Research Master Thesis

Affective Proneness and Prosocial Crisis Behaviors:

Predicting Social Distancing and Social Initiatives during the COVID-19 Pandemic

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Abstract

In two correlational studies, we investigated the role of affective proneness in order to predict engagement in two separate forms of prosocial crisis behaviors: social distancing and social initiatives. In Study 1 we assessed the predictive role of *trait* guilt, shame, pride, and externalization proneness, to predict social distancing and social initiatives in a Dutch student sample. Moreover, in this first study we explored the effects of *state* guilt, shame and pride on social distancing and social initiatives. Study 2 used a larger sample of English students, to test the effects of guilt, shame, and externalization proneness on social distancing and social initiatives. Results showed externalization proneness to be a negative predictor of social distancing. Guilt proneness (as a trait and state) was found to have a positive effect on social initiatives but not to have an effect on social distancing. Findings regarding the effects of pride and guilt were inconclusive.

Keywords: self-conscious emotions, social distancing, social initiatives, COVID-19

Affective Proneness and Prosocial Crisis Behaviors:
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Social life changed drastically in society all over the world when the COVID-19 virus rapidly spread around the globe in the beginning of 2020. Citizens were forced to remain indoors and to minimalize their social contacts in order to curb the spread of the virus. As long as no vaccine has been developed against COVID-19, social distancing remains the most effective way to keep the virus under control. Engaging in social distancing, however, requires behavioral changes in the core social habits of citizens, which can be challenging for most individuals. Achieving these behavioral changes relies heavily on individual's feelings of personal responsibility and their willingness to comply. Despite the necessary restrictions on social life, the Corona crisis also motivated people to engage in prosocial behaviors in the form of social initiatives. People all over the world participated in all kinds of creative initiatives to show social support during these crisis times, while still adhering to the social distancing guidelines. In this thesis, the role of self-conscious emotions was investigated in order to predict who will engage in social distancing and social initiatives. Self-conscious emotions such as guilt, shame, and pride are emotional indicators that guide behavior, as they arise from self-reflective and self-evaluative processes (Sznycer, 2019; Tangney, 2015). We hypothesized that individuals with a higher tendency to experience guilt, shame, and pride would feel personally responsible to adhere to the social distancing guidelines and would engage in more social initiatives, as these individuals are more likely to relate their social distancing and prosocial behaviors to their own identity goals (Lewis, 1971; Tangney, 2015; Sznycer, 2019). Externalization, on the other hand, is the opposite of self-consciousness as it refers to the tendency some individuals have to externalize blame to

others in situations where personal blameworthiness can be experienced (Woien, Ernst, Patock-Peckham, & Nagoshi, 2003). Individuals who externalize feel less personal responsibility, because they tend to place the cause of a problem outside their personal control. We therefore hypothesized that externalization prone individuals would engage in less social distancing and less social initiatives.

We report on two correlational studies testing these expectations. In Study 1 the predictive role of *trait* guilt, shame and pride, and externalization proneness was assessed to predict social distancing and social initiatives in a Dutch student sample. Additionally, in this first study we explored the effect of *state* guilt, shame and pride (instead of proneness) on social distancing and social initiatives. Study 2 used a larger sample of English students, where we only tested the effect of *trait* guilt and shame, and externalization proneness on social distancing and social initiatives. It is important to note that the Dutch and English government had different lockdown measures at the start of the COVID-19 pandemic. Testing our hypothesis in these different countries therefore ensured that the relationship between emotional traits and social distancing and social initiatives would not be tainted by a specific type of lockdown measure.

Social live during the COVID-19 pandemic

Situational crises are exceptional and unpredictable upheavals resulting from unusual circumstances such as divorce, a disabling accident or a sudden illness (Erikson, 1964). The current COVID-19 pandemic caused by the coronavirus SARS-CoV-2 is such a situational crisis. Throughout history, people have sought out comfort in the presence of others during times of crisis. A multitude of beneficial effects of social support and contact has been reported for psychological (for an overview see Kawachi & Berkman, 2001) as well as for physical symptoms (see Hostinar, 2015 for an overview). Moreover, perceived social support has been

hypothesized to protect against the pathogenic effects of life stress (Cobb, 1976). Cohen, Janicki-Deverts, Turner, and Doyle (2015) tested this hypothesis by examining the roles of perceived social support and received hugs in buffering against interpersonal stress-induced susceptibility to infectious disease. Among participants infected with upper respiratory illness, they found that greater perceived support and more-frequent hugs each predicted less-severe illness signs (Cohen et al., 2015). In sum, social support and physical contact with others is tremendously important in order to deal with psychological distress and even physical illness occurring during a situational crisis.

Ironically, during the Corona crisis, these benefits of social support and physical contact cannot be attained, since people are advised to minimalize (physical) contact with others. In order to suppress an accelerating growth in infections of the coronavirus SARS-CoV-2, the World Health Organization (WHO) and national governments around the globe recommended and promoted social distancing. People are advised to work from home and to withhold activities outside of their homes, in order to reduce social contact and interactions as much as possible. When people have to go outside it is recommended to keep between 1 and 2 meters distance from other people, depending on the country they live in. As mentioned above it is human nature to physically reach out to others during times of crisis. Social distancing, paradoxically, prohibits close, physical social contact with friends and relatives and can therefore be seen as a great personal sacrifice, as it comes at a considerable personal cost. However, by engaging in social distancing, one protects those most vulnerable to COVID-19 and helps reduce the excessive burden on health systems (Pfattheicher, Nockur, Böhm, Sassenrath, & Petersen, 2020). Moreover, if people around the world would adopt the behavioral changes related to social distancing, the implementation of strict lockdown measures could be avoided and hence would

allow all citizens to have more personal freedom. Prosocial behaviors refer to "voluntary actions that are intended to help or benefit another individual or group of individuals" (Eisenberg and Mussen, 1989). By this definition, social distancing is a prosocial act. Examples of typical prosocial behaviors are sharing, comforting, rescuing, and helping. All these behaviors help to maintain and improve interpersonal relations thereby satisfying a fundamental need to belong (Baumeister & Leary, 1995).

Other, more traditional, forms of prosocial behaviors also flourished during the COVID-19 pandemic in the form of social initiatives. Examples of these initiatives are showing support to health care workers, singing on balconies to encourage fellow citizens to hold on, and volunteering to help the people most vulnerable to Covid-19. In some cases, when enforced lockdown measures are very strict, these social initiatives are the only form of social contact people have. These kinds of social acts resemble more traditional prosocial behaviors, since they help people to connect with each other, thereby facilitating interpersonal relationships. Social distancing, on the other hand, requires abstinence of social contact, thereby imposing limitations on interpersonal relationships. It is therefore interesting to investigate whether individual differences that predict engagement in more traditional forms of prosocial behavior (social initiatives) would also predict engagement in the new kind of prosocial behavior (social distancing).

Compliance with social distancing

Citizens all over the globe will have to adopt the necessary behavioral changes related to social distancing as long as no vaccine has been developed against COVID-19. These changes have a major impact on social habits, since we have to redesign social and public life. National governments and international institutions such as the WHO launched public health information

campaigns that advised citizens to engage in required hygienic behaviors (e.g. washing hands, sneezing in elbow, etc...) and provided information about the importance of social distancing. National governments adopted several approaches to ensure compliance with the social distancing measures. Posters and billboards were installed in order to raise awareness and moral support for the measures. To facilitate social distancing, public spaces, such as shopping streets, train stations and libraries, as well as private spaces, such as restaurants, cinemas, and bowling alleys, were reorganized to ensure the availability of sufficient space. Moreover, most governments also issued fines when people neglected to keep safe distances to others. The purpose of these measures are to discourage people from violating the social distancing rules. Initially, people seemed to comply greatly with the new measures. However, since the spread of the coronavirus SARS-CoV-2 is under control in most Western-European countries and people are allowed more personal freedom, adherence to the social distancing guidelines is declining (RIVM, 2020). Full adoption of the behavioral changes related to social distancing therefore remains a problem, as the personal costs and strain of social distancing is starting to negatively affect compliance with the measures.

Since the outbreak of COVID-19, social scientists all over the world have tried to assess variation in compliance with social distancing. This line of research allows better understanding of what actions authorities should take to maintain high levels of compliance. Bogg and Milad (2020) found that variations in compliance in the United States can be explained by individual differences in personality (conscientious facilitate compliance), the perception of current health, as well as perceived social norms and attitudes towards the measures. In line with these findings, Van Rooij et al. (2020) also found, in a U.S. sample, that compliance is influenced by seeing others comply with social distancing, thereby emphasizing the role of perceived social norms.

These findings are in line with previous research, showing that social norms play an important role in compliance (Cialdini et al., 2006; Goldstein, Cialdini, & Griskevicius, 2008).

Another line of research has been focusing on interpersonal empathy motivations in order to study compliance. A study by Oosterhoff and Palmer (2020) demonstrated that American adolescents with higher levels of subjective self-interest were less likely to refrain from social interactions. Pfattheicher et al. (2020) reported trait empathy to promote compliance to the social distancing guidelines. Moreover, they found that providing individuals with only background information about why it is important to adhere to social distancing was not enough to increase motivation to engage in social distancing. Only when the message included an empathy manipulation, the motivation for social distancing increased (Pfattheicher et al., 2020).

Interestingly, not much attention has been paid to the role of emotional motivation to comply. To our knowledge, only the role of fear has been investigated. Harper, Satchell, Fido, and Latzman (2020) found in the beginning of the COVID-19 pandemic that fears toward the new virus predicted engagement in hygienic behaviors and social distancing. Kooistra et al. (2020), on the other hand, more recently found that, when people feared the disease, compliance to social distancing declined. This is in line with research showing that fear appeals can emphasize the severity of negative consequences so much, that people will often deny their own vulnerability in order to avoid feeling threatened by the fear (Ditto, Munro, Apanovitch, Scepansky, & Lockhart, 2003). Moreover, when individuals lose their sense of personal control due to fear, they will develop negative attitudes towards the advocated behaviors (Rogers, 1975). According to the emotion literature, different emotions have different influences on judgement and consequent behavior (Frijda, 1986; Lerner & Keltner, 2000; Zeelenberg, & Pieters, 2006). It is therefore important to investigate whether emotions, other than fear, will elicit behaviors in

compliance to the social distancing guidelines. Guilt and shame appeals, for example, have been found to improve the effectiveness of advertisements promoting behavioral changes for personal wellbeing (Agrawal & Duhachek, 2010; Duhachek, Agrawal, & Han, 2012) as well as collective well-being in the form of environmental behaviors (Baek & Yoon, 2017). In the current study, we will investigate the effects of self-conscious emotions on compliance.

Self-conscious emotions

Guilt, shame, and pride are members of self-conscious emotions[1], as these emotions are evoked by self-reflection and self-evaluation (Tangney, 2015). These emotions have an intrapersonal function as they depend on recognition of the self, separate from others (specific aspects of the self) and on a set of moral standards against which the self is evaluated (individual identity goals). Negative emotions, such as shame and guilt, are evoked when events are incongruent with one's identity goals (e.g., not getting a job, if one really wanted to work at that company) (Lewis, 1971; Tangney, 1991; Tangney, 2015). In this situation, attribution determines which specific emotion is elicited: Guilt is triggered when the failure to get the job is attributed to specific, unstable, or controllable aspects of the self (e.g., not having prepared enough for the interview). Attributions to the global, stable, or uncontrollable self (e.g., being unintelligent) trigger shame instead. Concurrently, the positive emotion pride arises due to identity-goal-congruent outcomes (e.g., getting the job) (Tracy & Robin, 2004; Sznycer, 2019).

Individual differences exist in how a person is likely to react to a situation with a specific emotion, depending on their personality. Proneness is the general tendency of a person to

[1] Emotions such as embarrassment, shyness, and social anxiety are also considered self-conscious emotions (Sznycer, 2019). However, less is known about the nature of these emotions, since research of self-conscious emotions has been more prominent for guilt, shame, and pride. For this reason, in this thesis, the more focal self-conscious emotions guilt, shame, and pride will be discussed.

experience a specific emotion (Tangney, 1990), and has mostly been measured with a personality scale called TOSCA, the Test Of Self-Conscious Affect (Tangney, Wagner, & Gramzow, 1989). Whether a person actually experiences these emotions, is dependent on their proneness to such emotions. Some individuals are prone to attribute success or failure to specific, unstable, or controllable aspects of the self. They believe that they are in charge of their own faith, and if they acted differently that the outcome would have been different. These are individuals who are more likely to experience guilt in cases of failure (I did not do my best) and authentic (beta) pride in case of success (I worked hard to achieve this). Other individuals are more prone to attribute success or failure to global, stable, or uncontrollable aspects of the self. They believe that certain outcomes are fully dependent on their personal characteristics. These are individuals who are more likely to experience shame (I'm not good enough) in cases of failure and hubristic (alpha) pride in cases of success (I'm awesome). Some individuals, however, never attribute outcomes to their own behavior or personal characteristics; these individuals have the tendency to externalize blame to others in situations where personal blameworthiness can be experienced (Woien et al., 2003; Tangney et al., 2000), a trait called externalization. Although externalization does not classify as an emotion, we suspect that it will have a negative effect on compliance to social distancing.

More than just serving intrapersonal functions, as described above, the experience of self-conscious emotions serves interpersonal functions. They are believed to be information processing mechanisms (Sznycer, Cosmides, & Tooby, 2017; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008), providing immediate and salient feedback on our social behaviors in order to improve cooperation and community life. Consequently, these emotions

have been found to predict several forms of prosocial behaviors. We will elaborate on this further below.

According to this interpersonal adaptationist framework, the function of guilt is to reflect on events where one has put insufficient weight on the welfare of a valuable other. In line with attributional theories, guilt involves a negative evaluation of a specific behavior and is associated with a private sense of having done something wrong, or having behaved in a way that violates one's conscience. The behavioral tendency of guilt is to approach others; as a consequence Schmader and Lickel (2006) found that guilty individuals are motivated to repair the wrongdoing caused by another as well as their own wrongdoing. A guilty person therefore has the tendency to make up for the wrongdoing and to undertake actions to minimize the damage caused (De Hooge, 2008). Research on emotional dispositions (Joireman 2004; Leith & Baumeister 1998; Tangney 1991) demonstrates that guilt-proneness consistently correlates with empathy oriented towards others. Appropriately, guilt is found to stimulate altruistic behavior and to be associated with environmentally friendly behavior (De Hooge, 2008; Bamberg & Möser, 2007).

The function of shame, on the other hand, is to limit the spread of negative information about the self, thereby avoiding devaluation by others. Shame involves a negative evaluation of the global self that can arise when one's failures and shortcomings are put on public (Tangney, 2015). An ashamed person feels worthless and inferior compared to others and has the general tendency to hide or withdraw from the shameful situation. Consequently, the action tendencies of shame motivate behaviors that seem to interfere with reparative or prosocial behavior (Tangney, 2015). Some recent research, however, suggests that in some cases the experience of shame may motivate efforts to repair or improve oneself by performing prosocial behaviors (De Hooge, Breugelmans, & Zeelenberg, 2008; Allpress, Brown, Giner-Sorolla, Deonna, & Teroni, 2014).

According to the adaptationist framework, the function of pride is to promote and advertise personal achievements in order to increase others' valuations of the self. Pride is a positive emotion; Mascolo & Fischer (1995) define pride as an emotion "generated by appraisals that one is responsible for a socially valued outcome or for being a socially valued person" (p. 66). Scholars further distinguish between two facets of pride: hubristic and authentic pride (Tracy & Robins, 2007). Hubristic pride is the more narcissistic facet and is typically experienced when success is attributed to internal, stable characteristics (Tracy & Robins, 2007). Authentic pride is the achievement-oriented facet and is experienced when people attribute positive outcomes to their own efforts (Tracy & Robins, 2007). Tracy, Shariff, and Cheng (2010) found that experiencing authentic pride reinforces behaviors that can lead to future pride-experiences. Van Osch, Zeelenberg, Breugelmans, and Brandt (2019) found further evidence for the prosocial nature of pride, as proud individuals were found to inhibit the expression of pride when personal achievements were relevant for the observers.

Affective proneness and prosocial crisis behaviors

As mentioned before, two separate forms of prosocial behaviors arose during the COVID-19 pandemic: social distancing and social initiatives. Engaging in these behaviors would satisfy interpersonal goals, thereby evoking feelings of pride and self-worth (Tracy & Robins, 2007). These feelings of self-worth might in turn motivate them to engage in even more prosocial behaviors. It was therefore hypothesized that pride prone individuals will engage in more social distancing and social initiatives. Failure to engage in these prosocial behaviors, on the other hand, will elicit feelings of guilt or shame, as the self will be evaluated negatively against moral standards of helping others. Individuals prone to experience guilt and shame will feel more personal responsibility regarding their own actions. In order to avoid these negative

feelings we expect guilt prone and shame prone individuals to adhere more to the social distancing guidelines and to participate more in social initiatives. Hypotheses regarding guilt and shame are as follows: Guilt proneness will have a positive effect on social distancing and social initiative. Shame proneness will also have a positive effect on social distancing and social initiative. Furthermore, we hypothesized that externalization proneness will have a negative effect on social distancing and social initiative, since individuals who externalize are less likely to attribute consequences to themselves.

In two studies, we investigate if affective proneness predicts adherence to the social distancing guidelines and motivates people to engage in social initiatives. Moreover, we explore whether social distancing motivations can be approached in the same way as traditional prosocial behaviors. By examining the effect of affective proneness on compliance to social distancing, the present research might help identify which emotions facilitate the necessary behavioral changes in social life. If we succeed, authorities and policymakers could use this information to tailor their communication by using emotional appeals in order to achieve greater public compliance to social distancing.

Study 1

In March 2020, when this study was conducted, the Netherlands was in a so-called "intelligent lock-down": museums, schools, sport clubs, gyms, and catering establishments were forced to close. People were asked to work from home as much as possible and were discouraged to meet with people with whom they did not live together. The lockdown was called "intelligent" because Dutch citizens still had a lot of personal freedom. There never was a curfew, shops were still open, and people were allowed to go outside to exercise or to simply sunbathe in parks and on beaches. This personal freedom was only made possible under the assumption that people

would adhere to the 1.5 meter distance guideline and would minimalize close contact. Social distancing, therefore, became the new norm in the Netherlands, while still weighing heavily on personal responsibility to do so.

Method

Participants and procedure

Two hundred and twenty-eight Tilburg University undergraduates participated in a series of unrelated online studies in exchange for course credit. These studies were available to students for three weeks (from April 2nd to April 23rd 2020). During this period, the intelligent lock-down measures of the Dutch government remained unchanged. At the beginning of the study, respondents were able to select in which language they wanted to take the questionnaire since two versions of the survey were created: a Dutch version for psychology students from the Dutch bachelor track and an English version for students from the international track[2]. After exclusion of 15 participants according to pre-registered criteria, 213 participants remained (M_{age} = 20.13, SD_{age} = 2.19, 71.8 % female, 23.5 % international). A sensitivity power analysis using G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007), indicated that this sample size of 213 participants allowed us to detect medium effects (f^2 = .13) in a hierarchical regression with 4 predictors and 6 control variables, given 80% statistical power and 5% alpha level.

Materials

CORONA TOSCA. To measure individual differences in guilt, shame, externalization, and pride proneness, a modified version of the Test of Self-Conscious Affect (TOSCA-3)

[2] The full preregistration for this study, including all the exclusion criteria's can be found on SURFdrive under the folder 'Corona Crisis Behaviors, Study 1'.

developed by Tangney, Dearing, Wagner, and Gramzow (2000) was created. The original TOSCA-3 is a scenario-based instrument, in which participants are asked to imagine themselves in 16 different situations of personal blameworthiness that they are likely to encounter in day-to-day life. Each scenario describes a person committing some unfavorable action (11 scenarios) or achieving a somewhat successful outcome (5 scenarios). For each scenario, respondents have to indicate the likelihood that they would respond to those situations with different given reactions. These reactions reflect emotional responses typical for guilt, shame, detachment, externalization, alpha pride, and beta pride.

In the Pilot Study, see Appendix A for a full description, it was noticed that some participants had difficulties answering the TOSCA-3 items, which might have resulted in invalid proneness assessments. As mentioned above, participants were asked to imagine themselves in situations they likely encounter in day-to-day life. However, day-to-day life changed dramatically after the outbreak of the coronavirus COVID-19, making the original TOSCA-3 to some extent irrelevant. Take the following example of a situation given in the TOSCA 3: *'You make plans to meet a friend for lunch. At five o'clock, you realize you stood have him/her up.'* In pre-corona times, this was indeed a situation that many people were likely to encounter. Standing a friend up for lunch could possibly elicit feelings of shame or guilt in respondents. However, meeting friends and going to restaurants was prohibited for the foreseeable future. Trying to imagine oneself in this particular situation might elicit a whole range of emotions, such as sadness, melancholy or even hope, that was never intended by the developers of TOSCA-3. This in turn might affect the respondent's evaluation of the given reactions following this particular scenario (e.g. Guilt: *You would think you should make it up to your friend as soon as possible*;

Shame: *You would think: "I am inconsiderate;"* Externalization: *You would think: "My boss distracted me just before lunch."*).

In order to resolve this issue, all 16 scenarios and corresponding reactions were modified to be relevant for students during the COVID-19 crisis times. Attention was paid in order to stay as close as possible to the original items, while also making sure that the English and Dutch versions were compatible. For illustration, the example given above was modified to: '*You promise to run some errands for a vulnerable neighbor around noon. At five o'clock, you realize you completely forgot to do the groceries for your neighbor.'* The guilt reaction was changed to *'You would try to make it up to your neighbor as soon as possible',* the externalization reaction was changed to '*You would think: "Because I'm working from home, I have no sense of time anymore,"*' and the shame reaction remained unchanged (e.g. *You would think: "I am inconsiderate"*). All original TOSCA-3 items and their CORONA TOSCA counterparts are presented in Appendix B.

As in the original, the CORONA TOSCA composed of 11 negative and 5 positive scenarios. The presentation order for each scenario was randomized for each participant, as was the order of the different reactions measuring proneness. Responses were measured on a 5-point Likert-scale (1 = very unlikely, 5 = very likely). Consequently, higher values were indicative for more trait proneness. Item scores were averaged for each participant and were subsequently mean-centered to provide indices for guilt, shame, externalization, and pride proneness. Guilt (α = .79), shame (α = .81), and externalization proneness (α = .72) were measured with 16 items. Pride proneness (α = .62) was measured with 5 items, after the positives scenarios. Only the beta pride items of the TOSCA-3 were used. These items measure pride reactions about performed behaviors, which is related to authentic pride. Authentic pride is the achievement-oriented facet

of pride and is most often associated with prosocial behaviors (Tracy et al., 2010); our hypotheses were formulated with this form of pride in mind. Items measuring pride feelings regarding inward gratification (alpha pride) were not included since they relate to hubristic pride, which is the more narcissistic and antisocial facet of pride. Hubristic pride falls outside the scope of this research. Table 1 provides an overview of the descriptive statistics of the TOSCA subscales from Study 1 and 2.

State measurement of emotion. The TOSCA measures trait emotions. In this study, we also explored whether emotions as a state would predict social distancing and social initiatives. Here, instead of measuring the participants' tendency to react with a particular emotion to several different situations (proneness), actual emotional states relevant to the Corona crisis were measured. Feelings of guilt, shame, and pride were each measured with 3 items modeled after the Pfattheicher et al. (2020) empathy scale. We included these emotional state variables in case our proneness measurement, the CORONA TOSCA, proved to be unreliable. Examples of these feelings items were: *'I feel guilty towards those most vulnerable to coronavirus COVID-19'* (Guilt); *'I feel quite incompetent when I think about those most vulnerable to coronavirus COVID-19'* (Shame), and *'I am very proud of what I am doing to protect those most vulnerable to coronavirus COVID-19'* (Pride). The remaining items can be consulted in Appendix C. Responses were measured on a 5-point Likert-scale ranging from 1 = strongly disagree to 5 = strongly agree. The order of the items was randomized per feeling for each participant. Item scores were averaged for each participant and were subsequently mean-centered to provide indices for guilt ($\alpha = .65$), shame ($\alpha = .81$), and pride ($\alpha = .79$). The same trend as in our proneness measurement was visible in our sample; on average participants had more feelings of guilt ($M = 3.23$, $SD = .89$) than feelings of shame ($M = 2.42$, $SD = .93$). Our participants felt on

average (*M* = 3.57 *SD* = .77) very proud of what they were doing to protect those most vulnerable to coronavirus COVID-19.

Social Distancing. Our dependent measurement, social distancing, was measured with the same 5 items used by Pfattheicher et al. (2020). All items in this scale consisted of behaviors that were not in adherence with governmental guidelines to prevent the spread of the coronavirus COVID-19 with social distancing. They were also measured on a 5-point Likert scale (1 = very unlikely; 5 = very likely). An item example reads: *'During the next days, I will meet friends outside of my apartment.'* All items were reverse coded for the analyses so that higher values reflected more social distancing. Across all participants, the mean score on social distancing was 4.10 (*SD* = 0.71), indicating that most people adhered to governmental guidelines. Remarkably, the reliability of the scale was lower (α = .64) in our study then the reported value of .79 of the original study by Pfattheicher et al. (2020).

A Principal Component Analysis (PCA) was conducted on the initial five items, to explore the cause for this difference in reliability. The PCA suggested a solution with two components (component 1: Eigenvalue = 2.14 with 42.71% variance explained; component 2: Eigenvalue = 1.25; 24.93%). Inspection of the pattern matrix (see Table 2) shows that items 1, 4 and 5 were uniquely loading on the first factor. Item 3 uniquely loaded on the second factor, and item 2 loaded on both factors but mainly on factor 2. The first component consisted of the items related to students social life (e.g., meet friends, meet friends outside, be at places where other people will be), while the second component consisted of items related to family obligation (e.g., visit vulnerable people and meet family members). These differences in reliability can thus be explained by our student sample where the average age was 20.13 (*SD* = 2.19). Pfattheicher et al. (2020) conducted their study under the general population, the average participant in their

sample was much older (*M* = 29.75) and the spread in age was much larger (*SD* = 9.39). For the general population, specifically non-students, family obligation is a large part of the social circle of people. For students however, their general social life might consist of two social circles that do not overlap, causing the two different factors in the PCA.

A PCA on these three items resulted in a unidimensional solution with an eigenvalue of 2.06 that explained 68.52% of the variance. The reliability of this scale was sufficient (α = .77). Additional corrected item-total correlations were computed to investigate the internal consistency of the scale. These ranged between .46 and .73, all above .30, which indicated that all items had acceptable internal consistency (Nunnally & Bernstein, 1994). The mean score on the 3-items Social Distancing Index was 3.84 (*SD* = 0.84). We performed further analysis on both versions of the social distancing index; results were replicated in both versions.

Social Initiatives. We measured social initiatives with 5 items. This scale captured behaviors that showed social support during this crisis time such as skyping with family members and volunteering to help people. An item example reads: *'In the coming days I will offer my help through a website to do my bit during this Corona crisis.'* The five social initiatives items were randomly mixed together with the social distancing items. Consequently, responses were also measured on a 5-point Likert-scale ranging from 1 = very unlikely to 5 = very likely and showed an inter item reliability (Cronbach's alpha) of .79, with higher values being indicative for more social initiatives. Across all participants, the mean score on social initiatives was 2.57 (*SD* = 0.82). Appendix D comprises of all items of the dependent variables used.

Control variables. Additionally, three control variables were measured that might affect social distancing and social initiatives behaviors. Firstly, participants were asked whether they or someone in their immediate environment has been tested positively for the coronavirus COVID-

19 and whether someone in their immediate environment has a vital profession, as described by the government (e.g., medical care, caregiver etc…). Answering positively to these items might affect how seriously individuals take governmental measures, resulting in more social distancing and more social initiatives. Lastly, participants answered whether they were staying with their parents at the moment or at their own housing. We expected that students who lived by themselves would adhere less to the social distancing guidelines, since the pressure to seek out others would be greater for people who live alone.

Results

An overview of the descriptive statistics and zero-order correlations between all key variables can be found in Table 3[3]. Consistent with the literature (Tangney, 1990; De Hooge, 2008), guilt and shame proneness were strongly correlated (r (211) = .64, $p < .001$). It was found that women have a higher tendency to experience guilt (r (211) = .28, $p < .001$) and shame (r (211) = .20, $p < .01$) than men. Age was found to be negatively correlated with guilt (r (211) = -.15, $p < .05$) and positively correlated with externalization (r (211) = .15, $p < .05$).

Shame and externalization proneness were also moderately correlated (r (211) = .44, $p < .001$), which is consistent with the literature. Previous theory and research (Lewis, 1971; Tangney, 1991) conceptualized that externalization is a primary means for dealing with shame. In order to avoid the painful sensation of shame, a shame-prone individual may sometimes blame outside circumstances in order to protect the self (e.g., Gilbert and Miles, 2000).

Correlations between proneness and emotional states were moderately strong for guilt (r (211) = .47, $p < .001$), shame (r (211) = .44, $p < .001$), and pride (r (211) = .35, $p < .001$). These

[3] Data and the SPSS syntax for all analyses that were executed for this study can be found on SURFdrive under the folder ‘Corona Crisis Behaviors, Study 1’.

results are consistent with the literature; there is indeed a positive relation between the disposition to react with a specific emotion and the likelihood that an individual will experience that specific emotion at a given moment (for an overview see Tangney, 2015). However, affective states at any given moment are also highly dependent on environmental and contextual clues that are present during a situation, explaining why the correlations are moderately strong, according to the guidelines given by Cohen (1988).

Social Distancing and Affective Proneness

Hierarchical multiple regression was used to assess the ability of our proneness measures (Guilt, Shame, Externalization, and Pride) to predict adherence to social distancing guidelines[4]. This was controlled for age, gender, where students were staying at the moment of data collection (Living), whether students or someone in their immediate environment had been tested positively for the coronavirus COVID-19 (Corona), whether someone in their immediate environment had a vital profession (Healthcare) and whether they were Dutch or international students (Nationality). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The Kolmogorov-Smirnov test was not significant (p = .200), however, the Shapiro-Wilk test was significant (p = .033), which might suggest a violation of the normality assumption. After inspection of the histogram of the regression standardized residuals and the scatterplot of standardized residuals and predicted values no severe violations could be detected. It was therefore decided to not deviate from parametric regressions. The control variables were entered at Step 1, explaining 9.5% of the variance in social distancing. Students living on their own were less likely to adhere

[4] Reported values are from regressions on the original 5-item Social Distancing index. Results remained unchanged whether the 3-item or 5-item version of this index was used.

to the social distancing guidelines (β = - .14, t (206) = - 2.00, p < .05) and international students (β = .27, t (206) = 3.70, p < .001) engaged in more social distancing.

After entry of guilt, shame, externalization, and pride proneness at Step 2, the total variance explained by the model as a whole was 21.7%, F (10, 202) = 5.61, p < .001. The proneness variables thus explained an additional 12.2% of the variance in social distancing (R^2 change = .122, F change (4, 202) = 7.90, p < .001). Table 4 can be consulted for an overview of the results. Consistent with our hypothesis, shame proneness was found to be a significant positive predictor of social distancing (β = .39, t (202) = 3.97, p < .001), and externalization proneness to be a significant negative predictor of social distancing (β = - .26, t (202) = - 3.29, p < .01). No significant results were found for guilt and pride proneness.

Four interaction variables were computed between the different proneness variables and Nationality (i.e., Dutch and international); these interaction variables were entered at Step 3 of the regression and revealed no significant relation with social distancing. International students did not answer differently to the proneness measures compared to Dutch students, therefore we concluded that collapsing the data across samples from the different bachelor tracks was justified.

Social Distancing and State Emotions

For exploratory purposes a hierarchical multiple regression was conducted to assess the role of state emotions regarding those most vulnerable to the coronavirus COVID-19 on social distancing. Results of preliminary analysis regarding violation of assumptions were similar to those of the previous regression. The steps of this hierarchical regression were the same as in the analysis described above, except that the proneness variables were replaced with emotional state

variables for guilt, shame, and pride. Control variables (age, gender, Living, Corona, Healthcare and Nationality) were entered in Step 1, the predictors guilt, shame, pride feelings were entered in Step 2, and the interactions between feelings and Nationality were entered at Step 3. The second model (without the interactions between emotional states and nationality) explained 13.8% of the variance in social distancing (F (9, 203) = 3.62, $p < .001$). Feelings of guilt, shame, and pride thus explained an additional 4.3% of the variance in social distancing (R^2 change = .043, F change (3, 203) = 3.40, $p < .001$), after controlling for age, gender, Living, Corona, Healthcare and Nationality. The three interaction variables entered at Step 3 revealed no significant relation with social distancing. International students did not answer differently to the emotional states measures compared to Dutch students, therefore interpretation of the results of the whole sample was justified. The negative effect of students living on their own on social distancing became insignificant after controlling for emotional states in model 2 (β = - .13, t (203) = - 1.90, p = .059). Feelings of pride about behaviors directed at protecting those most vulnerable to coronavirus COVID-19 significantly predicted more social distancing (β = .20, t (203) = 2.85, $p < .01$). No significant results were found for state guilt and state shame. Table 5 can be consulted for an overview of the results of this analysis.

Social Initiatives and Affective proneness

A hierarchical multiple regression was conducted on social initiatives with the same control predictors (age, gender, Living, Corona, Healthcare and Nationality) at Step 1. The predictors guilt, shame, externalization, and pride proneness were entered in Step 2, and the interactions between proneness and Nationality were again entered at Step 3. No violations of normality, linearity, multicollinearity, and homoscedasticity assumptions could be detected in preliminary analyses. The control variables entered at Step 1, explained 13% of the variance in

social initiatives. After entry of guilt, shame, externalization, and pride proneness at Step 2, the total variance explained by the model as a whole was 27.2%, F (10, 202) = 7.56, $p < .001$. The proneness variables thus explained an additional 14.2% of the variance in social initiatives (R^2 change = .142, F change (4, 202) = 9.87, $p < .001$). The interaction variables entered at Step 3 of the regression were not significant, again justifying interpretation of the sample as a whole.

Students who had been tested positive for COVID-19 themselves or had someone in their immediate environment who had been tested positive indicated to participate more in social initiatives (β = .13, t (206) = 1.93, p = .55. As did students with someone in their immediate environment with a vital profession (β = .22, t (206) = 3.28, $p < .01$). Furthermore, female students engaged in more social initiatives than male students (β = .22, t (204) = 3.33, $p < .01$). All four proneness predictors proved to be significant, see Table 6 for an overview of the results. In line with our hypothesis, guilt prone individuals self-reported more social initiatives (β = .54, t (202) = 6.07, $p < .001$). The effects the regression revealed for shame, externalization, and pride, however, were opposite to what was expected. Shame and pride proneness was found to have a negative influence on social initiatives. The negative effect of the pride proneness (β = -.136, t (202) = -2.09, $p < .05$) on social initiatives was less strong then the effect of shame proneness (β = -.35, t (202) = -3.67, $p < .001$). Surprisingly, externalization proneness was found to have a positive effect on social initiatives (β = .22, t (202) = 2.94, $p < .005$).

Social Initiatives and State Emotions

Additionally, the role of state emotions regarding those most vulnerable to the coronavirus COVID-19 on social initiatives was explored. In this hierarchical regression, as in the previous ones, control variables (age, gender, Living, Corona, Healthcare and Nationality)

were entered in Step 1, the predictors regarding feelings of guilt, shame, pride were entered in Step 2, and the interactions between feelings and Nationality were entered at Step 3. The interaction variables entered at Step 3 of the regression were not significant and therefore the third model did not significantly explain more variance in social initiatives. The second model explained 27.0% of the variance in social initiatives (F (9, 203) = 8.35, $p < .05$). Feelings of guilt, shame, and pride thus explained an additional 14% of the variance in social distancing (R^2 change = .140, F change (3, 203) = 12.99, $p < .001$). Feelings of guilt regarding those most vulnerable to coronavirus COVID-19 significantly predicted more social initiatives (β = .32, t (203) = 4.47, $p < .001$). This effect is similar to the effect that was found for guilt proneness on social initiatives. Experiencing feelings of guilt and having a tendency to experience guilt both result in more participation in social initiatives. No significant results were found for feelings of shame. Nevertheless, feelings of pride about behaviors directed at protecting those most vulnerable to coronavirus COVID-19 significantly predicted more social initiatives (β = .19, t (203) = 2.95, $p < .005$).

Discussion

In this first study the role of guilt, shame, pride as a state and a trait, and the role of externalization proneness was assessed to predict prosocial behaviors in the form of social distancing and social initiatives for psychology students of Tilburg University. Contrary to our hypothesis, no effects of guilt (as a state or a trait) was found regarding social distancing. Results, however, showed a positive effect of guilt (as a state and a trait) on social initiatives, this being in accordance with our expectations. Guilt on the one hand is considered as a prosocial emotion; individuals with higher tendencies to feel guilt might therefore engage in more social distancing to protect others and in more social initiatives in order to get close to others. On the

other hand, because of this prosocial nature, guilt motivates people to approach others. This approach tendency, nevertheless, is in conflict with social distancing practices, therefore guilt proneness might be negatively related to social distancing, while being positively related to social initiatives.

In accordance with our expectations, results showed shame as a trait but not as a state to be positively related to social distancing. Individuals with higher tendencies to feel shame engaged in more social distancing. These results are consistent with the behavioral tendency of shame to hide and withdraw. Contradictory to our expectations, shame as a trait but not as a state was found to be negatively related to social initiatives: individuals with higher tendencies to feel shame engaged less in social initiatives. These results, however, are also consistent with the behavioral tendency of shame to withdraw from social activities.

No results for pride proneness were found regarding social distancing while pride as a state was found to be positively related to social distancing. Pride as a trait was negatively related to social initiatives, while pride as a state was positively related to social initiatives. The found results regarding pride, thus, were inconsistent between the proneness measurement and the emotional state measurements. We will further address those discrepancies in the general discussion.

Furthermore, externalization proneness was found to be negatively related to social distancing, this being consistent with our expectations. Individuals with higher tendencies to externalize blame adhered less to the social distancing guidelines. Surprisingly, we found externalization proneness to be positively related to social initiatives. It could be the case that because externalizers are aware that misfortune can happen outside of our personal control, externalization proneness might therefore motivate people to help unfortunates others.

The trait variables guilt, shame, pride, and externalization explained more variance (12.2%) in social distancing then did state guilt, shame, and pride (4.3%). Percentages of explained variance in social initiatives were relatively similar for the trait variables (14.2%) and state variables (14.0%). Since the main focus of this thesis is to assess variation in compliance with social distancing guidelines, it was decided to only include affective proneness (i.e., trait variables) in the second study. Individuals high on a specific emotional trait, shame for example, will be more susceptible to shame-framed appeals promoting behavioral changes. By learning more about whether individual proneness for specific emotions influence social distancing behaviors, the use of emotionally framed messages might be justified to promote compliance.

The current COVID-19 pandemic is an exceptional situational crisis, our findings might therefore be highly dependent on the context in which the first study was conducted. For example the Dutch government was reluctant to enforce very strict lockdown measures and throughout the Corona crisis, Dutch citizens still had a lot of freedom to behave freely. It was emphasized that citizens had a personal responsibility to adhere to the social distancing guidelines. Although the sample of Study 1 consisted of international as well as Dutch psychology students, the majority (76.53 %) was Dutch, making it difficult to generalize the findings of Study 1 outside of the Netherlands. Our results might have been different if the study was conducted in a country with different lockdown measures. Moreover, Tilburg University, is located in North Brabant, an area that was severely hit by COVID-19. The high infection rate of this region might have impacted the results, since the severity of the pandemic was most visible in that region. The question therefore remained whether our specific findings will remain robust in a different population and at a different time point.

Study 2: Social Distancing and Social Initiatives of Students in England

The aim of this second study, was to investigate whether our previous findings of shame, guilt, and externalization proneness[5] on social distancing and social initiatives could be replicated in a larger non-Dutch sample. The study was conducted in England, where a total lockdown was enforced on citizens: People were only allowed to go outside of their home for four reasons: food shopping, exercising alone (for just 1 hour), medical issues, and providing care (Burgess, 2020). These draconian measures lasted eight weeks, from March 23 to May 13. Our study was conducted during the next phase of the lockdown in which citizens had more personal freedom to engage in social traffic. The next phase of the lockdown came only into effect in England, while Wales, Scotland and Northern Ireland kept slightly different, stricter rules. English people were now allowed to take "unlimited" amounts of exercise; play some sports outdoors and meet with one person from a different household, as long as they are outside and follow social distancing guidelines of staying two meters apart. From this time on adherence to the social distancing guidelines, like in the Netherlands, became the personal responsibility of English citizens.

Our hypotheses were adapted based on our findings in Study 1: We hypothesize guilt proneness to be positively related to social initiatives, but have no clear prediction regarding the relation between guilt proneness and social distancing. We hypothesize shame proneness to be positively related to social distancing and to be negatively related to social initiatives. Lastly, we hypothesize externalization proneness to be negatively related to social distancing. However, no clear prediction regarding how externalization proneness will affect social initiatives were formulated, but we will explore this relationship.

[5] Pride proneness was not included in this study due to the conflicting results between pride proneness and pride as a state found in Study 1.

Method

Participants and procedure

Five hundred and sixteen England based Prolific-workers completed the study on May 20th 2020 in return for £0.88[6]. An a priori power analysis for hierarchical regression (fixed model R2 increase) with 3 predictors and 6 control variables, indicated a required sample size of 441 to detect a small effect size (f^2 = .028, 1-ß = .80, α = .05). Participants were spread across England, ensuring variability in infection rate per regions. The restriction was given in Prolific to only make the survey accessible to Prolific-workers who indicated to be living in England and to be students. The latter restriction was given because items of our independent variable, the CORONA TOSCA, were specifically formulated to be relevant for students. As in the prior study, all participants gave informed consent before starting the survey. After exclusion of 26 participants, 490 participants remained (M_{age} = 24.53, SD_{age} = 7.55, 62.7 % female) [7].

Materials

The same materials were used as in Study 1: the 16-item CORONA TOSCA (see Appendix B) measuring guilt, shame, and externalization proneness, and the Social Distancing and Social Initiative dependent measure consisting of 5 items each (Appendix C). Prior to making the study available, the UK government website (https://www.gov.uk/coronavirus) was

[6] The preregistration for this study, including all of the exclusion criteria's can be found on SURFdrive under the folder 'Corona Crisis Behaviors, Study 2'.

[7] Participants that were excluded did not give a response on all dependent variables measured and/or did not answer the attention check correctly, (i.e., *"This is an attention check. Please select 'Strongly Agree.'"*). One participant (case 144 in file 'Data_Study2_Raw') was excluded from the analysis, since that person indicated to be visually impaired and to use a long cane, causing artificial social distancing. Moreover, 3 participants selected "other" of the gender variable. Since dummy coding for analysis of 3 cases is infeasible, those participants were also excluded from the analysis. It is noteworthy to mention that the age range of participants was quite wide from 18 to 62. No exclusion criteria were preregistered regarding age, we only specified that our sample should consist of students. Therefore, all participants identifying as students were included in the analysis. The age mode in our sample was 18, indicating that most participants were of the age one would normally expect from students.

carefully monitored in order to make sure that all items of the different indices were suitable for the English population. Additionally, five people currently living in England were interviewed about the Corona crisis in England, and were specifically asked to comment on our dependent variables. This preparation resulted in the decision to only use participants from England and to start the survey one week after the loosening of the total lockdown measures. By then, the behaviors asked in our measurements were also allowed for citizens of England. Items referring to the 1.5 meter distance in the CORONA TOSCA (item 5, 9, and 15), were changed from 1.5 to 2 meters. The spelling of some words in the survey was also adapted from American spelling to British (e.g., behavior became behaviour, realize became realise, etc…). No further changes were made in the independent and dependent measurements.

CORONA TOSCA. Guilt (α = .76), shame (α = .77), and externalization proneness (α = .69) were measured with 16 items. These estimates of internal consistency (Cronbach's alpha) were comparable to the ones found in previous samples. Responses were again measured on a 5-point Likert-scale from 1 = very unlikely to 5 = very likely. Total scores for guilt (*M* = 3.90, *SD* = .44), shame (*M* = 3.1, *SD* = .51), and externalization proneness (*M* = 2.85, *SD* = .45), were averaged to further provide mean-centered indices for analysis (also see Table 1).

Social Distancing and Social Initiatives. As in Study 1, the 5 social distancing items were randomly mixed together with the 5 social initiatives distancing items. Responses were given on 5-point Likert scale (1 = very unlikely; 5 = very likely). All social distancing items were reverse coded and computed in a single index (α = .75). In this study the reliability of the social distancing scale was thus higher than in Study 1 (α = .64), and more resembling the original study by Pfattheicher et al. (2020; α = .79). The mean score of social distancing was 4.05 (*SD* = 0.82), and was similar to the values that were found in Study 1 (*M* = 4.10, *SD* = 0.71).

The inter item reliability for social initiatives in this sample was .74, and resembled the Cronbach's alpha values found in Study 1 ($\alpha = .79$). The mean score of social initiatives was 2.73 (*SD* = 0.82) and was also similar to the reported values of Dutch students in Study 1 (*M* =2.57, *SD* = 0.82).

Control variables. The same three control variable were used as in Study 1, the variable Healthcare was however rephrased to match local terminology: "*vital profession*" was changed intro "*frontline worker*". 29.2 % of the participants indicated to have someone in their immediate environment that was a frontline worker. Moreover, 6.7% of the participants indicated that they or someone in their immediate environment had been tested positively for the coronavirus COVID-19 (Corona) and 40.2% indicated to be living in their own place and not at their parents. Lastly, an additional control variable was included in this study: *"How strictly is the lock-down being enforced in the borough you live in compared to other boroughs?"* (1= not strict at all; 5 = very strict). During our preparations, it came to our attention that in different parts of England the local authorities had different policies regarding enforcement of the lock-down measures with some being stricter than others. Overall, the enforcement was rated as neutral (*M* = 3.05, *SD* = 0.90) by the participants.

Results

Table 8 provides an overview of the descriptive statistics and zero-order correlations between all key variables[8]. As expected and consistent with our results from Study 1, guilt and shame proneness were strongly correlated (r (487) = .54, $p < .001$), and the correlation between shame and externalization proneness was moderate (r (487) = .32, $p < .001$). We found again that

[8] Data and SPSS syntax for all analyses are accessible on SURFdrive under the folder 'Corona Crisis Behaviors, Study 2'.

women have a higher tendency to experience guilt (r (487) = .27, p < .001) and shame (r (487) = .20, p < .001) than men. Furthermore we found age to have small negative correlations with shame (r (487) = - .13, p < .005) and externalization proneness (r (488) = - .11, p < .05).

Social Distancing

Hierarchical multiple regression was used to assess the ability of our proneness measures (Guilt, Shame, and Externalization) to predict social distancing. This was controlled for age, gender, where students were staying at the moment of data collection (Living), whether students or someone in their immediate environment had been tested positively for the coronavirus COVID-19 (Corona), whether someone in their immediate environment had a vital profession (Healthcare), and how strictly the lockdown was being enforced in their borough (Enforcement). The control variables were entered at Step 1, explaining 3.2% of the variance in social distancing. After entry of guilt, shame, and externalization proneness at Step 2, the total variance explained by the model as a whole was 6.6%, F (9, 479) = 3.73, p < .001. The proneness variables thus explained an additional 3.4% of the variance in social distancing (R^2 change = .033, F change (3, 478) = 5.69, p < .005). Table 9, provides an overview of the results. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The Kolmogorov-Smirnov test and the Shapiro-Wilk test were significant, indicating a violation of the normality assumption. Violation of the assumption of normality in multiple regression can be solved with 2000 bootstrap simulations (Efron & Tibshirani, 1994). After inspection of the histogram of the regression standardized residuals and the scatterplot of standardized residuals and predicted values, normality seemed to be the most severe violation. Therefore, multiple linear regressions with bootstrapping were used to assess the ability of our proneness measures (guilt, shame, and

externalization) to predict social distancing, the bootstrap results can be found on the right side of Table 9. Age was found to be a positive predictor of social distancing (β = .12, t (482) = 2.28, p < .05). Surprisingly, the regression also revealed that students with someone in their immediate environment that had a vital profession (β = - .18, t (482) = - 2.16, p < .05) engaged less in social distancing. These effects were significant in all steps of the hierarchical analysis. Consistent with our hypothesis, externalization proneness was found to be a significant negative predictor of social distancing (β = - .16, t (479) = - 3.28, p < .01). Individuals with higher tendencies to externalize blame engage less in social distancing. No significant results were found for guilt and shame proneness.

Social Initiatives

A hierarchical multiple regression was conducted on social initiatives with the same control predictors (age, gender, Living, Corona, Healthcare and Enforcement) at Step 1. The predictors guilt, shame, externalization, and pride proneness were entered in Step 2. No violations of normality, linearity, multicollinearity, and homoscedasticity assumptions could be detected in preliminary analyses. The total variance explained by the model as a whole was 12.3%, F (9, 478) = 8.58, p < .001. The proneness variables thus explained an additional 7.5% of the variance in social distancing (R^2 change = .075, F change (3, 478) = 13.95, p < .001). All our control variables were significant at the first step of the analysis, see Table 10 for an overview of the results. As in Study 1 we found female students to be engaged in more social initiatives (β = .105, t (481) = 2.37, p < .05). The effect of gender, however, became insignificant after adding the proneness variables to our model. Students who had been tested positive for COVID-19 themselves or had someone in their immediate environment who had been tested positive indicated to participate more in social initiatives (β = .10, t (481) = 2.12, p < .05), as did students

with someone in their immediate environment that had a vital profession (β = .13, t (481) = 2.12, p < .005). These results are consistent with findings from Study 1. Moreover, age was found to have a negative effect on social initiative (β = - .11, t (481) = - 2.01, p < .05), older people seemed to engage less in social initiatives. Students living on their own reported to engage in more social initiatives (β = .11, t (481) = 2.08, p < .05). Furthermore, judging the enforcement of the lockdown in one's own borough as more strict, positively predicted social initiatives (β = .11, t (481) = 2.73, p < .05). These results might imply that people living on their own or in an area with strict lockdown measures engage in more social initiatives in order to obtain more social contact. Guilt proneness positively predicted social initiative, shame and externalization proneness did not significantly predict social initiative in this sample. In line with our hypothesis guilt prone individuals self-reported more social initiatives (β = .46, t (478) = 4.533, p < .001).

General Discussion

In two studies, we investigated whether individual differences in affective proneness would predict engagement in two distinct kinds of prosocial behaviors during the COVID-19 pandemic: social distancing and social initiatives. In Study 1 the predictive role of trait guilt, shame, and pride, and externalization proneness was assessed to predict social distancing and social initiatives in a Dutch psychology student sample. Additionally, we explored the effects of the states guilt, shame, and pride on social distancing and social initiatives. In order to investigate the robustness of our prior findings regarding the effect of emotional traits, a second study was conducted using a different population and a different time point. Study 2 used a larger, more heterogeneous, sample of English students to test the effects of guilt, shame, and externalization proneness on social distancing and social initiatives.

Two of our hypotheses were supported by the data in both studies. Firstly, it was found that individuals with higher tendencies to externalize blame adhere less to the social distancing guidelines. Externalization is opposite to self-conscious affect, as outcomes are not being attributed to aspects of the self. Externalization proneness is characterized by the tendency certain individuals have to seek the cause of unfortunate outcomes outside of their personal control; they often tend to assign blame to outside circumstances (Woien et al., 2003; Tangney et al., 2000). As a consequence, externalizers feel less personal responsibility for their own actions. Individuals who externalize blame are therefore less motivated to take personal measures to prevent the spread of the Coronavirus. These results suggest that relying on individual's personal responsibility to adhere to social distancing is not feasible when people have a tendency to externalize. Secondly, it was found that guilty individuals (measured as a trait and a state) are more likely to engage in prosocial behaviors that showed social support to others (social initiatives). These results are in line with the adaptive prosocial function of guilt, to reflect on events where one has put insufficient weight on the welfare of a valuable other (Sznycer, 2019). The behavioral tendency of guilt is to seek out and approach others and to undertake actions to minimize damage (De Hooge, 2008; Niedenthal et al., 1994). Guilty individuals have even been found to be motivated to repair the wrongdoing caused by another (Schmader & Lickel, 2006). Appropriately, we found guilt prone individuals to engage in more social initiatives during the COVID-19 pandemic. Less evidence was found for our other hypotheses. Next, we will discuss in depth all our findings regarding, guilt, shame, externalization and pride separately.

Guilt

We initially argued that social distancing and social initiatives, while different, can both be categorized as prosocial behaviors. We therefore hypothesized that failure to engage in these

prosocial behaviors would elicit feelings of guilt as the self will be evaluated negatively against moral standards of helping others. In order to avoid the negative feelings associated with guilt we expected guilt prone individuals to adhere more to the social distancing guidelines and to participate more in social initiatives. We only found partial support for this hypothesis. As discussed above guilt as a trait was found to be a robust predictor of social initiatives. In Study 1, we also explored the predictive value of guilt as a state measured with 3 items (e.g., *I feel guilty towards those most vulnerable to coronavirus COVID-19*). Feelings of guilt were also found to positively predict social initiatives. This further strengthens our confidence in the findings that guilt is positively related to prosocial actions, in the form of social initiatives. Interestingly, we found guilt (as a trait and state) to have no influence on social distancing. This might suggest that motivations to engage in social distancing might differ from the ones related to more traditional forms of prosocial behaviors. Guilt is associated with a strong tendency to approach others. Social interactions, however, are reduced to a minimum when engaging in social distancing, while interactions with others are an important part of social initiatives. The personal cost of distancing oneself from others thus seems to weigh more heavily for guilt prone individuals, than the gain that can be achieved by satisfying the moral standards of helping others. Hence, the approach tendencies associated with guilt do not motivate people to distance themselves from others, but encourages guilty individuals to engage in other forms of prosocial behaviors during crisis times.

Shame

In our first study, we expected shame proneness to be positively related to prosocial behaviors. Shame, however, was found to have different effects for social distancing and social initiatives. The function of shame is to limit the spread of negative information about the self and

to avoid devaluation by others (Tangney, 2015; Sznycer, 2019). Consistent with the behavioral tendency of shame to hide and withdraw, we found shame proneness to facilitate social distancing and to impede social initiatives. No effects where found for shame when it was measured as a state. Based on these findings we adapted our predictions regarding the influence of shame on social initiatives for the second study. In Study 2, however, we were unable to replicate the effects of shame proneness on social distancing and social initiatives. Our findings regarding shame proneness remain therefore inconclusive. There is, nevertheless, a possible explanation as to why the effects of shame were not replicated in the English sample of Study 2. Shame arises when one's failures and shortcomings are observed by others (Tangney, 1991). Our second study was conducted only one week after the total lockdown in England was loosened, hence public life just started again. It could be the case that the behaviors of our respondent had not been witnessed by enough persons to elicit feelings of shame.

Externalization

As mentioned before, externalization proneness was found to be a robust negative predictor of social distancing. Unexpectedly, in Study 1 we found that students who have a tendency to externalize blame were more likely to engage in social initiatives. This result, however, was not replicated in Study 2. On the one hand it could still be the case that individuals with higher tendencies to externalize blame will engage less in social initiatives, since they feel no personal responsibility for the problem, and hence have no incentive to be part of a solution. On the other hand, it could also be the case that externalization proneness might motivate people to help unfortunate others, as externalizers are aware that misfortune can happen outside of your personal control. Therefore, externalization proneness might still be positively related to social initiatives as the results of Study 1 suggest.

Pride

The predictive value of pride proneness was only investigated in Study 1. We hypothesized that authentic pride would be positively associated to social distancing and social initiatives. No effect of pride as a trait was found regarding social distancing. However, feeling proud about behaviors directed at protecting those most vulnerable to coronavirus COVID-19 (state pride) was found to have a positive effect on social distancing. These feelings about student's behaviors capture authentic pride as they reflect on specific effortful accomplishments (Tracy & Robins, 2007). The fact that those feelings predict social distancing, was expected as feeling of authentic pride are accompanied by genuine feelings of self-worthiness (Tracy & Robins, 2007). Those feelings of self-worthiness might motivate people to continue to engage in social distancing behaviors in order to keep experiencing this positive feeling.

The current results contradicted each other: being proud of performed protective behaviors in the past motivates individuals to engage in social initiatives, while the tendency to feel pride results in less social initiatives. This paradox can be resolved when we consider the psychology behind the two facets of pride (hubristic and authentic pride) and how trait pride was measured. Authentic pride is the achievement-oriented facet and is most often experienced when people attribute positive outcomes to their own efforts (Tracy & Robins, 2007). Hubristic pride is the more narcissistic facet and is typically experienced when success is attributed to internal, stable characteristics (Tracy & Robins, 2007). An effort was made to measure authentic pride proneness with our CORONA TOSCA items, by only including pride reactions about performed behaviors (beta pride) instead of pride feelings regarding inward gratification (alpha pride). However, it can be the case that hubristic pride proneness was measured despite our efforts. Pride proneness was measured after each of the five positive scenarios of the CORONA TOSCA.

Most of these scenarios are phrased in such a way that no specific attribution can be made to effort or self. Moreover, the achievement described in these "positive" situations are also somewhat overshadowed by further description of possible unfavorable outcomes, meant to measure guilt and shame proneness. In sum, the positive scenarios of the TOSCA might be too ambiguous. Since authentic pride is specifically experienced when positive outcomes can be attributed to personal efforts, it might not be possible to detect authentic pride with the CORONA TOSCA. Hubristic pride proneness, on the other hand, can be detected since these individuals will attribute any kind of success (even when success is somewhat ambiguous) to personal characteristics. This might explain why no effect of pride proneness on social distancing was found, while a negative effect of pride proneness on social initiatives was found. When a person has a disposition to feel good about themself, regardless of the behaviors they perform, the motivation to engage in social initiatives decreases.

Practical implication and recommendation for further research

Maintaining compliance with the social distancing measures is an important concern of governments all over the globe, since social distancing is currently the most effective way to keep the coronavirus SARS-CoV-2 under control. Unfortunately, because of the high personal costs and strain of social distancing people are starting to be less careful (RIVM, 2020). By examining the effect of self-conscious emotions on compliance to social distancing, we are able to make an informed assessment about the use of emotional appeals in order to achieve greater public compliance to social distancing.

Promoting and monitoring personal control. Individuals who do not have a tendency to attribute outcomes to their own behaviors or personal characteristics (externalizers) engage in less social distancing. Relying on individual's personal responsibility to engage in social

distancing is therefore not feasible when people have a tendency to externalize. It is important to address this possible problem in order to maintain sufficient compliance to social distancing. Especially when we consider the positive role social norms play in compliance with social distancing (Bogg and Milad, 2020; Van Rooij et al., 2020). If people do not see others comply with social distancing, this positive role of perceived social norms might disappear. Government should design advertisement campaigns that elicit a sense of personal responsibility and promotes citizen's sense of control over the spread of the virus.

Additionally, in both studies the mode for externalization was 2.29, indicating that it is not uncommon for people to experience situations related to the Corona crisis as outside of their personal control. During this pandemic individuals have to deal with many uncertainties (e.g., How long will the pandemic will last? Will I be able to keep my job? Will I get sick?). Moreover, the disease COVID-19 is also highly confusing, resulting in even more uncertainties. Symptoms usually occurs several days after being infected, a person who feels fine can therefore already be sick and contagious. Some infected persons are even asymptomatic and are therefore unaware that they are spreading the virus around. Because of all these uncertainties, individuals can lose their sense of personal control and therefore believe that their own behavior does not influence the spread of the virus. If individuals are truly responding with externalization tendencies during this pandemic it might indicate loss of personal control. If this is the case, the possibility exists that individuals who respond with externalization tendencies will develop negative attitudes towards the advocated social distancing behaviors (Rogers, 1975). Governments and research institutes should therefore regularly monitor the sense of personal control of citizens.

Using Emotional Appeals. Governmental campaigns relying on guilt- or shame-induced messages could be effective to motivate people to adhere to social distancing guidelines, when we consider framing effects (see Tversky & Kahneman, 1981 for an overview of framing effects). Gain-framed messages highlight positive consequences if individuals comply with the promoted behavior (Baek & Yoon, 2017). Loss-framed messages often warn individuals of negative consequences for failing to comply. DeSteno, Petty, Rucker, Wegener, and Braverman (2004) have found individuals who feel shame to respond more positively to loss framing and individuals who feel guilt to respond more positively to gain framing. Additionally, Duhachek, Agrawal, and Han (2012) found a matching effect of framing and guilt and shame in advertisement aimed at discouraging irresponsible drinking behaviors. When the message of the ad combined guilt appeals with gain frames or shame appeals with loss frames, participants were more strongly discouraged. These results might help us shed some light on our findings.

During the COVID-19 pandemic, the media has emphasized the importance of social distancing by reporting numbers of hospital admissions, infection rates, and death tolls (loss frame). In Study 1, we found shame as a trait to be positively related to social distancing. Shame appeals therefore could be effective in advertisements promoting compliance to social distancing when the message also highlights the negative consequences for failing to comply (e.g., rising numbers of victims, loss of personal freedom when strict lockdown measures have to be implemented). However, one should be careful that the advertisement does not elicit feelings of fear, as discussed in the introduction. The fact that we found guilt (as a trait and state) to have no influence on social distancing can possibly be explained by the fact that compliance to social distancing is associated with loss of intrapersonal contacts. Moreover, highlighting the negative consequences for failing to comply (loss frame) will probably not motivate guilty individuals to

engage in more social distancing. Guilt appeals could be effective in advertisements, promoting compliance to social distancing when the message also highlights the positive consequences of compliance (e.g., numbers of life saved, being able to keep high levels of personal freedom as no strict lockdown measures have to be implemented). Guilt (as a trait and state) was found to have a positive effect on social initiatives. By engaging in social initiatives, individuals gained the opportunity to interact with other individuals, something that is very important for individuals motivated by a guilty conscience. Voluntary organizations such as the Red Cross should, therefore, emphasize the intrapersonal aspect of volunteering (gain frame), in order to recruit more volunteers. It would be very interesting to test the suggested framing effect in combination with emotional appeals in further research.

Limitations

The main focus of this thesis was in assessing the role of emotional traits in order to predict prosocial behaviors, in the form of social distancing and social initiatives. Measurement of emotional traits reflects the disposition an individual has to react with a specific emotion at any given moment; it does not reflect actual emotion. Whether a specific emotion (state) is elicited is highly dependent on environmental and contextual clues that are present during a situation. It is therefore very difficult to correctly assess state emotions using a web survey. Although inferences are made about the effects of specific self-conscious emotions, we only measured state emotions in Study 1 by specifically asking participants about their feelings regarding their behaviors towards those most vulnerable to COVID-19. Whether feelings of guilt, shame, or pride arise in a given situation depends on whether a certain situation overlaps with one's identity goals or not; and on how this situation is attributed to aspects of the self (Lewis, 1971; Tangney, 1991; Tracy & Robin, 2004). Other identity goals might relate to social

distancing, instead of just the motivation to project vulnerable people. A person might, for example, be motivated to comply because he or she wants to communicate that (s)he is good citizen. Further research is needed in order to identify the different identity goals related to social distancing. This would allow better understanding of the link between self-conscious emotions and compliance to social distancing.

Moreover, to measure individual differences in guilt, shame, externalization, and pride proneness we created a modified version of the TOSCA-3 (Tangney et al., 2000). Here the different scenarios were adapted so that they would be relevant for students during the COVID-19 crisis. The reliability of the CORONA TOSCA was sufficient for research purposes (see Table 1). However, the validity of this scale was not assessed, therefore, we cannot be certain that this scale accurately measured guilt, shame, externalization, and pride proneness. In Study 1, we had the suspicion that the scale did not correctly asses authentic pride proneness, because of these problem we did not include pride proneness in Study 2.

Lastly, the causal link between social distancing and social initiatives remained unexplored in this thesis. A possible alternative explanation for our social initiative results is whether people engaged in social distancing beforehand. Because of the way we measured social distancing and social initiatives (e.g., *During the next days, I will…*) we were unable to control this possible influence. An individual who purposely ignores the social distancing guidelines might, after some time, feel bad about his past actions after reports on the news of increasing death toll caused by the virus. These negative feelings in turn might motivate people to engage in social distancing. An interesting line for further research would be to investigate whether emotional responses would mediate the relation between adherence to social distancing and compliance to social initiatives.

Conclusion

In two correlational studies, we investigated the role of affective proneness in order to predict who complies with the social distancing guidelines and who engages in more traditional prosocial behaviors, in the form of social initiatives. More specifically, we tested the predictive role of guilt, shame, pride, and externalization proneness on social distancing and social initiatives. Two of our hypotheses were supported by the data in both studies. Externalization proneness has a negative effect on social distancing behaviors; people who have a tendency to externalize blame engage in less social distancing. Guilt proneness has a positive effect on social initiatives but no effect on social distancing. Hence, the approach tendencies associated with guilt do not motivate people to distance themselves from others, but encourage guilty individuals to engage in other forms of prosocial behaviors, in the form of social initiatives during crisis times. Further research should investigate framing effects (gain or loss) in combination with emotional appeal in order to promote compliance to social distancing. Previous research has found individuals who feel shame to respond more positively to loss framing and individuals who feel guilt to respond more positively to gain framing (DeSteno et al., 2004). Shame appeals could be effective in advertisements when the message also highlights the negative consequences for failing to comply (loss frame). Guilt appeals could be effective when the message also highlights the positive consequences of compliance (gain frame) and individuals who feel guilt to respond more positively to gain framing

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Table 1

Means, standard deviations, and reliability (Cronbach's Alpha) for the CORONA TOSCA in Study 1 and 2.

Sample	*N*	Guilt			Shame			Externalization			Pride		
Tilburg University Students	213	3.82	.50	.79	2.82	.56	.81	2.53	.47	.72	3.67	.61	.62
English Students	489	3.90	.44	.76	3.13	.51	.77	2.85	.45	.68	-	-	-

Note. Guilt, Shame, and Externalization are derived from 16 items each, Pride from 5 items.

Table 2

Pattern matrix of the factor analysis on the 5-item Social Distancing Scale by Pfattheicher, Nockur, Böhm, Sassenrath, and Petersen (2020).

	Factor	
	1	2
4. During the next days, I will meet friends outside of my apartment.	.880	
1. If the weather is good, I will meet friends today or tomorrow.*	.835	
5. During my free time in the next days, I will likely be at places where also other people will be (e.g., take away place, park, beach).	.714	
3. During my free time in the next days, I will visit vulnerable** people (e.g., parents, grandparents, chronically ill friends).		.830
2. During the next days, I will meet family members with whom I do not live together.	.385	.676
Eigenvalue	2.135	1.247
Explained variance	42.71%	24.93%

Note. All items were reverse coded
** Item 1 has been modified from "Because of the good weather,…" to "If the weather is good,…" due to the changing weather.*
*** Item 3 has been modified from "elderly people" to "vulnerable people".*

Table 3

Correlation Variables in Study 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Corona TOSCA Guilt	—													
2. Corona TOSCA Shame	.64***	—												
3. Corona TOSCA Extern	.09	.44***	—											
4. Corona TOSCA Pride	.19**	.03	.22**	—										
5. IV Guilt	.47***	.35***	.02	.08	—									
6. IV Shame	.29***	.44***	.21**	- .13†	.45***	—								
7. IV Pride	.15*	- .05	- .12†	.35***	.07	- .25***	—							
8. Social Distancing	.21**	.25***	- .08	.00	.09	.03	.22**	—						
9. Social Initiatives	.35***	.11	.11	.03	.39***	.15*	.23**	- .07	—					
10. Age	- .15*	- .06	.15*	.01	- .15*	- .13†	- .03	.09	- .06	—				
11. Gender	.28***	.20**	.03	.06	.26***	.21**	- .02	.01	.22**	- .17*	—			
12. Living	.01	- .01	.02	- .00	- .01	.02	-. 05	- .08	.05	.20**	- .04	—		
13. Corona	- .04	- .01	- .01	.03	.06	- .00	.03	- .02	.17*	- .13 †	.07	- .07	—	
14. Healthcare	.07	.01	.12†	.04	.04	- .07	.10	- .09	.23**	- .06	.04	- .07	.21 **	—
15. Nationality	.01	- .08	- .76	.02	.00	.11	.14*	.26***	.03	.09	- .15	.13	- .17*	- .17*
M / %	3.82	2.82	2.53	3.67	3.23	2.42	3.57	4.10	2.57	20.23	71.8% ♀	23.9%(1)	11.7%(1)	51.6% (1)
SD	.50	.56	.47	.61	.89	.93	.77	.71	.82	2.19	—	—	—	—
α	.794	.812	.719	.617	.654	.812	.786	.640	.787	—	—	—	—	—

† $p < .10$; * $p < .05$; **; $p < .01$; *** $p <. 001$

Table 4

Regression of proneness on the 5-items Social Distancing Index in Study 1.

Variables	*b*	*s.e.*	*β*	*t*	*p*
Step 1					
Age	.034	.023	.106	1.529	.128
Gender (0 = man; 1 = female)	.101	.108	.064	.937	.350
Living (0 = parents; 1 = student room)	- .229	.114	- .137	- 2.009	.046
Corona (0 = no; 1 = yes)	.092	.152	.041	.603	.547
Healthcare (0 = no; 1 = yes)	- .082	.098	- .057	- .837	.403
Nationality (0 = Dutch; 1 = other)	.454	.166	.270	3.918	.000
Step 2					
Corona TOSCA Guilt	.006	.131	.004	.046	.964
CORONA TOSCA Shame	.502	.126	.392	3.973	.000
CORONA TOSCA Externalization	- .394	.120	- .257	- 3.290	.001
CORONA TOSCA Pride	.048	.079	.041	.608	.544
Step 3					
TOSCA Guilt * Nationality	.015	.349	.006	.044	.965
TOSCA Shame * Nationality	- .260	.345	- .111	- .756	.451
TOSCA Externalization * Nationality	- .003	.298	- .001	- .009	.993
TOSCA Pride * Nationality	- .097	.217	- .038	- .448	.654

Model 1: R^2 = .095, *F* (6, 206) = 3.6, *p* <.001
Model 2: R^2 change = .122, *F* change (4, 202) = 7.9, *p* <.001
Model 3: R^2 changed = .227, *F* change (4, 198) = .6, *p* = .645

Table 5

Regression of Emotional States regarding those most vulnerable to the coronavirus COVID-19 on the 5-items Social Distancing Index in Study 1.

Variables	*b*	*s.e.*	*β*	*t*	*p*
Step 1					
Age	.034	.023	.106	1.529	.128
Gender (0 = man; 1 = female)	.166	.108	.064	.937	.350
Living (0 = parents; 1 = student room)	- .229	.114	- .137	- 2.009	.046
Corona (0 = no; 1 = yes)	.092	.152	.041	.603	.547
Healthcare (0 = no; 1 = yes)	- .082	.098	- .057	- .837	.403
Nationality (0 = Dutch; 1 = other)	.454	.116	.270	3.918	.000
Step 2					
Guilt	.049	.061	.062	.804	.422
Shame	.029	.061	.034	.426	.671
Pride	.187	.065	.202	2.854	.005
Step 3					
Guilt * Nationality	- .197	.131	- .137	- 1.505	.134
Shame * Nationality	.076	.133	.056	.576	.565
Pride * Nationality	.133	.151	.075	.885	.377

Model 1: R^2 = .095, *F* (6, 206) = 3.6, *p* < .001
Model 2: R^2 change = .043, *F* change (3, 203) = 3.4, *p* < .05
Model 3: R^2 change = .012, *F* change (3, 200) = .93, *p* = .425

Table 6

Regression of proneness on Social Initiatives in Study 1.

Variables	*b*	*s.e.*	*β*	*t*	*p*
Step 1					
Age	- .006	.025	- .015	- .224	.823
Gender (0 = man; 1 = female)	.403	.121	.222	3.333	.001
Living (0 = parents; 1 = student room)	.132	.128	.069	1.032	.303
Corona (0 = no; 1 = yes)	.331	.171	.130	1.932	.055
Healthcare (0 = no; 1 = yes)	.360	.110	.220	3.280	.001
Nationality (0 = Dutch; 1 = other)	.211	.130	.109	1.616	.108
Step 2					
CORONA TOSCA Guilt	.883	.145	.539	6.077	.000
CORONA TOSCA Shame	- .513	.140	- .350	- 3.674	.000
CORONA TOSCA Externalization	.389	.132	.222	2.940	.003
CORONA TOSCA Pride	- .183	.087	- .136	- 2.093	.038
Step 3					
TOSCA Guilt * Nationality	- .246	.387	- .084	- .636	.526
TOSCA Shame * Nationality	- .263	.383	.098	.688	.492
TOSCA Externalization * Nationality	.000	.331	.000	- .001	.999
TOSCA Pride * Nationality	- .038	.241	- .013	- .157	.875

Model 1: R^2 = .130, F (6, 206) = 5.1, p < .001
Model 2: R^2 change = .142, F change (4, 202) = 9.9, p < .001
Model 3: R^2 change = .003, F change (4, 198) = .23, p = .919

Table 7

Regression of Emotional States regarding those most vulnerable to the coronavirus COVID-19 on Social Initiatives in Study 1.

Variables	*b*	*s.e.*	*β*	*t*	*p*
Step 1					
Age	- .006	.025	- .015	- .224	.823
Gender (0 = man; 1 = female)	.403	.121	.222	3.333	.001
Living (0 = parents; 1 = student room)	.132	.128	.069	1.032	.303
Corona (0 = no; 1 = yes)	.331	.171	.130	1.932	.055
Healthcare (0 = no; 1 = yes)	.360	.110	.220	3.280	.001
Nationality (0 = Dutch; 1 = other)	.211	.130	.109	1.616	.108
Step 2					
Guilt	.288	.065	.315	4.466	.000
Shame	.030	.064	.035	.473	.636
Pride	.204	.069	.193	2.953	.004
Step 3					
Guilt * Nationality	.071	.139	.043	.510	.611
Shame * Nationality	.085	.140	.055	.607	.545
Pride * Nationality	.207	.159	.101	1.298	.196

Model 1: R^2 = .130, F (6, 206) = 5.1, p < .001
Model 2: R^2 change = .140, F change (3, 203) = 12.9, p < .001
Model 3: R^2 change = .009, F change (3, 200) = .85, p = .466

Table 8

Correlation Variables in Study 2.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. CORONA TOSCA Guilt	—										
2. CORONA TOSCA Shame	.54***	—									
3. CORONA TOSCA Extern.	- .06	.32***	—								
4. Social Distancing	.11*	.06	- .15**	—							
5. Social Initiatives	.29***	.21***	- .01	- .20***	—						
6. Age	.02	- .13**	- .11*	.11*	- .05	—					
7. Gender	.27***	.20***	- .08	.01	.11*	- .02	—				
8. Corona	.06	.08 †	.09 †	- .07	.12**	.02	.02	—			
9. Healthcare	- .02	- .01	.03	- .11*	.13**	- .03	.00	.17***	—		
10. Living	.00	- .13**	- .10*	.05	.04	.54***	.00	.03	- .02	—	
11. Enforcement	.04	.05	- .02	- .06	.11**	.00	.02	.06	- .05	- .05	
M / %	3.90	3.13	2.85	4.05	2.73	24.53	62.7% ♀	6.7%(1)	29.2%(1)	40.2%(1)	3.05
SD	.44	.51	.45	.82	.82	7.55	—	—	—	—	.90
α	.760	.773	.681	.748	.738	—	—	—	—	—	

† $p < .10$; * $p < .05$; **; $p < .01$; *** $p <. 001$

Table 9

Regression on Social Distancing Index in Study 2.

Standard Hierarchical Regression						*Bootstrap of 2000 cases*		
							Bca 95% CI	
Variables	*b*	*s.e.*	*β*	*t*	*p*	*p*	*lower*	*upper*
Step 1								
Age	.013	.006	.122	2.281	.023	.013	.002	.023
Gender (0 = man; 1 = female)	.026	.076	.015	.335	.738	.743	- .135	.170
Living (0 = parents; 1 = own place)	- .033	.090	-.020	-.372	.710	.691	- .199	.134
Corona (0 = no; 1 = yes)	- .175	.151	-.053	-1.157	.248	.286	- .510	.120
Healthcare (0 = no; 1 = yes)	- .178	.082	-.099	-2.164	.031	.042	- .354	- .005
Enforcement (1 = not strict at all; 5 = very strict)	- .059	.041	-.064	-1.428	.154	.145	- .144	.017
Step 2								
CORONA TOSCA Guilt	.111	.104	.060	1.073	.284	.305	- .107	.329
CORONA TOSCA Shame	.168	.095	.104	1.761	.079	.109	- .047	.373
CORONA TOSCA Externalization	- .298	.091	- .162	- 3.281	.001	.003	- .491	- .095

Model 1: R^2 = .013, F (6, 482) = 2.54, $p < .05$
Model 2: R^2 change = .035, F change (3, 479) = 5.97, $p < .005$

Table 10

Regression on Social Initiatives in Study 2.

Variables	*b*	*s.e.*	*β*	*t*	*p*
Step 1					
Age	- .012	.006	- .106	-2.013	.045
Gender (0 = man; 1 = female)	.178	.075	.105	2.369	.018
Living (0 = parents; 1 = own place)	.184	.089	.110	2.080	.038
Corona (0 = no; 1 = yes)	.316	.149	.095	2.120	.034
Healthcare (0 = no; 1 = yes)	.226	.081	.125	2.782	.006
Enforcement (1 = not strict at all; 5 = very strict)	.112	.041	.121	2.729	.007
Step 2					
Corona TOSCA Guilt	.457	.101	.243	4.533	.000
Corona TOSCA Shame	.113	.092	.070	1.233	.218
Corona TOSCA Externalization	- .044	.087	- .024	- .499	.618

Model 1: R^2 = .064, F (6, 481) = 5.45, p < .001
Model 2: R^2 change = .075, F change (3, 478) = 13.96, p < .001

Appendix A

Pilot Study

When the coronavirus COVID-19 rapidly spread throughout the Netherlands in the beginning of March 2020, experts raised their concerns that the hospitals might not have enough capacity to handle all the cases, if no precaution would be taken to slow the spread of the virus. Therefore, the Dutch government took actions such as advising people to work from home and to reduce social contact and interactions as much as possible. Citizens were urged to follow the social distancing guidelines while outside of staying 1.5 meters apart. Additionally, gatherings of more than 100 peoples were banned by law. Before Sunday the 15th of March, these measures were mainly advisory and focused on the personal responsibility of Dutch citizens. However, during this period without governmental enforcement of the guidelines, a large number of people still went out to bars and restaurants or gathered with friends and family. In order to take the necessary measures to curb the spread of the coronavirus COVID-19, the government decided to increase the measures taken: On March 15, at 6:00 pm, the Dutch government initiated new policies to close all schools and catering establishments until at least April 6, starting the Dutch intelligent lockdown. Another noteworthy behavior of Dutch citizens during the week preceding the more strict enforcement of the Dutch intelligent lockdown was that people started to hoard groceries, despite government advice. Supermarkets over the entire country had empty shelves. The Dutch Prime Minister Rutte spoke to the Dutch public in a press conference ensuring that there were more than enough grocery supplies in the country. The Prime Minister even specifically asked citizens to stop hoarding because this was a nuisance for people working in healthcare, as they would find empty shelves while buying food after their shift. Still, people did not take his advice into consideration and continued to stock supplies.

In this initial study we were interested in individual differences among Dutch citizens that might predict who felt personally responsible to adhere to the voluntary government guidelines, before the more strict enforcement of the lockdown measures taken on March 15th. It was hypothesized that individuals with a higher tendency to experience shame or guilt would self-report more adherence to the initial guidelines, since these self-conscious emotions facilitate feelings of personal responsibility. In order to conceal the aim of the study to participants, the decision was made to also measure externalization proneness. Externalization proneness refers to the tendency some individuals have to externalize blame to others in situations where personal blameworthiness could be experienced. By adding items measuring externalization we expected that the personal responsibility of participants would not be emphasized while answering the survey, which otherwise could affect the results. Consequently, it was hypothesized that externalization proneness would have a negative association with self-reported past behaviors that are in adherence to governmental guidelines, since individuals who externalize feel less personal responsibility.

Method

Procedure

An online Qualtrics survey, in Dutch, was conducted from March 17th to March 23rd 2020. The survey went online two days after the press conference where the Dutch prime minister introduced the intelligent lockdown, closing all schools and catering establishments. We specifically asked participants about their behaviors regarding the guidelines during the days before the introduction of these new policies, when the government was counting on the personal responsibility of individuals. The survey was distributed through various means such as social media (Facebook, Twitter, LinkedIn and Whatsapp) and email. Recipients were encouraged to

forward and share the survey with friends and family in order to reach as many participants as possible in a one week period. Since everyone with online access was able to fill in the survey, we created an exclusion criteria by asking participants to what extent they master the Dutch language. Participants who answer this item with *"It is my native language*" and *"Fluently"* were included in the analysis. Participants answer with items with *"Reasonable"* and *"Mediocre"* were excluded from the analysis. An a priori power analysis using G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007), indicated that a sample size of 150 participants was required to achieve an 80% statistical power, given a 5% alpha level and a correlation *r* of 0.2 (one tailed)[9].

Participants

Four hundred and thirty-three people were reached and opened the survey link. However, not everyone completed the survey. After exclusion based on our preregistered criteria, 297 participants remained (M_{age} = 33.49, SD_{age} = 12.64, 64.0 % female), all of whom gave informed consent. The participants that were excluded did not give a response on all dependent variables measured and/or did not answer the language and/or age item. An exclusion criteria regarding participant's age was not explicitly stated in the preregistration. However, our ethical approval was for participants from 16 years and older, therefore participants were excluded who did not indicate how old they were. One of the participants in our study was 15 years old, and was therefore excluded from the analysis. All of the remaining participants were fluent in Dutch.

Materials

[9] The full preregistration for this study can be found on SURFdrive under the folder 'Corona Crisis Behaviors, Pilot Study'.

TOSCA-3. To measure individual differences in guilt, shame, and externalization, the third version of the Test of Self-Conscious Affect (TOSCA-3) developed by Tangney, Dearing, Wagner, and Gramzow (2000) was used. The TOSCA-3 is a scenario-based instrument, in which participants are asked to imagine themselves in 16 different situations of personal blameworthiness that they are likely to encounter in day-to-day life. Each scenario describes a person committing some unfavorable action (11 scenarios) or achieving a somewhat successful outcome (5 scenarios). For each scenario, respondents have to indicate the likelihood that they would respond to those situations with different given reactions. These reactions reflect emotional responses typical for guilt, shame, detachment, externalization, alpha pride, and beta pride. In the current study participants were only presented with reactions related to guilt, shame, and externalization. For each of the 16 situations participants concurrently rated how likely they would react to the given responses on a 5-point Likert scale (1 = not likely; 5 = very likely). In our survey we added an additional instruction: *"Before we ask you questions about the Corona crisis, we would like to know how you normally react to different situations."* The presentation order for each scenario was randomized for each participant, as was the order of the different reactions measuring proneness. Translation of the TOSCA-3 into Dutch was done prior to this study and made accessible for this research by dr. Ilona de Hooge. Estimates of internal consistency (Cronbach's alpha) were: .69 for Guilt, .80 for Shame, and .66 for Externalization. These estimates are acceptable for research purposes. Total item scores for Guilt (M = 3.90, SD = .39), Shame (M = 2.90, SD = .55), and Externalization proneness (M = 2.20, SD = .40), respectively, were averaged for each participant and were subsequently mean-centered to provide indices for analysis.

Adherence to Guidelines. Our dependent measures consisted of behaviors the Dutch government recommended to citizens during press conferences in the first two weeks of March 2020, in order to control the spread of the coronavirus. These recommended guidelines were mainly advisory and made an appeal on the personal responsibility of Dutch citizens. Those recommended behaviors felt into three distinct subcategories: preventing the spread of the virus through hygienic behavior, engaging in social abstinence, and restricting grocery hoarding. Before answering these items, participant first read the following text: "*On Sunday 15 March at 6:00 pm, the Dutch government initiated new measures to prevent the spread of the Corona virus. It was decided to close all schools and catering establishments until at least April 6. We would like to know how you acted in the days before these measures took effect".* Responses were measured on a 5-point Likert scale (1 = not at all; 5 = very much) and the order of all items were randomized for each participant. The dependent variable Prevent Spread consisted of the following 4 items: "*I have avoided vulnerable groups (elderly, chronically ill, etc.)"*, "*I have been among people while experiencing symptoms (such as fever, sneezing and coughing)*", "*I have washed my hands more often*", and "*I shook hands with people*". Item 2 and 4 were reversed coded, higher values on this measure were indicative for more behaviors directed at preventing the spread of the virus. The dependent variable Social Abstinence consisted of the following 4 items: "*I went to catering establishments*", "*I met with friends*", "*I have been visiting family*", and "*I went to the gym/sports club*". All items were reverse coded, with higher values being indicative for more social abstinence. The dependent variable Shopping consisted of the following 4 items: "*I bought more groceries than usual*", "*I hoarded a bit*" (Dutch: "*Ik heb een beetje gehamsterd*"), "*I bought extra toilet paper*", and "*I stocked shelf-stable products*". All items were reversed coded, with higher values being indicative for more restriction while grocery

shopping. Estimates of internal consistency (Cronbach's alpha) were: .48 for Prevent Spread, .62 for Social Abstinence, and .88 for Shopping. Due to the low internal consistency of Prevent Spread and Social Abstinence, and the fact that both subcategories consisted of behaviors related to preventing the spread of the virus, an additional Principal Component Analysis (PCA) was conducted on these 8 items in order to explore whether these items could be merged into a single variable. However, no new solution came out of the PCA. It was therefore decided to keep the three indices as they were: Prevent Spread (M = 4.10, SD = .70), Social Abstinence (M = 3.79, SD = .87), and Shopping (M = 4.29, SD = .86). The variable Adherence was also created (α = .58, M = 4.06, SD = .48), in which all behaviors where collapsed into one variable, in case no associations would be found between the different types of proneness and the different subcategories of behaviors.

Other measurements. Additionally, several variables were measured for exploratory and control purposes. Firstly, participants were asked whether they agreed with 5 attitudes regarding the Corona crisis in the Netherlands (1 = strongly disagree; 5 = strongly agree). Table A1 provides an overview of all attitude items and their descriptive statistics; overall, participants agreed that the Corona crisis in the Netherlands was serious (M = 3.80, SD = .50).

Next, participants were asked about their news consumption in the last week. One item (News Active) asked participants to indicate on a Likert scale ranging from 1 (not at all) to 5 (very much), whether they actively searched for news about the coronavirus COVID-19 (M = 3.83, SD = 1.22). Participants were then asked to select the specific press conferences they watched: March 12, announcing the closure of all museums and the ban on all events with more than 100 people; March 15, announcing the closure of all schools and catering establishments; and March 16: in which the prime minister addressed citizens about the severity of the crisis. The

item News Specific was created to indicate how many of these events participants watched: 48.8% of our sample watched all three events, 27.9% watched two, 18.5% only watched one, and 4.7% watched none.

Lastly, participants answered 3 control variables regarding their profession that might influence how much they come in contact with other people. Healthcare (i.e., *"Do you have a vital profession, as described by the government (e.g., care, assistance etc…)?"*) and Contact (i.e., *"Do you come into contact with people while working?"*), could be answered with yes = 1 or no = 0. Finally, participants answered the variable Work asking whether they worked from home or on location (1 = location 2 = home as much as possible; 3 = fully working from home.)

Results

Table A2 provides an overview of the descriptive statistics and zero-order correlations between all key variables[10]. Consistent with the literature (Tangney, 1990), guilt and shame proneness were moderately strong correlated (r (290) = .52, $p < .001$) and women had a higher tendency to experience guilt and shame than men. A correlation between shame and externalization proneness (r (291) = .21, $p < .001$) was also found.

Adherence to guidelines regarding preventing the spread of the coronavirus COVID-19 was only found to be positively correlated with guilt proneness (r (291) = .16, $p < .01$) and shame proneness (r (292) = .13, $p < .05$) All these correlation were relatively weak but in line with expectations. As expected adherence, which composes of all behaviors recommended by the government (including Shopping, Social Abstinence, Prevent Spread), was negatively correlated with externalization proneness (r (292) = -.14, $p < .05$). The correlation analysis also revealed

[10] Data and SPSS syntax for all analyses are accessible on SURFdrive under the folder 'Corona Crisis Behaviors, Pilot Stydy'.

negative associations between the amount of media consumption and adhering to Shopping guidelines. Suggesting that the more people actively searched for news about coronavirus COVID-19 and the more press conferences they watched, the more groceries they bought despite governmental advice to not do so.

Adherence to guideline

Multiple linear regressions with bootstrapping were used to assess the ability of our proneness measures (TOSCA Guilt, TOSCA Shame, TOSCA Externalization) to predict adherence to guidelines in general. Regression analysis of the different subcategories of Adherence, i.e., Shopping, Social Abstinence, and Prevent Spread, was not possible since preliminary analyses revealed that the variables violated the assumption of normality, linearity, and homoscedasticity to some extent. The overarching variable Adherence only violated the assumption of normality, which in multiple regression can be solved with 2000 bootstrap simulations (Efron & Tibshirani, 1994). As predicted, externalization proneness had a significantly negative effect on adherence to guidelines (β = -.14, t (278) = - 2.55, p < .05). The 95% bias corrected and accelerated confidence interval was [-.30 ; -.03]. This effect remained statistically significant after controlling for age, gender, news consumption, attitude regarding severity of the crisis, work, contact, and healthcare. No other statistically significant results were found.

Discussion

The goal of this study was to investigate what kind of individual felt personally responsible to adhere to the Dutch government guidelines before the government decided to enforce the intelligent lockdown. More specifically, we were interested in individual's guilt,

shame and externalization proneness in relation to personal behaviors related to the Corona crisis. We found that individuals who have a tendency to externalize blame were less likely to adhere to governmental guidelines regarding preventing the spread of the virus through hygienic behavior and engaging in social abstinence, and restricting grocery hoarding. However, no effects of shame and guilt were found regarding adherence to guidelines. We did, nonetheless, found small positive correlations for guilt and shame and behaviors related to prevent the spread of the virus, such as not shaking hands and staying at home while experiencing symptoms.

Limitations and direction for further research

Several limitations can be addressed which might explain why no significant results were found for shame and guilt. Firstly, our participants were reached though different means such as social media (Facebook, Twitter, LinkedIn and Whatsapp) and email, meaning that everyone with online access was able to fill in the survey. As a consequence some of the participants that were reached might have been unfamiliar with answering surveys and might have had difficulties with understanding the instructions. This is reflected in the fact that a lot of items of the different scales were skipped and that a majority of participants did not complete the survey. This also raises the question whether the data for this study was filled in seriously. In order to control for this last point, further studies should include at least one attention check. Secondly, the dependent variable, Adherence, composing of all behaviors recommended by the government, had low reliability, as the subcategory Prevent Spread. The low reliability of those indices might have affected our results. Further studies should strive to use indices consisting of behaviors relevant to the Corona crisis that are more related to each other. Lastly, our independent measurement, the TOSCA-3, might not have been suitable to use during crisis times, as it presents participants with situations that they are likely to encounter in day-to-day life. Day-to-

day life, however, changed dramatically after the outbreak of the coronavirus COVID-19. For this reason some participants might have had difficulties answering the TOSCA-3 items, resulting in invalid proneness assessments for guilt, shame, and externalization.

Conclusion

During the first two weeks of March 2020, when the coronavirus COVID-19 started to spread in the Netherlands, public debate regarding a lockdown was divided. Some were against a total lockdown, while others found that the Dutch government was not taking enough measures. Before banning gatherings of large groups, and closing schools and catering establishments, the Dutch government was reluctant to enforce lockdown measures and preferred to make an appeal towards the personal responsibility of Dutch citizens to behave in a way that would curb the spread of the virus. The aim of this approach was to retain citizen's personal freedom to move. However, partly due to the nice weather, we saw that people had great difficulty adhering to the set guidelines. In this research we found that most Dutch people indicated to adhere to the guidelines but that individuals who have a tendency to externalize blame are less likely to adhere. These result suggest that relying on individual's personal responsibility is not feasible when people have a tendency to externalize. In order to moderate the spread of the coronavirus COVID-19 and IC-beds occupancy in hospitals, the Dutch Government was right to enforce some lockdown measure, especially when considering that a proportion of citizens externalize blame and would otherwise not take personal measures to curb the spread without restrictions imposed by the government.

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Table A1

Attitudes regarding the Corona crisis in the Netherlands (1 = strongly disagree; 5 = strongly agree).

Items		Descriptive	
		M	*SD*
1.	I think that the Corona crisis in Netherlands serious is.	3.80	.50
2.	I support the measures taken by the Dutch government on March 15 to close all catering establishments and schools	3.91	.37
3.	The Dutch government has not taken enough measures (rev.)	3.90	.78
4.	The measures taken by the government started in time	3.02	.95
5.	I have confidence in measures taken by the government	3.69	.66

Table A2

Correlation Variables in the Pilot Study.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. TOSCA-3 Guilt	—													
2. TOSCA-3 Shame	.56***	—												
3. TOSCA-3 Extern.	- .04	.21***	—											
4. Shopping	- .03	- .07	- .06	—										
5. Social Abstinence	.06	- .03	- .10†	- .17**	—									
6. Prevent Spread	.16**	.13*	- .09	- .15**	.41***	—								
7. Adherence (total)	.10†	.01	- .14*	.43***	.70***	.64***	—							
8. Age	- .05	- .21***	.03	.09	.06	.01	.09	—						
9. Gender	.31***	.33***	- .13*	- .18**	.04	.12*	- .03	- .17**	—					
10. Healthcare	- .06	.00	.09	- .09	.01	.07	- .01	- .07	- .16**	—				
11. Work	.06	.20**	- .03	- .15**	.11†	.05	.00	- .05	.05	.36***	—			
12. Contact	- .05	- .05	- .03	.05	- .07	- .04	- .04	.05	.02	- .32***	- .46***	—		
13. Attitude Severity	.18**	.04	- .02	- .10†	.08	.21***	.09	.12*	.13*	.04	.06	- .23***	—	
14. News Active	.19**	.14*	.08	- .26***	.08	.10†	- .06	.05	.12*	- .00	.04	.02	.32***	—
15. News Specific	.05	- .00	.03	- .16**	.04	.13*	- .01	.15**	.06	.08	.12*	- .06	.21***	.40***
M / %	3.90	2.90	2.20	4.29	3.79	4.10	4.06	33.49	64.0% ♀	73.1%(1)	2.26	53.9%(1)	4.29	2.21
SD	.39	.55	.40	.86	.87	.70	.48	12.64	—	—	.86	—	.84	1.22
α	.686	.801	.661	.880	.621	.484	.575	—	—	—	—	—	—	—

† $p < .10$; * $p < .05$; **; $p < .01$; *** $p <. 001$

Appendix B

Overview of the 16 TOSCA scenarios and their accompanying reaction in order: Guilt, Shame, Externalization, and Pride. The original TOSCA-3 (Tangney, Dearing, Wagner, & Gramzow, 2000) was used in the Pilot Study. The modified CORONA TOSCA was used in Study 1 and 2.

Note. Pride was measured with item 2, 6, 8, 11, and 14.

	TOSCA-3		**CORONA TOSCA**
1.	You make plans to meet a friend for lunch. At five o'clock, you realize you stood have him/her up. - You would think you should make it up to your friend as soon as possible. - You would think: "I am inconsiderate." - You would think: "My boss distracted me just before lunch."	1.	You promise to run some errands for a vulnerable neighbor around noon. At five o'clock, you realize you completely forgot to do the groceries for your neighbor. - You would try to make it up to your neighbor as soon as possible. - You would think: "I am inconsiderate." - You would think: "Because I'm working from home, I have no sense of time anymore."
2.	You break something at work and then hide it. - You would think: "This is making me anxious. I need to either fix it or get someone else to." - You would think about quitting.	**2.**	You sneeze in a busy supermarket and forget to do that in your elbow. - You would think: "This is making me nervous. I have to teach myself to sneeze properly". - You would think about leaving right away.

	- You would think: "A lot of thinks aren't made very well these days."	- - You would think: "No one can teach themselves a reflex."
3.	You are out with friends one evening, and you're feeling especially witty and attractive. Your best friend's partner seems to particularly enjoy your company. - You would think: "I should have been aware of what my best friend was feeling." - You would probably avoid eye contact for a long time. - You would think your best friend should pay attention to his/her spouse. - You would feel pleased to have made such a good impression	3. On the street, you see an old lady with a walker struggling to carry her groceries inside. You offer to help her. When you are saying goodbye you shake hands. - You would think: "I should have warned this lady that touching each other is dangerous for her." - You would probably avoid eye contact for a long time. - You would think that the lady is responsible for her own protection. - You would feel happy that you did a good deed.
4.	At work, you wait until the last minute to plan a project, and it turns out badly. - You would feel: "I deserve to be reprimanded for mismanaging the project." - You would feel incompetent. - You would think: "There are never enough hours in the day.	4. You wait until the last minute to finish a school assignment, and it turns out badly. - You would feel: "I deserve to be reprimanded for mismanaging the assignment." - You would feel incompetent. - You would think: "Now that lectures are no longer taking place, we are no longer reminded of deadlines."
5.	You make a mistake at work and find out a coworker is blamed for the error.	5. You are walking on the street with a friend and a police officer only

			addresses your friend that you are not adhering the 1.5 meters guideline. - You would feel unhappy and eager to correct the situation. - You would keep quiet and avoid your friend. - You would think the police officer did not like your friend.
6.	For several days you put off making a difficult phone call. At the last minute you make the call and are able to manipulate the conversation so that all goes well. - You would regret that you put it off. - You would feel like a coward. - You would think you shouldn't have to make calls you feel pressured into. - You would think: "I did a good job."	**6.**	To protect your grandparents, you have not visited them for a while and they indicate feeling lonely. For several days you put off calling your grandparents. When you finally call them, you are able to manipulate the conversation such that they are very happy with you. - You would regret that you put off calling them. - You would feel like a coward. - You would think you shouldn't have to make calls you feel pressured into. - You would think: "I did a good job calling them."
7.	While playing around, you throw a ball and it hits your friend in the face.	7.	In recent months you had a cold, you sneezed and coughed a little, but other than that felt fine. That is why you have had dinner with your housemates every day. Now one of your housemates is

			very ill, (s)he probably got the coronavirus COVID-19 from you. - You would apologize and make sure your friend feels better. - You would feel inadequate for not quarantining yourself in your room. - You would think that your housemates themselves should have told you to stay in your room.
			- You would apologize and make sure your friend feels better. - You would feel inadequate that you can't even throw a ball. - You would think maybe your friend needs more practice at catching.
8.	You have recently moved away from your family, and everyone has been very helpful. A few times you needed to borrow money, but you paid it back as soon as you could. - You would return the favor as quickly as you could. - You would feel immature. - You would think: "I sure ran into some bad luck". - You would be proud that you repaid your debts.	**8.**	You recently moved to a student house and become very ill. All your housemates are very helpful and put food and drinks outside your room door a few times a day. Because you cannot work, they advance the groceries, but you paid it back as soon as you could. - You would return a favor as quickly as you could. - You would feel useless. - You would think: "I have had some bad luck". - You would be proud that you repaid your debts as quickly as possible.
9.	You are driving down the road, and you hit a small animal. - You'd feel bad you hadn't been more alert driving down the road.	9.	While doing groceries and aware that you should keep 1.5 meter distance, still you accidentally bump into someone. - You'd feel bad you weren't more alert.

	- You would think: “I’m terrible.” - You would think the animal shouldn’t have been on the road.	- You would think: “I’m terrible - You would think people shouldn't stand so close to you.
10.	You walk out of an exam thinking you did extremely well, then you find out you did poorly. - You would think: “I should have studies harder.” - You would feel stupid. - You would think: “The instructor doesn’t like me.”	10. You work as a volunteer for a day to clean facial masks for healthcare institutes thinking you did extremely well. Then you find out you performed poorly. - You would think: “I should have worked harder.” - You would feel stupid. - You would think: “The manager doesn’t like me.”
11.	You and a group of coworkers worked very hard on a project. Your boss singles you out for a bonus because the project was such a success. - You would feel you should not accept it. - You would feel alone and apart from your colleagues. - You would think your boss is rather short-sighted. - You would feel your hard work had paid off.	**11.** You and a group of volunteers worked very hard on delivering groceries to vulnerable people. Your team manager singles you out and gives you a gift card because the project was such a success. - You would feel you should not accept it. - You would feel alone and separated from the other volunteers. - You would think you manager has not given this enough thought. - You would feel content your hard work paid off.
12.	While out with a group of friends, you make fun of a friend who’s not there.	12. During a group call with friends, you make fun of a friend who’s not there.

	- You would apologize and talk about that person's good point. - You would feel small…like a rat. - You would think that perhaps that friend should have been there to defend him/herself.	- You would apologize and talk about that person's good points. - You would feel like a sneaky person. - You would think that that friend should have logged in to defend him/herself.
13.	You make a big mistake on an important project at work. People were depending on you, and your boss criticizes you. - You would think: " I should have recognized the problem and done a better job." - You would feel as if you wanted to hide. - You would think your boss should have been more clear about what was expected of you.	13. You make a big mistake on a group paper for your studies. Other students were depending on you, and your lecturer criticizes you. - You would think: " I should have noticed the problem in time and done a better job." - You would like to avoid your group members. - You would think your lecturer should have been more clear about what was expected of you.
14.	You volunteer to help with the local Special Olympics for handicapped children. It turns out to be frustrating and time-consuming work. You think seriously about quitting, but then you see how happy the kids are. - You would think: "I should be more concerned about people who are less fortunate."	14. You volunteer to look after children of people who work in healthcare now that the schools are closed. However, the children turn out to be very annoying and you have no authority over them. You seriously consider quitting, but then the parents tell you how much they are needed in the hospital. - You would think: "I should be more concerned about the patients in the hospital who need help."

	- You would feel selfish, and you'd think you are basically lazy. - You would feel you were forced into doing something you did not want to do. - You would feel you great that you had helped others.	- You would feel selfish, and you'd think you are lazy. - You would feel forced into doing something you did not want to do. - You would feel great for helping others.
15.	You are taking care of your friend's dog while they are on vacation and the dog runs away. - You would vow to be more careful next time. - You would think: "I am irresponsible and incompetent." - You would think your friend must not take very good care of the dog or it wouldn't have run away.	On a sunny day you decide to go to the park with a friend. You intend to adhere to the 1.5 meters distance guideline. Once in the park you run into more people you know and you all have a nice chat. Without realizing it, you have completely forgotten the 1.5 meter distance. - You promise to be more careful next time. - You would think: "I am irresponsible and incompetent." - You would think the others were not paying attention.
16.	You attend your co-worker's housewarming party, and you spill red wine on a new cream-colored carpet, but you think no one notices. - You would stay late to help clean up the stain after the party.	Your laptop is broken and you borrow your housemate's laptop. After you return the laptop, you realize that you have not disinfected the keyboard. - You would reclaim the laptop and clean the keyboard properly.

- You would wish you were anywhere but at the party.
- You would wonder why your coworker chose to serve red wine with the new light carpet.
- You would wish you don't have to see your roommate for a while.
- You would think that your roommate should not lend her laptop if she is afraid of contamination.

Appendix C

Overview of the independent variable used in Study 1 measuring emotional states of guilt, shame, and pride. These feelings were each measured with 3 items modeled after the Pfattheicher, Nockur, Böhm, Sassenrath, and Petersen (2020) empathy scale.

Feelings regarding those most vulnerable to coronavirus COVID-19.

Guilt

1. *I feel guilty towards those most vulnerable to coronavirus COVID-19.*
2. *I feel very bad when I think about what can happen to those most vulnerable to coronavirus COVID-19.*
3. *I feel responsible for what can happen to those most vulnerable to coronavirus COVID-19.*

Shame

1. *I feel ashamed when I think about what can happen to those most vulnerable to coronavirus COVID-19.*
2. *I feel worthless when I think about the people most vulnerable to coronavirus COVID-19.*
3. *I feel quite incompetent when I think about those most vulnerable to coronavirus COVID-19.*

Pride

1. *I am very proud of what I am doing to protect those most vulnerable to coronavirus COVID-19.*
2. *I feel satisfied with what I am doing to protect those most vulnerable to coronavirus COVID-19.*
3. *I am quite confident in what I am doing to protect those most vulnerable to coronavirus COVID-19.*

Appendix D

Overview of the dependent variables used in Study 1 and 2. Social Distancing was measured with the same 5 items used by Pfattheicher, Nockur, Böhm, Sassenrath, and Petersen (2020). Social Initiative was measured with 5 items that were modeled after the Social Distancing scale.

Social Distancing

1. *If the weather is good, I will meet friends today or tomorrow.*[11]
2. *During the next days, I will meet family members with whom I do not live together.*
3. *During my free time in the next days, I will visit vulnerable*[12] *people (e.g., parents, grandparents, chronically ill friends).*
4. *During the next days, I will meet friends outside of my apartment.*
5. *During my free time in the next days, I will likely be at places where also other people will be (e.g., take away place, park, beach).*

Social Initiatives

1. *During the next days, I will volunteer to help people.*
2. *During my free time in the next days, I will skype/call family members.*
3. *During the next days, I will show my support for health care professionals via social media.*
4. *During the next days I will start thinking about how I can help people in my free time.*
5. *In the coming days I will offer my help through a website to do my bit during this Corona crisis.*

[11] Item 1 has been modified from "*Because of the good weather,…"* to "*If the weather is good,…"* due to the changing weather.
[12] Item 3 has been modified from "elderly people" to "vulnerable people" in Study 2.