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Persistent Bodily Threat Expectancies After Symptom Improvement in Anxiety Disorders

Prof. Dr. Melis Avci¹

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ABSTRACT

Symptom improvement after psychotherapy does not establish how patients interpret bodily sensations when familiar supports are absent. This article examines whether persistent bodily threat expectancies represent a dimension of recovery in adults treated for anxiety disorders. A critical integrative review connects research on interoception, intolerance of uncertainty, exposure learning, avoidance, and the durability of cognitive behavioural therapy. Peer reviewed studies and methodological papers were identified through targeted searches and verified against bibliographic records and accessible primary publications. The synthesis distinguishes reported symptom burden, beliefs about bodily danger, and the transfer of learning across situations. Existing evidence supports these distinctions but does not establish that their divergence independently predicts relapse. Laboratory extinction findings, questionnaire associations, and treatment outcomes therefore receive separate interpretations. The article proposes assessing specific feared outcomes before and after clinically appropriate behavioural observations, with matched assessments in familiar and unfamiliar contexts. A descriptive contrast between these contexts is considered alongside anxiety sensitivity, uncertainty intolerance, residual symptoms, and functioning, rather than treated as a diagnostic score. The principal argument is that a useful assessment must explain subsequent difficulties beyond established measures and must improve decisions without prolonging treatment unnecessarily. A staged research programme separates measurement development, prospective prediction, and experimental evaluation of assessment informed care. Alternative explanations include restricted exposure opportunities, medical changes, reporting effects, and adaptive caution. The framework offers a falsifiable account of incomplete recovery while preserving the distinction between an untested clinical hypothesis and an established treatment mechanism. Its practical value depends on prospective external validation.

Keywords: interoception; threat expectancy; intolerance of uncertainty; anxiety disorders; relapse prevention

Keywords: *Persistent; Bodily; Threat; Expectancies; After*

A patient may finish psychotherapy with fewer panic episodes, better sleep, and a return to work, yet remain convinced that an unfamiliar bodily sensation would become dangerous without immediate help. That possibility deserves careful examination because treatment outcome and the conditions supporting that outcome are different questions. Cognitive behavioural therapy has a substantial evidence base for anxiety and related disorders, including benefits beyond nonspecific comparison conditions (Carpenter et al., 2018). Persistent vulnerability should therefore be studied within an account of effective treatment, without assuming that improvement is superficial. The clinical problem is more specific: can a favourable symptom trajectory coexist with a conditional expectation of bodily catastrophe, and does that expectation matter for later functioning once treatment and its familiar supports have ended?

Durability is difficult to infer from average symptom change. Follow-up studies can show sustained group differences while providing limited information about which previously improved individuals experience renewed disorder. In their meta-analysis, van Dis et al. (2020) found evidence of longer term benefit but also substantial limitations in the available follow-up literature. Levy et al. (2021) showed that estimated relapse rates depend on how relapse is defined. These findings make it necessary to distinguish treatment response, diagnostic remission, residual impairment, and subsequent relapse. A temporary increase in anxiety does not necessarily reverse recovery. Conversely, a low questionnaire score during a restricted period of activity may leave an important aspect of recovery unobserved. Neither possibility can be resolved by a single discharge assessment.

Interoception provides one route into this problem. It concerns the perception and interpretation of signals arising within the body, including processes that need not enter conscious awareness (Khalsa et al., 2018). Clinical anxiety can involve beliefs about what sensations mean,

work has distinguished interoceptive accuracy, reported sensibility, and metacognitive awareness (Garfinkel et al., 2015). More recent evidence also separates subjective bodily beliefs from performance on cardiac perception tasks (Snell et al., 2026). For clinical psychology, the relevant question may concern the anticipated consequence of a sensation rather than the fidelity with which that sensation is detected.

Uncertainty and learning offer a complementary explanation. A patient can recognise that previous episodes ended without catastrophe while remaining unwilling to generalise that experience to a new setting. Intolerance of uncertainty concerns responses to not knowing; threat expectancy concerns the particular outcome anticipated. They overlap, but they are not interchangeable. Associations between uncertainty intolerance and extinction responding provide a reason to examine their interaction, although laboratory associations do not establish a clinical relapse mechanism (Morris et al., 2021). Exposure research likewise gives context and retrieval a central place in the persistence of learning (Craske et al., 2014). A recovery assessment that samples only a familiar treatment environment may consequently overlook the conditions under which bodily threat expectations reappear.

This article develops a critical integrative account of persistent bodily threat expectancy after symptom improvement in adult anxiety disorders. Its contribution is a proposed method of studying the relationship between clinical improvement and the transfer of learning, with explicit tests against established constructs and simpler explanations. Panic disorder is the clearest initial application; extension to generalised anxiety or social anxiety requires a bodily threat formulation in the individual case. The article proceeds through a transparent narrative methodology, a review of relevant evidence, a synthesis of findings, and arguments concerning measurement and clinical utility. It proposes neither a new diagnosis nor a validated risk score. The central

functioning.

Methodology

Review design and scope

The study is a critical integrative narrative review with a prospective research framework. It does not report a clinical cohort, an intervention trial, or a new meta-analysis. The review asks which distinctions are sufficiently grounded to guide measurement, which causal claims remain unresolved, and what observations could falsify the proposed framework. This design is appropriate because the relevant evidence spans treatment trials, experimental learning studies, psychometrics, and theoretical accounts with different outcomes and units of analysis. Reporting was informed by the emphasis of SANRA on a clear rationale, explicit aims, transparent source selection, appropriate referencing, and attention to evidential strength (Baethge et al., 2019). No numerical SANRA score or independent quality rating is claimed.

The clinical scope is adults receiving psychological treatment for anxiety disorders, with particular attention to panic and feared bodily consequences. Evidence from broader emotional-disorder samples is included when it bears on a specified construct. Healthy-participant experiments are retained as tests of learning or measurement, with their indirect clinical relevance identified. The review does not treat obsessive-compulsive disorder, post-traumatic stress disorder, chronic pain, functional neurological symptoms, or established physical disease as interchangeable with anxiety disorders. Where a cited synthesis includes these conditions, its wider scope is acknowledged. This restriction prevents a broad transdiagnostic vocabulary from obscuring differences in diagnosis, physical risk, and treatment goals.

Source identification and verification

behaviour, psychotherapy, remission, and relapse. Searches included named foundational papers, related-reference leads, and queries for recent work through the search date. PubMed and Europe PMC records, publisher pages, and institutional repositories were used to identify and verify publications. Europe PMC supplied bibliographic metadata and abstracts; accessible full texts informed interpretation where available. The procedure did not constitute an exhaustive search of subscription databases, duplicate independent screening, or a prospectively registered systematic review. The reference list is a purposive analytical corpus, not a claim that every eligible publication was retrieved.

Sources were selected for a direct contribution to the review question: treatment durability; distinctions among bodily perception, belief, and confidence; uncertainty-related learning; avoidance and safety behaviour; or the requirements for valid clinical prediction. Preference was given to original investigations, published quantitative syntheses, foundational theory, and primary methodological publications. Bibliographic verification checked author attribution, publication year, title, journal, and DOI. Results were described within the detail supported by the accessible record; no missing subgroup estimate or unreported effect was reconstructed. Recent adjacent work was included to bound the proposed contribution, particularly the broader discussion of mechanistic non-response by Sasin et al. (2026). The present focus is the narrower question of conditional vulnerability among people who have improved.

Synthesis and inferential boundaries

Evidence was organised by the relationship between the construct measured, the setting in which it was measured, and the outcome it could support. An extinction experiment can test responding when contingencies change; it cannot by itself establish diagnostic relapse. A questionnaire validation study can support the interpretation of a score; it cannot demonstrate

requirements for mechanism research outlined by Kazdin (2007). Particular attention was given to temporal ordering, plausible alternative explanations, and whether findings concerned differences between people or changes within a person.

The synthesis sought both convergence and points of resistance. Results suggesting distinct interoceptive dimensions were considered alongside validity problems in commonly used tasks. Accounts of avoidance maintenance were considered alongside evidence that the effects of safety behaviours depend on their function. Proposed implications were retained only when their evidential status could be stated clearly. Tables distinguish published findings from the assessment and research procedures proposed here. No patient examples, prevalence estimates, simulated clinical observations, or statistical coefficients were generated. The originality claim is limited to the organisation of an assessment and validation problem. Priority over all earlier formulations cannot be established by a targeted narrative search, and the proposed framework remains open to revision or rejection.

Literature Review

Clinical improvement and sustained recovery

Evidence for psychotherapy efficacy provides the starting point. Carpenter et al. (2018) synthesised 41 placebo-controlled studies involving 2,843 participants with anxiety and related conditions. Their findings support a meaningful effect of cognitive behavioural therapy on target symptoms. Such evidence establishes treatment benefit at the group level; it does not establish that every relevant process changes in parallel within an individual. This distinction is particularly important when a treatment contains several components and participants can improve through different routes. A reduction in bodily fear, an increase in perceived coping ability, and a

sustained benefit from complete knowledge of relapse. The review by van Dis et al. (2020) included 69 randomised trials and 4,118 outpatients, while noting limitations in study quality and follow-up evidence. Levy et al. (2021) subsequently estimated an overall relapse rate of 14% across 17 articles and 337 patients who contributed to their synthesis. That estimate should not be transferred to every service or diagnosis: the included studies and relapse definitions constrain its meaning. Together, the reviews support follow-up as an important clinical outcome while showing why a single pooled rate cannot identify the mechanism responsible for an individual recurrence.

Maintenance treatment offers more direct evidence that the period after acute improvement can matter. White et al. (2013) randomised responders to acute treatment for panic disorder to maintenance cognitive behavioural therapy or assessment-only follow-up. Lower relapse and impairment were observed with maintenance treatment over the reported follow-up period. This trial supports the potential usefulness of continuing work after response. It does not establish that all responders need additional sessions or that an interoceptive assessment can identify who benefits. That latter claim requires a comparison of decision rules, not simply evidence that a maintenance programme can work.

Bodily perception and the meaning of sensations

Clark's (1986) cognitive account of panic places the catastrophic interpretation of bodily sensations at the centre of a clinically influential explanation. A rapid heartbeat, dizziness, or a change in breathing may acquire significance through the consequence anticipated. The theoretical object is the appraisal of the sensation, not merely its presence. This distinction remains useful when symptoms have improved: infrequent sensations do not necessarily imply revised beliefs about their consequences. The present framework extends the assessment question into the period after improvement, while retaining the need to evaluate physical explanations and the

account of bodily experience. Garfinkel et al. (2015) demonstrated that behavioural accuracy, subjective sensibility, and metacognitive awareness could be distinguished in a normative sample. Khalsa et al. (2018) emphasised the conceptual and methodological breadth of interoception across mental health research. These distinctions matter clinically because more attention to bodily signals need not mean more accurate perception, and accuracy need not imply confidence or trust. An assessment that labels all these properties interoceptive sensitivity obscures the possible reason for a patient's difficulty. The question whether a sensation is detected should be kept separate from the question what the patient believes will follow it.

Snell et al. (2026) provide a recent illustration. In a nonclinical sample of 305 adults, with heartbeat tasks completed by a subsample of 103, anxiety-related traits were associated with self-reported interoceptive difficulties. The authors did not find significant relationships between the heartbeat task measures and the anxiety variables examined. The study supports careful separation of reported bodily beliefs from task performance. Its cross-sectional, nonclinical design leaves treatment change and relapse untested. It therefore offers a measurement constraint rather than direct evidence for the post-treatment profile proposed here.

Neurocognitive accounts connect bodily signals with expectations and self-referential beliefs (Paulus & Stein, 2010). Nord and Garfinkel (2022) review routes by which interventions might influence interoceptive processes. These accounts make bodily interpretation a plausible treatment target, but a plausible neural account is not a clinical test. Insular involvement, for example, cannot be inferred from a questionnaire response, and a clinician cannot determine a patient's prediction-error weighting from an ordinary interview. The practical contribution of interoceptive theory is therefore to specify competing observable explanations, with

Uncertainty concerns the limits of what is known about an outcome; estimated danger concerns the outcome expected. Grupe and Nitschke (2013) describe how anticipation under uncertainty can organise several features of anxiety. The Intolerance of Uncertainty Scale short form provides a measure of dispositions toward uncertain situations (Carleton et al., 2007). A patient can judge a catastrophic event unlikely yet remain distressed by the inability to exclude it. Conversely, another patient may tolerate uncertainty in everyday decisions while strongly expecting a particular bodily catastrophe. Clinically meaningful assessment requires asking both questions instead of assuming that one score represents both.

Experimental extinction work supports a connection between uncertainty intolerance and persistent responding. Morriss et al. (2016) found differing patterns of skin conductance during extinction in a healthy sample of 38 participants. Their later meta-analysis examined 18 experiments with 1,006 participants and found associations between self-reported uncertainty intolerance and extinction responding (Morriss et al., 2021). These studies support a relationship at the level of experimental learning. Their outcome was not the return of an anxiety diagnosis after psychotherapy, and skin conductance was not a direct measure of a patient's explicit bodily catastrophe belief. Translational relevance is therefore plausible but incomplete.

Clinical studies strengthen the case for uncertainty as a treatment-relevant construct without resolving that gap. Boswell et al. (2013) reported that change in uncertainty intolerance during transdiagnostic treatment correlated with improvement across emotional-disorder presentations. Dugas et al. (2022) randomised 60 adults with generalised anxiety disorder to behavioural experiments targeting uncertainty or a waiting list, finding favourable treatment outcomes and maintained or increased gains during follow-up. The waiting-list comparison does not isolate a unique mechanism against an

Learning across contexts and the role of avoidance

Extinction theory supplies an account of why new learning may be expressed unevenly. Bouton (2002) describes extinction as new learning whose retrieval can depend on context, rather than simple deletion of the earlier association. Vervliet et al. (2013) connect findings on extinction and the return of fear with questions about durable therapeutic change. For the present review, the relevant implication is conditional: successful responding in one setting may leave performance in another setting uncertain. A laboratory return-of-fear effect and clinical relapse nevertheless differ in complexity, timescale, and definition. Their relationship has to be measured rather than assumed.

The inhibitory learning approach to exposure highlights anticipated outcomes and the conditions under which corrective experience is acquired and retrieved (Craske et al., 2014). This provides a rationale for assessing learning beyond the final moments of a familiar exercise. It also creates a methodological problem. Repeating an assessment can itself provide additional learning, and changing a context can change the actual task demands. A higher expectation of danger in a new setting might reflect a failure to transfer learning, a genuinely harder task, or reasonable uncertainty about changed circumstances. Matching the comparison conditions is essential before attributing the difference to a particular learning process.

Avoidance further complicates interpretation. Salkovskis et al. (1999) experimentally examined safety-seeking behaviour during exposure in panic disorder with agoraphobia. Pittig et al. (2020) review the reciprocal relationship between conditioned fear and defensive action, including ways in which avoidance can preserve threat beliefs. Yet the functional distinction is important. Goetz et al. (2016) found that safety behaviours which prevent engagement and those which permit engagement can have different implications. The outward form of an action is

different interpretations.

Measurement and competing processes

The Anxiety Sensitivity Index-3 assesses concerns about the consequences of anxiety-related sensations across physical, cognitive, and social domains (Taylor et al., 2007). It is an important comparator for any proposed bodily threat assessment. The Multidimensional Assessment of Interoceptive Awareness Version 2 separates several self-reported aspects of bodily awareness (Mehling et al., 2018). Neither instrument should be treated as a direct measure of all bodily learning. Likewise, the GAD-7 measures a clinically useful symptom dimension but does not replace a diagnostic assessment or a disorder-specific outcome measure (Spitzer et al., 2006). Each measure has a defined interpretive role.

Behavioural measures also require caution. Desmedt et al. (2018) demonstrated substantial non-interoceptive contributions to heartbeat counting performance. Hedge et al. (2018) showed more generally why a reliable experimental effect need not produce reliable rankings of individuals. The methodological recommendations of Lonsdorf et al. (2017) further illustrate how fear-learning results depend on design and analysis choices. Finally, anxiety sensitivity is not the only plausible process accompanying clinical change. Gallagher et al. (2013) found temporally informative relationships involving both anxiety sensitivity and self-efficacy during panic treatment. A new assessment must therefore compete with established explanations rather than obtain apparent novelty by leaving them unmeasured.

Aim

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Findings

What the evidence supports

The review supports a distinction between symptom change, bodily interpretation, and the expression of learning across circumstances. These domains have different measurement traditions and cannot be collapsed into a single claim about recovery. Treatment research establishes meaningful average benefit; interoceptive research distinguishes facets of bodily experience; learning studies show that responding can depend on context. The synthesis does not establish how frequently these domains diverge among treated patients. It also does not establish a threshold at which residual bodily threat expectancy predicts relapse. Table 1 sets out the evidential contribution of selected studies and the inference that remains unavailable.

Table 1 Selected evidence and the limits of its clinical interpretation

Source and design

Supported inference

Unresolved inference

Levy et al. (2021)Meta-analysis

Relapse occurs after remission and depends on its definition.

Which bodily expectations predict individual relapse.

Garfinkel et al. (2015)Measurement study

Accuracy, sensibility, and metacognitive awareness are distinguishable.

Which dimension governs recovery in a treated population.

Morriss et al. (2021)Experimental meta-analysis

Uncertainty intolerance relates to extinction responding.

Uncertainty-focused treatment benefits adults with GAD against a waiting list.

A unique mechanism or marker for treatment selection.

Snell et al. (2026)Nonclinical study

Bodily self-reports and heartbeat task findings diverge.

Prospective effects after psychotherapy.

White et al. (2013)Maintenance trial

Maintenance CBT can improve durability after panic treatment response.

Whether the proposed profile identifies who needs maintenance.

These are selected studies from the narrative corpus, not an exhaustive evidence inventory. GAD = generalised anxiety disorder; CBT = cognitive behavioural therapy. No result in this table validates the proposed profile by itself.

A second finding concerns specificity. The most clinically relevant target is not a general instruction to become more aware of the body. Evidence differentiating subjective interoceptive beliefs from behavioural performance makes such an instruction too imprecise (Garfinkel et al., 2015; Snell et al., 2026). The proposed target is an explicitly stated expected consequence of a sensation in a specified setting. Examples include expecting loss of control when dizziness occurs away from home, or anticipating visible incapacity when physiological arousal appears during a meeting. These are illustrative expectations, not descriptions of participants in this review. Their importance depends on impairment and on the patient's own account of what is feared.

A third finding is that changes in symptoms and changes in candidate mechanisms require separate interpretation. Evidence linking uncertainty intolerance with extinction and treatment outcome supplies a rationale for

permits unmeasured common causes. The available work therefore supports uncertainty intolerance as a comparator and possible moderator, rather than a proven explanation of persistent bodily threat expectancy after treatment. The proposed relationship has to survive comparison with anxiety sensitivity, self-efficacy, and residual avoidance.

A proposed profile of incomplete generalisation

The proposed profile consists of documented clinical improvement together with a persistent, consequential expectation of bodily danger under circumstances relevant to ordinary life. Improvement should be established with an appropriate symptom measure and functional assessment. The expectation should be elicited before the outcome is known, linked to a stated consequence, and sampled more than once. It should also be distinguishable from a medically justified concern. These requirements prevent the profile from being assigned simply because a person reports occasional anxiety or expresses ordinary caution about an unfamiliar situation.

Two patterns need to be separated. In one, bodily threat expectancy remains high in both familiar and unfamiliar settings despite improvement in overall symptoms. In the other, expectancy has fallen in the familiar setting but increases when the context changes. The former may reflect a broadly persistent belief; the latter is compatible with restricted transfer, although it does not prove a retrieval deficit. If expectations are low in both settings while distress remains high, sensory unpleasantness, other fears, or non-anxiety explanations deserve attention. A framework that treats every discrepancy as the same problem would lose the distinction it was designed to make.

The proposed assessment records probability judgements for a named outcome, confidence in that judgement, perceived coping capacity, actual behaviour, and the subsequent outcome. These observations can be compared across matched contexts while keeping the bodily challenge

expectancy rating. Subtracting those unlike scales would create an uninterpretable score. Even a contrast between matched expectancy ratings remains a research measure whose reliability and validity must be established.

What remains unresolved

The decisive missing evidence is prospective incremental validity. Among people with comparable residual symptoms and established risk indicators, does a reproducible pattern of conditional bodily threat expectancy predict later impairment or the return of disorder? A positive cross-sectional correlation would not answer that question. Neither would a significant association with a future symptom score if it disappeared after accounting for baseline severity. A candidate assessment must contribute beyond a credible clinical comparison model and retain that contribution outside the sample used to develop it.

The synthesis also identifies a gap between prediction and useful care. A measure could predict outcome yet offer no practical advantage if no acceptable action follows its result. Conversely, maintenance care might benefit patients without the proposed measure identifying the relevant subgroup. Clinical utility therefore requires testing the decisions made with the information, including possible unnecessary treatment. The framework's evidential status is consequently limited but clear: established research motivates a narrowly specified hypothesis; the prevalence, prognostic value, causal role, and treatment-selection value of the proposed profile remain unestablished. The following arguments address how those separate claims could be examined without turning an attractive explanation into a premature clinical category.

Arguments

Incremental value must precede a new clinical label

already has an established measurement tradition, and a context-specific question may be no more than a concrete expression of the same construct. The proposed framework earns a place only if it adds information about when an existing belief is expressed, how it changes with experience, or which subsequent difficulty follows. It should not obtain apparent validity by comparing a detailed interview with an inadequately measured version of anxiety sensitivity. Established scales, specific clinical predictions, and relevant functional outcomes must all receive competent measurement.

This requires separating the mean level of threat expectancy from its dependence on context. Two patients could report the same overall expectation of danger but differ in whether that expectation appears only outside the therapy setting. Conversely, a large familiar-to-unfamiliar contrast could result from very low expectancy in the familiar condition, without a clinically concerning level in the unfamiliar condition. The analysis should therefore retain both levels, describe their uncertainty, and examine the interaction with context. A difference score alone cannot distinguish these possibilities. Repeated observations and a model that preserves the component ratings are preferable to classifying people by an arbitrary contrast threshold.

The more demanding test asks whether context adds predictive information after anxiety sensitivity, intolerance of uncertainty, self-efficacy, residual symptoms, and avoidance are considered. An informative null result would show that ordinary clinical measures capture the useful information adequately. Such a result should retire the proposed additional assessment or restrict it to a formulation aid. A positive result should be judged by its size, reproducibility, and decision consequences, rather than by a small probability value alone. The framework is intended to create that contest. It should not be protected from failure by redefining every unexpected result as a hidden form of incomplete recovery.

during a period; its interpretation depends partly on what happened during that period. If a patient has not encountered an important situation, the absence of difficulty there is unobserved rather than demonstrated. This is a sampling problem. It does not justify assuming that the patient would fail, and it does not invalidate improvement elsewhere. The useful response is to ask which activities matter to the patient and whether those activities have been attempted under ordinary conditions. A clinically meaningful assessment should focus on relevant participation rather than seek increasingly difficult tests until some anxiety appears.

The comparison between contexts must also preserve the nature of the expected event. A familiar and unfamiliar setting can differ in distance from help, physical effort, social demands, and actual consequences. If all these change together, a difference in expectancy says little about transfer of learning. Research should specify the contextual feature being varied and document perceived task difficulty. The choice of context should be agreed with the participant, and medically relevant supports should remain available. The aim is to observe an interpretable contrast, not to create maximal distress or to demonstrate that every feared situation is safe.

Functional recovery can occur despite residual uncertainty. A person may return to work, travel independently, and pursue valued relationships while acknowledging that bodily discomfort remains possible. That pattern can represent successful adaptation. Making the complete absence of threat expectancy a discharge requirement would risk turning treatment into a search for certainty that everyday life cannot provide. The present proposal therefore gives impairment and behavioural restriction a central role. A residual belief warrants additional attention when it constrains meaningful activity or has demonstrated prognostic value, not merely because a clinician can elicit it on a rating scale.

Transdiagnostic treatment evidence reinforces the need for restraint. Barlow et al. (2017) found that

emotional processes. They do not require a single latent mechanism to explain every patient's improvement. A narrowly targeted bodily assessment should therefore complement a broad formulation when relevant. It should not redirect all patients toward interoception, especially where interpersonal fears, worry about external events, or practical barriers account more directly for continuing impairment.

A candidate marker is not yet a mechanism

Suppose elevated bodily threat expectancy at discharge predicts later recurrence. At least four explanations remain possible. The expectation may contribute causally to avoidance and renewed anxiety. It may indicate a more persistent disorder that has been incompletely measured. It may reflect a continuing external stressor or physical condition that also predicts recurrence. It may capture a general response style that influences both the predictor and the reported outcome. Prospective association narrows the question but does not decide among these explanations. The distinction between a useful marker and a mechanism should be maintained even when the association is clinically impressive.

Within-person measurement can strengthen the investigation. If an increase in conditional threat expectancy reliably precedes withdrawal from meaningful activities within the same individual, the temporal pattern is more relevant than a simple comparison between more anxious and less anxious people. It remains vulnerable to time-varying confounding. A change in sleep, medication, physical health, or life circumstances could influence both expectation and participation. Hamaker et al. (2015) show why conventional cross-lagged models may conflate stable differences between people with changes within a person. The study design should determine the temporal question before a convenient statistical model is selected.

Mechanism claims ultimately require evidence that a relevant process can be changed and that changing it contributes to outcome under

increased activity. Measuring only the intended process would leave those alternatives unresolved. Gallagher et al. (2013), for example, provide a reason to consider coping self-efficacy alongside anxiety sensitivity. A credible account of bodily threat updating should specify how it differs from a growing belief that distress can be managed, even when the anticipated sensation itself remains unpleasant.

The clinical vocabulary should reflect this distinction. A clinician can document that a patient predicts a consequence, avoids a situation, or revises a judgement after an observation. Those are accessible findings. Terms such as impaired interoceptive prediction-error processing imply an additional explanatory level that has not been measured in that encounter. Keeping observation and explanation separate improves clinical communication and makes disagreement productive: another clinician can inspect the same observations while favouring a different mechanism. It also prevents neuroscience terminology from giving an unvalidated formulation more authority than the underlying evidence supports.

Measurement must preserve meaning without creating excessive monitoring

The assessment should begin with a short account of the feared consequence in the patient's own words. A probability rating can then refer to that consequence over a specified period and under a specified condition. Confidence in the probability estimate should be recorded separately from the probability itself. A person who gives a low estimate with low confidence is answering a different question from a person who gives a high estimate with high confidence. Similarly, expecting distress and expecting a medical catastrophe are different outcomes. Combining them in one item would make change difficult to interpret, particularly if treatment changes the meaning of the words used.

The observation chosen to examine a belief must also be capable of informing it. If a patient

successful test merely because distress decreased. A more interpretable prediction concerns an observable consequence within a defined interval, such as whether a planned activity can be completed despite discomfort. This does not translate the exercise into a medical guarantee. It makes explicit which expectation the observation can address and which questions remain outside its scope.

Outcome review should preserve that distinction. Completing an activity can provide evidence about immediate coping and participation while leaving some uncertainty about future sensations. The patient may revise the expected severity of an episode without revising its expected frequency. Recording both as a single global belief change would conceal the nature of the learning. Equally, a difficult exercise may provide useful information about the conditions needed for participation without constituting therapeutic failure. The research record should retain the original prediction, the observation, and the patient's interpretation instead of allowing the assessor to infer success from compliance alone.

This approach also clarifies what calibration could mean. Calibration of a short-term prediction against an observed event is different from calibration of a prognostic model against later relapse. The first concerns the particular judgement elicited in an assessment; the second concerns prediction across patients over follow-up. They require different data and different evaluation criteria. A study should not describe improved agreement in one as evidence of accuracy in the other. Maintaining this separation would make both favourable and unfavourable results easier to interpret.

Table 2 proposes a measurement set organised by the inference each measure is intended to support. The set is a research proposal rather than a battery validated as a whole. A brief symptom measure can support repeated monitoring, while a disorder-specific assessment and interview define clinical status. Anxiety sensitivity and uncertainty

a stated hypothesis. Adding a heartbeat task merely because the article concerns interoception would increase burden without necessarily improving the clinical question.

Table 2 Proposed measures and their distinct interpretive roles

Domain

Candidate assessment

Interpretive boundary

Clinical status

Disorder-specific symptoms, interview, and functional assessment

Improvement and remission require explicit definitions.

Bodily threat

Prospective estimate for a named consequence in matched contexts

A proposed measure; no validated risk threshold.

Anxiety sensitivity

ASI-3Taylor et al. (2007)

Essential comparator, not synonymous with task-specific expectancy.

Uncertainty intolerance

IUS-12Carleton et al. (2007)

Disposition toward uncertainty, not the probability of a specific event.

Bodily experience

Selected MAIA-2 subscalesMehling et al. (2018)

Self-report dimensions, not objective perceptual accuracy.

Coping and action

behaviour.

Daily context

Brief momentary assessment Shiffman et al. (2008)

Evaluate burden, reactivity, missingness, and temporal resolution.

The set is proposed for research and has not been validated as a combined battery. Instrument selection, language, permissions, and scoring require study-specific preparation. Items from the instruments are not reproduced here.

Repeated naturalistic assessment can help establish whether expectations precede changes in activity. Ecological momentary assessment samples experience in everyday settings and reduces dependence on retrospective global reports (Shiffman et al., 2008). In this application, however, frequent requests to inspect bodily sensations could become part of the process being studied. The sampling schedule should emphasise relevant situations and participation, use brief prompts, and assess whether monitoring increases distress or checking. A small feasibility phase should compare acceptable schedules before the definitive study. Missing responses should be examined as possible indicators of burden or situational difficulty, rather than treated automatically as random omissions.

Reliability must be evaluated at the level of the intended inference. Stable ranking between participants, sensitivity to change within a participant, and agreement across matched contexts are separate properties. A task can produce a repeatable average effect while giving unstable individual scores (Hedge et al., 2018). The proposed research should estimate uncertainty around each context effect and examine whether the effect survives variation in task order and occasion. A patient should not acquire a risk label because one unfamiliar exercise produced an unusual response. Where the information is unstable, the appropriate

and an honest comparison

An initial prospective study should recruit adults undergoing a defined course of psychological treatment, document the treatment received, and assess the proposed variables before the follow-up outcome begins. Baseline and end-of-treatment assessments would establish symptom change and the level of residual difficulty. The primary application could be panic disorder because bodily threat is central to many presentations and relevant comparators are available. Generalised and social anxiety cohorts could provide planned replication when the patient's formulation includes feared bodily consequences. Pooling diagnoses at the outset would risk concealing different meanings of the same rating.

Relapse analysis should be restricted to participants who first meet a stated remission criterion. The primary event would be the return of the index disorder established by an assessor unaware of the experimental ratings, using a structured interview after documented remission. Participants with clinically important improvement who have not remitted should remain in a separate analysis of persistence or exacerbation. This separation avoids labelling continuing illness as relapse. Follow-up assessments at one, three, six, and twelve months are a proposed schedule, not an empirically established optimum. Where an event is known only to have occurred between assessments, its timing should be analysed as an interval rather than assigned an invented exact date.

The primary prognostic comparison should be specified before inspecting outcomes. A base model would include end-of-treatment symptom severity, relevant avoidance and functioning, prior course, anxiety sensitivity, uncertainty intolerance, and treatment characteristics. A second model would add repeated, context-specific bodily threat estimates. Additional covariates should follow a causal rationale and the available information, rather than an automatic search through every recorded variable. Sample size should be determined before recruitment

sample-size calculation.

Analysis should preserve repeated ratings within patients and patients within therapists or services where the design requires it. A hierarchical model could estimate contextual differences while retaining their uncertainty. Performance should be assessed through calibration, discrimination, and the consequences of clinically plausible decisions. Internal validation should repeat the complete modelling process, including any selection and handling of missing data. A later study in a different service should examine transportability without quietly refitting the model and describing the result as independent validation. Any one-month measure used to update prognosis must predict events occurring after that assessment; it cannot be used retrospectively to improve an end-of-treatment prediction.

Attrition requires particular attention because people who deteriorate and people who recover fully may both stop responding. Follow-up procedures should distinguish reasons for missingness where feasible and examine sensitivity to plausible departures from the missing-data assumptions. Participants should not be omitted solely because their result complicates the proposed pattern. A useful analysis would also test simpler alternatives: average threat expectancy without a context contrast, established scales alone, and ordinary clinical judgement recorded before the experimental information is available. The additional assessment deserves adoption only if it improves on these realistic comparisons by a clinically meaningful amount.

Clinical utility needs experimental evaluation

Even successful prediction would leave a treatment decision unresolved. A patient identified as having elevated conditional threat expectancy could receive a booster session, an opportunity to practise in another setting, a review of uncertainty-related beliefs, or no change to the existing plan. The choice depends on the

the recommendation improves meaningful outcomes enough to justify the time, cost, and possible burden. This requirement is especially important when most improved patients will not experience the event being predicted.

A subsequent trial could compare an assessment-informed maintenance strategy with a credible strategy of equal contact time based on established symptom and functional information. Both groups should undergo the same research assessments so that the experience of being measured is not confounded with the use of the information. The intervention manual would specify how the extra information changes decisions and where clinician judgement remains necessary. Outcomes should include diagnostic status, participation in personally important activities, patient-rated burden, and additional treatment received. Investigators should also record whether assessment prompts checking or reassurance seeking.

An interaction between the proposed profile and treatment response would be more informative for treatment selection than a general benefit from extra sessions. Even that interaction would require replication and adequate power. If an assessment-informed strategy helps everyone equally, the benefit might come from better maintenance care rather than the new marker. If a context-focused module changes expectancy without improving functioning, the proposed target may have been modified without clinical advantage. If functioning improves while expectancy persists, the theory must accommodate recovery through other routes. These possibilities should be specified in advance, with outcomes that allow them to be distinguished.

Existing evidence for maintenance treatment makes this a realistic question, while leaving the selection rule open (White et al., 2013). Likewise, evidence for uncertainty-focused treatment supports the availability of a plausible intervention component, without proving that it is

protects patients and researchers from an expanding assessment programme whose rationale survives only because its defining claim is never tested directly.

Table 3 Proposed tests and observations that would weaken the framework

Stage

Prediction to test

Result that weakens the claim

Measurement

Contextual expectancy differences can be estimated reproducibly.

Effects are unstable or explained by unmatched task difficulty.

Specificity

Context contributes beyond average expectancy and established scales.

Existing measures explain the same information adequately.

Prognosis

End-of-treatment observations improve later outcome prediction.

No useful gain in a prospectively assessed external sample.

Temporal process

Changes in expectancy precede relevant changes in participation.

The temporal relation is reversed or explained by other changes.

Clinical utility

Using the information improves outcomes over equal-contact care.

criteria. No test in this table has been conducted for the framework in this article.

Clinical boundaries and fairness constrain interpretation

Bodily threat expectancy can be proportionate to a person's circumstances. New symptoms, a change in physical health, medication effects, or an environment with limited access to help can alter what is reasonable to expect. Psychological improvement does not remove the need for an appropriate medical assessment when the presentation changes. The proposed framework should therefore be applied to a clinically formulated fear with adequate attention to physical context. It must not be used to reinterpret every bodily concern as anxiety or to discourage indicated medical care. Research should record relevant health changes rather than treating them simply as inconvenient exclusions.

Social circumstances also affect the meaning of uncertainty. A participant with insecure employment, inaccessible transport, or limited healthcare access may face consequences that a standard laboratory exercise does not represent. Language and cultural conventions can influence probability ratings and descriptions of bodily experience. Measurement development should include cognitive interviews, accessible administration, and examination of whether scores have comparable meanings across relevant groups. High verbal fluency or familiarity with psychological terminology should not become an unrecognised requirement for being classified as recovered. The assessment should make space for uncertainty expressed without numerical language.

Finally, the framework should preserve the patient's authority over the goals of treatment. The clinician's interest in a possible vulnerability does not itself justify extending care, requiring repeated exposure, or making reassurance conditional on compliance. Shared decisions should explain what is known, what remains uncertain, and what action the additional

or consumes resources without improving outcome, those consequences would count against its use even if its theoretical account remained appealing.

Argument

This section should be reviewed during editorial preparation. If the original manuscript does not provide this section separately, the editorial office should decide whether the existing article content already covers it or whether author-approved expansion is required.

Conclusion

Persistent bodily threat expectancy after symptom improvement is a plausible clinical question with an incomplete evidential answer. Existing research supports separating symptom burden, interpretations of bodily sensations, and the circumstances under which new learning is expressed. It also provides established constructs against which any additional assessment must be judged. These foundations justify a focused programme of investigation. They do not establish a new syndrome, a validated predictor of relapse, or a universal reason for extending psychotherapy.

The article's central proposal is to examine what patients expect will happen when relevant bodily sensations arise outside familiar treatment

comparison across contexts becomes informative only when the tasks are interpretable, the measurements are sufficiently reliable, and medical or situational differences have been considered. Clinical improvement can remain meaningful even when some uncertainty persists.

Three tests determine the framework's future. The proposed observations must first be measurable without imposing excessive burden or creating additional monitoring. They must then predict subsequent difficulties beyond residual symptoms, anxiety sensitivity, uncertainty intolerance, avoidance, and other credible comparators. Finally, using that information must improve decisions and outcomes relative to an acceptable alternative. A failure at any stage should narrow or abandon the relevant claim rather than produce a broader label that cannot be disproved.

For clinical psychology, the immediate contribution is a more precise question at the boundary between acute improvement and sustained recovery. It asks whether a patient has had the opportunity to apply learning in the situations that matter, what is still expected under those conditions, and whether that expectation has practical consequences. The answer may support focused maintenance work, an alternative formulation, or an ordinary discharge plan. The purpose of the framework is to make those possibilities distinguishable through evidence while recognising that successful recovery permits discomfort, uncertainty, and a life that no treatment can render entirely predictable.

interpretation, and final approval of the submitted work unless otherwise stated.

Conflict of Interest

The author declares no conflict of interest unless otherwise stated in the manuscript or correspondence.

Ethics Statement

The author is responsible for ethical compliance, consent, institutional permission, and research integrity where applicable.

Data Availability

Data availability information was not separately provided unless stated by the author.

Correspondence & ORCID

Correspondence details and ORCID information are displayed where supplied by the author.

References

- Baethge, C., Goldbeck-Wood, S., & Mertens, S. (2019). SANRA—a scale for the quality assessment of narrative review articles. *Research Integrity and Peer Review*, 4, 5. <https://doi.org/10.1186/s41073-019-0064-8>
- Barlow, D. H., Farchione, T. J., Bullis, J. R., Gallagher, M. W., Murray-Latin, H., Sauer-Zavala, S., Bentley, K. H., Thompson-Hollands, J., Conklin, L. R., Boswell, J. F., Ametaj, A., Carl, J. R., Boettcher, H. T., & Cassiello-Robbins, C. (2017). The Unified Protocol for transdiagnostic treatment of emotional disorders compared with diagnosis-specific protocols for anxiety disorders: A randomized clinical trial. *JAMA Psychiatry*, 74(9), 875–884. <https://doi.org/10.1001/jamapsychiatry.2017.2164>
- Boswell, J. F., Thompson-Hollands, J., Farchione, T. J., & Barlow, D. H. (2013). Intolerance of uncertainty: A common factor in the treatment of emotional disorders. *Journal of Clinical Psychology*, 69(6), 630–645. <https://doi.org/10.1002/jclp.21965>
- Bouton, M. E. (2002). Context, ambiguity, and unlearning: Sources of relapse after behavioral extinction. *Biological Psychiatry*, 52(10), 976–986. [https://doi.org/10.1016/s0006-3223\(02\)01546-9](https://doi.org/10.1016/s0006-3223(02)01546-9)
- Carleton, R. N., Norton, P. J., & Asmundson, G. J. G. (2007). Fearing the unknown: A short version of the Intolerance of Uncertainty Scale. *Journal of Anxiety Disorders*, 21(1), 105–117. <https://doi.org/10.1016/j.janxdis.2006.03.014>
- Carpenter, J. K., Andrews, L. A., Witcraft, S. M., Powers, M. B., Smits, J. A. J., & Hofmann, S. G. (2018). Cognitive behavioral therapy for anxiety and related disorders: A meta-analysis of randomized placebo-controlled trials. *Depression and Anxiety*, 35(6), 502–514. <https://doi.org/10.1002/da.22728>
- Clark, D. M. (1986). A cognitive approach to panic. *Behaviour Research and Therapy*, 24(4), 461–470. [https://doi.org/10.1016/0005-7967\(86\)90011-2](https://doi.org/10.1016/0005-7967(86)90011-2)
- Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy*, 58, 10–23. <https://doi.org/10.1016/j.brat.2014.04.006>
- Desmedt, O., Luminet, O., & Corneille, O. (2018). The heartbeat counting task largely involves non-interoceptive processes: Evidence from both the original and an adapted counting task. *Biological Psychology*, 138, 185–188. <https://doi.org/10.1016/j.biopsycho.2018.09.004>

- Ganagner, M. W., Payne, L. A., White, K. S., Shear, K. M., Woods, S. W., Gorman, J. M., & Barlow, D. H. (2013). Mechanisms of change in cognitive behavioral therapy for panic disorder: The unique effects of self-efficacy and anxiety sensitivity. *Behaviour Research and Therapy*, 51(11), 767–777.
<https://doi.org/10.1016/j.brat.2013.09.001>
- Garfinkel, S. N., Seth, A. K., Barrett, A. B., Suzuki, K., & Critchley, H. D. (2015). Knowing your own heart: Distinguishing interoceptive accuracy from interoceptive awareness. *Biological Psychology*, 104, 65–74.
<https://doi.org/10.1016/j.biopsycho.2014.11.004>
- Goetz, A. R., Davine, T. P., Siwec, S. G., & Lee, H.-J. (2016). The functional value of preventive and restorative safety behaviors: A systematic review of the literature. *Clinical Psychology Review*, 44, 112–124.
<https://doi.org/10.1016/j.cpr.2015.12.005>
- Grupe, D. W., & Nitschke, J. B. (2013). Uncertainty and anticipation in anxiety: An integrated neurobiological and psychological perspective. *Nature Reviews Neuroscience*, 14(7), 488–501.
<https://doi.org/10.1038/nrn3524>
- Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods*, 20(1), 102–116. <https://doi.org/10.1037/a0038889>
- Hedge, C., Powell, G., & Sumner, P. (2018). The reliability paradox: Why robust cognitive tasks do not produce reliable individual differences. *Behavior Research Methods*, 50(3), 1166–1186. <https://doi.org/10.3758/s13428-017-0935-1>
- Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology*, 3, 1–27. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091432>
- Khalsa, S. S., Adolphs, R., Cameron, O. G., Critchley, H. D., Davenport, P. W., Feinstein, J. S., Feusner, J. D., Garfinkel, S. N., Lane, R. D., Mehling, W. E., Meuret, A. E., Nemeroff, C. B., Oppenheimer, S., Petzschner, F. H., Pollatos, O., Rhudy, J. L., Schramm, L. P., Simmons, W. K., Stein, M. B., ... Interoception Summit 2016 participants. (2018). Interoception and mental health: A roadmap. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 3(6), 501–513. <https://doi.org/10.1016/j.bpsc.2017.12.004>
- Levy, H. C., O'Bryan, E. M., & Tolin, D. F. (2021). A meta-analysis of relapse rates in cognitive-behavioral therapy for anxiety disorders. *Journal of Anxiety Disorders*, 81, 102407.
<https://doi.org/10.1016/j.janxdis.2021.102407>
- Lonsdorf, T. B., Menz, M. M., Andreatta, M., Fullana, M. A., Golkar, A., Haaker, J., Heitland, I., Hermann, A., Kuhn, M., Kruse, O., Meir Drexler, S., Meulders, A., Nees, F., Pittig, A., Richter, J., Römer, S., Shibani, Y., Schmitz, A., Straube, B., ... Merz, C. J. (2017). Don't fear 'fear conditioning': Methodological considerations for the design and analysis of studies on human fear acquisition, extinction, and return of fear. *Neuroscience & Biobehavioral Reviews*, 77, 247–285. <https://doi.org/10.1016/j.neubiorev.2017.02.026>
- Mehling, W. E., Acree, M., Stewart, A., Silas, J., & Jones, A. (2018). The Multidimensional Assessment of Interoceptive Awareness, Version 2 (MAIA-2). *PLOS ONE*, 13(12), e0208034.
<https://doi.org/10.1371/journal.pone.0208034>
- Morriss, J., Christakou, A., & van Reekum, C. M. (2016). Nothing is safe: Intolerance of uncertainty is associated with compromised fear extinction learning. *Biological Psychology*, 121(Pt B), 187–193.
<https://doi.org/10.1016/j.biopsycho.2016.05.001>
- Morriss, J., Wake, S., Elizabeth, C., & van Reekum, C. M. (2021). I doubt it is safe: A meta-analysis of self-reported intolerance of uncertainty and threat extinction training. *Biological Psychiatry Global Open Science*, 1(3), 171–179. <https://doi.org/10.1016/j.bpsgos.2021.05.011>

214(5-6), 451–463. <https://doi.org/10.1007/s00429-010-0258-9>

- Pittig, A., Wong, A. H. K., Glück, V. M., & Bosch, J. M. (2020). Avoidance and its bi-directional relationship with conditioned fear: Mechanisms, moderators, and clinical implications. *Behaviour Research and Therapy*, 126, 103550. <https://doi.org/10.1016/j.brat.2020.103550>
- Salkovskis, P. M., Clark, D. M., Hackmann, A., Wells, A., & Gelder, M. G. (1999). An experimental investigation of the role of safety-seeking behaviours in the maintenance of panic disorder with agoraphobia. *Behaviour Research and Therapy*, 37(6), 559–574. [https://doi.org/10.1016/s0005-7967\(98\)00153-3](https://doi.org/10.1016/s0005-7967(98)00153-3)
- Sasin, D., Rybczynski, B., Maj, B. W., Chwaszcz, J., Pruc, M., Niewiadomska, I., & Szarpak, L. (2026). Mechanistic non-response after psychotherapy for anxiety disorders: A maintenance-mechanism-based clinical taxonomy. *Journal of Clinical Medicine*, 15(11), 4223. <https://doi.org/10.3390/jcm15114223>
- Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology*, 4, 1–32. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091415>
- Snell, L., Reynolds, S., Garner, M., Pfeifer, G., & Morriss, J. (2026). Exploring the role of interoception in anxious traits and symptoms. *Frontiers in Psychiatry*, 17, 1769315. <https://doi.org/10.3389/fpsyt.2026.1769315>
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Taylor, S., Zvolensky, M. J., Cox, B. J., Deacon, B., Heimberg, R. G., Ledley, D. R., Abramowitz, J. S., Holaway, R. M., Sandin, B., Stewart, S. H., Coles, M., Eng, W., Daly, E. S., Arrindell, W. A., Bouvard, M., & Cardenas, S. J. (2007). Robust dimensions of anxiety sensitivity: Development and initial validation of the Anxiety Sensitivity Index-3. *Psychological Assessment*, 19(2), 176–188. <https://doi.org/10.1037/1040-3590.19.2.176>
- van Dis, E. A. M., van Veen, S. C., Hagenaars, M. A., Batelaan, N. M., Bockting, C. L. H., van den Heuvel, R. M., Cuijpers, P., & Engelhard, I. M. (2020). Long-term outcomes of cognitive behavioral therapy for anxiety-related disorders: A systematic review and meta-analysis. *JAMA Psychiatry*, 77(3), 265–273. <https://doi.org/10.1001/jamapsychiatry.2019.3986>
- Vervliet, B., Craske, M. G., & Hermans, D. (2013). Fear extinction and relapse: State of the art. *Annual Review of Clinical Psychology*, 9, 215–248. <https://doi.org/10.1146/annurev-clinpsy-050212-185542>
- White, K. S., Payne, L. A., Gorman, J. M., Shear, M. K., Woods, S. W., Saksa, J. R., & Barlow, D. H. (2013). Does maintenance CBT contribute to long-term treatment response of panic disorder with or without agoraphobia? A randomized controlled clinical trial. *Journal of Consulting and Clinical Psychology*, 81(1), 47–57. <https://doi.org/10.1037/a0030666>



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