The Core Threat Structured Interview

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Abstract

Pathological anxiety is often maintained by avoidance behaviors potentially driven by deeply personal core threats (aka, core fears). Despite their role in clinical formulations and interventions, core threats remain an under-researched concept, with no validated tools to systematically assess them. Core threats are defined as the ultimate feared consequences driving avoidance behaviors. For example, the core threat driving fear of contamination can be any of the following: threat of death, harm to one's loved ones, disgust, or inability to function. This study introduces the Core Threat Structured Interview (CTSI), a tool designed to systematically identify core threats in both face-to-face and self-administered online formats. Through four validation studies, the CTSI demonstrates reliability (e.g., interrater reliability, test-retest) and validity (face, convergent, divergent). Our findings further illuminate the phenomenological distinction between core and proximal threats, revealing that core threats are idiosyncratic and distinct from proximal threats. This underscores the complexity of anxiety and the necessity for personalized approaches in assessment and intervention. By enabling systematic identification of core threats, the CTSI offers a novel avenue for both research and clinical practice. This tool can enhance the personalization of anxiety treatments, fostering a nuanced understanding of the motivations and cognitions underlying fear. The study was pre-registered on AsPredicted (https://aspredicted.org/89j7-5m4t.pdf).

Keywords: Core threats, Motivation, Measurement

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Happy families are all alike; every unhappy family is unhappy in its own way.

Leo Tolstoy, Anna Karenina

A patient walks into the clinic. You can immediately see her careful demeanor and chafed hands. She reports that she compulsively washes her hands, that she doesn't go to public restrooms, and that she carefully cleans doorknobs before touching them. What is she afraid of? When asked, she says that she is afraid of being contaminated. But is contamination the true threat underlying her fear? Initial reports of a patient's fears often mask deeper concerns (Borkovec et al., 1998). This patient might fear becoming sick and dying, contaminating her loved ones, being deemed disgusting and rejected, or simply suffering. The key is that we can't know the true threat until we ask.

These underlying concerns, known as core threats, are also referred to as core fears, catastrophic beliefs or central innately aversive outcomes. Core threats are central to treating anxiety disorders (Huppert & Zlotnick, 2012; Zlotnick & Huppert, 2025). Many clinicians recognize the importance of understanding core threats to inform effective interventions (e.g., Craske et al., 2022; Gillihan et al., 2012; Murray, Loeb, et al., 2016; Pinciotti et al., 2021). However, despite their significance, clinical guidelines for identifying and addressing core threats remain limited. This paper aims to fill this gap by offering practical guidelines and exploring the phenomenology of core threats.

What are Core Threats?

Fear and anxiety are adaptive responses to perceived threats. The nature of these threats often follows a hierarchical pattern. Consider a jungle, where dangers such as venomous snakes, prowling lions, or quicksand abound. In this context, the jungle represents the proximal threat, the immediate signal of danger. However, the core threat—the ultimate feared outcome—is death (for example). It is the plausibility of death that makes the jungle

threatening and evokes fear.

Core threats arise from the intersection of expectation (the likelihood of death) and evaluation (the negative consequence of potential death). This interplay explains why the same situation can evoke different core threats for different people. Expectations may differ while evaluations converge: for example, one person in the jungle might fear encountering a snake, while another dreads a jaguar, yet both share the core threat of dying. Conversely, expectations can converge while evaluations differ: given the threat of snakes, one person might emphasize their unpredictability, another their sliminess, a third the threat to their life, and yet another the potential impact of their death on their family.

These distinctions are critical when examining anxiety disorders (e.g., Gillihan et al., 2012; Murray, Loeb, et al., 2016; Pinciotti et al., 2021). In pathological anxiety, seemingly benign stimuli are perceived as dangerous. To determine their safety, it is essential to understand the specific nature of the threat attributed to them (Craske et al., 2022; Gillihan et al., 2012; Huppert & Zlotnick, 2012; Murray, Loeb, et al., 2016). Consider an individual who fears blood. If their core threat involves the stress of encountering blood-like stimuli, exposure to sheep blood might be effective. However, if their primary fear centers on contracting AIDS, such exposure would likely be ineffective. The same principle applies to thought challenges and behavioral experiments.

A significant challenge in safety learning is its limited generalization across contexts (see Bouton, 2002). By focusing on core threats, clinicians can identify the most threatening aspects of feared stimuli, thereby promoting better generalization of safety learning across contexts (Gillihan et al., 2012; Zlotnick & Huppert, 2025). Identifying core threats also enhances clinicians' understanding of patients' experiences when confronting their fears. This understanding fosters a sense of being supported for the patient and provides a coherent narrative to explain their pathological behavior. Consequently, determining core threats can significantly shape the trajectory of psychotherapy—from the initial case formulation

(Persons, 2012) to the implementation of specific interventions like exposures, thought challenges, or behavioral experiments.

Determining Core Threats

Accurately identifying core threats is a complex process. It requires a clear understanding of what core threats are and the types of questions best suited to uncover them. A semi-structured interview can be an useful tool for this purpose (Samuel et al., 2020), offering benefits for both clinical and research applications. In clinical settings, such interviews help therapists identify the specific motivations underlying anxiety-related behaviors. This, in turn, facilitates the development of a clear case formulation (Persons, 2012) and enables the creation of tailored interventions (e.g., Gillihan et al., 2012; Murray, Loeb, et al., 2016; Pinciotti et al., 2021). In research, semi-structured interviews ensure consistency and accuracy, reducing ambiguity in identifying core threats and enhancing the reliability and validity of findings. Moreover, these interviews allow for the assignment of probability and threat values to both proximal and core threats. Tracking these values across treatment can provide valuable insights into therapeutic change and its relationship to other constructs.

The Catastrophizing Interview

The catastrophizing interview is a well-established procedure for investigating catastrophizing in Generalized Anxiety Disorder (GAD) and related disorders (Davey, 2006; Vasey & Borkovec, 1992). Developed by Vasey and Borkovec (1992), the procedure is based on the decatastrophizing technique used in cognitive therapy (Kendall & Ingram, 1987). The interview consists of two phases: topic generation and catastrophizing. During topic generation, participants list their current worries, rate the percentage of time spent worrying about each topic, and evaluate its significance. The topic with the highest percentage is then selected for the catastrophizing phase. Participants are asked, “What is it about [selected worry topic] that worries you?” and then, “What about [participant’s response] would you find fearful or bad if it did actually happen?” This questioning continues until participants

either refuse to continue, cannot generate further responses, or repeat the same response three times.

The procedure was later refined to improve standardization (Davey, 2006). Participants were instructed to write concise, single-sentence responses for each step on a response sheet. Examples of typical catastrophizing steps were provided beforehand to familiarize participants with the process. These updates reduced variability in responses and enhanced accessibility. Initially designed for GAD, the procedure was later adapted for worry in insomnia (Harvey & Greenall, 2003) and rumination in depression (Watkins & Mason, 2002). It primarily assesses the tendency to perseverate in worry by quantifying the number of catastrophizing steps.

While effective for measuring perseverative worry, the catastrophizing interview is not designed to identify the underlying threat that triggers fear. Investigating core threats requires a distinct approach focused on uncovering the ultimate fear driving anxiety. To address these challenges, we developed a tailored interview specifically for identifying core threats.

The Core Threat Structured Interview

The Core Threat Structured Interview (CTSI) begins by identifying a focal proximal threat [1]. This involves identifying situations or stimuli that induce fear or are avoided, and any rituals or safety behaviors the individual engages in. Once a set of fear responses is identified, participants select the situation that causes the most distress or negative impact on their life.

To identify core threats, the CTSI employs an adaptation of the classic "downward arrow" technique (e.g., Dugas & Koerner, 2005). Unlike the traditional focus on chains of beliefs (J. S. Beck, 2011), the CTSI emphasizes events, guiding participants through the

[1] The CTSI manual can be found in the supplementary materials.

question, "And then what would happen?" (Huppert & Zlotnick, 2012). Participants are first asked what they fear will happen if they refrain from avoidance or safety behaviors related to their chosen proximal threat. Follow-up questions such as "And then what?", "What is so terrible about that?", and "What does that mean to you?" are used to explore progressively deeper fears (J. S. Beck, 2011; Leahy, 2003). Through this iterative process, the interview continues until the underlying core threat is identified.

Core threats consist of an *expectation* that an event could occur and an *evaluation* that the event would be catastrophic (Zlotnick & Huppert, 2025). The evaluation depends on an individual's unique values, goals, and motivations. Therefore, it is helpful to ask not only what might happen but also what the event would mean to them or why it matters so much. This approach often leads in surprising directions (i.e., a form of guided discovery; Padesky, 1993). For instance, one woman worried that her children were abusing drugs. When asked what was so horrible about that, she explained it meant her children were not sharing everything with her, which in turn signified to her that she was failing as a mother.

In practice, the link between proximal and core threats often follows a chain of progressively more threatening outcomes. For example, an individual might state, "If I don't wash my hands, I will be contaminated, leading to illness, which will hinder my ability to function, and ultimately sabotage my career." Another individual might say, "A burglar might break into my house, harm or kidnap my child, and I couldn't bear that, as ensuring my family's safety and growth is the most crucial part of my life." In some cases, individuals describe multiple possible outcomes. When this happens, they are encouraged to explore the branch they find most threatening. The interview concludes when the participant cannot or will not identify a deeper threat, or when further questioning becomes repetitive. Importantly, these branches are highly idiosyncratic, and generic pathways are insufficient.

At times, individuals may "overshoot" their core threat, describing their response to it instead of the threat itself. For example, someone who fears their family dying in a car

crash may upon further inquiry describe fear of falling into depression. In such cases, the core threat is likely their family dying. To clarify, the interviewer can explicitly compare the options: "What would be worse for you: having your family die or sinking into depression?" However, there are instances where the response is indeed the feared outcome. For example, an individual may fear becoming so disgusted or anxious that they can no longer function, care for their family, or maintain relationships. These nuances highlight the importance of careful exploration to accurately identify the core threat.

Getting at Deeper Motivations

Identifying core threats can be challenging, as simply asking what could happen is often insufficient. Understanding the processes that create discrepancies between proximal and core threats can help address these difficulties. Two key processes that interfere with identifying core threats are avoidance and difficulty accessing emotional cognitions.

One explanation for this discrepancy is avoidance. Individuals may focus on immediate, proximal threats because confronting deeper, more global threats is distressing. Encouraging individuals to endure this discomfort and approach their fears can often facilitate access to core threats.

Another explanation involves the nature of underlying threats, which are often evident only in emotional reasoning or "hot" cognitions. These can be difficult to access in calmer, more reflective environments (David & Szentagotai, 2006; see Safran & Greenberg, 1982). To address this, clinicians use techniques designed to tap into emotional reasoning. In the CTSI, individuals are encouraged to focus on their *feelings* rather than their "cold" cognitive appraisals. Asking, "What do you *feel* might happen?" instead of "What do you *think* might happen?" highlights the distinction between emotional and cognitive reasoning, helping to uncover hidden core threats.

Another technique involves the use of imagery, which research shows evokes stronger

emotional responses than verbal processing alone (Holmes & Mathews, 2005, 2010). By guiding individuals to imagine threatening scenarios vividly, clinicians can bring emotions and memories to the surface, providing better access to hot cognitions. Together, these techniques offer complementary pathways for uncovering the deeper motivations behind anxiety-related behaviors.

Hypotheses

The current study examines the phenomenology of core threats as measured by the CTSI. We propose the following hypotheses:

1. Core threats differ significantly from proximal threats.
    a. Core threats cannot be reliably predicted based on proximal threats.
    b. Core threats exhibit greater variability than proximal threats because they are less constricted by specific disorders.
2. A single core threat often underlies and motivates multiple proximal threats.
3. Core threats remain stable over time, demonstrating consistency across repeated assessments.

By exploring the relationship between core and proximal threats and testing these hypotheses through the CTSI, this study aims to deepen our understanding of the fundamental processes that drive fear and anxiety disorders. These insights may contribute to refining theoretical models and improving clinical interventions by emphasizing the role of core threats in shaping anxiety-related behaviors.

Methods

Supplementary materials, including datasets, analysis scripts, and detailed methodological documentation, are available on GitHub at https://github.com/eladzlot/ctsi-2025-public. To ensure participant confidentiality, the datasets have been redacted to include only quantitative information, as the core threats and other open-ended responses could potentially identify specific individuals. These resources

enhance transparency and facilitate replication of the findings.

The study was pre-registered on AsPredicted (https://aspredicted.org/89j7-5m4t.pdf) after data collection was completed but before coding of threat types began. The pre-registration included hypotheses, methods, data collection procedures, and analysis plans, ensuring that the analyses were planned without influence from the raw data.

Several deviations from the pre-registered plan occurred:

1. To increase reliability, we used three judges to categorize core threats instead of two. All judges coded the threats simultaneously, ensuring that the addition was not done to affect initial outcomes.
2. We were unable to apply information methods (Theil's U) to assess the agreement between sets of threats due to the complexity of the data structure. Instead, we used permutation tests, as described in the Agreement section.
3. An exploratory hypothesis (2b) was added: core threats are more variable than proximal threats.
4. The third experimental group (high anxiety, online CTSI) was reported as two separate groups—Hebrew-speaking and English-speaking—due to demographic differences.

While the pre-registration aimed to increase transparency, exploratory analyses and adjustments to the analysis plan are clearly labeled to distinguish them from pre-registered components.

Design

This study comprised four experiments, each involving distinct samples of participants who completed the CTSI. Experiment 1 targeted individuals with obsessive-compulsive symptoms, who participated in face-to-face interviews conducted via Zoom. Experiment 2 also employed Zoom interviews but focused on a transdiagnostic sample of individuals with high anxiety levels. Experiment 3 introduced a digital,

self-administered version of the CTSI, allowing participants to complete the interview independently online. Experiment 4 replicated the methodology of Experiment 3 with an international, English-speaking sample. Given that results are presented in a similar fashion for each experiment, and it is useful to the reader to be able to see the results comparatively across the four Experiments, we present the unique methods for each of the four experiments below, and following this, we present the results of all four experiments simultaneously.

Measures

Core Threat Structured Interview (CTSI): The CTSI is a semi-structured interview developed to identify the core threats driving fear or anxiety in individuals with anxiety disorders. It includes a series of questions aimed at uncovering the central trigger of fear or anxiety, followed by a guided process (using a "downward arrow" technique) to reveal the underlying core threat, and concludes with a section focused on clarifying the idiographic meaning of the threat for the individual. The CTSI was administered face-to-face via Zoom in the first two samples, targeting individuals with OCD and transdiagnostic anxiety. For the last two samples, a self-administered online version of the interview was used. During Experiments 1 and 2, minor adjustments were made to refine the interview process; these adjustments did not alter the fundamental structure of the CTSI or its aims. Both the face-to-face and online versions of the CTSI are available in the supplementary materials.

Data Analysis

Rating Threats

This study addresses the extent to which different descriptions of threats are similar. Specifically, we examine whether proximal and core threats align and whether core threats remain consistent across time. To systematically assess this similarity, threats were categorized, enabling structured analysis.

Our investigation is primarily focused on identifying the threats driving fear responses. These threats are manifestations of the values motivating these responses

(Zlotnick & Huppert, 2025). While several taxonomies of basic values exist (see Austin & Vancouver, 1996; Ryan, 2012 for reviews), none adequately cover the types of threats commonly associated with fear, including Schwartz's taxonomy (1992), previously suggested for organizing core threats (Huppert & Zlotnick, 2012). To fill this gap, we developed a novel taxonomy of global motivations based on clinical insights, expert consultations, and theoretical frameworks such as those advanced by Dweck (2017). This taxonomy, detailed in Table 1, was used to code both proximal and core threats.

Three trained research assistants applied this taxonomy to categorize threats. Motivations underlying threats are often complex and may arise from multiple sources. For example, fear of contamination might stem from both concerns about sickness leading to death and feelings of disgust. Coders identified the primary motivation underlying each threat. When two motivations were equally prominent, both were recorded. If no clear dominant motivation emerged or the threat description lacked clarity, the threat was classified as ambiguous. This approach accommodates variability in how threats are reported and interpreted. Agreement between judges or across threats was defined as sharing at least one common motivation. Detailed coding criteria and instructions are provided in the supplementary materials.

Coders were trained using external datasets not included in the current analyses. Each judge independently coded the dataset, and discrepancies were resolved through consensus discussions. This rigorous adjudication process ensured consistency in applying the taxonomy.

Table 1

The taxonomy of values used for coding threats.

Category of Drives	Description	Examples of Core Threats
Affiliation	The drive to form social or interpersonal bonds and avoid rejection.	Rejection, social isolation, loneliness, being alone, social awkwardness. This covers anything from family connections to wide social acceptance
Predictability	The drive to understand and make sense of one's environment.	Confusion, uncertainty, unpredictability.
Competence	The drive for effectiveness, capability, and practical functioning.	Failure, not knowing what to do, incompetence.
Agency & Control	The drive to have agency and be in control of one's self and environment.	Losing control, doing something unintended, helplessness.
Survival	The goal of staying alive.	Death of onself, or a close other (survival by proxy).
Physical Comfort	The goal of avoiding physical discomfort or suffering.	Pain, injury, physical harm to self or close other (physical comfort by proxy)
Self-Image	The desire to maintain a positive self-image and avoid a negative one.	Feeling worthless, evil, or guilty. Feeling that I've let myself down.
Morality	The drive to behave ethically and uphold virtues.	Harming others, violating religious beliefs or morals.
Distress (in)tolerance	The desire to avoid psychological distress or discomfort.	Disgust, Not-just-right experiences, pure psychic pain.

Krippendorff's α was selected as the statistical measure of inter-rater reliability due to its robustness and flexibility. This measure is widely used to assess consistency among

raters across various data types, including nominal, ordinal, interval, and ratio scales (Hallgren, 2012; A. F. Hayes & Krippendorff, 2007). Its ability to accommodate more than two raters and handle missing data makes it particularly well-suited for our study, where raters categorized mixed data types. Krippendorff's α values are interpreted as follows: values between 0.60 and 0.74 indicate moderate agreement, suitable for exploratory research; values between 0.75 and 0.84 reflect good agreement; and values of 0.85 or above signify excellent reliability, appropriate for measures requiring high precision or strong consensus. These thresholds guided our interpretation of reliability within this study. As pre-registered, ratings of "ambiguous" were treated as missing data in the computation of α, as they do not represent a definitive decision about motivation. This decision ensures that reliability estimates reflect only clear and specific categorizations. Sensitivity analyses confirmed that this approach did not substantially affect the results. Further details of the reliability scoring algorithm are provided in the supplementary materials.

Agreement

This study examines the correlations between sets of threats, each consisting of one or two categories. Traditional statistical measures, typically designed for single-category data, are insufficient to handle the complexity of multi-category sets, necessitating an alternative analytical approach. To address this, we calculated the rate of agreement, defined as the percentage of pairs that share at least one category in common across all possible pairs. This relatively liberal criterion accounts for the inherent fuzziness in defining drives and distinguishing between the primary and secondary motivations underlying anxiety.

While Theil's U was pre-registered as the information-theoretic measure to assess agreement, we encountered difficulties applying it due to the complex structure of our data. As a result, we switched to permutation tests, a non-parametric approach well-suited to handling this complexity (Edgington et al., 2007). Unlike traditional methods, permutation tests make no assumptions about the underlying data distribution. By repeatedly shuffling

the data, these tests generate a null distribution of the test statistic, enabling the computation of p-values based on the proportion of permutations yielding a statistic as extreme as, or more extreme than, the observed one (Ernst, 2004).

This method is robust for small samples like ours and circumvents the limitations of standard analytical techniques, such as information-theoretic measures, which are ill-suited to our data. We report the expected number of agreements, the empirical count of agreements, and the likelihood (p) of obtaining the empirical count by chance, assuming the expected count is accurate. Consistent with conventional statistical practice, $p < .05$ is considered significant.

Motivational Diversity

Hypothesis 1b posits that core threats are associated with diverse motivations, whereas proximal threats are not. To quantify this diversity, we employ a variation of Simpson's Diversity Index (D; Simpson, 1949). D measures "unalikeability," or the probability that two randomly selected members of a population will have different motivations (Kader & Perry, 2007). It ranges from 0 to 1, where 0 indicates a completely heterogeneous population and 1 indicates a maximally homogeneous population (all members share the same motivations). For interpretability, we classify D values below 0.2 as highly diverse, values between 0.2 and 0.4 as moderately diverse, and values above 0.4 as non diverse.

While the standard form of D assumes discrete, mutually exclusive categories, our data allows for overlapping motivations. For example, one threat might be driven by both affiliation and survival, while another is driven solely by affiliation. To accommodate this, we adapted the calculation of D to account for partial overlaps between motivations. Specifically, we define $D = \frac{\sum \delta_{ij}}{N(N-1)}$, where: N is the total number of threats, δ_{ij} is the agreement function, which returns 1 if the motivations of i and j overlap and 0 otherwise, $i \neq j$ ensures that a member is never compared to itself.

Table 2

Demographics

	Interview		Self-administered	
	High OC FTF	TD FTF	TD Online (He)	TD Online (En)
N	48	43	81	87
Female N	43 (89.58%)	40 (93.02%)	–	60 (68.97%)
Mean age (SD)	24.6 (3.2)	27.8 (6.2)	–	40.6 (14.6)
Anxiety Measure	OCI-R	TICSA	TICSA	OASIS
Anxiety Score (SD)	37.2 (11.0)	20.9 (13.4)	29.7 (11.3)	7.8 (2.9)

Note. OC - obsessive compulsive, FTF - face to face, TD - Transdiagnostic

The diversity of a sample is considered greater than another if more than 95% of bootstrapped D values for one sample exceed those of the other. Bootstrapping is employed because it provides a robust, non-parametric method to assess variability and establish confidence intervals for D values, making it ideal for our data's structure and sample size. This approach allows us to directly test whether core threats exhibit significantly greater motivational diversity than proximal threats, supporting or refuting the hypothesis.

Methods: Experiment 1

Experiment 1 aimed to evaluate the feasibility and potential utility of the face to face CTSI for identifying core threats among individuals exhibiting high levels of obsessive-compulsive (OC) symptoms.

Participants

Participants were drawn from a pre-existing database of individuals who had previously consented to participate in research and completed the OCI-R. A research assistant contacted eligible participants and obtained informed consent. Demographic characteristics are presented in Table 2. The median OCI-R score (38.50) placed the majority

of participants well within the severe range of obsessive-compulsive symptoms (Abramovitch et al., 2020). Moreover, 41 participants, comprising 85.4% of the sample, met diagnostic criteria for obsessive-compulsive disorder (OCD) based on the DIAMOND interview.

Procedure

Participants completed a series of questionnaires followed by a semi-structured interview conducted via Zoom, lasting between 45 minutes and two hours. The interview included the OCD module of the DIAMOND and the CTSI. The CTSI was used to identify core threats underlying two compulsions (proximal threats). To enhance variability, the compulsions were chosen to be as dissimilar as possible (e.g., a cleaning compulsion versus a checking compulsion). Interviewers explored participants' perceptions of what would occur if ritualistic behaviors were not performed. Participants were compensated with approximately $10 per hour or course credit, depending on their preference.

Measures

The face-to-face CTSI was employed to identify proximal and core threats. While three independent judges initially scored each threat, inter-rater reliability was insufficient. To address this, a consensus score was used for subsequent analyses. This approach informed the development of enhanced training protocols, which improved reliability in later experiments. Despite initial limitations, the consensus scores are considered valid for the purposes of this study.

Obsessive Compulsive Inventory Revised (OCIR; Foa et al., 2002): The OCI-R is an 18-item self-report measure assessing the distress associated with obsessive-compulsive symptoms using a Likert scale (0–4). It has demonstrated strong psychometric properties across clinical and non-clinical populations (Foa et al., 2002; Huppert et al., 2007). In this sample, the OCI-R exhibited high internal consistency, with an omega coefficient of 0.90, supporting its reliability as a measure of OCD symptom severity.

Diagnostic Interview for Anxiety, Mood, and OCD and Related

Neuropsychiatric Disorders (DIAMOND; Tolin et al., 2018): The DIAMOND is a semi-structured diagnostic interview developed to diagnose DSM-5 psychiatric disorders with robust psychometric properties. For this study, only the OCD section was administered to confirm OCD diagnoses. The DIAMOND has consistently demonstrated excellent inter-rater reliability, test-retest reliability, and strong validity metrics (Tolin et al., 2018).

Methods: Experiment 2

Experiment 2 aimed to build on the findings of Experiment 1 by evaluating a transdiagnostic population with elevated anxiety symptoms. A central objective was to assess the test-retest reliability and inter-rater reliability of the CTSI.

Participants and Procedure

Participants were recruited from a pre-existing database of individuals who had previously consented to participate in research and completed the TICSA. A research assistant contacted eligible participants and obtained informed consent. Full demographic details are presented in Table 2.

Participants completed the CTSI via Zoom in two sessions spaced approximately one to two months apart (Median = NA days; Range: NA–NA days). In the initial session, an interviewer guided participants to identify and explore the fear they perceived as most impactful. The second session replicated the procedure, focusing on the same proximal threat but involving a different interviewer to assess inter-rater reliability. Each session lasted 30 to 90 minutes. Between the two sessions, 5 participants (11.6%) withdrew from the study. Participants were compensated with approximately $10 per hour or course credit, depending on their preference.

Measures

The face-to-face CTSI was used to identify proximal and core threats, as outlined above. Threats were scored by three judges who achieved good inter-rater reliability, with Krippendorff's $\alpha = 0.84$.

The Trait Inventory for Cognitive and Somatic Anxiety (TICSA; Ree et al., 2008) The TICSA is a validated 21-item self-report measure designed to assess cognitive and somatic dimensions of trait anxiety. Each item is rated on a 4-point Likert scale, ranging from 0 ("not at all") to 3 ("very much so"), with higher scores reflecting greater severity of anxiety symptoms. The TICSA has consistently demonstrated strong psychometric properties in diverse populations (Grös et al., 2007; Ree et al., 2008). In the present study, the TICSA exhibited high internal consistency, with an omega coefficient of 0.95.

Methods: Experiment 3

Experiment 3 aimed to build on the findings from Experiment 2 by employing a self-administered version of the CTSI, facilitating a more scalable and participant-directed assessment of core and proximal threats.

Participants and Procedure

Participants were recruited from a pre-existing database of individuals who had previously expressed interest in research participation and completed the TICSA. Each participant was contacted by a research assistant, who obtained informed consent before enrollment. Due to a technical error, participant age and gender data were not recorded. However, given the similarity in recruitment procedures, the sample demographics are presumed to align closely with those of Experiment 2. Full demographic information can be found in Table 2. Participants were provided with a secure link to complete the self-administered CTSI along with additional relevant questionnaires. Participants were compensated with approximately $10 per hour or course credit, depending on their preference.

Measures

The self-administered CTSI was used to identify proximal and core threats, as discussed above. Three judges scored each threat and achieved good inter-rater reliability (Krippendorff's $\alpha = 0.86$). The TICSA was used to measure anxiety, showing high internal consistency, with an omega coefficient of 0.91.

Experiment 4

Experiment 4 aimed to expand upon Experiment 3 by recruiting an international, English-speaking population.

Participants and Procedure

Participants were recruited via the Prolific platform for online research and compensated at a rate of £9 per hour. Screening focused on identifying individuals with high anxiety, defined as a score greater than 4 on the Overall Anxiety Severity and Impairment Scale () (OASIS; Norman et al., 2006), and functional impairment, indicated by at least one item scored above 2 on the Work and Social Adjustment Scale [WSAS; Mundt et al. (2002)]. Exclusion criteria included severe depression (PHQ score $>$ 14; Kroenke et al., 2009), significant post-traumatic symptoms (short PCL-5 score $>$ 6; Zuromski et al., 2019), or psychotic symptoms (items 19 or 20 on the DIAMOND screener; Tolin et al., 2018). Additional criteria included fluency in English, no history of head injury or reading/writing difficulties (as indicated on the Prolific system), and experience on the platform with an approval rate above 95% and at least 300 prior submissions. Eligible participants signed a consent form, completed a set of questionnaires related to a separate study, and then proceeded to the main experiment, which involved completing the self-administered CTSI. Full demographic details can be found in Table 2.

Measures

The self-administered CTSI was used to identify proximal and core threats, as discussed above. Three judges scored each threat, achieving good inter-rater reliability (Krippendorff's $\alpha = 0.80$).

The Overall Anxiety Severity and Impairment Scale [OASIS; Norman et al. (2006)] was used to measure anxiety. This 5-item scale assesses the frequency, intensity, and impact of anxiety and fear over the past week, with responses ranging from 0 (Little or None) to 4 (Extreme or All the Time). Higher scores reflect greater severity, with a cut-off

score of eight recommended for identifying anxiety disorders and a change of four points considered clinically significant (Moore et al., 2015). The OASIS demonstrated excellent reliability in this study, with an omega coefficient of 0.82, consistent with its strong psychometric properties reported in previous research (Norman et al., 2006).

Results

The Distribution of Threat Values

The distribution of values in core and proximal threats varied across experiments, with notable differences between the face-to-face and self-administered formats (see Figure 1). Proximal threats were more frequently rated as ambiguous compared to core threats. This discrepancy may stem from the CTSI's emphasis on exploring values, though participants were not explicitly instructed to frame their threats in these terms. A more plausible explanation is that the CTSI facilitates a clearer focus on core threats during the interview process.

In the face-to-face samples, particularly in Experiment 1, distress tolerance frequently emerged as a proximal threat but was rare as a core threat. This suggests that distress tolerance-related threats may function as mechanisms for avoiding deeper, underlying fears rather than representing the ultimate feared outcome. Interestingly, this pattern was not observed in the self-administered versions of the CTSI, possibly because the detailed prompts in the self-administered format encouraged participants to identify harm-avoidant threats explicitly.

In the face-to-face samples, particularly in Experiment 1, distress tolerance frequently emerged as a proximal threat but was rare as a core threat. This suggests that distress tolerance may serve as a form of avoidance rather than an ultimate feared outcome. Because distress tolerance is often framed in broad and universally valid terms (e.g., "I can't handle this discomfort"), it allows individuals to sidestep engaging with the specific and potentially more threatening underlying fears. In essence, focusing on distress tolerance can provide an

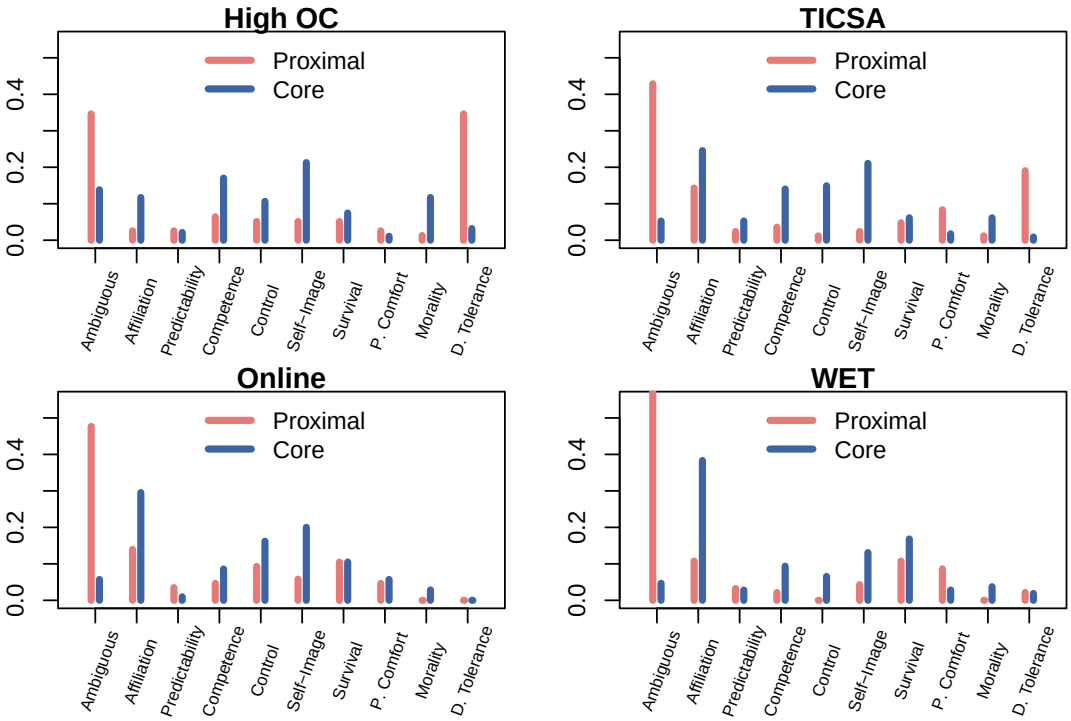

Figure 1

Distribution of threat values across experiments

avenue for avoidance by shifting attention away from addressing the actual threat.

Affiliation consistently appeared as a prominent value in the transdiagnostic experiments. This could reflect an overrepresentation of socially anxious individuals in the sample, or it may indicate that the affiliation category encompasses diverse subtypes. Differentiating between these subtypes in future research may provide greater specificity. Alternatively, affiliation may genuinely represent the most common core threat, as suggested by theories emphasizing its evolutionary and psychological significance (Bowlby, 1969; cf. Gilbert, 2001).

Hypothesis 1: Proximal-Core Agreement

Hypothesis 1 was that core threats represent a distinct psychological process from proximal threats. To test this, we examined two key questions: whether core threats can be

predicted based on proximal threats and whether core threats display greater diversity in content compared to proximal threats. Across all experiments, core threats matched their corresponding proximal threats in no more than 32.5% of cases, with the lowest agreement observed in Experiment 1 (High OC sample), where the rate was 16.9%. Among the transdiagnostic samples, agreement rates were slightly above chance. However, after applying the Holm-Bonferroni correction for multiple comparisons (Holm, 1979), only Experiment 2 (face-to-face transdiagnostic sample) demonstrated a statistically significant agreement between proximal and core threats. These results indicate that while proximal threats may offer some information about core threats, the observed agreement rates, are clinically insufficient. This finding supports the hypothesis that proximal threats do not reliably predict core threats, as more than 70% of core threats differed from their proximal counterparts.

The diversity of proximal threats, measured using Simpson's D, ranged from 0.30 to 0.46 across experiments. Core threats generally exhibited greater diversity than proximal threats, with the exception of Experiment 2 (face-to-face high anxiety sample), where diversity levels were equivalent. The difference was most pronounced in Experiment 1 and 4 (face-to-face high OC, and online English speaking). However, after correcting for multiple comparisons, only the diversity difference observed in Experiment 1 remained statistically significant. The diversity metrics and detailed statistical results are presented in Table 3.

After identifying core threats, participants were asked whether these threats reflected their underlying motivation for fear. This assessment was conducted in the three trans-diagnostic samples but not in the OCD sample. The full results are presented in Figure 2. Across all experiments, the majority of participants affirmed that the identified core threats accurately represented their motivation for anxiety. Notably, the proportion of participants endorsing the core threat as their "true" motivation was consistent regardless of whether the proximal and core threats aligned or the identified core threat reflected a

Table 3

Agreement and Diversity statistics across studies. Agreement reflects the count of expected and actual pairs of motivations aligning (p Agreement indicates the likelihood of observing this agreement by chance). Diversity is measured using the Simpson Diversity Index for proximal versus core threats (p Diversity represents the probability that core threat diversity exceeds proximal threat diversity).

	Interview		Self-administered	
	High OC FTF	TD FTF	TD Online (He)	TD Online (En)
Agreement				
N pairs	71	78	77	84
Expected Agreement (%)	14 (19.72%)	16 (20.51%)	18 (23.38%)	22 (26.19%)
Actual Agreement (%)	12 (16.90%)	23 (29.49%)	25 (32.47%)	24 (28.57%)
p Agreement	.759	.031	.049	.302
Diversity (D)				
Proximal threats	0.31 [0.25, 0.38]	0.30 [0.23, 0.38]	0.34 [0.27, 0.45]	0.46 [0.36, 0.58]
Core threats	0.24 [0.20, 0.29]	0.31 [0.25, 0.38]	0.31 [0.25, 0.40]	0.33 [0.26, 0.42]
p Diversity	.038	.584	.294	.040

Note. OC - obsessive compulsive, FTF - face to face, TD - Transdiagnostic

different motivation. A significant proportion of participants expressed uncertainty about whether the identified core threat truly captured their underlying motivation. However, this uncertainty was less prevalent in the self-administered versions of the CTSI, suggesting that the self-administered format may facilitate more confidence in the identification of core threats. It is important to note that this analysis was not pre-registered and should be regarded as exploratory. While the results are intriguing and suggest potential avenues for further investigation, they require replication and confirmation in future research.

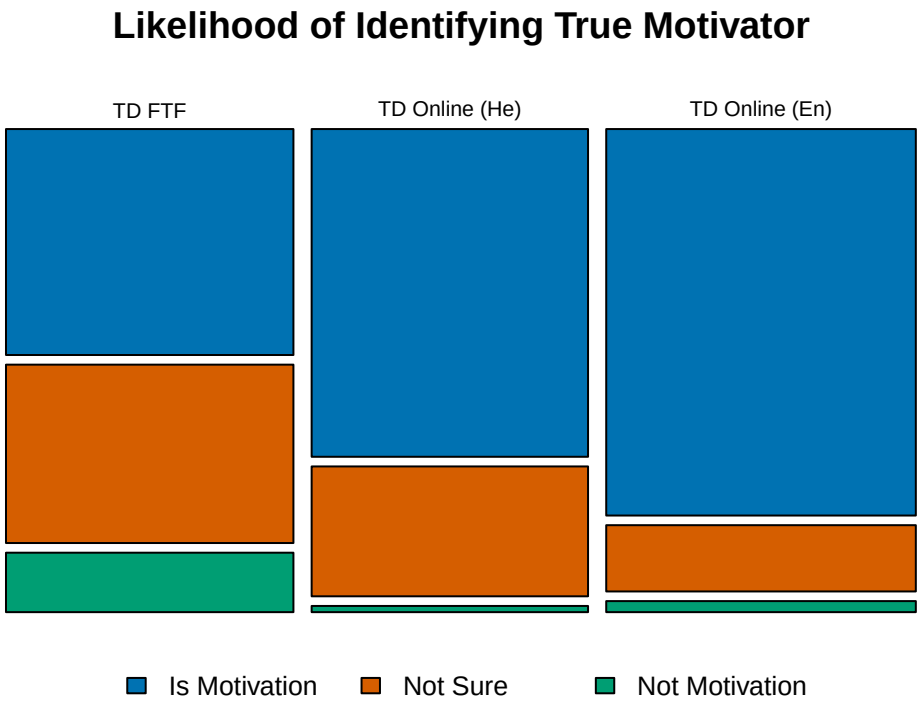

Figure 2

The mosaic plot illustrates participants' responses to the question: "Does the core threat you identified reflect your true motivation?" Tile sizes represent the relative frequencies of responses across groups. The plot indicates that core threats generally align with participants' true motivations. Sensitivity analyses confirmed that these proportions remained consistent regardless of whether core threats matched proximal threats.

Hypothesis 2: Multiple proximal threats - one core threat

Hypothesis 2: Multiple Proximal Threats and One Core Threat

Hypothesis 2 was that one core threat often motivates multiple proximal threats. We investigated this in Experiment 1 by administering the CTSI for two distinct compulsions (proximal threats). Only 13 (27.08%) individuals identified core threats for both compulsions. This limited identification often occurred because participants became fatigued and impatient by the time they were interviewed about the second compulsion. Consequently, our data on this topic is both limited and potentially biased (e.g., is there a relationship between participants' persistence and the characteristics of their fears?).

A permutation test revealed that the median expected number of agreements was 4 (30.77%). In practice, 7 (53.8%, $p = .074$) pairs of core threats agreed with one another. While this result is not statistically significant, it suggests that core threats may motivate multiple proximal threats within the same individual. Due to the small sample size, these findings should be interpreted cautiously. Further research is warranted, as this estimate might be higher if more similar compulsions were selected.

Interestingly, some pairs might share common underlying threats, even when their coded values did not match. For example, one woman was afraid of contamination and dying if she did not perform her cleaning compulsions (Survival) and also feared breaking up with her boyfriend, not having children, and being alone forever (Affiliation). A deeper investigation might reveal that not having children held the same significance as not surviving for her. This dataset, collected during the initial development of the CTSI, may have been affected by suboptimal administration. Nonetheless, this finding underscores that the same core threats often appear to motivate different proximal threats.

Hypothesis 3: Test Retest Validity

In the high-anxiety face-to-face sample, 7 individuals (16.3%) completed both evaluations of their core threats. A permutation test revealed that the median expected

number of agreements was 1 cases (14.3%). In practice, 4 pairs of core threats agreed with each other (57.1%, $p = .030$).

This finding suggests significant test-retest validity, indicating that the same core threats likely motivate fear over time. Furthermore, it supports the notion that different evaluators can reliably identify the same core threat when interviewing an individual. However, the agreement rate is slightly lower than expected. Future research should investigate whether core threats are less stable than predicted or if adjustments to CTSI administration can improve test-retest reliability.

Discussion

The current study aimed to provide clinical guidelines for identifying core threats in anxiety disorders and to explore the phenomenology of these threats. Core threats, the underlying fears driving proximal threats, play a crucial role in the structure and treatment of anxiety disorders (Zlotnick & Huppert, 2025). While proximal threats may involve immediate fears such as contamination or injury, core threats often reflect deeper concerns, including death, social rejection, or moral failure. Despite their frequent application in clinical practice (commonly referred to as core fears), core threats have not been systematically studied.

Our first hypothesis addressed the discrepancy between core and proximal threats. Previous research (Gillihan et al., 2012; Huppert & Zlotnick, 2012; Murray, Treanor, et al., 2016) has underscored the complexity of core threats and highlighted the importance of clinicians delving deeper into patients' fears. Consistent with these findings, we observed that proximal threats were generally distinct from their associated core threats. Notably, only about one-third of proximal threats in the transdiagnostic samples predicted their corresponding core threats. This suggests that identifying core threats remains a meaningful endeavor, to ensure reliable identification of core threats in the remaining two-thirds. This distinction appears especially critical in OCD, where core threats are more diverse and

proximal threats less predictive.

Contrary to our expectations, significant differences in the diversity of core versus proximal threats were observed only in the OCD sample (after applying the Holm-Bonferroni correction), and these effects were modest. Shifting focus to the content of core threats, we observed that, across all four samples, core threats tended to concentrate on themes such as affiliation, self-image, competence, and control. In contrast, proximal threats were often more ambiguous or focused on distress tolerance.

Assessing Validity

The development of the CTSI was driven by practical research and clinical needs. Despite their theoretical foundation and frequent use in clinical practice, core threats lacked a validated tool for systematic measurement in research or therapy. The CTSI was created by integrating common clinical practices with insights from the catastrophizing interview (Davey, 2006). Early versions of the interview were manualized and refined based on expert feedback.

The current study aimed to evaluate the CTSI's validity and reliability as a tool for identifying core threats. Face validity was established through expert clinician reviews, confirming that identified core threats aligned with those commonly observed in psychotherapy. Construct validity was demonstrated through evidence of both convergent and divergent validity. Participants consistently reported that their identified core threats reflected their motivations, demonstrating convergent validity. Meanwhile, the mild associations between core and proximal threats supported divergent validity. Furthermore, participants indicated that core threats captured their motivations better than proximal threats, highlighting their distinctiveness.

In terms of reliability, the CTSI demonstrated robust test-retest reliability, ensuring consistent identification of core threats across administrations. It also exhibited good

inter-rater reliability, with different clinicians reaching consistent conclusions. Finally, the findings showed consistency across diverse samples, reinforcing the CTSI's applicability and relevance to various populations.

What are We Measuring?

A major question remains whether fear is indeed organized, to a certain extent, around core threats. This challenge has two key dimensions: theoretical and functional.

The theoretical challenge involves determining whether core threats are genuinely part of the fear structure and understanding the process by which the CTSI identifies them. It is uncertain whether individuals possess direct verbal access to their underlying motivations. Even if they do, questions arise about how clinicians or researchers can reliably identify these motivations. From this perspective, core threats could be difficult to access or may not exist in the way we conceptualize them. For instance, core threats might be generated through random processes or influenced by non-anxiety-related factors (e.g., "what would sound valuable or important to me"). Alternatively, the observed reliability over time and across interviewers could reflect participants recalling previous responses rather than genuine consistency.

We have reviewed the theoretical arguments for the existence of core threats elsewhere (Zlotnick & Huppert, 2025). Briefly, we propose that core threats exist in all individuals, and that the evaluations of their probability and of their meaning potentially contributing to pathological anxiety. While not all individuals possess pathological core threats, identifying such threats in those who do can support case conceptualization and enhance the generalization of learning in psychotherapy.

Even assuming that a core threat can be determined, an interesting question arises: Is the core threat identified or construed? Is the process of determining a core threat akin to uncovering an existing prototype (cf. Rosch & Lloyd, 1978)? Or should core threats be

treated as ad-hoc narratives, individually tailored to activate the fear structure (cf. Barsalou, 2003)? If the latter is the case, the therapist's role would be to help the patient construe a core threat that effectively activates the fear network as opposed to determining it.

Ultimately, these challenges may be unresolvable. There will always be alternative explanations, as we lack direct access to these theoretical constructs (see De Houwer, 2011). One might ask, "If we can't be sure we can access core threats, are they scientific?" We argue that many useful and theoretically interesting constructs are similarly inaccessible, yet remain valuable, such as attachment styles, cognitive schemas, or implicit biases. Indirect methods, such as physiological measures of anxiety and implicit measures (Gawronski & De Houwer, 2014), may provide access. The accumulating data, particularly the functional implications of core threats, increasingly support the validity of this cognitive construct.

The functional challenge is as follows: Are we indeed identifying the true core threats? How can one validate this abstract clinical construct? One approach is to define a functional definition of core threats that *can* be empirically examined (De Houwer, 2011). Core threats primarily represent an individual's motivations to avoid certain stimuli or situations. Indeed, preliminary findings suggested this is accurate; many individuals reported that their identified core threat indeed reflected their true motivation. However a more concrete functional definition is needed.

Furthermore, a significant critique of the CTSI is its potential circularity. By defining proximal threats as distinct from core threats, participants are implicitly guided to identify a different underlying threat. Consequently, it is unsurprising that proximal threats differ from core threats. This issue is especially pronounced in cases involving distress-tolerance-related core threats, which are rare among core threats but common among proximal threats. Additionally, requiring participants to articulate potential harm—even when they initially report none—may inadvertently prompt them to identify an alternative core threat.

The solution for both of these problems would lie in demonstrating that core threats, as identified through the CTSI, exhibit distinct behavioral patterns compared to proximal threats. Core threats are believed to be more effective targets for safety learning, such as through exposure or behavioral experiments (Zlotnick & Huppert, 2025). Thus, demonstrating that focusing on core threats improves therapeutic outcomes would provide strong evidence for their validity.

Distress Tolerance

Recent literature emphasizes distress tolerance as a central mechanism in anxiety disorders (Barlow et al., 2010; S. C. Hayes et al., 2006; Keough et al., 2010). Literature on OCD highlights the importance of "not just right" experiences, sensory phenomena, incompleteness, and other seemingly harmless phenomena (Ecker & Gönner, 2008; e.g., Ferrão et al., 2012). An association between these phenomena and other anxiety disorders has also been found (Michel et al., 2016). Indeed, distress tolerance has been shown to correlate with psychopathology (Leyro et al., 2010) and has been suggested as a treatment target in various contexts, such as smoking cessation (Brown, 2022) and borderline personality disorder (Linehan, 1993).

Distress tolerance has been proposed as a primary transdiagnostic process to target in emotional disorders (Barlow et al., 2010). Building on this model, we emphasize harm avoidance as a complementary mechanism that warrants equal consideration. Findings from our face-to-face experiments, involving both OCD and transdiagnostic samples, revealed a high prevalence of distress tolerance-related proximal threats and a low prevalence of distress tolerance-related core threats. This pattern suggests that, even when distress tolerance is evident, harm avoidance likely plays a significant role in anxiety. Indeed, recent findings indicate that at least part of the motivation underlying NJRE in OCD is due to interference with cognitive processes rather than enjoyment of daily life (Melli et al., 2020). In other words, beyond the challenge of tolerating distress, there remains the issue of disconfirming

underlying threats that maintain anxiety (Craske et al., 2022).

When designing transdiagnostic interventions, it is essential to address multiple underlying processes (Hofmann & Hayes, 2019). While distress tolerance has received considerable attention, we argue that harm avoidance—particularly in the context of core threats—should also be considered a critical addition (A. T. Beck & Dozois, 2011; Foa & Kozak, 1986; Steimer, 2002).

Core Threats in OCD

Much of the foundational work on core threats originates in the OCD literature (Gillihan et al., 2012; Huppert & Zlotnick, 2012). It is therefore reasonable to hypothesize that core threats hold particular significance for individuals with OCD. Our findings support this hypothesis and reveal notable differences between the OCD sample and the transdiagnostic samples. In the OCD sample, proximal threats did not predict core threats at all, a pattern not observed in the transdiagnostic groups. Additionally, core threats in the OCD sample were significantly more diverse than proximal threats, underscoring their heterogeneity. There was also a disproportionate prevalence of distress tolerance-related proximal threats in the OCD sample, but this pattern did not extend to core threats. These results emphasize the critical importance of identifying and addressing core threats for individuals suffering from OCD.

The observed differences between the OCD and transdiagnostic samples may stem from the inherent diversity of OCD presentations, which manifest in various forms. Alternatively, this distinction may reflect the fact that the OCD sample was the only validated pathological group in our study. Future research should investigate these differences further, focusing on how core and proximal threats interact across different anxiety disorders and how these relationships may inform tailored intervention strategies.

Limitations and Further Research

Core threats have been theorized to play a central role in the generalization of threat (see Zlotnick & Huppert, 2025). If this is indeed the case, we would expect the same core threats to motivate multiple different proximal threats. In the current study, we found some non-significant initial evidence that one core threat can underlie multiple proximal threats. If this finding is confirmed with further research, it would suggest that safety learning targeting core threats could be a more effective intervention for anxiety disorders. This notion would be strengthened further by demonstrating better generalization for core threat-focused learning (Murray, Treanor, et al., 2016; see Pinciotti et al., 2021). However, the current dataset is too small to reach definitive conclusions, and further study with a larger sample size is needed.

To investigate the agreement between threats, we needed to codify them. As no existing typology fully suited our needs, we developed one specifically for this study. While this typology has not yet been validated, and there is a possibility of over-dividing certain categories (e.g., safety and physical discomfort) or under-dividing others (e.g., affiliation), we believe it is sufficient for exploring the associations between different threats. Nonetheless, further psychometric work is needed to establish a robust and validated typology for core threats.

The CTSI attempts to identify the ultimate underlying threat, but it is not clear if it succeeds. The stopping criteria used in the CTSI are accepted in the field (see Davey, 2006). However, there is no guarantee that the true motivation is identified. For example, should one stop at “I will die,” or ask further to discover that the fear is of burning in hell? And is burning in hell the correct stopping point, or should one delve deeper? The instructions in the CTSI are to stop once the patient can no longer find any deeper meaning, repeat themselves, or once they start getting further from the underlying threat, as evidenced by lower levels of distress. Ultimately, this question remains open and subjective to the

discretion of the interviewer. We argue that, despite the inherent noise in the process, the answers obtained are at least better than plain proximal threats, even if they do not reach the "true" core threat.

We know from several studies that core threats are deceptively diverse (Zlotnick & Huppert, 2025). For instance, Greenberg and colleagues (2018) examined whether the underlying fear in olfactory reference syndrome centers on embarrassing oneself or offending others. They found that individuals possess both types of motivations, regardless of their cultural background (Western vs. Eastern). Moreover, about a quarter of participants reported a completely unexpected concern: whether the odor indicated a medical condition. This highlights the importance of investigating idiosyncratic fears expressed by individuals, beyond the stereotypical fears associated with specific disorders. However, we hypothesize that different disorders exhibit distinct patterns of core threats. For example, safety is a prominent concern in panic disorder and OCD but appears less central in social anxiety disorder, where competence and affiliation often take precedence. Similarly, morality plays a significant role in OCD but is less pronounced in other disorders. Thus, variability in core threats reflects both systematic, disorder-specific tendencies and individual idiosyncrasies. Future research should focus on mapping these associations more comprehensively.

An additional limitation of this study is the low prevalence of predictability core threats. Our clinical experience indicates that such core threats should be more prevalent (though not quite as prevalent as other motivators). It is likely that the focus of the CTSI on specific harm-avoidance type outcomes may have masked such core threats. For example, some people that fear having cancer are particularly bothered by the inherent fuzziness of the situation - that they can never know for sure. When asked what they fear, they would focus on the cancer, but that is in face over-shooting the actual motivating core threat. To address this problem we recommend that interviewers review the downward arrow and explicitly ask what the worst outcome would be.

Implications for Clinical Practice and Future Research

The findings of this study have implications for both clinical practice and future research. Clinically, the Core Threat Structured Interview (CTSI) proves to be a valuable tool in uncovering the underlying fears that drive anxiety disorders, facilitating the development of more effective, tailored treatment plans. This aligns with the work of Persons (Persons, 2012), who emphasized the importance of individualized case formulations in cognitive-behavioral therapy.

For future research, these findings open new avenues for exploring the mechanisms underlying the stability of core threats and their impact on treatment outcomes. The fact that the CTSI includes a self-administered, online version that appears to be reliable and valid should allow significant further research. We contend that one major limiting factor of studying core threats to date has been the absence of such a tool. Investigating the interaction between core threats and other psychological constructs, such as resilience and coping strategies, could further enhance our understanding of anxiety disorders and inform more comprehensive treatment approaches.

In conclusion, this study underscores the potential critical role of core threats in anxiety disorders and provides a valid and reliable structured approach to identifying and addressing these threats in clinical practice. By focusing on the underlying fears that drive surface threats, clinicians might be able to develop more effective interventions, ultimately improving patient outcomes.

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