



## Social trauma and its association with posttraumatic stress disorder and social anxiety disorder

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### ABSTRACT

The key characteristic of a traumatic event as defined by the Diagnostic and Mental Manual of Mental Disorders (DSM) seems to be a *threat to life*. However, evidence suggests that other types of threats may play a role in the development of PTSD and other disorders such as social anxiety disorder (SAD). One such threat is *social trauma*, which involves humiliation and rejection in social situations. In this study, we explored whether there were differences in the frequency, type and severity of social trauma endured by individuals with a primary diagnosis of SAD ( $n = 60$ ) compared to a clinical control group of individuals with a primary diagnosis of obsessive compulsive disorder (OCD,  $n = 19$ ) and a control group of individuals with no psychiatric disorders ( $n = 60$ ). The results showed that most participants in this study had experienced social trauma. There were no clear differences in the types of experiences between the groups. However, one third of participants in the SAD group (but none in the other groups) met criteria for PTSD or suffered from clinically significant PTSD symptoms in response to their most significant social trauma. This group of SAD patients described more severe social trauma than other participants. This line of research could have implications for theoretical models of both PTSD and SAD, and for the treatment of individuals with SAD suffering from PTSD after social trauma.

## 1. Introduction

### 1.1. The Criterion A debate

Post-traumatic stress disorder (PTSD) has been conceptualized as a response to a traumatic stressor. The Diagnostic and Statistical Manual of Mental Disorder (DSM) has from the third edition and onward been focused on objective indicators of psychopathology in order to increase the reliability of diagnoses. This emphasis also affected the traumatic stressor criterion, by attempting to pre-define the kind of events that can lead to PTSD symptoms. In DSM-5, trauma is characterized as “exposure to actual or threatened death, serious injury, or sexual violence” (American Psychiatric Association, 2013, p. 271, Criterion A). A diagnosis of PTSD is made if Criterion A is met in addition to post-traumatic stress symptoms (PTSS) for more than one month, such as intrusion symptoms (e.g., memories of the event), avoidance of stimuli related to the event, negative alterations in cognitions and mood, and changes in arousal and reactivity (American Psychiatric Association,

2013, pp. 271–272).

The key characteristic of a traumatic event according to the DSM seems to be a *threat to life* (Weathers & Keane, 2007), although sexual violence does not necessarily fit this definition. There has, nevertheless, been a considerable debate, sometimes referred to as the *Criterion A debate*, in the literature on what constitutes a traumatic stressor that can lead to PTSD (Boals & Schuettler, 2009; Gold, Marx, Soler-Baillo, & Sloan, 2005; Long et al., 2008; Stein, Wilmot, & Solomon, 2016) and reaching a general consensus has proven difficult. There has been a number of studies that have found that individuals often report PTSS in response to events that are not life-threatening and do not meet Criterion A. A recent meta-analysis (Larsen & Pacella, 2016) revealed that the association between Criterion A events (as defined by DSM-III and DSM-IV) and PTSS resulted in only a slightly larger effect size than events that do not meet that criterion. Furthermore, a recent study of DSM-5 Criterion A events vs. events that do not meet that criterion showed a similar but non-significant effect size (Larsen & Berenbaum, 2017).

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The Criterion A debate remains unresolved, and we may need a different approach to reveal what makes an experience traumatic and likely to lead to PTSD. It is clear that certain types of experiences (e.g., rape compared to an avalanche) are more likely than others to result in PTSD symptoms (Friedman, Resick, Bryant, & Brewin, 2011). However, rather than emphasizing the types of events that count as trauma, a more constructive approach may be to consider the types of perceived *threat* that are related to reproductive success in the evolutionary history of our species (Stein & Nesse, 2011). This would also provide a stronger link to current theoretical models of PTSD (see especially Ehlers & Clark, 2000) that emphasize not the event itself but rather how the individual appraises the experience, and whether he or she does it in a way that leads to a sense of constant threat. Larsen and Berenbaum (2017) examined a number of predictors of PTSD symptoms and found only one consistent predictor: the individual's assessment of life threat. Other studies have found similar results (see e.g., Pinto, Henriques, Jongenelen, Carvalho, & Maia, 2015): Perceived threat may be a much more likely causal factor in the development of PTSD than a pre-defined list of "traumatic" events. Threat to life is one, but there may be other types of threat that can result in a traumatic response. Furthermore, it is important to explore the extent to which different types of threat play a role in the development and maintenance of other disorders, such as social anxiety disorder.

### 1.2. Social anxiety disorder and social trauma

Social anxiety disorder (SAD) is characterized by a persistent fear of being humiliated or embarrassed in social situations (American Psychiatric Association, 2013). Most people with SAD report a single event or an ongoing social experience, which commonly revolve around humiliation, rejection and criticism, as having played a significant role in the onset of the disorder (Bandelow et al., 2004; Hackmann, Clark, & McManus, 2000), although not all studies have found that such conditional events are the most important factors in the onset of SAD (Harvey, Ehlers, & Clark, 2005; Hofmann, Ehlers, & Roth, 1995). Negative social events are usually not considered to be traumatic. However, research suggests that aversive social events are sometimes experienced as such. Erwin, Heimberg, Marx, and Franklin (2006) examined (with a clinical interview) PTSS in response to stressful social events among individuals with SAD and non-anxious controls. The results showed that all participants in the SAD group and 70% of the non-anxious group had experienced a socially stressful event. Most importantly, more than one-third of the participants with SAD (but none in the control group) met criteria for PTSD in response to the social event (which, however, did not meet Criterion A). Similarly, Carleton, Peluso, Collimore, and Asmundson (2011) compared patterns of social anxiety symptoms and PTSS relative to negative social events and Criterion A trauma. They found that one third of the participants reported a negative social event as being the most distressing event that they had ever experienced, despite most also having experienced Criterion A events. In addition, participants who had experienced negative social events had higher levels of PTSS and SAD symptoms. These findings suggest an important relationship between negative social experiences and both SAD and PTSD (Carleton et al., 2011). Everyone experiences some sort of aversive social experiences during their lifetime. Nevertheless, it may be that individuals that develop SAD have a psychological vulnerability (see e.g., Rodebaugh et al., 2017) to events that are not commonly considered traumatic. Even though negative social experiences are neither necessary nor sufficient for the onset of SAD, their role in the developmental process of SAD is reminiscent of the role of trauma in the development of PTSD.

### 1.3. Threat appraisal

Collimore, Carleton, Hofmann, and Asmundson (2010) called for research on disentangling temporal sequence between SAD, PTSD and

traumatic experiences and whether there was a shared vulnerability (genetic and/or psychological) to both disorders, but their review, published a decade ago, has not sparked systematic research on these critical issues. The Criterion A debate has revolved around what kind of *events* have the potential of being traumatic and playing a role in the development of PTSD. We propose that one way of advancing the field may be to shift the focus away from pre-defined events, and instead focus on the types of perceived *threat* that can have the potential of leading to PTSD, but also to other disorders such as SAD. In that sense, there may be a group of individuals who do not have co-morbid PTSD and SAD (two separate conditions) but rather react to a social threat in such a way that they live life as if under constant social threat, with accompanying symptoms (such as intrusive memories, vigilance and avoidance of social situations) of both PTSD and SAD as *one* integrated condition.

We explored in this study whether there may exist at least two types of trauma; *threat to life* and *social threat*. The latter threat involves perceived rejection or humiliation and can only be understood from an evolutionary perspective (Bjornsson et al., 2016). Humans are social animals that have throughout their evolutionary history relied on their group for access to food, mating partners and security (Gilbert, 2002; Gilboa-Schechtman, Shachar, & Helpman, 2014). Being rejected from one's group may have been, from an evolutionary perspective, just as life-threatening as physical attacks (Bjornsson et al., 2016). However, there are likely to be different processes involved, and not necessarily the same emotion regulation processes (e.g., social trauma may be more likely to be associated with shame than threat to life). Research is needed on whether certain experiences can be considered socially traumatic in this sense, and whether they have a unique relationship to the development of not only PTSD but to SAD as well. We use the term social trauma in the same way as threat to life trauma, such that the individual experiences these types of threats, which have the potential of provoking (but do not necessarily cause) post-traumatic stress symptoms. It should be noted that the construct of social trauma is different from the notion of interpersonal trauma, which is often referred to in the literature (see e.g., Nishith, Mechanic, & Resick, 2000) since most traumatic experiences involve other people and the term "interpersonal trauma" does not reveal the type of threat involved. However, it is likely that the concept of social trauma can make sense of why certain interpersonal experiences are more potent than other experiences in causing PTSS. In addition, it is hoped that an emphasis on both life threat and social threat can result in integrating literatures that have the potential to cast light on how certain experiences become traumatic. Notable examples are the literature on bullying and peer victimization (see e.g., Kowalski, Guimetti, Schroeder, & Lattanner, 2014; McCabe, Miller, Laugesen, Antony, & Young, 2010) and the literature on adverse childhood experiences (ACE; Hughes et al., 2017; Petruccelli, Davis, & Berman, 2019). Research on ACEs investigates a rich array of experiences, such as physical violence, sexual violence, bullying and neglect, but may benefit from specifying further how different types of threat affect mental and physical health.

In order to assess whether social trauma has a special relationship with SAD and PTSD, we need to compare such trauma among individuals with SAD, with a control group of individuals with no psychiatric disorders, but also a clinical control group of individuals with a different psychiatric disorder (in this study, obsessive-compulsive disorder, OCD). The reason for including not only a control group but also a clinical control group was to assess whether social trauma and PTSD in response to social trauma is uniquely associated with SAD but not only psychopathology more generally. The reason for choosing OCD as a clinical control group is that OCD has been associated with threat to life trauma (Miller & Brock, 2017). We also need to assess this new construct (*social trauma*) with a clinical interview and to assess both PTSD and SAD symptoms and their age of onset with a diagnostic interview conducted with a trained assessor (as opposed to self-report measures that are common in this literature).

## 1.4. Aims of the study

The purpose of this study is to explore the construct of social trauma and whether it may be associated with the development and maintenance of both PTSD and SAD. The aims of the current study are fourfold. First, to examine the frequency of social trauma among individuals diagnosed with SAD as a primary diagnosis (the disorder that is most impairing and distressing), a clinical control group of individuals with OCD as a primary diagnosis and a control group of individuals with no psychiatric disorders. Second, to examine if the social trauma is different in the three groups with regard to types of experiences and their severity. Third, to assess PTSD and clinically significant PTSS in response to social trauma and, fourth, to examine if different types of experiences or severity are differentially related to PTSD.

## 2. Method

### 2.1. Participants

The sample consisted of 139 participants 18 years of age or older. Participants in this study consisted of three groups. The SAD group comprised 60 individuals in treatment or seeking treatment for social anxiety at the Icelandic Center for Treatment of Anxiety Disorders. The inclusion criterion for the SAD group was to be diagnosed with SAD as a primary diagnosis (defined as the disorder causing most impairment and distress). The diagnosis of OCD was an exclusion criterion for this group. The clinical control group consisted of 19 individuals with OCD as a primary diagnosis that were either in treatment or seeking treatment, who were recruited using advertisements on social media and on bulletin boards. An exclusion criterion for this group was the diagnosis of SAD. The control group consisted of 60 adults who were recruited using advertisements on social media and on bulletin boards. The inclusion criteria for the control group consisted of having no psychiatric diagnoses. Participants in the control group were screened via a brief phone interview in order to exclude those who suffered from psychiatric disorders. The National Bioethics Committee of Iceland approved the study, and all participants signed an informed consent. All participants received a 5000 ISK gift certificate for their participation in this study.

All participants were Icelandic and there were no significant differences in age or gender between the three groups (see Table 1). Participants in the SAD group were less likely to have completed junior college or more (45.0%) compared to the control group (80.0%) and the clinical control group (63.2%;  $p < .001$ ). Participants in the SAD group were also significantly more likely to be single (50.0%;  $p < .05$ ) compared to the control group (35.0%) and the clinical control group (31.6%). The patients with SAD and OCD met criteria for a number of other psychiatric disorders, as can be seen in Table 1.

We compared social anxiety symptoms, depression symptoms, quality of life and functional impairment in the three groups (see Table 1). Post hoc comparisons using the Bonferroni correction indicated statistically significant differences between the groups with regard to social anxiety symptoms (as measured by the LSAS and SPWSS, see below), depression symptoms (as measured by PHQ-9, see below), quality of life (as measured by QOLS, see below) and functional impairment (as measured by SDS, see below), as can be seen in Table 1. The mean scores on LSAS, SPWSS, PHQ-9 and SDS were significantly higher in the SAD and clinical control group, and mean scores on the QOLS were lower, than in the control group ( $ps < .001$ ). Additionally, the mean scores on the LSAS and SPWSS were significantly higher in the SAD group, and QOLS mean scores lower, compared to the clinical control group ( $ps < .001$ ) but the groups did not differ with regard to scores on SDS ( $p = .273$ ).

### 2.2. Measures

*Background information* about the participants was collected with a demographics form that included questions about age, education, work and marital status.

*The Imagery and Social Trauma Interview* is a non-invasive semi-structured interview, based on earlier versions of imagery interviews (Hackmann et al., 2000; Lipton, Brewin, Linke, & Halperin, 2010) translated by the first author and adapted to focus more specifically on reactions to intrusive images and social trauma. The interview is divided into two parts. The first part of the interview assesses the presence of intrusive images. The second part assesses social trauma and takes approximately 15-20 minutes to administer. For the purposes of the current study, only the second part is described. To assess whether the participant has ever endured a socially traumatic experience, the interviewer asks the participant if he or she has ever been humiliated or rejected by other people during their lifetime. If the participant endorses such an experience, he or she is asked to choose the worst one. The interviewer then asks about the experience in detail, including what happened, what the situation was, who were involved, whether it happened repeatedly and at what age it happened. Participants are asked how strongly they remember the experience (ranging from “very weak” to “very strong”) and then are asked to identify and rate the strength of current emotional responses (on a scale from zero to ten) to it, first in an open-ended format, and then by asking about various other emotions that were not listed by free recall. Next, the interviewer asks how distressing the experience was (ranging from “not at all distressing” to “extremely distressing”), and how much it interfered with work, school, daily activities and social life at the time it happened (ranging from “no interference” to “extreme interference”).

*The Mini International Neuropsychiatric Interview* (MINI) is a structured diagnostic interview that assesses Axis I psychiatric disorders according to the DSM-IV. It is used in this study to characterize the sample and to ensure that individuals in the control group had no diagnosable disorders. Inter-rater and test-retest reliability has been shown to be good, with kappa's in the high to very high range. The MINI has strong reliability and validity in relation to the Structured Clinical Interview for the DSM-IV (SCID-IV). The majority of kappa values were .90 or higher, which indicates excellent inter-rater reliability ( $\kappa = .79-1.0$ ; Sheehan et al., 1997). An Icelandic version of the MINI was used in this study. The Icelandic version of the MINI has good convergent validity with self-report measures of depression and anxiety symptoms (Sigurðsson, 2008). The inter-rater reliability was high in this study: Percentage of agreement between raters in the control group was 100% for all disorders, and in the SAD group it ranged from 90.9% to 100%.

*The Body Dysmorphic Disorder Diagnostic Module* (BDD-DM; Phillips, 2005) is a brief semi-structured interview, designed to diagnose BDD (the MINI does not assess BDD). BDD-DM has been found to have good psychometric properties, including high inter-rater reliability ( $\kappa = .96$ ; Phillips, 2005). Inter-rater reliability for the Icelandic version of BDD-DM used in this study was high, with 87.5% percentage agreement between raters in the control group for lifetime BDD and 100% for current BDD, and 100% for lifetime BDD and 90.9% for current BDD in the SAD group.

*The Liebowitz Social Anxiety Scale* (LSAS) is a brief semi-structured clinical interview that assesses anxiety and/or fear and avoidance in 24 social situations (Liebowitz, 2003). Participants are asked to rate their anxiety and/or fear and avoidance (on a four point Likert scale) during the previous week. The LSAS total score was used to assess the severity of social anxiety symptoms. The scale has been found to be sensitive to change following treatment and to have excellent internal consistency on different subscales (Cronbach's alpha = .81-.92; Heimberg et al., 1999). The Icelandic version used here had good internal consistency for the SAD ( $\alpha = .90$ ), clinical control group ( $\alpha = .91$ ) and control group ( $\alpha = .91$ ). Additionally, scores on the LSAS predicted a SAD

**Table 1**  
Background variables and clinical characteristics of the groups (N = 139).

| Variables <sup>a</sup>                                | SAD group n = 60            | Clinical control (OCD) group n = 19 | Control group n = 60       | Chi-Square- or F statistic      |
|---|-----------------------------|-------------------------------------|----------------------------|---------------------------------|
| <b>Demographic variables</b>                          |                             |                                     |                            |                                 |
| Age (M; SD)   | 29.0 (10.7)                 | 30.7 (7.4)                          | 31.6 (10.2)                | F (2, 136) = 1.02               |
| Gender (% female)                                     | 36 (60.0)                   | 16 (84.2)                           | 33 (55.0)                  | X <sup>2</sup> (2, 139) = 5.2   |
| Nationality (% Icelandic)                             | 60 (100)                    | 19 (100)                            | 60 (100)                   | -                               |
| Education (% Junior College or more)                  | 27 (45.0)                   | 12 (63.2)                           | 48 (80.0)                  | X <sup>2</sup> (2,139) = 15.7** |
| Currently a student (%)                               | 25 (44.6) <sup>c</sup>      | 10 (52.6)                           | 23 (39.0) <sup>c</sup>     | X <sup>2</sup> (2, 134) = 1.6   |
| Married or living with a partner (%)                  | 30 (50.0)                   | 13 (68.4)                           | 39 (65.0)                  | X <sup>2</sup> (2, 139) = 3.6*  |
| <b>Comorbidity<sup>b</sup></b>                        |                             |                                     |                            |                                 |
| Major depressive disorder                             | 22 (36.7)                   | 6 (31.6)                            | -                          | -                               |
| Dysthymia   | 2 (3.3)                     | -                                   | -                          | -                               |
| Bipolar I disorder                                    | 1 (1.7)                     | -                                   | -                          | -                               |
| Bipolar II disorder                                   | 3 (5.0)                     | 2 (10.5)                            | -                          | -                               |
| Panic disorder with agoraphobia                       | 5 (8.3)                     | 1 (5.3)                             | -                          | -                               |
| Agoraphobia without panic                             | 3 (5.0)                     | 3 (15.8)                            | -                          | -                               |
| Social anxiety disorder                               | 60 (100)                    | -                                   | -                          | -                               |
| Obsessive compulsive disorder                         | -                           | 19 (100)                            | -                          | -                               |
| Posttraumatic stress disorder (threat to life trauma) | 3 (8.3)                     | 3 (15.8)                            | -                          | -                               |
| Posttraumatic stress disorder (social trauma)         | 13 (21.7)                   | -                                   | -                          | -                               |
| Alcohol dependence                                    | 7 (11.7)                    | 2 (10.5)                            | -                          | -                               |
| Alcohol abuse   | 1 (1.7)                     | 2 (10.5)                            | -                          | -                               |
| Drug dependence                                       | 2 (3.3)                     | -                                   | -                          | -                               |
| Drug abuse  | -                           | -                                   | -                          | -                               |
| Bulimia   | -                           | 3 (15.8)                            | -                          | -                               |
| Anorexia nervosa                                      | -                           | 1 (5.3)                             | -                          | -                               |
| Generalized anxiety disorder                          | 7 (11.7)                    | 4 (21.1)                            | -                          | -                               |
| Body dysmorphic disorder                              | 9 (15.0)                    | 1 (5.3)                             | -                          | -                               |
| <b>Other clinical characteristics</b>                 |                             |                                     |                            |                                 |
| LSAS <sup>f</sup>                                     | 80.80 (18.30)               | 42.88 (19.67) <sup>c</sup>          | 12.62 (10.44)              | F (2, 134) = 298.6 ***          |
| SPWSS <sup>g</sup>                                    | 39.36 (7.86) <sup>d</sup>   | 19.29 (8.89) <sup>c</sup>           | 9.40 (4.93)                | F (2, 130) = 123.0 ***          |
| PHQ-9 <sup>h</sup>                                    | 10.67 (6.17) <sup>d</sup>   | 10.18 (6.67) <sup>c</sup>           | 1.95 (2.00)                | F (2, 131) = 52.6***            |
| QOLS <sup>i</sup>                                     | 64.28 (12.01) <sup>d</sup>  | 78.12 (14.24) <sup>c</sup>          | 94.72 (9.49)               | F (2, 131) = 106.9***           |
| SDS <sup>j</sup>                                      | 181.46 (59.36) <sup>d</sup> | 156.88 (79.61) <sup>c</sup>         | 14.36 (31.03) <sup>c</sup> | F (2, 130) = 158.3 ***          |

Note. \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  <sup>a</sup> Results in the table are presented as n (%) or mean (standard deviation). <sup>b</sup>The Mini International Neuropsychiatric Interview was used to assess all disorders except that body dysmorphic disorder (BDD) was assessed with the Body Dysmorphic Disorder Module. <sup>c</sup>One missing value. <sup>d</sup>Three missing values. <sup>e</sup>Four missing values. <sup>f</sup>LSAS = Liebowitz Social Anxiety Scale. <sup>g</sup>SPWSS = Social Phobia Weekly Summary Scale. <sup>h</sup>PHQ-9 = Patient Health Questionnaire-9. <sup>i</sup>QOLS = Quality of Life Scale. <sup>j</sup>SDS = Sheehan Disability Scale.

diagnosis on the Icelandic version of the MINI. Inter-rater reliability for the Icelandic version of LSAS was high (on both subscales i.e., the intraclass correlation coefficient [ICC] = 1.00 and .90 for anxiety and ICC = .91 and .94 for avoidance) and for the total score (i.e., i.e., the intraclass correlation coefficient was .98 and .92) for the control and SAD group, respectively.

The Social Phobia Weekly Summary scale (SPWSS) is a six-item weekly summary measure of social anxiety, social avoidance, self-focused versus external attention, anticipatory processing, and post event rumination. The SPWSS has been found to have good internal reliability (Cronbach's alpha = .81; Clark et al., 2006). The Icelandic version of the SPWSS used in this study had poor internal consistency in the control group ( $\alpha = .57$ ) but fair in the SAD group ( $\alpha = .74$ ) and the clinical control group ( $\alpha = .73$ ).

The Patient Health Questionnaire-9 (PHQ-9) is a 9-item self-report measure of depression symptoms and the severity of those symptoms. Each item can be scored from 0 (i.e., not at all) to 3 (i.e., nearly every day). The PHQ-9 has excellent internal reliability (Cronbach's alphas from .86–.89) and good test-retest reliability ( $r = .84$ ) (Kroenke, Spitzer, & Williams, 2001). The Icelandic version of the PHQ-9 used in this study had good internal consistency in the SAD group ( $\alpha = .87$ ) and the clinical control group ( $\alpha = .85$ ), but fair in the control group ( $\alpha = .66$ ).

The Quality of Life Scale (QOLS) is a self-report measure (of 16 items) of quality of life on a seven point Likert scale ranging from 7 (delighted) to 1 (terrible). The domains that are assessed are the following: Social and community activities, material and physical wellbeing, relationships with other people, personal development and fulfilment, and recreation. The QOLS has good reliability and validity (Liedberg,

Burckhardt, & Henriksson, 2005). The Icelandic version of the QOLS used in this study had fair internal consistency in the SAD group ( $\alpha = .76$ ) but good in the clinical control group ( $\alpha = .87$ ) and the control group ( $\alpha = .86$ ).

The Sheehan Disability Scale (SDS) is a brief self-report measure of functional impairment in three domains: Work/school, social and family life. The three domains are assessed on an 11-point Likert type scale ranging from 0 (not at all) to 10 (extremely). Scores on the SDS have been found to be highly correlated with both symptoms of SAD and MDD, in addition to high internal and test-retest reliability, and good construct validity (Leon, Olfson, Portera, Farber, & Sheehan, 1997). The Icelandic version of the SDS used here had fair internal consistency in the SAD group ( $\alpha = .70$ ), but good internal consistency in the clinical control group ( $\alpha = .84$ ) and control group ( $\alpha = .81$ ).

### 2.3. Procedure

Trained assessors conducted the interviews (i.e., the Imagery interview and Social Trauma Interview, MINI, BDD-DM and LSAS). Every assessment was documented on a laptop computer using the RedCap database, an encrypted, electronic software and stored on secure servers (Harris et al., 2009). The assessors were experienced psychologists or advanced graduate students in clinical psychology. The assessors received thorough training from the first author (a licensed clinical psychologist) in conducting the interviews. The training included sitting in on an assessment session, reviewing records of assessment sessions, reviewing administration manuals and completing mock interviews. All assessors received weekly group supervision with the first author in which each interview was discussed (often by listening to

segments of tape from assessments) with regard to issues like differential diagnoses on the MINI until consensus was reached.

Content analyses were conducted with the aim of identifying the main themes of the social trauma. These analyses were managed by the first author and two advanced graduate students in clinical psychology. All three assessors were blind to group assignment when conducting the content analyses. Adopting a methodology based on Joffe and Yardley (2004); see also Lipton et al., 2010; Purdon & Holdaway, 2006), we created separate themes for the content of the social trauma, prior to examining the data, by reviewing the existing literature on negative social events (with reference to, e.g., Brook & Schmidt, 2008; Carleton et al., 2011; Gold et al., 2005; Levinson, Langer, & Rodebaugh, 2013; Olweus, 1993; Rigby, 2002; Van Hooff, McFarlane, Baur, Abraham, & Barnes, 2009). The coders subsequently attempted to categorize the data, and some themes were modified when they were deemed not appropriate for this data set. If coders did not agree on the categorization of a single event or appraisal, further discussion was made until majority consensus was reached. If the event did not clearly fall into any category due to ambiguity or insufficient information, the event was rated as “uncodeable”.

Final categories for the social trauma were the following: 1. Bullying (e.g. someone intentionally and repeatedly hurting the participant). The definition of bullying in this study included the three characteristics presented by Olweus (1993): intentional aggression; a power imbalance between the aggressor and victim; and repetition of the aggressive behavior; 2. Teasing (e.g. making a joke about the appearance of the participant); 3. Mental/physical and sexual violence/harassment (e.g. someone hitting and/or raping the participant with the intention of humiliating him/her); 4. Anxiety-provoking remark (e.g. someone saying that the participant is red in the face) which is a statement that appears to be innocent but nevertheless is interpreted in a way that results in increased social anxiety and other emotions; 5. Being rejected by someone/not included (e.g. ending a relationship, excluding the participant from a group); 6. Social mishap (e.g. feeling like one messed up in a social situation); 7. Being an outsider (e.g. the experience of not belonging even if there is no clear evidence of exclusion).

Severity of the social trauma was also coded. Each rater categorized each experience with regard to severity of rejection and/or humiliation, taking into account whether it was an isolated event or repeated, and if the experience took place over a long period of time. Each member rated the severity of the social trauma on a five point Likert scale: 0 = No humiliation and rejection (e.g. innocent comment); 1 = Mild humiliation and rejection (e.g. teasing over a short period of time, mild traumatic remark, mild social mishap); 2 = Considerable humiliation and rejection (e.g. a negative comment such as “You are stupid”); 3 = Severe humiliation and rejection (e.g. repeated bullying over a long period but not of the most severe kind); 4 = Extreme humiliation and rejection (e.g. physical assault, severe bullying, or rape). In addition, the team rated whether the negative social experience involved one, two or a number of people.

#### 2.4. Statistical Analyses

Deviations from normality and univariate outliers were screened for all variables of interest. Descriptive statistics were used to characterize the three groups in terms of background variables and clinical characteristics, in addition to social trauma (based on the content analyses described above). Background characteristics and clinical variables of the three groups were compared with chi-square tests of independence and one-way between-subject ANOVAs along with post-hoc comparisons using the Bonferroni correction. We conducted two logistic regression analyses to examine, first, the relationship between trauma severity and PTSD or clinically significant PTSS, and, second, between trauma severity and a diagnosis of SAD. An appropriate model was selected by comparing the model fit criteria (i.e., Akaike Information Criterion) between models but also by comparing significance tests

results for main and interaction effects. In general, a model with a lower AIC is believed to be a better fit, and a two-point difference in AIC is considered meaningful.

### 3. Results

#### 3.1. Frequency and characteristics of social trauma

Members of all three groups reported high rates of social trauma: 49 of the 60 (81.7%) participants in the SAD group, 15 out of 19 (78.9%) in the clinical control group and 38 of the 60 participants in the control group, (63.3%;  $\chi^2 [2, N = 139] = 5.51, p = .60$ ). About 77% of individuals in the SAD group reported that the social trauma took place repeatedly compared to 87% for individuals in the clinical control group and 72% of individuals in the control group ( $\chi^2 [2, N = 80] = 1.03, p = .60$ ). Most (77%) individuals in the SAD group said that the traumatic experience took place over a period of time (rather than being an isolated event) compared to 73% in the clinical control group and 67% in the control group ( $\chi^2 [2, N = 80] = 0.66, p = .72$ ). Most participants reported a strong memory of the experience, with 63% in the SAD group, 67% in the clinical control group and 65% in the control group reporting either a considerably strong or very strong memory of the experience ( $\chi^2 [2, N = 102] = .09, p = .96$ ).

The great majority (70.7%) of those who had experienced social trauma in the SAD group reported that the event happened before the age of onset of SAD (i.e., the age at which the social anxiety was starting to have a significant effect on the participant's life), the mean age of onset was 14 years ( $SD = 5.4$ ), and mean age of worst social trauma was at age 12.5 ( $SD = 6.3$ ), however, there was not a statistical difference between those two time points, ( $t(40) = 1.77, p = .08$ ). Participants in the SAD group (85.7%) and the clinical control group (66.7%) were more likely to report that their social trauma led to them becoming socially anxious (or more anxious in social situations) compared to the control group (23.7%;  $\chi^2 [2, N = 102] = 34.60, p < .001$ ). There was a statistically significant difference between age of onset of SAD ( $M = 14.3$  years,  $SD = 5.5$ ) and the timing of the trauma ( $M = 12.6$  years,  $SD = 6.7$ ) for those in the SAD group who reported that their trauma had led them to becoming socially anxious ( $t(35) = 2.12, p < .05$ ).

#### 3.2. Type and severity of social trauma

Results of the content analyses of the social trauma reveal some differences between the groups (see Table 2), although few statistically significant differences were found. There were similar rates of bullying in the groups, but teasing was more common in the control group (28.9%) than the SAD group (10.2%;  $z = 2.4, p < .05$ ). Mental/physical abuse and sexual violence/harassment and abuse was reported more frequently in the clinical control group (53.3%) than in the SAD group (22.4%;  $z = 2.3, p < .05$ ) and control group (7.9%;  $z = 3.7, p < .001$ ).

Participants described a variety of emotions that they experience now when they bring the social trauma to memory. The most frequently mentioned emotions (in order of frequency) for the SAD group were sadness (75.5%, and the strength of the emotion was  $M = 5.92$  on a 10-point Likert scale,  $SD = 2.22$ ), anger (75.5%,  $M = 5.62, SD = 2.29$ ) and shame (73.5 %,  $M = 5.65, SD = 2.68$ ), for the clinical control group the most frequently mentioned emotions were sadness (86.7%,  $M = 5.31, SD = 2.10$ ), disgust towards others (80.0%,  $M = 5.92, SD = 2.71$ ) and anger (80.0%,  $M = 5.58, SD = 2.99$ ), and for the control group the most frequently mentioned emotions were anger (60.5%,  $M = 3.22, SD = 1.95$ ), sadness (57.9%,  $M = 2.93, SD = 1.80$ ), and shame (47.4%,  $M = 3.00, SD = 1.68$ ). There were statistical differences in the strength of the following emotions: Sadness, shame, disgust towards others, anger, anxiety and fear were stronger in the SAD group than in the control group ( $ps < .05$ ). Sadness, shame, anger, and

**Table 2**  
Information about the social trauma in the three groups (n = 94).

| Type of social trauma <sup>a</sup>                   | SAD group<br>n = 49<br>Frequency (%) | Clinical control<br>group n = 15 | Control group<br>n = 38 |
|--|--------------------------------------|----------------------------------|-------------------------|
| I. Bullying  | 20 (40.8)                            | 4 (26.7)                         | 11 (28.9)               |
| II. Teasing  | 5 (10.2)                             | 2 (13.3)                         | 11 (28.9)               |
| III. Mental abuse                                    | 7 (14.3)                             | 3 (20.0)                         | 3 (7.9)                 |
| IV. Physical abuse                                   | 1 (2.0)                              | 3 (20.0)                         | -                       |
| V. Sexual abuse                                      | 3 (6.1)                              | 2 (13.3)                         | -                       |
| VI. Anxiety-provoking<br>remark                      | 2 (4.1)                              | -                                | 2 (5.3)                 |
| VII. Rejected by other<br>people/not included        | 4 (8.2)                              | 1 (6.7)                          | 7 (18.4)                |
| VIII. Social mishap                                  | 5 (10.2)                             | -                                | 4 (10.5)                |
| IX. Being an outsider                                | 1 (2.0)                              | -                                | -                       |
| X. Uncodeable  | 1 (2.0)                              | -                                | -                       |
| <b>Humiliation or rejection</b>                      | <b>n = 48</b>                        | <b>n = 15</b>                    | <b>n = 38</b>           |
| Mild   | 6 (12.5)                             | 2 (13.3)                         | 10 (26.3)               |
| Considerable   | 11 (22.9)                            | 4 (26.7)                         | 13 (34.2)               |
| Severe   | 21 (43.8)                            | 6 (40.0)                         | 12 (31.6)               |
| Extreme  | 10 (20.8)                            | 3 (20.0)                         | 3 (7.8)                 |
| <b>Individuals involved in the<br/>social trauma</b> | <b>n = 48</b>                        | <b>n = 15</b>                    | <b>n = 38</b>           |
| One or two   | 11 (22.9)                            | 8 (53.3)                         | 13 (34.2)               |
| Three or more  | 37 (77.1)                            | 7 (46.7)                         | 25 (65.8)               |

Note. <sup>a</sup>Categories are mutually exclusive.

anxiety were stronger in the clinical control group than in the control group ( $p < .05$ ). Strength of emotions did not differ between the SAD group and the clinical control group.

Almost everyone reported that they had experienced at least considerable distress in response to the social trauma at the time it happened (98% in the SAD group, 100% in the clinical control group and 87% in the control group,  $X^2 [2, N = 102] = 5.88, p = .05$ ), however, 67% reported extreme distress in the SAD and clinical control groups, compared to 32% in the control group ( $X^2 [2, N = 102] = 12.17, p < .01$ ). When they were asked about functional impairment associated with the social trauma at the time it happened, the great majority of individuals in the clinical groups reported at least considerable functional impairment (80% in both the SAD and the clinical control groups), compared to 42% in the control group ( $X^2 [2, N = 102] = 14.94, p = .01$ ). Furthermore, 29% in the SAD group and 20% in the clinical control group reported extreme impairment, compared to only 8% in the control group ( $X^2 [2, N = 102] = 5.91, p < .05$ ). Raters blind to group assignment conducted ratings of the severity of the social trauma (see Table 2). The groups differed with regard to severity of the social trauma ( $F(2, 98) = 3.4, p < .05$ ). However, post hoc comparisons indicated that the only significant difference was trauma in the SAD group ( $M = 2.7, SD = 0.9$ ) being rated higher in severity compared to trauma in the control group ( $M = 2.2, SD = 0.9; p < .05$ ).

### 3.3. Frequency and characteristics of PTSD in response to social trauma

There were 16 (32.7%) individuals in the SAD group that met criteria for PTSD or clinically significant PTSS in response to the social trauma. Of those 16 individuals, 13 (81%) met full criteria for PTSD (meeting criteria for DSM-IV PTSD in response to social trauma) and three (19%) reported clinically significant PTSS; i.e., meeting Criteria B1 (having intrusive memories) at least two symptoms in Criterion C (persistent avoidance of stimuli associated with the event and numbing) and D (symptoms of increased arousal), meeting Criterion E (duration more than one month); and meeting Criterion F (symptoms causing clinically significant distress and/or impairment) for PTSD.

There were no clear differences in the types of experiences between individuals with SAD and PTSD/PTSS and individuals with SAD but no clinically significant PTSS associated with the experience (see Table 3), although it may be noted that certain experiences were not associated

**Table 3**  
Information about the social trauma among individuals with SAD and with/without social PTSD/PTSS (n = 48<sup>a</sup>).

| Type of event                                    | Social PTSD/PTSS     |               |
|--|----------------------|---------------|
|  | Yes (n = 16)         | No (n = 33)   |
|  | <b>Frequency (%)</b> |               |
| I. Bullying                                      | 7 (43.8)             | 13 (39.4)     |
| II. Teasing                                      | -                    | 5 (15.2)      |
| III. Mental abuse                                | 3 (18.8)             | 4 (12.1)      |
| IV. Physical abuse                               | -                    | 1 (3.0)       |
| V. Sexual violence/harassment                    | 2 (12.5)             | 1 (3.0)       |
| VI. Anxiety-provoking remark                     | -                    | 2 (6.1)       |
| VII. Rejected by other people/not included       | 2 (12.5)             | 2 (6.1)       |
| VIII. Social mishap                              | 2 (12.5)             | 3 (9.1)       |
| IX. Being an outsider                            | -                    | 1 (3.0)       |
| X. Uncodeable                                    | -                    | 1 (3.0)       |
| <b>Severity</b>                                  | <b>n = 16</b>        | <b>n = 32</b> |
| Mild   | 2 (12.5)             | 4 (12.5)      |
| Considerable                                     | 1 (6.3)              | 10 (31.3)     |
| Severe   | 8 (50.0)             | 13 (40.6)     |
| Extreme  | 5 (31.3)             | 5 (15.6)      |
| <b>Individuals involved in the social trauma</b> | <b>n = 16</b>        | <b>n = 32</b> |
| One or two                                       | 4 (25.0)             | 7 (21.9)      |
| Three or more                                    | 12 (75.0)            | 25 (78.1)     |

Note. One missing value.

with post-traumatic symptoms, such as teasing, physical abuse, an anxiety-provoking remark and being an outsider. Individuals that reported PTSD/PTSS reported more and stronger emotions than the individuals without PTSD/PTSS, with the most frequent emotions for the PTSD/PTSS group being anxiety (93.8%,  $M = 7.90, SD = 2.14$ ), shame (93.8%,  $M = 7.03, SD = 2.16$ ), sadness (87.5%,  $M = 7.21, SD = 1.37$ ), fear (87.5%,  $M = 7.32, SD = 1.92$ ) and anger (87.5%,  $M = 6.29, SD = 1.82$ ), and the most frequent emotions for the SAD group without PTSD/PTSS being anger (69.7%,  $M = 5.22, SD = 2.49$ ), sadness (69.7%,  $M = 5.12, SD = 2.28$ ), shame (63.6%,  $M = 4.67, SD = 2.61$ ), anxiety (60.6%,  $M = 6.15, SD = 2.16$ ) and disgust towards others (54.5%,  $M = 5.00, SD = 3.05$ ). Sadness ( $t(35) = 3.09, p < .005$ ), shame ( $t(34) = 2.87, p < .05$ ), disgust towards others ( $t(25.8) = 3.05, p < .05$ ), anxiety ( $t(33) = 2.38, p < .05$ ), and fear ( $t(27) = 2.38, p < .05$ ), were significantly stronger in the PTSD/PTSS group than in the group without PTSD/PTSS. Raters blind to group assignment rated the social trauma of individuals with PTSD/PTSS as being more severe ( $M = 3.0, SD = 0.9$ ), on average, than the social trauma of individuals with SAD but without PTSD/PTSS ( $M = 2.43, SD = 0.9$ ), and this difference was statistically significant ( $t(23.1) = 2.27, p < .05$ ). Individuals in the SAD group with PTSD/PTSS also scored higher on all clinical variables compared to individuals in the SAD group without PTSD/PTSS, which indicates more depression and SAD symptoms in the PTSD/PTSS group, although statistically significant differences were only found on the PHQ-9 ( $p < .01$ ) and SPWSS ( $p < .01$ ; see Table 4).

A logistic regression analysis was conducted to predict PTSD/PTSS in response to social trauma using severity as a predictor. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between those who suffered a social trauma and met criteria for PTSD/PTSS and those who did not meet criteria (chi square = 4.9,  $p < .05, df = 1$ ). The coefficient on the severity variable had a Wald statistic equal to 4.4,  $p < .05$ . The odds ratio for severity was 1.96 (CI [1.0; 3.7]) which suggest that a unit increase on the severity scale increased the odds of receiving a diagnosis of PTSD/PTSS by 96%. Severity was also a significant predictor of receiving a SAD diagnosis in a logistic regression analysis. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between the SAD group, the control group and the clinical control group (chi square = 4.2,  $p < .05, df = 1$ ). The coefficient on the severity variable had a Wald statistic of 4.0,  $p < .05$ . The odds

**Table 4**

Comparison of depression and social anxiety symptoms, quality of life and impairment of functioning among individuals with SAD with or without PTSD/PTSS ( $n = 49$ ) in response to social trauma.

| Instrument         | PTSD/PTSS <sup>b</sup>              |                                    | Independent two-tailed <i>t</i> -test |
|--------------------|-------------------------------------|------------------------------------|---------------------------------------|
|                    | Yes ( $n = 16$ )<br>M ( <i>SD</i> ) | No ( $n = 33$ )<br>M ( <i>SD</i> ) |                                       |
| LSAS <sup>c</sup>  | 85.2 (15.9)                         | 79.6 (18.7)                        | $t(34) = 1.1, p = .28$                |
| PHQ-9 <sup>d</sup> | 15.3 (5.9) <sup>a</sup>             | 8.8 (5.2) <sup>a</sup>             | $t(24) = 3.6, p < .01$                |
| QOLS <sup>e</sup>  | 65.5 (13.6) <sup>a</sup>            | 62.8 (11.7) <sup>a</sup>           | $t(24) = 0.7, p = .50$                |
| SDS <sup>f</sup>   | 205.6 (40.4) <sup>a</sup>           | 180.2 (57.8) <sup>a</sup>          | $t(37) = 1.7, p = .09$                |
| SPWSS <sup>g</sup> | 34.1 (6.3) <sup>a</sup>             | 27.1 (7.1) <sup>a</sup>            | $t(31) = 3.4, p < .01$                |

Note. <sup>a</sup>One missing value. <sup>b</sup>PTSD/PTSS = Meeting full criteria for PTSD or having clinically significant PTSS symptoms in response to social trauma. <sup>c</sup>LSAS = Liebowitz Social Anxiety Scale. <sup>d</sup>PHQ-9 = Patient Health Questionnaire-9. <sup>e</sup>QOLS = Quality of Life Scale. <sup>f</sup>SDS = Sheehan Disability Scale. <sup>g</sup>SPWSS = Social Phobia Weekly Summary Scale.

ratio for severity was 1.55 with a (CI[1.0; 2.4]) suggesting that a unit increase on the severity scale increased the odds of receiving a diagnosis of SAD by 55%.

#### 4. Discussion

Which kind of events can be defined *a priori* as being traumatic and as having the potential of leading to PTSD? We propose that rather than focusing on type of *events* (Criterion A debate) that it may be more fruitful to explore whether there are different types of perceived *threat* that play a role in the development of PTSD, but also other disorders such as SAD. We hypothesized that there are at least two types of traumatic threats, involving threat to life or social trauma, the latter involving humiliation or rejection. We explored the frequency, characteristics and severity of social trauma, reported by individuals with a primary diagnosis of SAD, individuals with a primary diagnosis of a OCD (the clinical control group), and a control group with no psychiatric disorders. Our aim was also to assess PTSD and clinically significant PTSS in response to social trauma.

##### 4.1. Social trauma

Most participants in this study (ranging from 63% in the control group to 82% in the SAD group) reported social trauma. In other words, experiencing social trauma appears to be very common, similar to what has been found with threat to life trauma (Benjet et al., 2016). These results are in line with Erwin et al.'s study (2006) in which outpatients with SAD were compared to non-anxious controls, except that the authors of that study assessed social events (taken from the LSAS) that were stressful, but not necessarily experiences in which individuals experienced being humiliated or rejected (as in our study), which we deem necessary for being considered socially traumatic.

Previous studies of negative social events (see e.g., Boals & Schuettler, 2009; Carleton et al., 2011; Long et al., 2008) have mainly used self-report measures in which individuals choose pre-selected experiences. To our knowledge, the present study is the first in which individuals are asked an open-ended question about a socially traumatic experience characterized by humiliation or rejection. Raters blind to group assignment conducted content analyses of these answers and we then sought to determine if there were certain types of social trauma that were more common among those in the SAD group compared to the other groups. The results showed that *bullying* was common in all groups and was most frequent in the SAD group (40.8%), although rates of bullying did not differ significantly between groups. The clinical control group had more reports of mental/physical and/or sexual violence/harassment compared to the other groups. Individuals in the clinical groups were more likely to report extreme distress and greater

functional impairment caused by the social trauma than individuals in the control group, and to report more emotions and stronger emotions when they brought the social trauma to conscious memory. When we analyzed independent ratings of severity of the experiences there was a significant difference in severity between the clinical groups and the control group. More specifically, severity of the social trauma predicted whether the individual was likely to be diagnosed with SAD in a logistic regression analysis. However, social trauma may be implicated in the development of other disorders as well, such as OCD, similar to what has been found in the literature with threat to life trauma (Cromer, Schmidt, & Murphy, 2007).

The findings in this study indicate that social trauma may be a major factor in the onset of SAD. The majority of participants in the SAD group (70%) reported that the social trauma happened before age of SAD onset, and almost all participants in the SAD group (85.7%) believed that the social trauma caused the onset of their social anxiety or contributed to it. These results are in line with other studies that have found negative social events to be a possible causal factor in the development of SAD (Bandelow et al., 2004; Carleton et al., 2011; Chartier, Walker, & Stein, 2001; Erwin et al., 2006; McCabe Miller, Laugesen, Antony, & Young 2010, Stein et al., 1996), in line with diatheses-stress (Rapee & Spence, 2004) and maintenance (e.g., Heimberg, Brozovich, & Rapee, 2012) models for SAD. What the current study adds to the previous literature is the hypothesis that a reaction to a socially traumatic experience may play a key role in the onset and later maintenance of the disorder for a large group of individuals with SAD.

It should be added that not all studies have found conditional events to be the most significant experiences in the onset of SAD. Hofmann et al. (1995), in a study of SAD individuals with speech fears, found that aversive speaking situations were ranked by 17% as being the most important reason for the onset of their social anxiety while 33% found panic attacks to be the most important reason. Harvey, Ehlers, & Clark, 2005 found that about 13% of individuals with SAD identified a traumatic event in a social situation as being the most important reason for the development of their social anxiety while 27% of them rated the lack of social skills as the most significant reason. These findings are not necessarily opposed to the findings in the current study and may be accounted for by different constructs across studies and the methods used to measure them. We asked individuals in a clinical interview an open-ended question about their most severe experience involving humiliation or rejection, in line with how we define the construct of social trauma. We then went on to ask them about their most severe social trauma and found that 77% of individuals with SAD reported that the experience took place over a period of time rather than being an isolated conditional event. The beliefs that individuals have about themselves likely determined how they responded to the social trauma, for example whether they believed that they had adequate skills to handle bullying.

##### 4.2. Frequency and characteristics of PTSD in response to social trauma

Researchers have pointed out the high co-morbidity between PTSD and SAD (see e.g., McMillan & Asmundson, 2016), and revealed that co-morbid PTSD and SAD is related to decreased quality of life and greater suicidality (McMillan, Sareen, & Asmundson, 2014). The current study reveals at least one reason for this high co-morbidity. Sixteen individuals (27% of all SAD-participants but 32.7% of all those who reported social trauma) met criteria for PTSD ( $n = 13$ ) or had clinically significant PTSS ( $n = 3$ ) in response to social trauma. These rates of PTSD are similar to the only other study in which PTSD in response to a negative social event was assessed with a clinical interview, in which more than one-third of the participants with SAD met criteria for PTSD in response to a negative social event (Erwin et al., 2006). It can be estimated that about a third of individuals with SAD meet full criteria for PTSD or suffer from clinically significant PTSD symptoms in response to their social trauma, that in most cases will not be found to

meet Criterion A.

The results in this study showed that there were no clear differences in the types of social trauma that did or did not lead to PTSD/PTSS. *Bullying* was common among SAD individuals with or without PTSD or PTSS (43.8% vs. 39.4%), and *mental/physical and/or sexual violence/harassment* was also common in both groups (31.3% vs. 18.1%, respectively). It is worth noting that there were certain experiences (such as teasing, anxiety-provoking remarks and feeling like an outsider) that were not reported by the PTSD group and therefore may not be likely to lead to PTSD. Even though there were no clear differences in the types of experiences between the groups, the severity of the social trauma predicted who was likely to go on to develop PTSD/PTSS. In addition, symptoms of social anxiety (on the SPWSS but not the LSAS) and depression were more severe in the PTSD/PTSS group, and this group reported more emotions and stronger emotions in response to the social trauma. These results are partially in line with Carleton et al. (2011), in which participants reporting a negative social event also reported higher levels of PTSS and SAD symptoms along with higher levels of fear of negative evaluation and anxiety sensitivity.

We are accustomed to thinking of psychiatric disorders as separate, often belonging in different chapters of the DSM, as is the case with these two disorders. However, this may not be the most appropriate conceptualisation for a large group of individuals suffering from PTSD after social trauma. The results of the current study indicate that most of the individuals developed both PTSD and SAD in response to their most significant social trauma. They not only developed a clinically significant fear of negative evaluation, and increased avoidance of social situations. They also experience intrusive memories of the experience, often with intense distress and physiological symptoms, feelings of detachment, restricted range of affect, and a sense of a foreshortened future, and persistent symptoms of increased arousal, such as irritability or outbursts of anger, difficulty concentrating, hypervigilance and an exaggerated startle response. These PTSD and SAD symptoms are reactions to the same social threat, and involve the same fundamental fear, with a conceptually linked set of responses, such as avoidance in many forms. We cannot be certain about causality, but a plausible hypothesis is that the experience of severe social trauma makes it more likely for an individual to develop both PTSD and SAD, as one integrated problem rather than two distinct disorders. Treatment for this condition will likely require addressing the maintaining processes of how individuals react to this experience, which has resulted in a sense of continued and constant social threat.

#### 4.3. Study limitations and strengths

There are several limitations to the current study. We used the most recent diagnostic interview validated in Icelandic, which was based on DSM-IV. The sample size in the clinical control group was small, thereby affecting statistical power. It is important to replicate this study with a larger clinical sample, other clinical control groups and with a diagnostic interview based on DSM-5. Furthermore, future studies should systematically compare threat to life to social threat and their associations with PTSD and SAD and whether there is a shared vulnerability for both disorders (Collimore et al., 2010). Also, the validity of assessing events that happened in the (sometimes distant) past can be affected by several well-known biases in memory (see e.g. Hardt & Rutter, 2004). Longitudinal studies are needed to evaluate the effects of different types of threat on future development of PTSD, SAD and other disorders. The strengths of the study include the use of clinical interviews instead of relying solely on self-report questionnaires and the careful training and supervision of the assessment team.

#### 4.4. Conclusion

The current study is to our knowledge the first to assess, describe and evaluate the impact of social trauma. These early findings suggest

that this new construct is viable and that it may add to our understanding of how PTSD, SAD, and possibly other disorders, develop and are maintained. Our results suggest that one third of individuals with SAD may suffer from PTSD in response to social trauma and moreover, that this group reports greater anxiety and depressive symptoms. This group may be best understood as not having two distinct disorders, but rather one integrated condition which consists of a reaction to the social trauma which leads to a sense of constant and serious social threat involving recurring intrusive memories of the experience, vigilance and avoidance of social situations. These findings are compelling and raise the question of whether this PTSD group should be accounted for in future editions of nosological systems such as DSM and the ICD, and in current theoretical models of both PTSD and SAD. It is, furthermore, clear that the idea of different types of threat (threat to life, social threat and potentially more) may have to potential to bridge the gap between different literatures such as the trauma literature, bullying and peer victimization and adverse childhood experiences. There may be therapeutic implications as well. There are already fascinating developments in treating intrusive images, that are, in many cases, based on social trauma, with imagery rescripting (Norton & Abbott, 2016; Romano, Mosvocitch, Huppert, Reimer, & Mosvocitch, 2020; Wild & Clark, 2011). It would be interesting to explore if other empirically validated interventions from the treatment of PTSD may be effective for individuals that suffer from PTSD in response to social trauma.

#### Declaration of Competing Interest

None.

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