenced by the extent to which intrusive thoughts threaten core perceptions of the self (e.g., Aardema & O'Connor, 2007; Bhar & Kyrios, 2007; Clark & Purdon, 1993; Doron, Szepsenwol, Karp, & Gal, 2013; Rowa, Purdon, Summerfeldt, & Antony, 2005). Rachman (1997) proposed that catastrophic interpretations of intrusions as personally significant are a crucial factor in their exacerbation and maintenance. Accordingly, Doron and Kyrios (2005) suggested that individuals who highly value a particular self-domain (e.g., morality), but feel compromised or incompetent within this domain, could be sensitive to intrusive thoughts that threaten this sensitive aspect of the self. This may then increase the likelihood of a dysfunctional response to such intrusions (i.e., maladaptive appraisals, anxiety, and OC symptoms). Indeed, Doron and colleagues have found that individuals with OCD reported higher levels of self-sensitivity in the domain of morality compared with individuals with other anxiety disorders and nonclinical controls (Doron, Moulding, Kyrios, & Nedeljkovic, 2008). Similarly, Ferrier and Brewin (2005) have found that individuals with OCD, compared with individuals with

other anxiety disorders and nonclinical controls, were more likely to draw negative moral inferences about themselves from their intrusive thoughts. Self-sensitivity in the morality domain was also found to be linked with higher OC symptoms and cognitions in a nonclinical sample (Doron, Kyrios, & Mouliding, 2007), and lately, in several experimental studies (e.g., Doron, Sar-El, & Mikulincer, 2012a, 2012b; Zhong & Liljenquist, 2006). Most notably, Abramovitch, Doron, Sar-El, and Attenburger (in press) have found that priming threat to moral self-perceptions triggered OC-related cognitions such as inflated responsibility, overestimation of threat, and importance of thoughts.

Based on the emerging literature linking self-perceptions to OC phenomena, we propose that holding entity theories of character and morality may undermine self-perceptions in these domains and result in exaggerated responses to intrusive thoughts. Perceiving morality and human character as stable, fixed traits may increase the likelihood of catastrophic interpretations of perceived failures in these domains (e.g., having immoral or disgusting intrusions; Rachman, 1997), the activation of OC-related beliefs (e.g., importance and control of thoughts), and the interpretation of intrusions as indicative of "feared self" attributes, thereby contributing to the formation of obsessions and compulsive behaviors (Aardema, Moulding, Radomsky, Doron, & Allamby, 2013). Thus, having an entity theory of moral character may elicit OC symptoms by way of encouraging catastrophic interpretation of intrusive thoughts and promoting maladaptive OC-related beliefs. Examining such beliefs, therefore, is important for reaching a better understanding of the development and maintenance of OC phenomena. We propose that because of their perception of character as a fixed trait, character entity theorists are particularly vulnerable to harmful self-perceptions that have previously been linked with OC phenomena. Specifically, entity theories of character may promote OC-related beliefs such as inflated responsibility, overestimation of threat, and importance of thoughts, which in their turn may increase the frequency of OC symptoms.

THE PRESENT RESEARCH

In the present research, we examined the hypothesized relation between implicit theories of character and morality and OC phenom-

ena. However, before examining such an association, we needed to validate the structure of the Hebrew version of the Implicit Theories Scale, a composite measure of three domain-specific implicit theories scales (Dweck, 1999). For this purpose, we translated this scale into Hebrew and examined its factor structure in a large sample (Study 1). We then used the validated scale in Study 2 to test the hypothesis that holding an entity theory of morality and character is positively associated with obsessive-compulsive symptoms, and that this association is mediated by OC-related dysfunctional beliefs.

STUDY 1

The purpose of Study 1 was to determine the underlying structure of the Hebrew version of the Implicit Theories Scale through factor analysis on a large sample. To our knowledge, this is the first examination of a composite measure consisting of items pooled from various implicit theories scales proposed by Dweck (i.e., character, morality, and world).

METHOD

Participants. A total of 1,528 Israeli community participants (1,109 women ranging in age from 14 to 77 years, *Mdn* = 29, and 419 men ranging in age from 14 to 68, *Mdn* = 29) were recruited via *Midgam.com*, an Israeli online survey platform with more than 100,000 registered users from all over Israel. The website attracts participants of various ethnic, socioeconomic, and religious affiliations. For this reason, it is regularly used for academic research and political opinion surveys. Participants received automated feedback regarding their responses. They did not receive monetary compensation for their participation. Participants' education level varied (11.3% did not complete high school, 33.2% were high school graduates, 19.2% completed post–high school nonacademic studies, and 36.3% completed a university degree). Most participants self-identified as Jewish (93.7%) and secular (67%). In terms of socioeconomic status, 89.1% reported average or lower status. Participants were informed of their rights and completed an online informed consent form in accordance with university IRB standards.

Materials and Procedure. The study was administered online through midgam.com. Responses were saved anonymously on the server and downloaded by the first author for analysis. All participants completed the Hebrew version of the Implicit Theories Scale.

The Implicit Theories Scale is a composite of three separate implicit theories scales (Dweck, 1999): Implicit Theories of Character ("kind of person"), Implicit Theories of Morality, and Implicit Theory of the World. The composite scale included 14 items in total. Participants rated their agreement or disagreement with statements concerning the fixed or malleable nature of a person's character as a whole, the morality of people, or the world, on a 6-point scale ranging from 1(*strongly disagree*) to 6 (*strongly agree*).

RESULTS AND DISCUSSION

Factor Analysis. We used a dual approach of exploratory and confirmatory factor analysis. For this purpose, the dataset was randomly split into two subsamples. Study variables did not differ significantly between these two subsamples.

Exploratory factor analysis (EFA) was run on the first subsample ($N = 793$). The 14 items of the Implicit Theories Scale were subjected to principal factors extraction with direct oblimin rotation ($\delta = 0$). Oblique rotation was chosen over orthogonal rotation because interfactor correlations were expected. Factors with eigenvalues greater than 1 were retained. The analysis yielded a three-factor solution, which explained 60.92% of the shared variance. The first factor included seven items relating to stability of individual character and morality, and was labeled *entity theory of morality and character*. The second factor included four items relating to malleability of individual character, and was labeled *incremental theory of character*. The third factor included three items relating to stability of the world order, and was labeled *entity theory of the world*. Items and rotated item loadings (pattern matrix) are presented in Table 1.

The resulting factor structure was validated through confirmatory factor analysis (CFA) on the second subsample ($N = 735$). Namely, we specified and examined an oblique measurement model that included three correlated latent factors with their relevant indicators. Goodness-of-fit indices were largely favorable. The comparative fit index (CFI) equaled .96 and the standardized root mean-square re-

TABLE 1. Rotated Item Loadings (Direct Oblimin) for the Three Implicit-Theories Factors

Item	EMC	IC	EW
The kind of person you are is something very basic about you and it can't be changed very much.	.82		
Everyone is a certain kind of person, and there is not much that can be done to really change that.	.72		
A person's moral character is something basic about them and they can't change it much.	.81		
As much as I hate to admit it, you can't teach an old dog new tricks. People can't really change their deepest attributes.	.71		
Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	.72		
There is not much that can be done to change a person's moral traits.	.70		
People can do things differently, but the important parts of who they are can't really be changed.	.67		
People can always substantially change the kind of person they are.		.85	
Everyone, no matter who they are, can significantly change their basic characteristics.		.85	
All people can change even their most basic qualities.		.80	
No matter what kind of person you are, you can always change.		.69	
Our world has basic or ingrained dispositions, and you really can't do much to change them.			.86
Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.			.76
Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.			.63

Note. EMC = entity theory of morality and character; IC = incremental theory of character; EW = entity theory of the world.

sidual (SRMR) equaled .04, both falling within the range commonly regarded as indicating acceptable fit (CFI > .95, SRMR < .08; Hu & Bentler, 1999). The root mean square error of approximation (RMSEA) equaled .068, falling short of reaching the criterion indicating good fit (RMSEA < .06; Hu & Bentler, 1999), while falling outside the range commonly regarded as indicating poor fit (RMSEA > .10; Browne & Cudeck, 1993). Cronbach's alphas for each of the three factors, calculated on the entire sample (N = 1,528), were high, further validating the three-factor solution (see Table 2).

As expected, both EFA and CFA revealed sizeable estimated interfactor correlations (see Table 2). This seems to validate our oblique measurement model. Most notably, entity theories of the world were strongly correlated with entity theories of morality and character. Interestingly, entity theories of morality and character loaded onto the same factor. This may reflect the strong association pre-

TABLE 2. Inter-Factor Correlations and Cronbach's Alphas for Implicit-Theories Factors (Study 1)

	EMC	IC	EW
EMC	.91	-.61	.71
IC	-.47	.88	-.38
EW	.65	-.19	.82

Note. EMC = entity theory of morality and character; IC = incremental theory of character; EW = entity theory of the world. Values on the diagonal are Cronbach's alphas. Values above the diagonal are inter-factor correlations estimated through CFA. Values below the diagonal are inter-factor correlations estimated through EFA.

viously found between morality and personality judgments (e.g., Chiu, Hong et al., 1997). Consistent with these findings, our results suggest that, at least with respect to its stability, morality is perceived as an integral part of human character in general.

Surprisingly, items relating to incremental theory of character loaded onto a separate factor, rather than negatively loading onto the entity theory of morality and character factor. This runs counter to the view that entity theories and incremental theories are two ends of a single continuum. A possible explanation for the relative independence of the incremental character items is that participants did not necessarily view these items as contradicting the entity items. That is, the items may have been phrased in a way that elicited agreement, even from entity theorists. A similar account of the desirability of incremental items was put forth by Chiu, Hong, et al. (1997), and may be particularly relevant in the character domain. It may be hard for people, even character entity theorists, to completely reject the possibility of character change, even if their basic belief is that character is fixed.

Relationships with Demographic Variables. The relationships between demographic variables (sex, age, education, religiosity, and socioeconomic status) and the three implicit theories scales were examined. The only significant finding was that religious individuals were more likely to report holding incremental theories of morality (r = .19), and less likely to report holding entity theories of morality and character (r = -.12). This may be because of the Jewish religion's emphasis on moral improvement through religious practice. Nevertheless, these correlations were very modest in size.

STUDY 2

In Study 2, we examined the hypothesis that perceiving morality and human character as stable fixed traits (i.e., entity perceptions of morality and character) is associated with higher severity of OC symptoms. Specifically, we proposed that holding an entity theory of morality and character would be positively associated with OC symptoms, and that this association would be mediated by OC-related beliefs, such as threat overestimation, perfectionism, and the importance of thoughts.

The sample used in Study 2 consisted of nonclinical participants, in accordance with the common practice in the study of OCD. Similarly to individuals who are clinically diagnosed with OCD, nonclinical participants tend to engage in compulsive behaviors in order to alleviate distress (e.g., Muris, Harald, & Clavan, 1997). Furthermore, taxometric studies of OCD (e.g., Haslam, Williams, Kyrios, McKay, & Taylor, 2005; Olatunji, Williams, Haslam, Abramowitz, & Tolin, 2008) have found that OC symptoms and OC-related beliefs are best conceptualized as dimensional rather than categorical. Finally, due to the association between OCD and mood symptoms, such as depression, anxiety, and stress, individual differences in these variables were statistically controlled.

METHOD

Participants. One hundred and fifty-five Israeli community participants (119 women ranging in age from 18 to 60 years, *Mdn* = 27, and 36 men ranging in age from 18 to 69 years, *Mdn* = 34) were recruited via *Midgam.com*. Participants who took part in Study 1 were excluded from Study 2. They received automated feedback regarding their responses, and no monetary compensation. Participants' education level varied (9.7% did not complete high school, 47.1% were high school graduates, 12.2% completed post–high school nonacademic studies, and 31% completed a university degree). Most participants were Jewish (89.7%) and secular (65.8%). In terms of socioeconomic status, 86.5% reported average or lower status.

Materials and Procedure. The study was administered online through midgam.com. Responses were saved anonymously on the server and downloaded by the first author for analysis. All participants completed the Hebrew version of the Implicit Theories Scale,

the Obsessive Beliefs Questionnaire-Revised (OBQ-44; OCCWG, 2005), the Obsessive-Compulsive Inventory Revised (OCI-R; Foa et al., 2002), and the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995).

The Obsessive Beliefs Questionnaire-Revised (OBQ-44; OCCWG, 2005) is a 44-item self-report measure of pan-situational cognitions associated with OCD, which was developed collaboratively by many of the prominent cognitive researchers of OCD. The instrument taps six domains represented in three subscales: (1) *Inflated responsibility and threat overestimation*, consisting of 16 items about preventing harm from happening to oneself or others, the consequences of inaction, and responsibility for bad things happening (e.g., "Harmful events will happen unless I am very careful"); (2) *perfectionism and intolerance of uncertainty*, consisting of 16 items reflecting high standards, rigidity, concern over mistakes, and feelings of uncertainty (e.g., "For me, things are not right if they are not perfect"); and (3) *importance and control of thoughts*, consisting of 12 items concerning the consequences of having intrusive distressing thoughts and the need to rid oneself of intrusive thoughts (e.g., "Having a bad thought is morally no different than doing a bad deed"). All items are rated on a 7-point scale ranging from 1 (*disagree very much*) to 7 (*agree very much*). All subscales have been shown to relate strongly to OCD-symptom measures as well as to measures of anxiety, depression, and worry (OCCWG, 2005).

The Obsessive-Compulsive Inventory Revised (OCI-R; Foa et al., 2002) is an 18-item self-report questionnaire. In this measure participants were asked to rate the degree to which they were bothered or distressed by OCD symptoms in the past month on a 5-point scale, ranging from 0 (*not at all*) to 4 (*extremely*). The OCI-R assesses OCD symptoms across six factors: (1) washing, (2) checking/doubting, (3) obsessing, (4) mental neutralizing, (5) ordering, and (6) hoarding. Previous data suggested that the OCI-R possesses good internal consistency for the total score (alphas ranged from .81 to .93 across samples), although internal consistency was less strong for certain subscales in nonclinical participants (Foa et al., 2002). Test-retest reliability has been found to be adequate (.57–.91 across samples; Foa et al., 2002). In the present research, the total OCI-R score was used.

The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) is a 42-item self-report questionnaire listing negative emotional symptoms. It is divided into three subscales measuring depression, anxiety, and stress, with 14 items for each scale. The

Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia (e.g., "I couldn't seem to experience any positive feeling at all"). The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect (e.g., "I was worried about situations where I might panic and make a fool of myself"). The Stress scale is sensitive to levels of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient (e.g., "I found it hard to wind down"). Participants rated the extent to which they experienced each symptom over the past week on a 4-point scale, ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). The DASS has been shown to have high internal consistency and to yield meaningful discriminations in a variety of settings (Lovibond & Lovibond, 1995). However, in the present research, the three scales were highly correlated (*r*s > .80). Hence, only the depression scale was used in further analysis.

Preparation for Analysis. Based on Study 1's findings, three implicit-theories factor scores were created by averaging out the relevant items of the Implicit Theories Scale (Dweck, 1999). Total scores were also created for the OCI-R as a whole, the three subscales of the OBQ-44 (overestimation of threat/inflated responsibility, perfectionism/intolerance of uncertainty, and importance/control of thoughts), and the DASS depression scale. All scales were standardized prior to analysis. Means, standard deviations, Cronbach's alphas, and inter-correlations are presented in Table 3.

RESULTS AND DISCUSSION

In order to test our multiple-mediation model we used Preacher and Hayes's SPSS macro (2008). Because the assumption of sampling distribution normality is questionable with regard to the total and specific indirect effects, we used bootstrapping in order to establish confidence intervals for these effects. Bootstrapping is a nonparametric resampling procedure, and hence does not require normality of the sampling distribution. In this procedure, the sample is conceptualized as a pseudo-population that represents the broader population from which the sample was derived, and the sampling

TABLE 3. Means, SDs, Reliability Coefficients, and Correlations among Implicit-Theories Subscales, OBQ Subscales, DASS Depression, and OCI-R Total Scale (*N* = 155)

	1	2	3	4	5	6	7	8
1. EMC	.83							
2. IC	-.48***	.86						
3. EW	.45***	-.18*	.81					
4. OBQ-R/T	.23**	.05	.06	.90				
5. OBQ-P/U	.21*	-.06	.18*	.74***	.91			
6. OBQ-I/C	.37***	.01	.14	.70***	.58***	.87		
7. DASS-D	.24**	-.16*	.09	.40***	.41***	.48***	.97	
8. OCI-R	.25**	.04	.08	.60***	.53***	.60***	.50***	.89
M	3.45	3.74	4.03	3.51	3.82	2.67	0.90	19.80
SD	0.85	1.03	1.05	1.22	1.27	1.14	0.89	11.7

Note. EMC = entity theory of morality and character; IC = incremental theory of character; EW = entity theory of the world; OBQ-R/T = inflated responsibility and threat overestimation; OBQ-P/U = perfectionism and intolerance of uncertainly; OBQ-I/C = importance and control of thoughts; DASS-D = DASS depression; OCI-R = OCI-R total scale; *$p < .05$, **$p < .01$, ***$p < .001$.

distribution of any statistic can be generated by calculating the statistic of interest in multiple subsamples drawn from the dataset (for details, see Preacher & Hayes, 2008). By using Preacher and Hayes's SPSS macro, we were able to obtain bootstrapped confidence intervals based on 1,000 resampling runs for the indirect effects.

The model examined the contribution of holding an implicit entity theory of morality and character to the prediction of OC symptoms, both directly and via three OC-related beliefs domains (i.e., overestimation of threat/inflated responsibility, perfectionism/intolerance of uncertainty, and importance/control of thoughts). Participants' depression level and implicit theories of the world and of character (incremental) were included as covariates.

Results indicated that holding an entity theory of morality and character (i.e., believing that character and moral constitution are unchangeable) was positively associated with OC symptoms via OC-related beliefs. That is, when OC-related beliefs were entered into the equation, the significant effect of holding an entity theory of morality and character on OC symptoms became nonsignificant. More specifically, conditions for establishing mediation were met for the responsibility/threat overestimation and the control/importance of thoughts subscales. Both were positively associated with holding an entity theory of morality and character (significant a

paths), and positively associated with obsessive-compulsive symptoms (significant b paths). Confidence intervals for the indirect effects through both mediators did not include 0, indicating, with a 95% confidence level, that these effects were statistically significant.

With regard to perfectionism/intolerance of uncertainty, it was neither associated with holding an entity theory of morality and character (nonsignificant a path) nor with obsessive-compulsive symptoms (nonsignificant b path). That is, perfectionism did not mediate the association between holding an entity theory of morality and character and obsessive-compulsive symptoms. This finding seems surprising given that both entity theory of morality and perfectionism represent attempts to avoid criticism and are characterized by rigidity and high concern over mistakes (Dweck, 1991; Frost & Steketee, 2002). It may well be that because perfectionism shared a large part of its variance with responsibility/overestimation of threat and control/importance of thoughts in the current sample (R = .78), it could not uniquely mediate the relationship between entity theory of morality and character and obsessive-compulsive symptoms.

In summary, the findings supported our hypotheses. First, holding an implicit theory that people's character and moral traits are fixed and cannot be substantially changed (entity theory) was positively associated with the severity of obsessive-compulsive symptoms. Second, this association was mediated by inflated responsibility/overestimation of threat and beliefs about the importance and control of thoughts. Table 4 provides regression coefficients and bootstrapped confidence intervals for the mediation model.

GENERAL DISCUSSION

The aim of the present research was to examine the association between entity theories of morality and character and OC symptoms, and to examine the role of OC-related beliefs in mediating this association. In order to obtain a measure of entity theory of morality, we subjected a 14-item composite measure of implicit theories to factor analysis, which yielded three internally consistent and distinct factors, one of which was entity theory of morality and character (Study 1). Our mediation hypothesis was supported in Study 2. Entity theory of morality and character was associated with OC symptoms, and this association was mediated by beliefs about the

TABLE 4. Path Coefficients for Mediation Model

				.95 CI	
Path	**β**	**SE**	**t**	**Lower**	**Upper**
c path: total effect					
EMC → OC symptoms	.27	.09	3.15**		
c′ path: direct effect IV on DV					
EMC → OC symptoms	.11	.08	1.36		
a paths: IV to mediators					
EMC→ OBQ-R/T	.27	.09	2.98**		
EMC→ OBQ-P/U	.10	.09	1.05		
EMC→ OBQ-I/C	.41	.08	4.86***		
b paths: direct effects of mediators on DV					
OBQ-R/T → OC symptoms	.21	.10	2.06*		
OBQ-P/U → OC symptoms	.13	.09	1.44		
OBQ-I/C → OC symptoms	.22	.09	2.36*		
ab paths: mediated effectsa					
EMC → total → OC symptoms	.16	.06		.05	.30
EMC → OBQ-R/T → OC symptoms	.06	.04		.01	.18
EMC → OBQ-P/U → OC symptoms	.01	.02		-.01	.08
EMC → OBQ-I/C → OC symptoms	.09	.04		.02	.19
Covariates: direct effects on DV					
DASS depression	.25	.07	3.57***		
Incremental theory of character (IC)	.12	.07	1.71		
Entity theory of the world (EW)	-.04	.07	-0.63		

Note. a = estimates derived from bias corrected and accelerated bootstrap (k = 1000); EMC = entity theory of morality and character; OBQ-R/T = inflated responsibility and threat overestimation; OBQ-P/U = perfectionism and intolerance of uncertainly; OBQ-I/C = importance and control of thoughts; OC symptoms = OCI-R total scale; *$p < .05$,** $p < .01$, ***$p < .001$.

importance and controllability of thoughts and by overestimation of threat and inflated responsibility.

These results were consistent with previous theoretical models implicating self- and morality-related cognitions in the development and maintenance of OC symptoms (e.g., Bhar & Kyrios, 2007; Doron & Kyrios, 2005; Guidano & Liotti, 1983; Phillips, Moulding, Kyrios, Nedeljkovic, & Mancuso, 2011; Purdon & Clark, 1999). Doron and Kyrios (2005) proposed that thoughts or events that challenge valued self-domains, particularly in the morality self-domain (e.g., immoral thoughts or behaviors), damage a person's self-worth and activate maladaptive attempts aimed at compensating for the perceived deficits. These attempts, together with the activation of

other dysfunctional thoughts (e.g., an inflated sense of responsibility, threat overestimation), are self-perpetuating and can result in the development of obsessions and compulsions.

Our findings were also consistent with the developmental-motivational model put forth by Dweck (1999), who proposed that people's beliefs about the nature and workings of the self and the social world play a highly important role in psychological functioning in major areas of life. Applying this theory to perceptions of human character and morality, Dweck (1999) argued that entity theorists of character and morality, who perceive these domains as fixed and stable entities, will be more vulnerable to experiences challenging their sense of personal and moral competence. For them, it is critical to maintain desirable attributes in order to maintain positive self-evaluations. As implicit theories play a crucial role in self-regulation and resilience, particularly in the face of setbacks and failures, individuals holding entity self-perceptions will appraise any failure as a significant threat to their view of self. Consistent with this model, our findings suggest that perceiving morality and character as stable, fixed entities seems to increase vulnerability to OCD by promoting the development and maintenance of maladaptive beliefs about importance of thoughts and inflated responsibility. Holding such entity perceptions may further encourage the appraisal of unwanted intrusions as indicative of "feared self" attributes. Thus, for such individuals, common aversive experiences may activate overwhelmingly negative evaluations in sensitive self-domains, which may trigger OC-related maladaptive responses (Doron et al., 2008).

Although the data were consistent with the hypothesized mediation model, it is important to note that our design was cross-sectional and correlational, and therefore caution should be taken when deriving causal inferences from the findings. Studies have shown that individuals prone to OCD reveal a stronger desire for control and predictability (e.g., Moulding, Doron, Kyrios, & Nedeljkovic, 2008; Moulding & Kyrios, 2006). This may be particularly true when assessing domains that are perceived as indicative of the self. Holding entity perceptions of morality and character facilitates the perception of these valued domains as stable and unchanging, thereby increasing one's sense of control and predictability. Hence, it might be that the importance of controlling one's thoughts and the inflated responsibility associated with OCD promotes entity theories, and not the other way around. Future research using longitudinal

and experimental approaches may provide stronger evidence for the direction of causality of the observed associations.

An additional limitation of the current study is the use of an analogue cohort consisting of community participants. Although nonclinical participants experience OC-related beliefs and symptoms, they may differ from clinical patients in the type and severity of OCD symptoms as well as in symptom-related impairment. Future research would benefit from studying the link between entity theories of morality and character and OCD symptoms among clinical participants.

Despite these potential limitations and pending replication of the findings with a clinical cohort, the findings have important implications for the treatment of OCD. For example, clinicians might consider paying more attention to OCD patients' implicit beliefs about morality and human nature, using cognitive behavioral techniques (e.g., cognitive reconstruction) to challenge such beliefs and to facilitate the formation of more flexible incremental theories regarding the self and the world (Doron & Moulding, 2009). Such interventions were proved successful in educational contexts. Blackwell, Trzesniewski, and Dweck (2007) have shown that an intervention teaching incremental theory was effective in halting the decline in mathematics achievement among adolescents holding entity theories of intelligence.

In conclusion, to our knowledge this is the first major study exploring the relationship between entity implicit theories, dysfunctional cognitive beliefs linked with OCD, and obsessive-compulsive symptoms. By integrating social/developmental theories and cognitive/clinical models of OCD, our research contributes to the understanding of this highly disabling disorder and takes another important step in elucidating the consequences of the belief in fixed human character and morality on individuals' psychological functioning.

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