

“DON’T PLAY GOD!”: IS INACTION PREFERENCE LINKED TO OBSESSIVE COMPULSIVE CHARACTERISTICS?

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Abstract

Objective: two kinds of guilt feelings have been postulated: altruistic and deontological. the latter seems to play a role in the genesis and maintenance of obsessive-compulsive Disorder (ocD) and to be linked to inaction choice in moral dilemmas. This paper aims to investigate whether inaction choices in moral dilemmas are specifically linked to obsessive-compulsive (OC) characteristics and to deontological guilt.

Methods: In the first study, participants completed questionnaires for depression, anxiety and oc and answered to moral and non-moral dilemmas. In the second study, after deontological or altruistic guilt or of shame induction and in control condition (no emotive induction), they answered to moral and non-moral dilemmas and to Padua Inventory.

Results: showed that people who ever prefer inaction in moral dilemmas report higher scores only in oc characteristics, but not in depression or anxiety symptoms. at the same time, after induction of deontological guilt but not of altruistic guilt or shame, participants showed an increase of inaction choices.

Conclusions: These findings support the existence of a specific link between OC characteristics and deontological guilt.

Key words: deontological guilt; altruistic guilt; shame; moral dilemma; obsessive-compulsive characteristics

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1. Introduction

Guilt emotion has been claimed to have a pivotal role in Obsessive Compulsive Disorder (OCD) (e.g., Salkovskis 1985, Rachman 1993, Rachman 2002), and to cause obsessive-compulsive (OC)-like symptoms in non-clinical samples, including increased threat perception (Gangemi et al. 2007), Not Just Right Experience (NJRE; e.g. Mancini et al. 2008) and checking and doubts (Mancini et al. 2004). In OCD samples, a reduction of responsibility and, thus, of the chance of feeling guilty, can reduce patients’ urge to perform rituals (Lopatka and Rachman 1995, Shafran 1997) and preliminary evidence on therapeutic interventions, focused on an exaggerated belief of responsibility or on acceptance of guilt even in non-symptomatic domains, have been shown that a decrease of responsibility and/or of guilt decreases OCD symptoms (Bouchard et al. 1999, Cosentino et al. 2012; Vos et al. 2012). But what kinds of guilt do OCD patients want to prevent?

Recently, Mancini (2008) suggested that two kind of guilt feelings, deontologic and altruistic, could be distinguished. Altruistic guilt appears when one appraises his own conduct as not altruistic and it is characterized by feeling of sorrow for the victim; it implies the tendency to alleviate suffering of the victim at the expense of one’s own. Deontological guilt occurs

when supposing to have contravened one’s own moral rules; it implies feeling of unworthiness and expectations of punishment. The two guilt feelings seem to involve two different brain networks: the deontological guilt includes the insula and the anterior cingulate cortex, and the altruistic one the medial prefrontal areas (Basile et al. 2011). Since insular activation is related to self reproach and disgust (e.g., Rozin et al. 2000), it is suggestive to infer that deontological guilt implies self-reproach and self-loathe more than altruistic guilt. On the other hand, as reported by Basile and colleagues (2011, p. 237) “the activation of medial prefrontal brain areas for altruistic guilt can be related with previous studies on Theory of Mind (for instance, Shallice 2001, Moll et al. 2005) ... for instance, “mind-reading” tasks typically entail experiencing social and interpersonal emotions, compared to inner and more private emotional experiences, such as sadness” thus suggesting that altruism might imply understanding the victim’s mind.

Some data suggest that Obsessive Compulsive Disorder (OCD) patients are more sensitive to deontological guilt than other people, or that they process it in another, maybe less adaptive, way. For instance, in a recent functional magnetic resonance imaging (fMRI) study (Basile et al. 2013), when processing deontological guilt stimuli, OCD patients showed decreased activation in the anterior cingulate

cortex, the insula and the precuneus, compared to non-clinical controls, whereas no significant differences were observed between the two groups, when processing altruistic guilt, angry or sad stimuli. The authors suggested that this decreased activation might reflect patients' cerebral efficiency that would result from their frequent exposure to deontological guilt feelings, in line with the neural efficiency hypothesis (Neubauer and Fink 2009).

Other evidence comes from studies employing the switch version of the trolley problem. In its original form, the problem asks people to imagine that "a trolley is running out of control down a track. In its path are five people who have been tied to the track. Fortunately, you can flip a switch, which will lead the trolley down a different track to safety. Unfortunately, there is one person tied to that track. Should you flip the switch?" (Foot 1967). This moral dilemma requires participants to choose one of two undesirable courses of action (both involving loss of life), putting two opposing moral instances into conflict: a deontological one and an altruistic one. If you omit to flip the switch, then you don't modify the "natural order" and respect the "Not play God" moral rule (Sunstein 2005, Edmonds 2014) but five people die. If you move the flip, you save four people, minimizing the number of victims, but you modify the "natural order" and "play God".

Mancini and Gangemi (2015) found that patients with OCD prefer inaction thus suggesting that OCD patients have a propensity to deontological guilt feelings. Other studies have found results only partially overlapping. Franklin and colleagues (2009), asking to individuals with or without OCD to choose action (actively cause one death in order to save many others) or omission (passively to allow many people die) in moral dilemmas, did not find any differences between groups, suggesting that individuals with OCD judge inaction as similar to action. However, these authors found that people with inflated responsibility are less likely to act to kill one person to save the lives of others, suggesting a positive relationship between inflated responsibility and preference for deontological option.

On the other hand, Siev and colleagues (2010) found that OCD patients show smaller omission bias (i.e., the tendency to prefer harm by inaction over harm by commission) than others, at least for OCD relevant scenarios. Furthermore, these authors found that, in a student population, OCD symptoms and inflated responsibility are negatively related to omission bias in washing and checking scenarios, supporting the idea that OCD consider harm by omission as harm by commission, at least in OCD-relevant situations. Furthermore, Wroe and Salkovskis (2000) found that in OC patients, omissions were viewed as being as morally serious as actions, in contrast to nonclinical individuals. However, these authors did not use the dilemmas requiring a choice of action or inaction but rather asked participants to judge the moral severity of action and omission. Furthermore, in their experiment, actions and omissions led to the same outcome and not two undesirable courses of action, which led to quite different outcomes.

These considerations let imagine that some discrepancies between studies using dilemmas could be justified by the different version of the moral dilemmas. In its classic version people prefer action than inaction (Greene et al. 2009) and this sort of ceiling effect could give rise for the same pattern for action and inaction both in OCD and non-clinical samples. For instance, when facing with a modified version of the original trolley dilemma (a modified proportion of victims, i.e.,

five vs. three, instead of the five vs. one) Mancini and Gangemi (2015) found inaction preference in OCD patients.

Other factors may influence the relationship between guilt, thinking and behaviors. Research on these factors could be improved by the use of analogue samples. As suggested by Deacon and Maack (2008), the use of analogue sample could be useful in research on OC-related psychopathology, for instance in experimental research that tests hypotheses regarding the effects of putative developmental and maintenance factors on OC symptoms. Studies on non clinical samples seem to support the hypothesis of an association between deontological guilt and OCD-like behavior: D'Olimpio and Mancini (2014), by inducing deontological or altruistic guilt in healthy volunteers, found that participants in the deontological group checked more, cleaned a cube more and scored higher in doubts and discomfort than participants in altruistic or control group. Furthermore, Mancini and Gangemi (2015) found that induction of deontological guilt in non clinical participants imply a preference for inaction choices in the trolley dilemma, more than altruistic guilt induction. Individuals preferring the inaction tended to justify it by referring to the "Not play God" principle (e.g. "Who am I to decide who lives and who dies?"), while those preferring action tended to justify it by referring to the consequentialist attempt to minimize suffering (e.g. "it's better what will save the greatest number of people").

However, the inaction preference could be related to other "moral" emotions, like shame. The main difference between deontological guilt and shame can be found in the goals involved in the self-evaluation or proper intentions. In guilt, goals concern the respect of introjected moral norms, in shame they turn around the image to portray and the judgment by others (Castelfranchi 2005). Smith and colleagues (2002) showed that public exposure of transgressions or incompetence experiences was associated with shame. Shame was also strongly linked to non-moral experiences of inferiority, suggesting two core features of shame: public exposure and negative self-evaluation. According to Nelissen and Zeelenberger (2009), shame, differently from guilt, does not imply self-punishment or remedial conducts. In other words, the distinctive features of guilt include remorse, self-blame, and the private feelings associated with a troubled conscience.

In the present Study we aimed to clarify the distinction among altruistic and deontological guilt and shame, and to compare the effects of induction of these three emotions. On the basis of the above mentioned studies, if deontological guilt is "preferentially" related to OCD we predicted that: a) in a standard condition (no emotive induction) people with an inaction style in moral situations have higher obsessive-compulsive characteristics; b) induction of deontological guilt implies more inaction choices than induction of altruistic guilt or of shame.

Study 1

In line with the literature on OCD and moral dilemmas, we hypothesized that people who ever prefer inaction in moral situations have higher scores only in OC characteristics, when compared to people ever choosing action. To test this prediction, we required to non-clinical participants to answer to moral and non moral dilemmas, and compared their action/inaction preference style on OC, depression and anxiety scores.

2. Method

2.1 Participants

Participants were 66 students (33 females; age range = 18-39 years, mean age = 25.20, $sd=3.57$) from University of l'Aquila. They were dwelling in Center Italy, and 92% of them lived in an area near l'Aquila. Participants were recruited in the University area by asking them to voluntarily participate to a study on decision making. All subjects were naive to purposes and predictions of the study. Participants gave their informed consent to take part in the study.

2.2 Measures and procedure

All participants were individually tested in a quiet room. All of them received a booklet comprising several questionnaires assessing psychological aspects and seven scenarios (moral dilemma and four control scenarios) in a randomized order.

State-Trait Anxiety Inventory –Y (STAI-Y)

The State-Trait Anxiety Inventory (Beck et al. 1988) consists of two 20-item scales aiming at assessing state and trait anxiety. The STAI-Y State subscale requires respondents to rate how they feel “right now ... at this moment”, on a 4-point scale (1 = not at all, 4 = very much so), in response to a series of self-descriptive statements ($\alpha = .93$). The STAI Trait subscale requires respondents to rate how they “generally” feel, on a 4-point scale (1 = almost never, 4 = almost always), in response to a series of self-descriptive statements ($\alpha = .90$). Factor analytic validation of the state–trait distinction has been demonstrated, and the improved psychometric properties of the STAI over an earlier version of this inventory are well documented (Spielberg et al. 1983). In the present study, we used the validated Italian version of the scale (Pedrabissi and Santiniello 1989).

Beck Depression Inventory (BDI)

The Beck Depression Inventory (Beck et al. 1979) measures presence and severity of depressive symptoms. There is strong support for its reliability (α ranging from 0.81 to 0.88) and validity (Kendall et al. 1987). Balsamo and Saggino (2007) supported the structure and reliability for the Italian version of the scale.

Padua Inventory-R (PI-R)

The Padua Inventory-R (van Oppen et al. 1995), consisting of 41 items, provides a total score indicating the presence of obsessive-compulsive features, and 5 sub-scale scores: Impulses (e.g., “While driving I sometimes feel an impulse to drive the car into someone or something”), Washing (e.g., “I feel my hands are dirty when I touch money”), Checking (e.g., “I check letters carefully many times before posting them”), Rumination (e.g., “I find it difficult to take decisions, even about unimportant matters”), and Precision (e.g., “I feel obliged to follow a particular order in dressing, undressing and washing myself”). In the original study (Sanavio 1988) using an Italian normative sample of 828 subjects of varying ages, the scales evidenced good psychometric properties. The PI-R has good internal consistency ($\alpha = 0.92$). Its factorial structure is invariant across various clinical samples (i.e. obsessive-compulsive, panic disorder and social phobic patients) and non-clinical samples (van Oppen et al. 1995).

Scenarios

Participants received seven brief scenarios comprised of 6–8 sentences each (Gangemi and Mancini 2013). Scenarios required indicating which of two courses of action they would take if confronted with the situation described (Greene and Haidt 2002). We used a version of the problem with a modified proportion of victims, five vs. three instead of the original five vs. one. In a preliminary study Gangemi and Mancini (2013) found that, with this modified trolley problem, there were about 50% action choices in all dilemmas.

Four scenarios concerned moral dilemmas, where participants are required to choose between action (killing three human but saving the lives of five) or inaction (did not kill three human beings, letting to die five people). Three scenarios required participants to choose between action and inaction without moral implication (non moral/control scenarios). These control scenarios did not involve moral dilemmas. We included them to test whether participants would decide in the same way when facing with two courses of action. Participants responded to each scenario by marking “yes” (action) or “no” (inaction).

The order of the seven dilemmas was randomized. Following is an example of the two kinds of dilemmas, moral and control, presented in the study (translated from Italian, all the scenarios are available at http://www.apc.it/wpcontent/uploads/2014/10/DilemmiMorali_NonMorali.pdf):

Moral Dilemma

You are near a Ferris wheel. It does not work. Just under the wheel, there are five tourists. Suddenly, the wheel starts turning and soon a cabin will kill them. There is no way to warn them and they cannot escape in any way. The only way to save the five tourists is to pull a lever that can change the rotation of the wheel. Unfortunately, there are three people on the other side that would be killed. Should you pull the lever?

Control scenarios

You have just sent an e-mail order for three books that you need for your studies (they are by your favorite writer), when a colleague suggests that you buy the same books and two more (five books in total) at a discount. The order cancellation procedure requires much time. Should you proceed with the cancellation procedure?

2.3 Analyses

All variables were checked on distribution before analysis. Skewed distributions were log-transformed, if normality could not be approached.

According to their answers to moral dilemma, participants were divided in two groups: action preference style (APS, participants who responded with action 4 times out of 4 scenarios) and inaction preference style (IPS, participants who never responded with action). On these participants a series of ANOVA/MANOVA were conducted on BDI, PI-R (ANOVAs) or STAI-Y State and Trait (MANOVA) scores, with Group (APS/IPS) as between subjects factor and scores as dependent variables.

Furthermore, a control analysis (one way ANOVA with group as between factor) was conducted on scores reported in control scenarios in order to verify if the action/inaction responses reflect a more general response style.

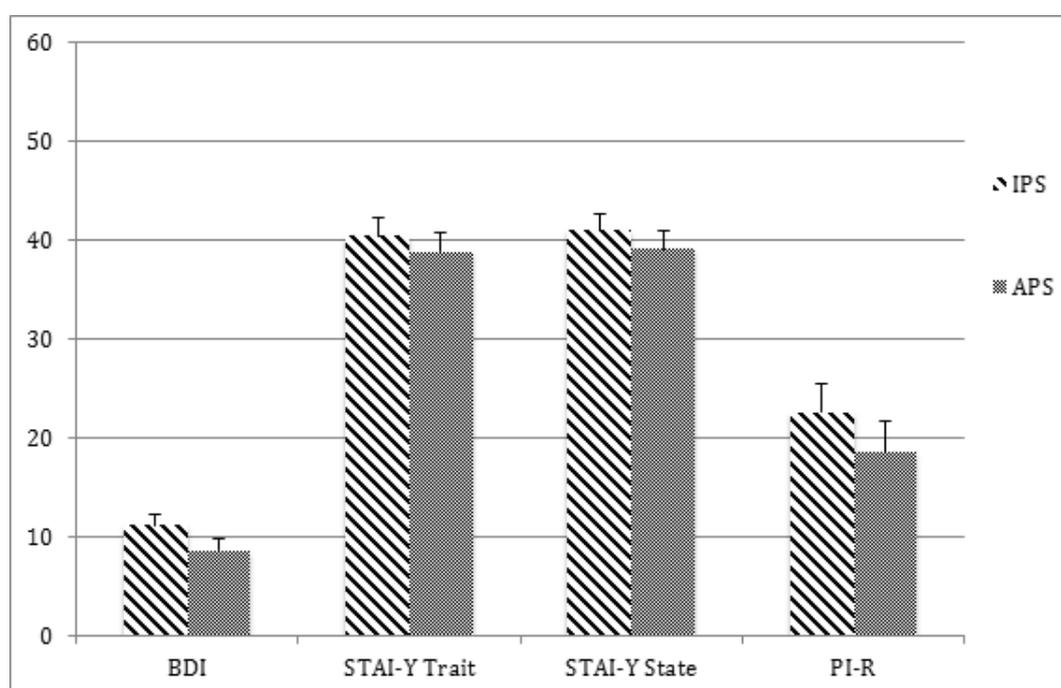
3. Results

Analyses were conducted on 58 participants (APS= 21, 12 females; IPS= 37, 18 females). Analysis on STAY-Y scores and on BDI scores didn't show effect of group (STAI-Y: = .98; $F(2,55)=.49$; $p=.62$; $\eta_p^2=.02$; BDI: $F(1,56)=3.09$; $p=.08$; $\eta_p^2=.05$). A significant effect of group was found on PI-R scores ($F(1,56)=5.23$; $p=.03$; $\eta_p^2=.08$) with IPS showing higher scores (mean = 22.62, s.e.= 2.83) than APS (mean= 11.86, s.e.=3.76). Analysis on scores from control scenarios did not show any difference ($F(1,56)=1.71$; $p=.20$; $\eta_p^2=.03$) between groups (IPS: mean = 1.51, s.e.= .11; APS: mean = 1.76, s.e.= .15). Fig.1 report the scores for all psychological characteristics in both groups.

Study 2

In this study we explored the effects of guilt feelings and shame on choices in moral dilemmas and control scenarios. We induced (deontological or altruistic) guilt or shame in non-clinical individuals and asked them to answer to scenarios. If deontological guilt, more than other emotions, implies a preference for inaction, it would spawn a preference for inaction in moral dilemmas compared to people who have to choose action or inaction in the same moral dilemmas without emotive induction.

Figure 1. Mean and Standard Error of the BDI, STAI-Y and PI-R scores in IPS and APS (grey bars) groups



4. Discussion

This study showed that people who ever respond with omission in moral dilemmas report significant higher scores only in PI-R when compared to people responding ever with action. This pattern is not significant on anxiety or depression scores.

These findings are in line with the Mancini and Gangemi (2015) findings, showing that when facing with moral dilemmas OCD patients prefer inaction than action. It was hypothesized that this relation could be due to a specific link between deontological guilt and OC-behavior (Mancini and Gangemi 2015). In other words, following Mancini's theory, OCD are particularly sensitive to a kind of guilt, the deontological one and the state of feeling deontological guilty would cause OCD-like behaviors, like washing and checking, and would influence the doing or not doing actions when facing with moral situations. If this were true, manipulating deontological guilt would result in a more marked inaction preference even in non-clinical sample.

5. Method

5.1 Participants

Participants were 45 non-clinical volunteers (27 females; age range = 19-30 years, mean age = 24.13, sd = 3.3), with mean level of education 16.10 years. They were undergraduate students from the Second University of Naples or from University of l'Aquila. They were dwelling in Center or South Italy, (about 25% of them lived in an area near l'Aquila, and 75% of them in an area near Naples). The participants were randomly assigned to one of 2 emotion conditions or control group: guilt, or shame condition or no emotion induction (control group, CG). Furthermore, at the end of the experimental session, participants in guilt condition were classified in two further groups, according to the story content: the altruistic and deontological guilt groups. Participants gave their written informed consent to take part in the study.

5.2 Measures and procedure

Participants were individually tested. The experimenter briefly explained the general aim of the investigation. Then experimenter gave to the participants in guilt and shame conditions the following instruction:

In a moment I will leave the room. You have to recall and write down a biographical story when you felt highly ashamed (or guilty, according to the emotional condition) and to put it into a box. You will have than to fill out a booklet (moral and non-moral dilemmas and PI-R). I will be in a room near to this one. When you have finished please call me.

After this explanation, the experimenter left the room. The participant wrote the story meant to prompt shame or guilt, and then was required to complete a booklet comprising the scenarios, in a randomized order, and the PI-R questionnaire (see study 1). The control group participants were just requested to fill out the scenarios booklet and PI-R questionnaire.

At the end of the experimental session the participants were debriefed.

5.3 Analyses

All variables were checked on distribution before analysis. Skewed distributions were log-transformed, if normality could not be approached.

The written stories were picked from the box and submitted to two judges who independently assessed emotions described in all of the stories as shame, deontological or altruistic guilt.

Judges were post-graduated psychologist. They were given a description of the three target emotions in terms of internal dialogue, action propensity and recurring thought, and they were trained to categorize the stories in one of four categories, that are shame, altruistic guilt, deontological guilt, other emotions.

Univariate (on PI-R total score) and multivariate (on PI-R subscales) analyses of variance were used to compare the groups on the control variables. On scenarios we conducted a mixed 4X2 ANOVA on scores reported, with group as between-subjects factor and kind of scenario (moral vs control) as within-subject factor. Because the number

of scenarios was different in moral (4) and control (3) situations, we confronted average scores. Higher scores indicate that participants preferred action than inaction.

6. Results

6.1 Control variables

Inter-rater agreement between judges, computed on all of the written stories, was very high ($K=.97$). Seven subjects were excluded from subsequent analyses because their stories were classified as "other than guilty or shame feelings". The final analyses were conducted on 38 subjects, 11 from control group, 11 from shame group, 7 from altruistic and 9 from deontological group. Anova on PI-R score did not showed group differences on the PI-R total score ($F(3,34)=2.52$; $p=.07$; $\eta_p^2=.18$) or on their subscales ($\lambda=.53$; $F(15,83)=1.45$; $p=.14$; $\eta_p^2=.19$).

6.2 Scenarios

ANOVA on scenarios revealed a significant interaction group X kind of scenarios ($F(3,34)=3.72$; $p=.02$; $\eta_p^2=.25$). Principal effect of group and of kind of scenarios were not significant (group: $F(3,34)=1.84$; $p=.16$; $\eta_p^2=.14$; scenarios: $F(1,34)=1.34$; $p=.26$; $\eta_p^2=.04$).

table 1 shows means for action/inaction choice in the moral and control scenarios in the four groups. Post-hoc comparisons showed that in moral situations the deontological group participants preferred inaction (about 72% of inactions on average) significantly more often than participants in the non-emotive condition ($p<.05$), whereas in control scenarios we did not found any difference.

Table 1. Mean preference for moral and control scenarios in each group

	Moral	Control scenarios
Deontological	.28 ^a (.15)	.48 (.24)
Altruistic	.50 (.20)	.48 (.26)
Shame	.41 (.16)	.64 (.27)
Control	.68 ^b (.44)	.52 (.17)

Note. Mean scores around .5 indicate no preference for action or inaction, higher values indicate that participants preferred action, and lower inaction.

7. Discussion

Our findings show that emotions differently affect choices in moral and control scenarios. In particular, induction of deontological guilt was significantly related to choice of inaction only in moral dilemmas whereas induction of altruistic guilt or shame did not affect choices in moral dilemmas. These results are in line with the hypothesis that deontological guilt specifically leads to avoid violations of the "Not play God" principle.

8. General Discussion

Taken together, the results of the present two studies generally indicate that: 1. Responding with inaction in moral situations reflects higher scores in OC characteristics, but not in depression nor in anxiety; 2. Inaction preferences in moral dilemmas increase with deontological guilt, but not altruistic guilt nor shame. These findings specifically support a relationship between deontological guilt, inaction choices in moral dilemmas and obsessive compulsive characteristics.

Franklin and colleagues (2009), using the classical version of the trolley dilemma (one vs. five victims), found that preference for the consequentialist choice (action) was inversely related to OCD symptom severity, at least in OCD patients. Furthermore, patients who scored higher in responsibility attitudes choose less frequently to kill one person in order to save the lives of others, suggesting that responsibility in OC patients involves the fear of "Playing God" more than worries about harming others.

A recent study (D'Olimpio and Mancini 2014) found that, in a nonclinical sample, deontological guilt induction activates OC-like behaviors (checking behaviors and physical cleaning) more than altruistic guilt induction. The present findings fit well such observations if preference for inaction is considered as a feature of OCD, in which the patients show similar behaviors: inaction choices in moral dilemmas (Mancini and Gangemi 2015, Franklin et al. 2009), checking and washing (D'Olimpio and Mancini 2014). In sum, we could suggest that the mental state of an OCD patient is particularly concerned about the possibility of transgressing an introjected moral norm, and of not respecting the will of the moral authority. If this hypothesis will be confirmed, it could contribute to improving the moral appraisal theory of OCD (Salkovskis 1985, Rachman 1993, Rachman 2002, Radomsky et al. 2010).

It is important to underline some methodological choices and results from the study 2. First of all, we avoided checking emotional states after induction. This choice was taken because we preferred to immediately ask participants to fill in the moral dilemmas. Thinking about questions on emotions could have move emotion from one to another state. Because we did not measure emotional states we can not be sure that participants in deontological guilt state subjectively feel deontological guilt emotion and so on for the other conditions. Nevertheless, according to the judges' classification, participant differed in their mental recalling situations, as in terms of internal dialogue, action propensity and recurring thought. In deontological guilt group stories were higher elements of guilt for moral rules violations, described feeling of unworthiness and desire to confess or apology. In altruistic guilt condition stories elements of sorrow for the victim, the presence of a victim and a desire to alleviate suffering of the victim at the expense of one's own are more present.

At last, in shame condition stories judges found more thoughts of transgressions/incompetence in public exposure or negative self-evaluation in terms of experience of inferiority. This conditions further reported more remorse or self-blame. So, even if we can not be sure that participants were feeling and were aware about their proper specific emotional condition, we know that they re-evoked a situation that could led them in the mental state according to their emotional experimental condition.

Furthermore, one could argue that the fact that deontological group did not differ from the altruistic guilt on the PI-R provides contrary evidence to the overall hypothesis of a positive relation between OC characteristics and deontological guilt. Nevertheless, we think that OCD patients have a specific arousal when faced with situations that could have a deontological guilt involvement and act in order to avoid this specific guilt. However, when required to recollect a situation where they felt guilt, they don't necessarily remember a deontological guilt one. Contrarily, considering that this kind of situation is particularly distressing for OCD patients, they could avoid this memory of deontological guilt in favor of altruistic one.

Our results suggest some alleys for new research. For instance, it could be useful to deeply investigate the causal role of deontological guilt in OC behaviors and thinking, and check whether decreasing deontological guilt in OCD patients can reduce obsessive symptoms. It would be also interesting to explore the differences between deontological and altruistic guilt. O'Connor and colleagues (2002) found that interpersonal sense of guilt is high in depressed patients, but it could

be important to study the differential influences of altruistic and deontological guilt on cognitive and psychophysiological processes.

Since the present study was conducted on a non-clinical sample, however, any generalization of our findings to clinical OCD must be done with caution, although current behavioral and cognitive-behavioral theories (Salkovskis 1989), and data on non-clinical samples (Burns et al. 1995), support the notion of a continuum between normal and OCD patients, i.e., a dimensional basis of obsessions and compulsions. By the way, some fMRI data suggested that in non-clinical individuals the neural activation related to deontological guilt involves area similar to that occurring in obsessive patients after symptom induction (Basile et al. 2013).

Furthermore, Abramowitz and colleagues (2014) indicated that analogue research is relevant to understanding OC-related phenomena. Despite quantitative differences in severity, OC symptoms in non-clinical individuals appear for the most part to be largely qualitatively indistinguishable from those in clinically diagnosed samples of OCD patients. Specifically, analogue samples afford more precise experimental control as compared to clinical samples in experimental research that tests hypotheses regarding the effects of putative developmental and maintenance factors on OC symptoms (e.g., Deacon and Maack 2008).

Moreover, further limitations of our study include: i) we didn't directly assess participants' feeling in Study 1, so we could not evaluate the direct/mediational effect of deontological guilt on inaction/action choice; ii) all participants were Italian, and it is possible that they are strongly influenced from Catholic religion, event though the influence of responsibility and guilt in general was also found on samples from different countries (e.g., Ceulemans et al. 2013); iii) the low statistical power related to the small sample size in Study 2 might explain the lack of difference between the inaction scores from altruistic guilt or shame groups and the one from control group; iv) in Study 2 we required participants to recall and write a personal guilty feeling event, and classification of each story as relating to deontological or altruistic guilt was made post-hoc only by two examiners and no measure of subjective perceived emotions were taken; v) in Study 2 it is possible that people recalling a deontological guilt event was more vulnerable to deontological guilt, and that some other variables, like intervention of incidental emotion, could act in increasing omission choices. Nevertheless even if it could be, following Franklin and colleagues (2009) that found that people with inflated responsibility are less likely to act to kill one person to save the lives of others, we think that this result suggests a positive relationship between inflated responsibility in a deontological guilt way and preference for omission option.

Further studies are needed to understand the relative importance of these aspects, and to integrate them in a comprehensive model of the maintenance and development of OCD.

In conclusion, our data suggest that the study of deontological guilt can help to better understand both the decision processes in moral situations and the psychological determinants and the factors of vulnerability involved in OC symptoms.

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