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Development and application of the propensity/ability framework in alexithymia: "Do you" versus "Can you" engage with your emotions?

Nathan Torunsky [*,1], Iris Vilares [2], Wilma Koutstaal [3]

Department of Psychology, University of Minnesota – Twin Cities, United States

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ABSTRACT

Alexithymia is a multi-dimensional trait characterized by difficulties in emotional processing, but its driving mechanisms remain somewhat contentious. The highly transdiagnostic nature of alexithymia, and its associations with reduced treatment efficacy, suggest that these mechanisms may be particularly important targets for intervention. Here we outline how carefully distinguishing the frequency and depth with which an individual *tends* to engage a given mechanism (i.e., *propensity*) from the functional *capacity* which an individual possesses (i.e., *ability*) might enable more appropriate and precise inferences regarding the contributions of various cognitive mechanisms to alexithymic emotional processing. We propose a *propensity/ability framework* to more formally define these terms and identify criteria for research methods that might better differentiate mechanistic inferences. We then apply this framework to cognitive-behavioral research on alexithymia in three domains: interoception, attention and avoidance, and expression. Despite a particularly strong theoretical emphasis on emotion-related ability deficits, existing alexithymia research seems to focus primarily on propensities and beliefs about abilities, rather than abilities themselves. Moreover, although extant work has documented associations between alexithymia and both abilities and propensities in each of these domains, relatively little work has examined influences on abilities and propensities across multiple domains. Future work might therefore benefit from the development of a multi-method and multi-measure battery of alexithymia assessing both propensities and abilities in multiple forms of emotional cognition. Such enhanced precision in the measurement of the mechanisms driving emotional expertise may in turn afford greater precision in diagnosis and treatment of clinical conditions.

1. Introduction

Alexithymia is a complex, multidimensional construct broadly characterized by atypical, usually diminished, emotional processing. The term itself was initially coined by psychiatrist Peter Sifneos to describe the restricted emotional and fantasy life of a subset of patients being treated for psychosomatic conditions (i.e., conditions wherein unexplained bodily symptoms were thought to be the result of intrapsychic conflict; Nemiah and Sifneos, 1970; Sifneos, 1973). Etymologically, "alexithymia" directly translates to "without words for feelings" (a - without, lexi - words, thymos - feelings, spirit), though Sifneos noted that in addition to having difficulties verbalizing their feelings, these patients also demonstrated a lack of imagination or interest in daydreams or fantasies, a tendency to avoid conflicts by using actions or focusing on endless details rather than by considering their feelings, and an overall "dull" or "emotionally-restricted" demeanor. Current work situates alexithymia as an important transdiagnostic concomitant for a variety of mental and physical health conditions beyond psychosomatic conditions alone (Lumley, Stettner, et al., 1996; Weissman et al., 2020), and has found that individuals higher in alexithymia may benefit less from psychologically-oriented therapy (Chugg et al., 2009; Ogrodniczuk et al., 2011). The functional mechanisms linking alexithymia to these negative health outcomes remain unclear, though multiple viable options have been forwarded including reduced awareness of bodily sensations (Brewer et al., 2016; Scarpazza et al., 2022), attentional avoidance of emotional content (Bilotta et al., 2016; Panayiotou et al.,

* Correspondence to: University of Minnesota – Twin Cities, Department of Psychology, Elliott Hall, 75 East River Parkway, Minneapolis, MN 55455, United States.
E-mail address: torun005@umn.edu (N. Torunsky).
[1] https://orcid.org/0000-0002-9925-4216
[2] https://orcid.org/0000-0003-1500-3864
[3] https://orcid.org/0000-0003-2464-6511

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2015), and generally interrupted emotion regulation (Preece et al., 2017) and expression (K. S. Lee et al., 2022; Wagner and Lee, 2008). Given the broad array of clinical symptoms associated with alexithymia, a better understanding of the trait and its constituent functional mechanisms has the potential to inform the development of improved treatments for a wide variety of conditions.

Since its inception in the 1970s, the alexithymia construct has undergone several transformations and has attracted attention from clinical, psychometric, cognitive-behavioral, and other subdisciplines of psychology. Although it remains broadly characterized by atypical emotional processing, consensus regarding the nature and etiology of these atypicalities remains elusive. This increasingly nuanced body of work has proven challenging to integrate under any single, existing theoretical framework of the construct. In particular, whereas alexithymia has traditionally been viewed as a constant, global deficit in emotional processing (Bagby et al., 2009; Martin and Pihl, 1985; McDougall, 1982; Sifneos, 1973; Taylor, 2000), recent work has challenged this notion. This subsequent body of work has shown that the relationship between alexithymia and emotional processing can be sensitive to a variety of contextual and experimental factors including the amount of available processing time (e.g., clearer performance deficits in speeded compared to unspeeded trials; Donges et al., 2014), the valence of the emotional stimuli (e.g., valence-dependent differences in neural activity; van der Velde et al., 2013), the stage of processing being indexed and/or manipulated (e.g., early avoidance but later increased maintenance of attention on negative stimuli, hypo-arousal during shallow processing versus hyperarousal during deep processing, aberrations in event-related potentials associated with both early and late processing; Constantinou et al., 2014; Jardin et al., 2019; Leonidou et al., 2022). Some work even suggests that alexithymia can be associated with *heightened* emotional responses, including enhanced attention to unpleasant or illness-related stimuli (Leonidou et al., 2022; Luminet et al., 2021), heightened physiological responses to threatening or painful stimuli (Hickman et al., 2022; Kano and Fukudo, 2013), and higher ratings of negative valence in the context of active touch (Suslow and Kersting, 2021). Furthermore, some studies of the latent factor structure of alexithymia suggest that it may be more appropriate to interpret alexithymia at the level of facets (e.g., with respect to capabilities initially identifying versus differentiating emotions), rather than as a single general factor (Preece et al., 2018; Schroeders et al., 2022). The improved interpretability of this facet-level approach suggests there may be some heterogeneity in the pathways leading to "alexithymic" presentation. Consistent with this notion, there is evidence of an overdetermination of emotional awareness ability in a variety of contexts and approaches, ranging from a network analysis of terms used in the broader literature on emotional skills (Hoemann and Barrett, 2019) to a simulation study of an active inference model for emotional state inference (Smith et al., 2019). Thus, while alexithymia broadly encompasses atypical emotional processing, the nature of these atypicalities may be somewhat inconsistent with the notion of a context-invariant deficit in emotional responding. Moreover, the paths and processes through which alexithymic atypicalities emerge across different individuals remain largely unmapped.

Recent work in the field has advocated a processual modeling approach to integrate these apparently inconsistent findings, emphasizing the use of experimental evidence as a means of connecting adaptive and maladaptive characteristics of alexithymia to specific mechanisms and stages of affective processing (Luminet and Nielson, 2025). Historically, alexithymia has been identified and defined through clinical observations (Nemiah, 1977; Sifneos, 1973) and through self- or observer-reported responses to questionnaire items (Bagby, 2004; Luminet et al., 2018; Preece et al., 2018; Taylor et al., 1988; Vorst and Bermond, 2001). These approaches have advanced a strong descriptive profile of alexithymia but tend to be abstract and retrospective – they focus on individuals' recollections of the subject's general tendencies over time rather than on particular actions or capabilities demonstrated in the present or likely to be shown in the future. In contrast, a processual approach lends itself to a more immediate, behavioral context wherein specific behavioral predictions can be made based on hypotheses about the expected contributions of various psychological mechanisms (e.g., memory, language) at different stages of a process (Jarecki et al., 2020). Such an emphasis on the role of mechanisms engaged over time allows the processual approach to examine emotions dynamically (Kuppens and Verduyn, 2017; Larsen et al., 2009) and integrates well with the emphasis on belief updating made by Bayesian and predictive coding accounts of emotion (Barrett, 2017; Saxe and Houlihan, 2017). A processual approach may thus be particularly well-suited for examining how cognitive processes implicated in alexithymia unfold over time, embedding our understanding of alexithymia within modern theories of emotional processing.

In the present perspective overview, we develop a framework designed to augment the processual modeling approach and apply this framework to extant research in alexithymia as a case study of its utility. We have three main aims: (1) to define a framework that systematically distinguishes an individual's *tendency* to engage a given psychological process from their *ability* to engage that process, (2) to examine how extant research on alexithymia might be interpreted under this framework, and (3) to discuss how distinguishing between propensities and abilities might advance the development of cognitive process models of alexithymia and other psychological phenomena. Although the current systematic application of the propensity vs. ability distinction to alexithymia is novel, the more general differentiation between a tendency (predisposition) vs. ability (capacity) to engage in a given behavior or action has been successfully applied in multiple areas of psychological literature (Bilotta et al., 2016; Cage et al., 2013; Daronco et al., 2023; Keysers and Gazzola, 2014; F. Li and Zhang, 1998; Silvers and Guassi Moreira, 2019). We suggest a more formal characterization of these forms of psychological response, which we term *propensity* and *ability*, respectively, and discuss how research methods might be more explicitly and purposefully designed to preferentially index each of these components. Next, we apply the *propensity/ability framework* to the literature on alexithymia, narrowing our scope to three components of the emotional response process: the sensation and integration of bodily signals (Section 1.1.2 Interoception), attention to and engagement with emotions and emotional stimuli (Section 1.1.3 Attention/Avoidance), and the expression of emotions and emotional experiences (Section 2.4 Expression). We suggest that despite the historical dominance of a deficit model of alexithymia, extant work appears to be particularly focused on emotion-related propensities, rather than abilities, in cognition and behavior. To address this discrepancy, we offer suggestions of how future research in alexithymia might resolve some apparent inconsistencies in past work by implementing study designs that more explicitly distinguish ability from propensity. Beyond its theoretical impacts, we argue that this distinction affords more precise information for the design of targeted clinical interventions, wherein the difference between developing new capacities or skills in the processing and identification of emotions versus implementing existing ones may be particularly important.

1.1. Overview of approaches to alexithymia research

1.1.1. Clinical associations

Research attention on alexithymia has expanded well beyond its psychosomatic origins and alexithymia is now considered a transdiagnostic indicator or risk factor for a wide variety of disadvantageous health and wellbeing outcomes. It is especially related to the domain of mental health, where high alexithymia is common in both internalizing (S. Li et al., 2015; Liu et al., 2025; Oussi et al., 2023) and externalizing disorders (e.g., substance use; Coriale et al., 2012; Ghalehban and Besharat, 2011; Honkalampi et al., 2022) as well as eating disorders (McAtamney et al., 2023; Nowakowski et al., 2013; Westwood et al., 2017), schizophrenia (Ozdemir et al., 2025; Xiao et al., 2024), and

neurodevelopmental conditions like ADHD (Donfrancesco et al., 2013; Edel et al., 2010; Güleş et al., 2018; Lyvers et al., 2024) and autism (Bird and Cook, 2013; Kinnaird et al., 2019). Higher alexithymia has also been associated with increased reporting of physical health symptoms (Davies and Griffin, 2025; Lumley, Stettner, et al., 1996) and appears to be elevated in individuals diagnosed with physical health conditions including gastro-intestinal disorders (Carrozzino and Porcelli, 2018; Martino et al., 2020), chronic pain (Aaron et al., 2019; Di Tella and Castelli, 2016; Kreitler and Niv, 2001), asthma (Silvestro et al., 2023), HIV (Benfante and Romeo, 2023), and multiple dermatological conditions (Holmes et al., 2022).

In addition to higher rates of health issues, alexithymia is associated with poorer treatment outcomes (Ogrodniczuk et al., 2011; Pinna et al., 2020; Putica, 2024). Notably, this effect may be related not only to the inability or unwillingness to communicate about emotions characteristic of alexithymia (Leweke et al., 2009; Ogrodniczuk et al., 2004), but also to clinicans' tendencies to react negatively to alexithymic clients, which can erode the therapeutic alliance and its beneficial effects (Ogrodniczuk et al., 2008, 2011). Moreover, high or "clinically relevant" levels of alexithymia are relatively common in the general population with a prevalence rate of around 10 %, though this statistic is based on samples from northern Europe and the rates vary somewhat across certain sociodemographic features including gender (Franz et al., 2008; Honkalampi et al., 2022; Mendia et al., 2024; Salminen et al., 1999) and socioeconomic status (Franz et al., 2008; Honkalampi et al., 2022; Poprelka et al., 2025; Salminen et al., 1999). One study of Finnish men from the general population showed that alexithymia had high absolute and relative stability and that higher scores at baseline were associated with elevated levels of depression symptoms at both 4- and 11-year follow-ups (Tolmunen et al., 2011). In clinical populations, alexithymia scores show high relative stability, but tend to decrease alongside psychiatric symptoms after treatment, especially when treatments specifically targeted alexithymic symptoms (Cameron et al., 2014; Tsubaki and Shimizu, 2024).

Notably, the development of methods to directly target alexithymia in treatment is an open goal that depends on understanding the functional mechanisms linking alexithymia to the various psychiatric disorders with which it is associated. Relatedly, it is not clear to what extent these linkages are comparable across diagnoses and consequently whether the same alexithymia-targeting treatments can be applied across diagnoses with equal efficacy. Regardless, the combination of relatively high prevalence, wide transdiagnostic associations, and reduced treatment efficacy positions alexithymia as a critical variable in health-related research, whereby developing effective methods of targeting alexithymia during treatment may alleviate suffering across an especially wide swath of clinical conditions.

1.1.2. Psychometric modeling

Although it is considered clinically relevant, alexithymia is typically conceptualized as a dimensional trait rather than a discrete psychological disorder or state-level process. Indeed, although use of cutoff scores to assign participants to "alexithymic" and "non-alexithymic" groups is quite common (Bagby et al., 2020), taxometric investigations have consistently supported a dimensional, rather than discrete, interpretation of the construct (Keefer et al., 2019; Parker et al., 2008). Accordingly, research on alexithymia has traditionally borrowed from psychometric approaches to personality psychology, with an especially strong emphasis on latent factor analyses (Bagby et al., 1994; Preece et al., 2017; Vorst and Bermond, 2001). Despite decades of research on this topic, there remains significant contention about which model best represents the alexithymia construct.

There are three predominant factor models of alexithymia: the Toronto model (Parker et al., 2008; Taylor et al., 1991), the Amsterdam model (Vorst and Bermond, 2001), and the Perth model (also called the *attention-appraisal model*; Preece et al., 2017). The Perth and Toronto models share a three-factor structure wherein Difficulty Identifying Feelings (DIF), Difficult Describing feelings (DDF), and Externally-Oriented Thinking (EOT) all contribute to a general alexithymia factor. The Perth model further distinguishes between negative and positive emotions based on emerging evidence of valence-based differences in emotional processing in alexithymia (Preece et al., 2018). Consequently, the Perth model includes subfactors of the DIF and DDF factors for negative (N) and positive (P) emotion (P-DIF, N-DIF, P-DDF, N-DDF). The Toronto model includes a "hidden" fourth factor, imaginal processes (IMP), dealing with restricted imaginal processes, as emphasized in early definitions of alexithymia (Taylor et al., 1991), that is not assessed by the most common measures associated with the Toronto model. Both the Perth and Toronto models have been widely accepted and used in the field, with the Toronto model being the most prevalent, historically.

Notably, neither the Perth nor the Toronto model include all five facets of alexithymia originally described by Nemiah and Sifneos (1970) – particularly restricted emotional expression and limited imaginal capacity. The Amsterdam model (Vorst and Bermond, 2001) attempts to rectify this theoretical discrepancy, offering a five-factor solution of alexithymia that includes Identifying, Describing, Analyzing, Emotionalizing, and Fantasizing factors. The Identifying, Describing, and Analyzing factors are considered comparable to DIF, DDF, and EOT respectively (Preece et al., 2017) and together load onto what Bermond and Vorst characterize as a higher-order "cognitive" alexithymia dimension pertaining to the conscious *interpretation* of feelings (Bermond et al., 2007; Vorst and Bermond, 2001). In contrast, the Emotionalizing and Fantasizing factors correspond to low emotional reactivity and restricted imaginative activity (e.g., IMP), respectively. These two factors load onto a higher-order factor unique to the Amsterdam Model, referred to as "affective" alexithymia, pertaining to the conscious awareness of the *arousal* of emotions. While the Amsterdam model tends to underperform psychometrically relative to the three-factor models (J. Müller et al., 2004; Preece et al., 2017), the distinction between cognitive and affective processes implicated in alexithymia has some attractive theoretical connections to neurobiological findings (Bermond et al., 2006; Goerlich-Dobre et al., 2015). Thus, while all three models of alexithymia centrally include difficulties interpreting emotions and share comparable DIF, DDF and EOT facets, there are notable discrepancies between models especially regarding their first and second-order factor structures (see Table 1).

The existing literature relies almost exclusively on self-report measures as the standard assessments for alexithymia (Luminet et al., 2021; Luminet and Nielson, 2025). The Toronto, Perth, and Amsterdam models are each associated with their own self-report measures of alexithymia – the 20-Item Toronto Alexithymia Scales (TAS-20 Bagby et al., 1994), the Perth Alexithymia Questionnaire (PAQ Preece et al., 2018), and the Bermond-Vorst Alexithymia Questionnaire (BVAQ; Vorst and Bermond, 2001), respectively. Collectively, these questionnaires are by far the most commonly administered measures of alexithymia (Luminet et al., 2021; Luminet and Nielson, 2025), and each have demonstrated strong psychometric properties in their development and validation. Nonetheless, each has also received its fair share of critiques – the TAS-20 for low reliability of the EOT subscale (Kooiman et al., 2002) and overlap with general distress (Marchesi et al., 2014; Preece, Becerra, Boyes, et al., 2020; Preece et al., 2024; Veirman et al., 2021), the PAQ for its departure from the psychoanalytic basis of the construct and removal of imaginal capacity/activity from the model (Taylor et al., 2024), and the BVAQ for its relatively low reliability (de Vroege et al., 2018; J. Müller et al., 2004) and lack of statistical evidence supporting the nature of the "affective" factor and its relationship to the "cognitive" factor of alexithymia (Preece, Becerra, Robinson, et al., 2020).

Outside of self-report methods, relatively few measures of alexithymia have been developed. Notably, of the three prominent models of alexithymia, only the Toronto model has developed any alternatives to self-report measures: the clinician-administered Toronto Structured Interview for Alexithymia (TSIA; Bagby et al., 2005) and the 20-item

Table 1
Descriptions and examples of alexithymia factors.

Factor	Facet	Description	Example Items
Cognitive	Difficulty Identifying Feelings (DIF)	Difficulties identifying one's own feelings and distinguishing them from bodily sensations (e.g., stomach pain)	TAS−20, item 7: "I am often puzzled by sensations in my body."
	Difficulty Describing Feelings (DDF)	Difficulties describing and communicating one's own feelings to others	BVAQ, item 1: "I find it difficult to express my feelings verbally."
	Externally-Oriented Thinking (EOT)	Tendency to focus excessively on the external world and avoid attending to one's own internal states	PAQ, item 12: "Usually, I try to avoid thinking about what I'm feeling."
Affective	Reduced Emotionalizing	Reduced capacity or inclination to become emotionally aroused by internal or external stimuli	BVAQ, item 9: "When I see somebody crying uncontrollably, I remain unmoved."
	Restricted Fantasy Life	Reduced ability or inclination to fantasize – potentially including reduced capacities in creativity, originality, imagination, mental imagery, and divergent thinking	BVAQ, item 32: "I think that fantasizing about imaginary things or events is a waste of time."

Toronto Alexithymia Scale – Informant Form (TAS-20-IF; Bagby et al., 2021), designed to be completed by a close other nominated by the target participant. Interestingly, although the Toronto model of alexithymia posits the existence of a IMP factor, only the TSIA includes a IMP facet – the IMP facet was removed from the TAS-20 to improve its psychometric properties during its development (Bagby et al., 1994) and was not included in the TAS-20-IF for this reason. Both the TSIA and TAS-20-IF show modest convergent validity with the TAS-20 (Bagby et al., 2005, 2021), suggesting that self-perceptions of alexithymia generally, but imperfectly, align with others' perceptions. The fact that these correlations are only of moderate strength is, perhaps, unsurprising given that alexithymia is characterized by poor emotional insight and has been associated with general and emotion-specific deficits in self-reflection (Smith et al., 2022). Nonetheless, such findings underscore the need for a multi-method approach to alexithymia measurement: relatively little research has examined the extent to which these different assessment methods might differentially predict behavior in emotion-related tasks. Furthermore, in contrast to other constructs related to emotional processing (e.g., emotional awareness, emotional granularity), the field lacks clearly defined and validated behavioral or free-response measures of alexithymia (Hoemann, Nielson, et al., 2021; Lane et al., 1990; Tugade et al., 2004).

Although latent factor analysis has been and continues to be a powerful tool for the development and measurement of the alexithymia construct, there are several limitations to this approach. Most importantly, while factor analysis can provide insight into the structure of inter-item correlations, it cannot directly reveal the causal mechanisms that produce this structure. Consequently, the same presentation on one factor can arise from multiple causes (i.e., overdetermination) and different factors may or may not share some of the same causes.

To concretely illustrate this point, consider the first item of the TAS-20: "I am often confused about what emotion I am feeling". High ratings on this item, and others from the DIF subscale, could feasibly reflect one or more causes, including physiological reactivity (detection is more difficult for low-signal stimuli; Green and Swets, 1966), an impoverished or undifferentiated set of emotion concepts with which to interpret physiological and mental states, or an uncertainty bias, as just a few possible explanations. However, it is not hard to imagine how items from the other TAS-20 subscales might index some of the same causal sources – for example, the DDF subscale item "It is difficult for me to find the right words for my feelings" could just as plausibly reflect an "impoverished or undifferentiated concept set". Indeed, past work has found that both DDF and DIF are associated with poorer emotion differentiation for negative emotions (Erbas et al., 2014; K. S. Lee et al., 2022). Some researchers have pointed out that an inability to form mental representations of emotion should disrupt abilities further downstream in affective processing, such as verbally naming or communicating what one is feeling (Lane et al., 2015). Thus, while the separation of alexithymia facets implies some level of functional distinction, the complex nature of emotional processing suggests that each facet might implicate and even share multiple functional mechanisms that cannot be pinpointed by current latent factor models.

Relatedly, because the questionnaire and interview items on alexithymia measures are typically retrospective (i.e., participants' responses reflect their general behavior and preferences) and are often assessed cross-sectionally, questionnaires and interviews cannot distinguish whether one feature of alexithymia precedes or causes other features. For example, inattention to or avoidance of emotionally relevant stimuli could plausibly make it more difficult to appropriately identify and label one's emotional experience. In this scenario, individuals who struggle to appropriately attend to emotional information could self-report elevated levels of DIF and DDF, despite lacking any deficits in the ability to categorize or express emotions, simply because attention exerts its influence on the emotional awareness process earlier than the processes of identification or expression. Longitudinal studies can provide some insight into how subscale scores evolve and interact with each other over time, but even these methods may be constrained by the retrospective and broadly-focused nature of the response items themselves. Overall, the majority of psychometric efforts in alexithymia research have developed excellent means of describing alexithymia at the level of overall symptomology, but have not afforded a deep understanding of the causal mechanisms that produce alexithymic presentation, especially as it pertains to the dynamic nature of psychological processes.

1.1.3. Cognitive-behavioral approaches

Though relatively new compared to the clinical and psychometric approaches, cognitive-behavioral approaches have been used to test and develop theoretical predictions about alexithymia since the 1990s. These approaches focus on how alexithymia might impact the processing of affective information, including a variety of implicated cognitive functions such as attention, sensation/perception, memory, and language (Donges et al., 2014; Hobson et al., 2019; Luminet et al., 2021; Trevisan et al., 2019).

Historically, the predominant view from this literature has been that alexithymia is associated with a broad deficiency in affective information processing – a view which has been referred to as the *deficit model* (Taylor, 2000). Indeed, alexithymia has been associated with a tendency to direct early attention away from negative emotional stimuli (S.-H. Lee and Lee, 2022; Leonidou et al., 2022), reduced ability to accurately recall emotional stimuli or experiences (Battista et al., 2021; Vermeulen, 2021), reduced tendency to use emotional words or report emotional events (Aaron et al., 2018; K. S. Lee et al., 2022), and poorer accuracy in reporting one's own bodily states (Murphy, Catmur, et al., 2018; Trevisan et al., 2019) and recognizing others' facial expressions (Grynberg et al., 2012). However, there is also a substantial body of work wherein alexithymia, in contrast, has been associated with heightened emotional processing, collectively referred to as *over-responding models* of alexithymia (Luminet et al., 2021). For example, alexithymia has been associated with prolonged late-stage attention allocation to negatively-valenced stimuli (Grynberg et al., 2014; Leonidou et al., 2022), enhanced memory performance for stimuli related to illness (Brandt et al., 2015), increased expressivity of negatively-valenced

emotions (Jakobson and Pearson, 2021; Tull et al., 2005) and elevated physiological arousal in response to negatively-valenced visual stimuli (Hickman et al., 2022). Just as in the psychometric literature, such results could indicate an overdetermined alexithymia construct. Supporting this notion, Smith et al. (2019) developed a computational active inference model of emotional awareness which demonstrated that the same phenotype of low emotional awareness could be produced by several different forms of mechanistic failures (e.g., misattributions of bodily sensations, coarse emotion concept repertoire, reduced reflective capacity). It is thus unclear to what extent alexithymia is caused by deficient or attenuated affective processing versus biases towards processing certain affective information in particular ways, or whether various profiles of joint deficiencies and tendencies appear across individuals with similar alexithymic presentations.

This ambiguity surrounding which cognitive-behavioral deficits, if any, are critical elements of alexithymia has made the development of a behavioral profile of the construct especially challenging. Some researchers have suggested that facet-level analyses of the relationship between alexithymia and cognitive processing are key to progressing towards such a behavioral profile, pointing to the tendencies for EOT to be associated with performance deficits, DIF with emotional overresponding, and DDF with reduced expressivity (Luminet et al., 2021; Luminet and Nielson, 2025). We agree that facet-level approaches are likely to reveal important insight into alexithymic cognition, but here we focus on an additional lens we believe will yield further information still: the explicit distinction of *abilities* from *propensities*. Such an approach highlights the role of cognitive mechanisms by encouraging researchers to pinpoint whether the behavior or phenotype they observe stems from a true deficiency in some neurocognitive or physiological function versus a tendency to intentionally or unintentionally avoid engaging that function. We hope that this distinction will help align alexithymia research with related bodies of work (e.g., emotional intelligence, emotional granularity, emotional awareness) and draw attention to how alexithymia relates to cognitive-affective processes that unfold over time (Kuppens and Verduyn, 2017). A stronger understanding of the cognitive mechanisms that drive alexithymia might afford greater precision in identifying subtypes of alexithymia, guiding future research on the neurocognitive mechanisms of emotional experiences and potentially informing individualized treatment plans across a wide array of diagnoses.

1.2. Introducing the propensity/ability framework

Past work has used a variety of terms to describe whether and to what extent an individual can perform a given psychological function including ability/deficiency (Cage et al., 2013; Daronco et al., 2023; Lane, 2020; F. Li and Zhang, 1998; Taylor and Bagby, 2013), capacity (Caballero et al., 2023; Guassi Moreira et al., 2022; Silvers and Guassi Moreira, 2019), and necessity (Bilotta et al., 2016). Similarly, there are a variety of terms used to describe how prone an individual is to perform a given psychological function and/or to engage that function at a particular level of depth, including terms like propensity (Cage et al., 2013; Daronco et al., 2023; Keysers and Gazzola, 2014; F. Li and Zhang, 1998), tendency (Caballero et al., 2023; Guassi Moreira et al., 2022; Rammensee et al., 2023; Silvers and Guassi Moreira, 2019), and habit/convenience (Bilotta et al., 2016; Smith et al., 2019). Jointly, the variety of terms and lack of consensus regarding when it is appropriate to use which terms for which types of evidence can make it difficult to communicate and synthesize findings across these studies.

In this section we contextualize and develop our *propensity/ability framework*, which seeks to provide a structured means of defining and measuring propensity and ability, especially in the context of cognitive-behavioral studies. Under this framework, we define *ability* as the extent to which an individual is able to perform a given psychological function, especially when the task demands or instructions reference it explicitly. *Propensity*, on the other hand, refers to the frequency and depth with which individuals tend to perform a given psychological function, especially when task demands or instructions do not reference this function explicitly. By emphasizing both frequency and depth of processing, the term *propensity* encourages researchers to consider qualitative differences in the ways that individuals tend to engage in a particular cognitive process.[1]

Explicit distinctions between propensity and ability have produced fruitful results in both distally- and proximally-related areas of human research, suggesting a promising future direction for both alexithymia research and affective science. More specifically, propensity/ability distinctions have been used to advance research in organization-level innovation (Daronco et al., 2023), emotion regulation (Caballero et al., 2023; Silvers and Guassi Moreira, 2019), empathy (Keysers and Gazzola, 2014), and autism (Cage et al., 2013). For example, some work suggests that deficits in emotion recognition and empathy observed in autism may arise from differences in propensity, rather than ability, to process information (Cage et al., 2013; Izuma et al., 2011). Specifically, relative to neurotypical participants, autistic participants did not donate more to charity when an observer was present compared to when they were absent, suggesting an insensitivity to the potential threat to social reputation which could reflect reduced metacognitive, theory of mind, or social reward processing abilities (Izuma et al., 2011). However, Cage et al. (2013) found that when participants were told that the observer would also be the recipient of the donations and would have an opportunity to donate back to the participant, both autistic and neurotypical participants donated more when they were told the observer could potentially reciprocate their donations compared to participants who were told that the observer was simply observing the procedure, though autistic individuals still tended to give less than neurotypical individuals in both conditions. These results instead suggest that autistic individuals are able to represent what others think of them, but have a reduced propensity to allow this information alone to dictate their actions. Though the propensity/ability distinction is subtle and not especially predominant in autism research, its application has both refined the interpretation of previous findings and suggested promising new directions for future work.

To further advance the application and generalizability of the propensity/ability framework, the field would benefit from a clear and consistent way to distinguish abilities from propensities. Currently, most studies that feature propensity/ability distinctions do not appear to use a standard definition of these terms or define the methodological characteristics or research approaches best designed to assess one or the other aspect. For example, when defining analogues of “propensity”, some research places heavy emphasis on the frequency of behaviors of interest (Silvers and Guassi Moreira, 2019) while other work seems to distribute emphasis more equally across depth/intensity and frequency (Keysers and Gazzola, 2014). In the following paragraphs, we propose a number of methodological/research design features that might be used to more consistently characterize propensity and ability (summarized in Table 2).

Under our framework, *ability* is defined as the extent to which an individual is able to perform a given psychological function at a given

[1] Similar distinctions have been made in prior literature regarding individual differences in affect and have helped resolve conflicting research findings. Whereas some early work in this area pointed to a strong, inverse relationship between self-reported positive and negative affect (Russell, 1980), others found evidence for their independence (Bradburn, 1969). By accounting for frequency and intensity of positive and negative affect separately, Diener et al. (1985) found that they could largely resolve this apparent discrepancy in findings: they found low correlations between positive and negative affect ratings, but were strongly negatively correlated when emotional intensity was partialed out. Moreover, intensity and frequency were largely statistically independent dimensions of affective experience that, when standardized, could be additively combined to recover mean levels of affect (Diener et al., 1985; Schimmack and Diener, 1997).

ability:

the extent to which an individual is able to perform a given psychological function, especially when the task demands or instructions reference it explicitly

propensity:

the frequency and depth with which individuals tend to perform a given psychological function, especially when task demands or instructions do not reference this function explicitly

Table 2
Criteria for tasks indexing propensity vs. ability.

Task Criterion	Propensity	Ability
Task Goals	The task need not have explicit or objective goals e.g., open-ended verbal description of emotional facial expressions	"Success" in the task should be clearly defined and preferably objectively evaluable e.g., accuracy in a forced choice emotion recognition task
Instructional Specificity	Task instructions should not specify how the participant should approach the problem or how to solve it e.g., "in the following section you will be asked to view images and make ratings about your reactions to them"	The task instructions should explicitly state the goal of the task and/or the strategies the participant is expected to engage in to achieve the goal e.g., "while viewing the following images, please attend to your bodily sensations before rating the following items"
Response Scaffolding	Participants should be able to respond as freely as possible e.g., written journal entries detailing the emotional events of the day	The response options may be constrained such that the available choices control for potential confounding factors e.g., verbal fluency, positive/negative, angry/sad/happy/neutral

time. Thus, to index ability a study design must compare participants' behavior against an explicit objective (e.g., an objective function, optimal solution, accuracy) and participants should be fully aware of the tasks or skills they are being asked to perform. Typically, studies that index ability require a high level of experimental control, often sacrificing ecological validity in the process. In doing so, these experiments provide participants with implicit or explicit "scaffolding" that they can use to structure their responses. For example, if a participant is asked to report their interpretation of an emotional expression, their response will be far more structured and less variable if they are given a response bank of possible options to select from (e.g., four-alternative forced choice design) than if they were asked to give an autonomously-generated, free-form verbal description. While the verbal description may offer richer information about an individual's interpretation, it may also be contaminated by confounding influences (e.g., verbal fluency, assertiveness). When these confounding factors are reduced or eliminated by careful experimental design, any persisting differences in task performance may more directly indicate differences in the specific underlying cognitive mechanism of interest. Altogether, we argue that a method that indexes ability should provide the participant with explicitly defined and explicitly stated objectives and high instructional specificity and will likely employ significant response scaffolding to reduce the influence of confounding variables.

In contrast, to index *propensity* a study must assess the frequency and quality of a participant's responses on a given task or skill. As the goal of such studies is to understand a participant's natural inclinations, each study must be careful not to bias participants toward particular attitudes, cognitions, or behaviors. Typically, the less aware the participant is of the assessment target, the more effectively the study will index propensity. This helps prevent potentially confounding influences of demand characteristics, desirability biases, or participants' preconceptions about themselves or the target of the assessment. Likewise, task instructions should be carefully designed to avoid prescribing a particular approach or solution.

As an extreme example – contrasting predominantly ability-focused vs. propensity-focused assessments – consider a diary-entry task where participants are asked to record their daily experiences as "precisely as possible, addressing the unique, emotional nature of each experience" versus one where they are simply asked to record their daily experiences. The frequency and differentiability of emotion words used by participants in this second study would provide a much "purer" sense of participants' inclination to experience and report emotions compared to the first version, where the instructions may influence participants to focus more on their emotional experiences than they would have otherwise done. The form of the response also matters – a diary entry study where participants are free to write about their experiences in their own words will offer more information about their emotional communication tendencies than one where they select from a standardized list of emotion labels. Altogether, then, a study of propensity should generally have low instructional specificity, with participants provided few or no explicitly stated objectives concerning emotional processing, and also provided minimal emotion-related response scaffolding.

Importantly, we do not mean to suggest that propensity and ability are necessarily orthogonal categories – in fact, in most cases we might expect them to be correlated dimensions. For example, Guassi Moreira et al. (2022) found that participants' self-reported tendency to use cognitive reappraisal as an emotion regulation technique was weakly, yet positively correlated with their percent change in ratings of negative images before and after being instructed to use cognitive reappraisal to regulate their feelings. However, the correlation of propensity and ability may converge and diverge over time due to developmental and psychopathological influences (Fig. 1).

For example, Goldin et al. (2009) found evidence that propensity and ability to apply cognitive reappraisal were decoupled for individuals with Social Anxiety Disorder. During threat exposure, individuals with anxiety disorders tend to report higher levels of distress and show smaller blood-oxygenation-level-dependent (BOLD) responses in areas related to emotion regulation compared to controls, suggesting that anxious individuals are less inclined than their peers to engage in emotion regulation strategies (Goldin et al., 2009). Yet, when directly asked to engage in emotional reappraisal, patients and controls showed comparable reductions in distress, suggesting that both groups had the capacity to engage in emotion regulation. In alexithymia, one can imagine how the tendency to avoid attending to emotions could lead to less practice in identifying and communicating feelings, which in turn might halt the development of or even diminish one's abilities to recognize and express their emotions (Panayiotou et al., 2015; Torunsky et al., 2023; see Fig. 1). Under such a model, the correlation between attentional propensities and perception and communication abilities would become stronger over time in alexithymia. Moreover, such a model reveals promising nodes for treatment – for example, one might wish to focus on reducing attentional avoidance of emotions if such patterns are just beginning to develop or instead focus on building skills

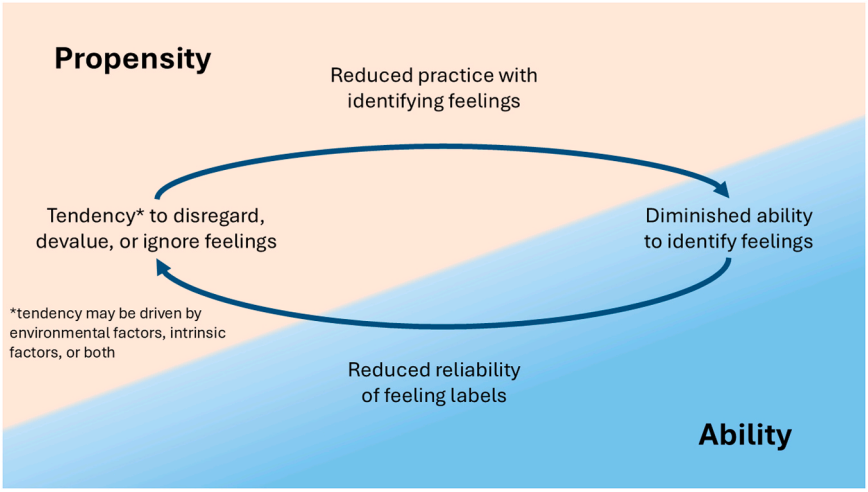

Fig. 1. Propensities and Abilities over Time in Alexithymia: A Hypothetical Model. *Note.* Some researchers have suggested that the tendency to avoid attending to one's emotions may initiate a cycle wherein avoiding emotions leads to less practice in identifying and communicating feelings, which in turn might halt the development of or even diminish one's ability to recognize and express their emotions. Individuals may thus learn that expending effort in identifying their feelings tends to be a fruitless effort, and thus avoidance of emotions is reinforced. Under this hypothesis, the relationship between propensity and ability would become stronger over time – i.e., the propensity to avoid emotions and difficulties identifying emotions would increase together.

and confidence in emotion identification after such patterns have already calcified. In this way, accounting not only for propensity and ability separately, but also examining their relationship over time might reveal useful information for the diagnosis and treatment of a variety of disorders, as well as an enhanced understanding of other psychological traits and conditions.

2. Applying the propensity/ability framework to alexithymia

In this section and its subsections, we apply the propensity/ability framework to extant alexithymia research, aiming to examine the extent to which atypical propensities and/or abilities in emotion-related cognition and behavior have been distinguished and supported. While previous work has not drawn on a unified set of definitions or measurement criteria for propensity and ability, there appears to be both tacit and explicit interest in the distinction. For example, when looking over the items of the TAS-20 and PAQ, we found terms that might imply a tacit distinction between propensity and ability (see Table 3). Questionnaire items using words like "prefer", "tend", and "try" suggest preferences and tendencies implying these items are interested in propensities. In contrast, items that seem to refer to beliefs about abilities tend to provide a type of scenario (e.g. "When I am upset…", "When I am feeling good…") and use terms that imply a difficulty or inability to achieve some desired goal (e.g. "I find it hard to describe…", "I can't make sense of…"). This informal analysis suggests that, although neither questionnaire necessarily makes an explicit distinction between abilities and propensities, each might reflect an admixture of participants' beliefs about both their propensities and their abilities in emotional processing.

Table 3
Alexithymia questionnaire items that may differentially index propensities versus abilities.

Questionnaire	Item Number	Item	Propensity/ Ability
TAS−20	1	I am **often** confused about what emotion I am feeling.	Propensity
TAS−20	15	**I prefer** talking to people about their daily activities rather than their feelings	Propensity
PAQ	3	I **tend to** ignore how I feel	Propensity
PAQ	18	I **don't try to** be 'in touch' with my emotions	Propensity
TAS−20	6	**When I am upset**, **I don't know** if I am sad, frighted, or angry	Ability
TAS−20	13	**I find it hard to describe** how I feel about people	Ability
PAQ	10	When I'm feeling good, **I can't make sense** of those feelings	Ability

Note. "TAS−20" refers to the 20 Item Toronto Alexithymia Scales (Parker et al., 2003), "PAQ" to the Perth Alexithymia Questionnaire (Preece et al., 2018).

Theoretical work in alexithymia also exhibits substantial interest in abilities and propensities. For example, in one highly influential review, Taylor (2000) proposed that alexithymia is characterized by deficits in processing and regulating emotions, supported in part by studies linking alexithymia to reduced accuracy identifying emotional expressions and in matching emotional stimuli with congruent labels, faces, and scenes (Lane et al., 1996; Mann et al., 1994; Parker et al., 1993a). However, Taylor et al. (2024) also note that certain components of alexithymia are better viewed as propensities, as revealed by their recent critique of the characterization of the IMP facet as a deficit rather than as an inclination described in early work on the attention-appraisal model (Preece et al., 2017). Lane et al. (2015) argued for the careful distinction between types of ability deficits in alexithymia, suggesting that the field should seek to distinguish agnosia (i.e., inability to perceive) and anomia (i.e., inability to name) subtypes of alexithymia. In contrast, other researchers have pointed to the strong relationship between alexithymia and experiential avoidance, i.e., the tendency to avoid potentially uncomfortable thoughts or situations (Hayes et al., 1996), positing that alexithymia may be primarily characterized by an unwillingness to engage with certain situations or feelings rather than by inabilities in emotional processing as such (Bilotta et al., 2016; Constantinou et al., 2014; Panayiotou et al., 2015). One potential synthesis of these perspectives is provided by the attention-appraisal model, which suggests that different facets of alexithymia disrupt the processing of emotional information at different, distinct stages (Preece et al., 2017). In this framework, Preece et al. describe "avoidance alexithymia" as EOT-driven tendencies to avoid focusing on emotional stimuli or appraisals compared to "ability deficit alexithymia" driven by DIF and DDF and characterized by impoverished emotional schemas and disrupted systems of valuation. Although this attention-appraisal model has been well-supported by latent models of questionnaire data (Preece et al., 2018, 2024), this work does not emphasize the distinction between propensities and abilities, and cognitive-behavioral support for this model remains in its early stages. Altogether, the substantial theoretical interest in propensities

versus abilities indicates that a purposeful and systematic approach to the definition of these terms and how they can be measured would improve the comparability of research, both past and future.

In the following sections, we will apply the propensity/ability framework to alexithymia research in different cognitive-emotional domains and evaluate the current state of research in these areas. To narrow the scope of this overview, we have focused on three cognitive-emotional mechanisms for which major hypotheses about the nature of alexithymia have been developed: interoception (e.g., hyper-arousal, hypo-arousal, and interoceptive deficit hypotheses; Brewer et al., 2016; Martin and Pihl, 1985; Roedema and Simons, 1999), avoidance (e.g., alexithymia avoidance hypothesis; Bilotta et al., 2016; Panayiotou et al., 2015), and expression (e.g., language hypothesis of alexithymia, normative male alexithymia; Hobson et al., 2019; Levant et al., 2014). In each of these domains, we will examine key methods and measures used to evaluate cognitive-emotional processing, point out whether these study design features afford strong inferences about the cognitive mechanisms underlying alexithymic presentation, and offer a summary of the current state of findings regarding ability and propensity in that domain. In general, research across each of these three domains tends to focus on and produce stronger results related to propensity compared to ability, with relatively few studies meeting the propensity/ability framework's multiple criteria for indices of ability (see Table 2). In each section, we will examine the potential mechanistic implications of these propensity and ability findings within the relevant cognitive domain. Then, in the general discussion, we consider the general pattern of findings regarding abilities and propensities across cognitive domains, and highlight future research directions for the development of a neurocognitive process model of alexithymia.

2.1. Interoception

2.1.1. Overview of interoception-related theories

Interoception can be broadly defined as the processes by which bodily sensations, particularly those generated from internal sources (e.g., visceral organs, sympathetic and parasympathetic nervous system) are communicated to, represented in, and altered by neural representations in the brain.[2] While researchers disagree on their exact role in emotional experience, including centuries of debate over whether interoceptive states are the cause or consequence of emotions (Barrett, 2017; Cannon, 1927; Feldman et al., 2024; James, 1884), there is widespread agreement that interoception plays an important role in how people process affect (Gross and Barrett, 2011).

Recent theoretical work by Feldman et al. (2024) situates interoception in a predictive processing framework wherein ascending signals reflecting changes in interoceptive states interact with descending signals reflecting top-down predictions of sensory states. This interaction allows the brain to monitor the body's metabolic states and initiate changes in metabolic resource allocation when sufficiently large discrepancies between prediction and sensation are observed. Affect (e.g., subjective arousal, valence), per this framework, arises from efferent signals indicating the allocation of energetic resources to initiate actions that will minimize future prediction error. Importantly, this implies that individual differences in both the generation of interoceptive signals and in the prediction of interoceptive states are likely to produce differences in emotional experience.

Accordingly, theoretical work has tightly linked alexithymia to the perception and interpretation of bodily sensations. Early conceptualization of alexithymia arose from a psychosomatic focus, wherein researchers predicted that individuals high in alexithymia fail to interpret affective, interoceptive sensations as emotions (e.g., panic, anxiety) and instead report them as unexplained somatic symptoms (e.g., chest pain, headache; Blanchard et al., 1981; Nemiah, 1977; Sifneos, 1973; Sivik, 1993; Taylor et al., 1991). In other words, these frameworks describe alexithymia as a reduced *ability* to understand emotion concepts and infer emotional states from sensory signals, potentially accompanied or caused by a *propensity* to divert somatic signals away from elaborative emotional processing. Importantly, this does not require any abnormalities in the generation or representation of bodily signals – under this framework an individual with high alexithymia may accurately identify the location (e.g., chest), nature (e.g., pain), and intensity (e.g., dull) of their discomfort, but be unable to accurately assess the source of this pain (e.g., anxiety versus heart attack). Likewise, under these assumptions, alexithymia need not be associated with higher frequency or intensity of physiological reactivity.

The *stress-alexithymia hypothesis* forwarded by Martin and Pihl (1985) takes these assumptions a step further, positing that deficits in emotional cognition prevent individuals with high alexithymia from being able to recognize potential stressors and resolve their emotional conflicts, resulting in a sustained state of stress and enhanced physiological sensitivity to stress. Thus, while past psychosomatic work posited only that alexithymia should be linked to an increased *frequency* of somatic complaints, the *stress-alexithymia hypothesis* further predicts propensities towards increased *psychological intensity* of and *physiological sensitivity to* stress.

In contrast, other theoretical and empirical work has proposed a competing *hypo-arousal hypothesis*. This perspective is theoretically grounded in the original clinical observations that inspired the coining of the term alexithymia, which characterized highly alexithymic individuals as presenting with flat affect and restricted emotional reactivity (Nemiah and Sifneos, 1970; Sifneos, 1973) and have largely been supported by subsequent reports of clinician's experiences working with clients high in alexithymia (Ogrodniczuk et al., 2008, 2011). Consequently, this perspective posits that alexithymia, especially its affective component as defined by the Amsterdam model, is linked to a *propensity* to experience *attenuated* physiological responses to emotional provocation (Bermond et al., 2010; Cuve et al., 2018; Linden et al., 1996). Interestingly, this hypothesis does not require alexithymia to be associated with deficient cognitive *abilities* to differentiate emotion states – it is more or less agnostic to the cause of the propensity towards attenuated physiological responses.

2.1.2. Alexithymia is associated with a propensity to report more frequent and intense bodily symptoms/complaints

Empirical findings generally support the hyper-arousal theories' claims that alexithymia should be associated with increased frequency and intensity of self-reported bodily symptoms, as indexed by clinical diagnoses and retrospective reports of general experiences. Alexithymia has been robustly associated with chronic conditions characterized by persistent bodily symptoms including inflammatory bowel disease (Martino et al., 2020), asthma (Silvestro et al., 2023), functional neurological disorder, functional somatic disorder, and a variety of chronic pain disorders (Aaron et al., 2019; Di Tella and Castelli, 2016; Habibi Asgarabad et al., 2023). Furthermore, as one might predict from the stress-alexithymia hypothesis, within these chronic conditions alexithymia has also been associated with a propensity to report higher intensities of uncomfortable bodily sensations (Aaron et al., 2019; Habibi Asgarabad et al., 2023; Kreitler and Niv, 2001; L. Lundh & Simonsson-Sarnecki, 2001; Martino et al., 2020). Some work also suggests that alexithymia may be associated with increased pain and touch sensitivity in the general population (Kano et al., 2007; Sivik, 1993) and medically unexplained bodily or psychosomatic bodily complaints in

[2] A detailed review of the neural and phenomenological features used to distinguish these pathways is outside the scope of the present paper (see Feldman et al., 2024 for an introductory review). It is worth noting that there is still contention regarding the exact boundaries between what pathways and signals should be considered exteroceptive versus interoceptive (Pizarro and Ceric, 2023). In particular, components of some traditionally exteroceptive systems including the olfactory and gustatory systems may function more like interoceptive signals than other exteroceptive systems (e.g., vision, audition).

both student and general populations of adults (Blanchard et al., 1981; Heiberg, 1980) and children (Hadji-Michael et al., 2019). Individuals with higher alexithymia also appear to self-report increased awareness of autonomic physiological reactivity in daily life (Van Bael et al., 2024). Notably, there is at least some evidence suggesting that the relationships between alexithymia and both frequency and intensity of bodily complaints might be mediated by concomitant psychological distress factors (e.g., depression, anxiety; Aaron et al., 2019; Di Tella et al., 2018; Lundh & Simonsson-Sarnecki, 2001). However, these mediations have only been demonstrated in cross-sectional designs, which others have pointed out may be inadequate to assess the complex and potentially cyclical relationships between these variables (Habibi Asgarabad et al., 2023). Regardless, the overarching narrative across these studies appears to support the notion that alexithymia is associated with a propensity to report bodily symptoms at higher frequencies and intensities.

2.1.3. *Alexithymia is associated with propensities towards physiological hyper-arousal at baseline but hypo-arousal in online responses*

Findings regarding physiological measures offer mixed support for both the hyper- and hypo-arousal theories. Regarding physiological arousal at baseline and/or during the presentation of ostensibly emotionally-neutral stimuli, alexithymia has been linked to increased heart rate (Eastabrook et al., 2013; Papciak et al., 1985; Peasley-Miklus et al., 2016; Wehmer et al., 1995) and skin conductance responses (Davydov et al., 2013; Stone and Nielson, 2001), though for both measures the majority of studies in the field report no significant group differences between high- and low-alexithymia scorers (for a systematic review, see Panayiotou et al., 2018). Alexithymia has also been associated with greater rates of hypertension (Di Tella et al., 2023) and with individual differences in resting electrocardiogram signatures (Koelsch et al., 2007). Findings supporting hypo-arousal at baseline are much rarer, though alexithymia has been linked with reduced cortisol levels (Goerlich and Votinov, 2023) and lower SCR at baseline (Bermond et al., 2010). Additionally, the EOT facet of the TAS-20 has been linked with lower baseline heart rate, but simultaneously higher baseline SCR (Davydov et al., 2013). Altogether, the available literature supports only a tenuous association between alexithymia and a *propensity* towards heightened baseline arousal.

In contrast, alexithymia appears to be linked to reduced physiological reactivity in response to experimental tasks and stimuli, though again quite a few studies report null results and some report the opposite trend. In their systematic review, Panayiotou et al. (2018) note that the evidence supporting an association between physiological reactivity is much stronger in studies using SCR than studies using cardiac measures (e.g., heart rate, heart rate acceleration/deceleration). Among 36 studies using cardiac measures, nine reported hypo-arousal effects, three reported hyper-arousal effects, and the 21 reported no differences associated with alexithymia. In contrast, of the 30 studies using SCR measures, 15 studies reported hypo-arousal effects, 2 reported hyper-arousal effects, and 12 reported no group differences. Since their review was published, at least three more studies have found evidence linking alexithymia to attenuated SCR responses (Alkan Härtwig et al., 2020; Herrero et al., 2020; Zucchelli et al., 2019) and two have linked alexithymia to heightened SCR responses (Hickman et al., 2022; Romero-Martínez et al., 2020). Studies that have linked alexithymia to attenuated SCRs have used a variety of different types of stimuli including uncomfortably loud tones (Rabavilas, 1987), electrical stimulation (Starita et al., 2016), anger recall (Neumann et al., 2004), stressful speech tasks (Kleiman et al., 2016; Newton and Contrada, 1994; Pollatos et al., 2011), narrative scripts meant to invoke affective imagery (Constantinou et al., 2014; Peasley-Miklus et al., 2016), moral dilemmas (Cecchetto et al., 2017), affective video clips (Franz et al., 1999, 2003), and affective pictures presented at speeds both above (Alkan Härtwig et al., 2020; Bermond et al., 2010; Herrero et al., 2020; Roedema and Simons, 1999; Wehmer et al., 1995) and below (Pollatos et al., 2008) the threshold for conscious awareness of stimulus content. Studies that have found no relationship or increased SCR reactivity have broadly used similar methods of emotional stimulation, though it has been suggested that experimental design (e.g., cognitive versus emotional stressor tasks, immediacy of threat/stimulus, stimulus arousal strength; Luminet and Nielson, 2025; Panayiotou et al., 2018) and/or differential relationships across facets (Luminet and Nielson, 2025) or factors (i.e., cognitive versus affective; Bermond et al., 2010) of alexithymia could contribute to the inconsistency in the literature. A meta-analytic approach to this question could help clarify the reliability of this effect, but for many of these methods there are likely an insufficient number of publications to afford appropriate power for such analyses. As it stands, the available evidence appears to suggest a tendency for alexithymia to be associated with reduced physiological responses to emotional stimuli, although this effect may not generalize across different domains of interoception.

The physiological differences observed in these studies are typically interpreted as evidence of a reduced ability to appropriately engage in allostatic and emotional regulation in individuals with high alexithymia. However, in many of these studies the participants were passively reacting to stimuli and were not necessarily tasked with responding in a particular manner. Moreover, the quality of responses was evaluated by comparing groups to each other rather than to an objective criterion with a clearly defined goal (e.g., accuracy, goal achievement, social approval). Consequently, we suggest that although these findings are consistent with the hypothesis that alexithymia is associated with difficulties in allostatic management, they more directly support a relationship between alexithymia and physiological *propensities* towards baseline physiological hyper-arousal and hypo-reactivity in response to affective stimuli. Work seeking to instead pinpoint a relationship between alexithymia and allostatic or interoceptive *abilities* may focus on difficulties mobilizing metabolic resources (e.g., misalignment between neural representations of body states and true body states), directing mobilization in alignment with goals (e.g., physiological responses that prime the body for actions inconsistent with a specific goal state), or accuracy of participants' reports of internal states (e.g., misalignment between physiological markers and self-report).

2.1.4. *Alexithymia is associated with poorer alignment of self-report and physiological markers of affect – potentially reflecting reduced ability to recognize allostatic, affective states*

Extant work has, in fact, examined this latter point extensively and the preponderance of evidence suggests that alexithymia is associated with poorer alignment between physiological states and self-reported feelings of affect and bodily sensations (Panayiotou et al., 2018; Qi et al., 2025). Initial interest in this relationship arose from findings in many of physiological reactivity studies referenced above, wherein participants with higher alexithymia tended to self-report affective ratings (e.g., valence, arousal, tension, intensity) that did not align with their physiological responses (Cecchetto et al., 2017; Connelly and Denney, 2007; Davydov et al., 2013; Eastabrook et al., 2013; Franz et al., 2003; Gaigg et al., 2018; Kleiman et al., 2016; Newton and Contrada, 1994; Papciak et al., 1985; Peasley-Miklus et al., 2016; Pollatos et al., 2011; Rabavilas, 1987; Zucchelli et al., 2019). This phenomenon, termed "decoupling" by Papciak et al. (1985), was initially expected to reflect reduced subjective awareness of physiological reactions to affective stimuli and contexts as a result of deficits in cognitive differentiation and elaboration abilities (Lane et al., 1997; Nemiah, 1975; Taylor et al., 1991). Based on the early clinical observations of alexithymia, which emphasized clients' emotional non-reactive demeanors (Nemiah, 1975, 1977; Sifneos, 1973), decoupling hypotheses typically posited that alexithymia would be associated with attenuated self-report ratings relative to the observed level of physiological arousal. However, the systematic review by Panayiotou et al. (2018) concluded that only four of 15 studies on decoupling showed this pattern of reduced ratings relative to arousal in alexithymia, whereas the remaining 11 studies found that individuals with higher alexithymia reported higher affect ratings and reduced or typical physiological arousal. Since that review's

publication, three studies have been published that found no decoupling effects in alexithymia (Herrero et al., 2020; Hickman et al., 2022; Romero-Martínez et al., 2020), two of which were conducted in clinical populations and were not designed to directly test this hypothesis (Herrero et al., 2020; Romero-Martínez et al., 2020). Nonetheless, there is still relatively high overall agreement across studies favoring an association between alexithymia and a "hypo-arousal but typical or exaggerated reporting" profile.

We argue that the literature on the *decoupling hypothesis* of alexithymia points towards a deficit in the *ability* to consciously account for the interoceptive components of affect, though the approaches used in the literature are an imperfect match with the specifications of abilities in our framework. In contrast to the studies of hyper- and hypo-arousal tendencies, the use of within-participants comparisons of self-report and physiological markers in the studies examining decoupling provides a more specific, objective criterion for comparisons across alexithymia levels. Alignment between self-report and physiological markers acts like a measure of an individual's insight into their affective processing: higher alignment theoretically indicates greater conscious awareness of interoceptive processes. However, the instructions and design of these studies do not explicitly task participants with the goal of aligning their reports with these physiological markers. This approach is advantageous in that it allows for inferences about self-perceptions of affect broadly rather than focusing more narrowly on insight into interoceptive signals. However, explicitly instructing participants to report on their physiological states directly would provide much stronger evidence regarding the relationship between alexithymia and interoceptive insight as a component of the affect process.

2.1.5. *Alexithymia is associated with a propensity to avoid attending to internal cues and to report poorer insight of bodily sensations*

In the last decade, the question of whether alexithymia is associated with individual differences in interoceptive insight has received increasing attention. As a relatively new area of research, the terminology used to describe these individual differences can vary between papers (Garfinkel et al., 2015; Khalsa et al., 2018; Murphy, Catmur, et al., 2019). Nonetheless, most authors offer relatively similar definitions of at least three components of individual difference in interoception: interoceptive accuracy (i.e., the ability to accurately report one's interoceptive states as aligned with objective physiological markers), interoceptive sensibility (i.e., self-reported beliefs about one's interoceptive tendencies), and interoceptive awareness (i.e., the correspondence between interoceptive accuracy and sensibility). Multiple meta-analyses indicate widespread agreement across the literature that alexithymia is associated with at least some of these individual differences in interoception (Qi et al., 2025; Shen et al., 2025; Trevisan et al., 2019; Van Bael et al., 2024), but the quantity of articles and strength of support does not appear to be equally spread across all three facets. The strongest and most consistent finding is that alexithymia is robustly correlated with a wide variety of interoceptive sensibility measures, indexed via self-report inventories. In particular, alexithymia is associated with lower self-reported perceptions of interoceptive accuracy (Qi et al., 2025; Trevisan et al., 2019; Van Bael et al., 2024), attention (Van Bael et al., 2024), and higher self-reported confusion and sensory sensitivity (Van Bael et al., 2024). One study even used exploratory factor analysis to demonstrate that, when the TAS-20 and various psychological and health questionnaire items are considered simultaneously, the latent structure of alexithymia may include an entire factor dedicated to difficulties in (self-reported) interoceptive abilities (Fournier et al., 2019). Although self-report measures offer highly-structured response options, the lack of an explicitly stated objective or goal means that these results are best interpreted in terms of propensities rather than abilities. Consequently, the available literature offers strong support that alexithymia is associated with a propensity to believe that one's interoceptive judgments are inaccurate and confusing and a propensity to avoid attending to these sensations.

2.1.6. *Alexithymia is associated with both stronger and weaker interoceptive neural representations depending on context*

Interestingly, whereas self-report data suggest that alexithymia is associated with less conscious awareness of interoceptive sensations, neuroimaging results point to hyper-responding in areas associated with interoceptive representation. Across studies, individuals with higher alexithymia showed greater BOLD responses in regions of the brain associated with bodily state representation (e.g., posterior insula, right anterior insular cortex) during empathic pain perception tasks (Moriguchi et al., 2007) and during uncomfortable or painful gastrointestinal stimulation (e.g., bowel distension; Kano et al., 2020; see Kano and Fukudo, 2013 for review). Interestingly, multiple reviews have also linked alexithymia to decreased BOLD responses in the insula during tasks requiring more social-cognitive processing (e.g., mentalizing, perspective taking; Moriguchi and Komaki, 2013) and in reaction to external affective stimuli (e.g., visual images; Moriguchi and Komaki, 2013), especially positively-valenced ones (van der Velde et al., 2013). This has led some researchers to hypothesize that the fidelity and precision of interoceptive representations in alexithymia may be enhanced for more intense affective sensations, especially if they are more "primitive" (e.g., pain, hunger) and attenuated for less intense affective sensations, especially if they require more cognitive processing (e.g., empathy; Kano and Fukudo, 2013; Moriguchi and Komaki, 2013). Perhaps consistent with this, neuroimaging studies have generally linked alexithymia to decreased activity in areas related to executive control and emotion regulation (e.g., ventral anterior cingulate cortex, medial prefrontal cortex) and emotional attention (e.g., amygdala) during emotion perception tasks (Kano and Fukudo, 2013; Moriguchi and Komaki, 2013), especially when the stimuli involved negative emotional content (van der Velde et al., 2013).

A recent study by Terasawa et al. (2021) corroborates the idea that attention plays an important role in how individuals with alexithymia represent their interoceptive states. In their study, participants were administered mildly painful electric shocks in both an interoceptive condition, wherein they performed a heartbeat counting task between shock periods to prompt an interoceptive attentional focus, and an exteroceptive condition, wherein they were tasked with counting repetitive sounds generated by the MRI scanner between shock periods. Relative to the low-alexithymia participants, those with high alexithymia showed reduced functional connectivity between areas in an interoceptive network (i.e., insula, somatosensory cortex) during the interoceptive-focus periods. However, high-alexithymia participants also showed increased connectivity within this network during a period of anticipatory anxiety prior to shock. Thus, consistent with the conclusions drawn by previous literature reviews (Kano and Fukudo, 2013; Moriguchi and Komaki, 2013), these results suggest that individuals with high alexithymia may struggle to intentionally focus on and represent interoceptive sensations unless there is an immediate potential for threatening or intense stimulation. Altogether, the neuroimaging literature on alexithymia and interoception appears to support the notion that alexithymia is associated with a decreased propensity to attend to interoceptive cues under normal circumstances, but an increased propensity to attend to these cues when intense discomfort is imminent.

2.1.7. *Alexithymia is associated with a reduced ability to accurately report interoceptive states in at least some interoceptive domains*

The relationship between alexithymia and objective interoceptive accuracy is significantly more contentious. Trevisan et al. (2019) failed to find a significant relationship between alexithymia and objective assessments of interoceptive accuracy – of 32 studies reviewed, five found significant negative associations, two found significant positive associations, and the remaining 25 found no significant associations. Notably, nearly all of the studies in the review exclusively used the TAS-20 to measure alexithymia and all but two exclusively used a heartbeat perception task, wherein, to measure interoceptive accuracy,

a participant's count of their own heartbeat within a certain time interval is compared against that of an objective pulsometer (Schandry, 1981). Interoceptive accuracy tasks like the heartbeat task tend to fit very neatly into our description of measures of ability: they typically have a clear goal that is explicitly communicated to participants (e.g., to accurately track heart beats) that can be evaluated against an objective criterion (e.g., pulsometer readings) and participants' responses are highly structured and easily compared (e.g., all responses are count data). Thus, to the extent that interoceptive processing as a whole can be indexed by the heartbeat tracking task alone, the available evidence suggests that alexithymia is not related to ability deficits in interoceptive accuracy.

However, subsequent publications have criticized both the heartbeat perception task itself and the idea that interoceptive processing is comparable across different interoceptive domains. Regarding the heartbeat perception task, multiple studies have pointed out potential confounding factors including participants' abilities to use non-interoceptive knowledge and cues to shape their responses (Desmedt et al., 2020) and the concomitant influences of related physiological variables (e.g., blood pressure, resting heart rate, body mass index) and psychological traits (e.g., anxiety, depression; Murphy, Brewer, et al., 2018). Notably, a simple adjustment to task instructions such that participants are prompted to attend *only* to their felt heartbeat sensations (i.e., not to time or a priori knowledge about heart rate) significantly altered behavior in the heartbeat perception task (Desmedt et al., 2020), beautifully corroborating our framework's emphasis on the importance of clear and specific task instructions for measuring abilities. When at least some of these confounding influences are accounted for, subsequent studies on alexithymia and interoceptive accuracy have reported a negative correlation between alexithymia and interoceptive accuracy (Murphy, Brewer, et al., 2018; Murphy, Millgate, et al., 2019). Moreover, when these confounding influences are not accounted for, as they typically were not in the studies reviewed by Trevisan et al. (2019), meta-analytic evidence suggests that performance on the heartbeat perception task has no association with nearly any theoretically relevant mental health variables (Desmedt et al., 2022). Together, these findings suggest that the available data for the meta-analysis by Trevisan et al. (2019) may have been predisposed to yield null results, and that alexithymia may actually be associated with poorer interoceptive accuracy within the cardiac domain.

Furthermore, there is significant contention over whether interoceptive accuracy is generalized across or specific to different domains of interoceptive signals (Desmedt et al., 2023; Schoeller et al., 2025), or indeed what those domains might be (Desmedt et al., 2025). This then suggests that it is worth examining the relationship between alexithymia and interoceptive accuracy in studies that used tasks other than heartbeat perception tasks. Among studies that did not exclusively use the heartbeat perception task, one found that alexithymia was associated with a reduced ability to identify changes in temperature as heat increased, but was not associated with the ability to detect changes in temperature as heat decreased nor with tactile acuity, accuracy of heartbeat counting, detection thresholds for electric shock, or discrimination between high- and low-intensity painful thermal stimuli (Borhani et al., 2017). Another study found that alexithymia was associated with poorer interoceptive accuracy in muscular effort (i.e., reduced ability to discern when two buckets were of equal weights) and taste sensitivity (i.e., poorer ability to discriminate between different levels of solution salinity) but not with respiratory control (i.e., ability to control the speed of one's exhales; Murphy, Catmur, et al., 2018). However, when the experimenters played white noise during the respiratory control task to prevent participants from using auditory cues, participants in the high alexithymia group performed worse than they did when no white noise was played, while low-alexithymia participants showed no difference in performance between the conditions. This finding suggests that, while high-alexithymia individuals are *able* to use interoceptive respiratory cues to achieve the same performance as low-alexithymia individuals in general, they *tend* or *prefer* to use exteroceptive cues when such cues are available and have greater difficulty relying on interoceptive cues alone to guide task performance. Murphy, Catmur, et al. (2018) thus not only accounted for potential influences of interoceptive domains, but also carefully delineated between ability and propensity in both the design and interpretation of their work. Altogether, although the available evidence is quite limited, these results from multi-domain studies of interoception suggest that alexithymia may be associated with domain-specific deficits in the *ability* to accurately report on interoceptive states.

2.1.8. Summary

In summary, alexithymia appears to be linked to a variety of differences or deficits in interoceptive abilities and propensities, with varying degrees of supporting evidence. In particular, higher alexithymia is linked to a propensity to report a greater frequency and intensity of a variety of unpleasant bodily sensations and symptoms (Di Tella and Castelli, 2016; Habibi Asgarabad et al., 2023; Kano et al., 2020; Lumley, Stettner, et al., 1996), despite simultaneously being tentatively linked to a propensity towards decreased physiological reactivity to emotional stimuli (Panayiotou et al., 2018). Evidence linking alexithymia to the decoupling of self-reported arousal and physiological markers suggests that this apparent discrepancy might be the consequence of poorer insight into current affective/interoceptive states (Panayiotou et al., 2018). Indeed, alexithymia has been linked to a decreased propensity to attend to interoceptive states (Murphy, Catmur, et al., 2018; Van Bael et al., 2024) or dedicate neural resources to their representation (Moriguchi and Komaki, 2013; van der Velde et al., 2013), except perhaps in circumstances involving immediate and intense sensations (Kano and Fukudo, 2013; Moriguchi and Komaki, 2013; Terasawa et al., 2021). Though contentious and in need of replication, the available evidence also suggests that alexithymia is generally associated with poorer ability to accurately report on one's interoceptive states, at least within certain domains of interoception (Murphy, Brewer, et al., 2018; Murphy, Catmur, et al., 2018; Trevisan et al., 2019).

While the literature on alexithymia and interoception has generally separated abilities and propensities fairly well, this distinction has not always been explicit, which has at times muddled the interpretation of findings relating alexithymia and interoception. For example, multiple influential researchers have suggested that the characteristic abnormalities in emotional processing associated with alexithymia can be linked to failures at either the level of attention to emotional stimuli (Preece et al., 2017) or the levels of appraisal, representation, and differentiation of emotion concepts (Preece et al., 2017; Taylor et al., 1991). However, evidence that alexithymia is linked to hypo-reactivity even in the absence of a relationship to the vividness of affective imagery or differences in emotion labeling (Constantinou et al., 2014) and when emotional stimuli are presented at speeds below the threshold for conscious perception (Pollatos and Gramann, 2011) suggests that cognitive elaboration and early attentional allocation may not always be necessary features of emotional processing deficits characteristic of alexithymia. Likewise, although neuroimaging work has examined the relationship between alexithymia and activity in brain areas or networks associated with interoceptive representation, to our knowledge prior work has not examined whether individual differences in these patterns of activity can mediate the relationship between self-reported affect and physiological markers of arousal.

It is worth noting a few limitations of both our current interoception-related overview and of the existing literature itself. Although existing research on alexithymia and interoception focuses a bit too narrowly on cardiac and skin conductance markers of arousal, there is a variety of available work discussing other domains of interoception, including startle responses (Kumari et al., 2023; Panayiotou et al., 2018), facial electromyography (Panayiotou et al., 2018), and electroencephalogram recordings (Chmiel et al., 2025). Future work on alexithymia and interoception would benefit from more studies that examine behavior

across multiple interoceptive sensory domains simultaneously, to better evaluate the domain-specificity of this relationship. Furthermore, although we interpret existing work to suggest that the relationship between alexithymia and interoceptive attention, accuracy, and representation might depend on the intensity, immediacy, and pleasantness of present and anticipated emotional stimuli, precious little work has simultaneously examined the influence of these factors on these relationships. The field would benefit from a deeper exploration of each of these relationships in both novel empirical work and meta-analytic reviews. In particular, greater attention to the time-scales of both physiological measurements themselves (e.g., evaluating baseline heartrate with average resting heartrate collected over a week using smart watches) and stimulus presentations (e.g., affective and physiological changes for pre-conscious stimulus presentation versus over the longer duration course of a movie) might afford more specific and ecologically valid insights into the relationship between alexithymia and interoception. Finally, many of the studies in this area did not report any results at the level of alexithymia facets (i.e., DIF, DDF, EOT, etc.) and we did not always discuss these findings if they were reported. In some instances among the studies reviewed the relationship between alexithymia and interoception was entirely different depending on the facet being examined (Davydov et al., 2013; Kano et al., 2007). This, combined with the nearly universal prevalence of the TAS-20 and relative rarity of the BVAQ, PAQ, or other alexithymia measures suggests that future research could benefit from a more granular focus on subscale and factor differences in the relationship between alexithymia and interoception.

2.2. Attention/Avoidance

2.2.1. Overview of alexithymia and attention/avoidance theories

Different perspectives on the origins and effects of alexithymia place differing emphasis on emotion-related abilities and propensities. Of the families of hypotheses reviewed here, however, the *avoidance hypotheses* have by far the strongest emphasis on the role of propensity. According to this perspective, individuals with high alexithymia deliberately and/or habitually avoid experiencing, describing, and processing emotions (Panayiotou et al., 2015). Such a pattern of behavior constitutes a specific instance of *experiential avoidance* – the unwillingness to remain in contact with uncomfortable "private experiences" (e.g., sensations, feelings, memories) accompanied by attempts to prevent these experiences and their antecedent contexts (Hayes et al., 1996). The avoidance framework suggests that individuals with high alexithymia, intentionally or not, regularly engage in experiential avoidance and other avoidant coping methods to distance themselves from uncomfortable emotional experiences (Bilotta et al., 2016; Panayiotou et al., 2015, 2021).

Experiential avoidance is thought to be self-reinforcing: that is, avoiding a potential threat causes relief, which reinforces avoidant behavior (Kashdan et al., 2006; Wegner et al., 1987). Consequently, some researchers have suggested that experiential avoidance plays an important role in the etiology of alexithymia (Panayiotou et al., 2015). Under a strict interpretation of this framework, emotional difficulties associated with alexithymia are viewed primarily as *outcomes* of sustained avoidance rather than as fundamental deficits in cognition, though deficits in ability may arise over time due to lack of exposure or practice of emotion-related skills (Kashdan et al., 2006). Thus, the avoidance framework emphasizes an increased propensity to avoid emotion-related introspection rather than decreased emotion processing abilities as the fundamental characteristic of alexithymia.

Whereas experiential avoidance is typically examined at the level of retrospective reports of multiple instances of past behaviors, at the state level we might expect to see alexithymia associated with propensities and abilities in attention. Attentional propensities in alexithymia might incorporate both intentional and unintentional preferences in how participants distribute their attention across incoming streams of emotional information in the absence of explicitly stated task goals or extrinsic reward or punishment contingencies. For example, to the extent that alexithymia is associated with a propensity to avoid attending to unpleasant emotional information, during a free-viewing task we might expect it to be associated with reduced frequency or duration of visual fixations and dwell times on unpleasant stimuli. In contrast, to the extent that alexithymia is associated with attentional *abilities*, we would expect to see poorer alignment between attentional maintenance or searching/shifting decisions and current task goals. For example, alexithymia could be related to a greater ability to ignore task-irrelevant emotional distractors or a poorer ability to detect task-relevant emotional stimuli amidst task-irrelevant, emotionally-neutral stimuli in a visual search task.

2.2.2. Questionnaire-based assessments of alexithymia are linked to propensities toward higher experiential avoidance

Growing evidence has underscored the contributions of experiential avoidance in shaping the emotional contexts and response tendencies that are associated with alexithymia. In a particularly influential paper on this topic, Panayiotou et al. (2015) conducted two studies examining the relationship between alexithymia, experiential avoidance, and clinical symptoms. Both studies constructed mediation models using questionnaire measures of the variables of interest. The first employed a cross-sectional design in a non-clinical student sample and showed that experiential avoidance mediated the relationship between alexithymia and psychosomatic symptoms. The second study recruited patients from residential and outpatient treatment programs for obsessive-compulsive disorder and examined their scores on both alexithymia and mental health indices at intake compared to post-treatment, affording initial longitudinal insights. Specifically, Panayiotou et al. examined the change in alexithymia, experiential avoidance and depression severity scores between intake and post-treatment measurements and found that the relationship between change in alexithymia and change in depression was mediated by change in experiential avoidance. In both studies, the DIF and DDF factors of alexithymia appeared to drive the relationship between alexithymia and experiential avoidance, especially the DIF factor. Thus, in both clinical and non-clinical samples and across at least two clinical symptomologies (depression, psychosomatic illness) experiential avoidance appears to mediate the relationship between alexithymia and clinical symptoms.

This mediation effect has been well-replicated and shows convergence across different questionnaire measures of both constructs, further validating the notion that experiential avoidance tendencies play an important role in shaping individuals' behavioral tendencies and clinical symptoms. Multiple studies have replicated this pattern of mediation across different clinical symptoms and conditions (e.g., chronic pain, schizophrenia, social anxiety; O'Driscoll et al., 2014; Panayiotou et al., 2020; Schmitz et al., 2021), age groups (e.g., adolescents; Stewart et al., 2002; Venta et al., 2012), and various questionnaire measures of alexithymia and experiential avoidance (Torunsky et al., 2023), suggesting that this is a robust and transdiagnostic effect. There is also early evidence that this mediation pattern may replicate in other cultural contexts: Zakiei et al. (2017) found convergent evidence for the same mediating role of experiential avoidance in a sample of Iranian students.

Studies that have examined facet-level relationships have generally found that the DIF facet of the TAS-20 is particularly important in the relationship between alexithymia and experiential avoidance (Celikbas et al., 2021; Panayiotou et al., 2015; Torunsky et al., 2023; Zakiei et al., 2017). When subfactors of experiential avoidance are also examined, alexithymia appears to be especially strongly related to repression and denial, moderately related to procrastination, and weakly or moderately related to behavioral avoidance, distress aversion, and distraction and suppression (Torunsky et al., 2023). However, these results are also based exclusively on self-report – for the majority of these avoidance strategies, it remains unknown whether observational reports from close others or in-lab behavioral tasks would produce the same pattern of

relationships.

2.2.3. Alexithymia may be associated with reduced abilities in early attentional processing

Higher alexithymia is generally associated with attenuated early attention to emotional stimuli, largely evidenced by reduced interference from emotional stimuli in attentional performance tasks (e.g., emotional Stroop, affective word priming) or decreased number or duration of eye gaze fixations in free-viewing tasks (Donges et al., 2014; Leonidou et al., 2022; Luminet et al., 2021). Generally, we suggest that studies from the former group tend to preferentially index attentional abilities, whereas those from the latter are good indices of attentional propensities. In this subsection, we will examine the relationship between alexithymia and performance on tasks that index attentional abilities.

Emotional Stroop tasks require participants to quickly report the ink color of emotion and non-emotion words during timed trials – longer response times for emotion words compared to non-emotion words is often interpreted to reflect greater attentional bias towards emotional information (Williams et al., 1996). These tasks typically explicitly and clearly instruct participants that they should try to respond as quickly and accurately as possible and participants' responses are drawn from a limited set of pre-specified color options. Therefore, emotional Stroop tasks generally fit our criteria for an ability measure: they have explicit goals (e.g., accuracy, speed) that can be objectively evaluated (e.g., accuracy, response times) and participants' responses are semi-structured (i.e., provided from a known, limited set of possible correct responses despite a verbal free-response format). Given that alexithymia appears to have a particularly strong relationship with negative emotional processing and avoidance, much of the literature using the Stroop task has focused on attentional biases towards or away from unpleasant emotional stimuli (Luminet et al., 2021).

Studies using the emotional Stroop tasks or its variants to examine attentional biases in alexithymia have returned somewhat mixed results. Alexithymia has been associated with a bias towards negative emotional information, as evidenced by slower responses for emotion words (Martínez-Sánchez and Marin Serrano, 1997; Pandey, 1995; Parker et al., 1993b) and illness-related words (L.-G. Lundh and Simonsson-Sarnecki, 2002) in the typical color-naming version of the emotional Stroop task. Alexithymia has also been associated with slower response times to emotional face stimuli in modified emotional Stroop designs using pictures of word-congruent or word-incongruent negative faces as the distractor stimuli (Hsing et al., 2013). Other studies, however, have found no effect of alexithymia on the classic emotional Stroop task (Galderisi et al., 2008; Wingenfeld et al., 2011). Moreover, some studies have found that alexithymia is associated with a bias *away* from potentially unpleasant emotional information (S.-H. Lee and Lee, 2023; Wang et al., 2021), particularly when trait negative affect has been taken into account (Coffey et al., 2003; Mueller et al., 2006). One study attempted to control for state negative affect by presenting threatening, aversive, or neutral images immediately prior to an emotionally-neutral counting Stroop task decision (S.-H. Lee and Lee, 2022). Using this approach, it was found that low-alexithymia individuals responded equally as quickly in Stroop trials presented after unpleasant stimuli as they did to Stroop trials after pleasant stimuli, but individuals in the high-alexithymia group responded more quickly in Stroop trials after unpleasant images compared to those presented after neutral images. Consistent with a tendency for early avoidance of negative emotional stimuli, these results suggest that unpleasant images do not consume as many attention resources for individuals with high alexithymia, allowing them to respond more quickly in subsequent Stroop trials. However, alexithymia was also associated with overall slower response times in the Stroop task, potentially indicating greater overall deficit in processing speed across unpleasant and neutral emotional stimuli. This may be consistent with the finding that alexithymia is associated with reduced processing speeds in tasks involving stimulus congruency conflicts, even when those tasks are non-emotional (Zhang et al., 2011). Altogether, the available evidence seems to suggest that alexithymia is associated with reduced interference on Stroop task performance, potentially reflecting an enhanced ability to ignore task-irrelevant emotional information and a tendency to avoid aversive emotional information.

Other measures that index attentional ability have shown a similar pattern of findings (Luminet et al., 2021). Affective priming tasks, for example, examine the extent to which the congruency of prime-target word pairs influences participants' ability to respond to target words, such that emotional incongruency between prime and target results in lower speed and accuracy of responses (Fazio et al., 1986; Rohr and Wentura, 2021, 2022). This task has an objective goal (i.e., fast and accurate responses) that is explicitly communicated to participants and participants' responses are highly scaffolded (i.e., a single, correct response is displayed in front of them), thus we generally consider it to be a measure of ability to automatically attend to emotional stimuli. The extent to which participants exhibit an effect of congruency is thought to reflect their ability to automatically attend to emotional information during early attentional processing. Much like in the emotional Stroop task, previous work has found that alexithymia is associated with reduced priming effects for emotion words (Suslow and Junghanns, 2002) as well as for emotional faces (Rosenberg et al., 2020; Vermeulen et al., 2006), emotional prosody (Goerlich et al., 2011), and illness-related words (Brandt et al., 2015). These alexithymia-related priming deficits also generally remained significant after accounting for trait negative affect (Brandt et al., 2015; Vermeulen et al., 2006). However, unlike in the Stroop task, evidence for a valence-specific effect appears somewhat less clear. In a series of three studies Vermeulen et al. (2006) found consistent evidence that alexithymia-related priming effect deficits were particularly pronounced for high-arousal, negative stimuli. However, other studies have associated alexithymia with reduced affective priming effects for both positive and negative emotional stimuli (Rosenberg et al., 2020; Suslow and Junghanns, 2002). Thus, although the literature on affective priming supports the notion of reduced early attention to emotional information in alexithymia, there does not appear to be sufficient evidence to suggest that this stems from unconscious avoidance of unpleasant stimuli specifically.

While the findings from emotional Stroop and affective priming point to poorer performance on objective task measures that depend on early attention to emotional stimuli, there are some limitations to what we can infer about attentional abilities from these studies. Perhaps most notably, it is difficult to disentangle the contributions of attention from those of stimulus salience. Stimulus salience is thought to be based on both the physical and ethological properties of a stimulus (Xia et al., 2024), the latter of which may be relevant to both the social and survival aspects of emotional information (Adolphs and Andler, 2018). Theories of attention typically suggest that various features of stimulus salience are computed separately and in parallel (Treisman and Gelade, 1980) and can affect attention independently from task goals (Xia et al., 2024). This suggests that attention driven by stimulus salience relies on perceptual processing and emotion representation abilities, rather than the ability to direct attention per se. Consequently, it might be possible to explain reduced attention to emotional stimuli in alexithymia as reduced attentional *propensities* resulting from atypical perceptual processing of stimulus salience.

These considerations regarding the effects of salience are particularly likely to complicate interpretations of attentional ability when variance in salience-relevant stimulus features is not taken into account, as is often the case in extant work using the emotional Stroop task and affective priming. For example, prior work using the Stroop task has shown that meaningful correlations between distractors and targets or between context cues and targets can be obscured when the relative salience of the target dimension is sufficiently strong (Crump et al., 2008; Dishon-Berkovits and Algom, 2000). The emotional Stroop effect

also appears to be modulated by the magnitude of and interaction between the valence (threat/safety) and motivational properties (approach/withdrawal) of stimuli (Quan et al., 2020), suggesting that salience and its impact on attentional allocation may differ across types of emotional content. To address this, future work should seek to intentionally examine differences in stimulus-driven versus goal-driven attention in alexithymia, for example by purposefully varying potential salience-relevant stimulus features or by more directly testing attention-switching across various goal parameters.

2.2.4. Alexithymia is associated with a reduced propensity to attend to emotional information, especially during early attention

Behavioral studies on alexithymia and the propensity to attend to particular types of emotional information have frequently used eye-tracking to examine where and for how long participants look during free-viewing of emotional stimuli (Luminet et al., 2021). These tasks do not provide participants with a specific goal and participants are, accordingly, not instructed to approach their viewing of emotional images in any particular way and are instead allowed to freely view the image. This combination of no indicated goal, no specific instructions for behavior, and low response scaffolding makes eye-tracking during free-viewing of emotional images, in our view, an excellent index of propensities in emotion-related visual attention.

The vast majority of studies using eye-tracking paradigms have found that alexithymia was associated with a tendency to pay less attention to emotional stimuli. Alexithymia has been associated with reduced dwell times on the mouth (Bird et al., 2011) and eye (Bird et al., 2011; Fuchs et al., 2024; Fujiwara, 2018) regions of faces expressing emotions. In one study, individuals with higher alexithymia showed a reduced effect of masked emotion word primes on the duration of fixations on corresponding target emotional faces, suggesting that reduced abilities during early attention phases might lead to reduced propensity to attend to emotional information at later times (Surber et al., 2024). Consistent with the avoidance hypothesis of alexithymia, some studies have found reduced dwell times for unpleasant emotional stimuli in particular (Durtette et al., 2023; Leonidou et al., 2022; Wiebe et al., 2017), which may be driven by DDF (Leonidou et al., 2022) and EOT (Leonidou et al., 2022; Wiebe et al., 2017). Importantly, Leonidou et al. (2022) found a unique time course to the relationship between gaze time and alexithymia: whereas EOT and DDF were negatively correlated with dwell times during early intervals of viewing (e.g., 0–500, 501–1000 ms) they were positively correlated with dwell times during later stages of viewing (i.e., 1001–6500 ms). These two stages generally correspond to phases of attentional orientation and attentional maintenance, respectively (Cisler and Koster, 2010; Wieser et al., 2009), suggesting that alexithymia may be associated with a reduced propensity to orient towards negative emotional information, but an enhanced propensity to maintain attention on this negative emotional information. A few studies have found no relationship between alexithymia and eye gaze durations or fixations (Sharpe et al., 2016; Wenk et al., 2024), though these studies were not specifically designed to study alexithymia and may have had low power for the detection of effects in individual differences (Gignac and Szodorai, 2016). Altogether, the preponderance of available evidence from eye-tracking studies seems to suggest that alexithymia is associated with a reduced propensity to attend to emotions during early stages of attention, though some preliminary evidence suggests that it is associated with greater attention to negative emotions during later processing stages.

2.2.5. Summary

In summary, evidence from across behavioral, clinical, and questionnaire studies points to a relationship between alexithymia and avoidance of emotional processing. These lines of evidence converge to imply that alexithymia is associated with certain attentional *propensities*, especially when faced with unpleasant and high-arousal stimuli. However, these propensities appear to be complex and do not appear to unilaterally increase or decrease early attention allocation towards emotional stimuli in behavioral experiments. In order to better understand these attentional propensities, alexithymia research may benefit from experimental designs that simultaneously examine attentional processing across stages (e.g., early/automatic, late/strategic) and subprocesses of attention (e.g., selectivity, disengagement, avoidance), as has been done in the literature on anxiety (Cisler and Koster, 2010). The evidence regarding alexithymia and deficits in attentional *abilities* is significantly weaker, as many of the studies in this area do not adequately control for related, potentially confounding, constructs (e.g., salience, negative affect). Nonetheless, the results from emotional Stroop tasks (Coffey et al., 2003; S.-H. Lee and Lee, 2022; Mueller et al., 2006; Wang et al., 2021) and affective priming studies (Brandt et al., 2015; Goerlich et al., 2011; Rosenberg et al., 2020; Suslow and Junghanns, 2002; Vermeulen et al., 2006) are consistent with a reduced ability to attend to briefly presented emotional stimuli. To better address attentional abilities, future work might seek to intentionally examine how well participants can shift attention between stimuli according to task goals (e.g., shifting reward/punishment contingencies) and account for varying levels of stimulus salience (e.g., by varying motivational and intensity properties of emotional stimuli).

2.3. Expression

2.3.1. Overview of expression-related aspects in alexithymia

While alexithymia is linked to a variety of affective features, the construct is particularly concerned with individual differences in the processing of feelings and how they are expressed (Taylor, 1984, 2000). Emotional expressivity was of especial importance to early researchers of alexithymia, many of whom were psychiatrists who had become frustrated with the limited efficacy of conventional talk therapy approaches for certain clients, particularly those with psychosomatic conditions (Nemiah and Sifneos, 1970; Sifneos, 1973; Taylor, 1984). Psychotherapeutic approaches typically rely heavily on both a client's *ability* and their *willingness* to elaborate on and communicate their emotional experiences (Hayes et al., 1996; Lane et al., 2022) – aspects that are directly implicated by at least the DDF and EOT factors of alexithymia (Taylor and Bagby, 2013). Accordingly, high-alexithymia individuals tend to benefit less from psychologically-based therapy (Leweke et al., 2009; Ogrodniczuk et al., 2011; Pinna et al., 2020) and have poorer relationships with their therapists (i.e., poor therapeutic alliance; Cameron et al., 2014; Ogrodniczuk et al., 2011; Quilty et al., 2017; Taylor, 1984), though these relationships may depend on the psychiatric diagnosis, treatment phase, treatment approach, or alexithymia facets being examined (Pinna et al., 2020; Quilty et al., 2017; Zorzella et al., 2019). Outside of the therapist's office, alexithymia has also been associated with lower self-reported social skills (Koppelberg et al., 2023; Lumley, Ovies, et al., 1996; Vaiouli and Panayiotou, 2021) and challenges in intimate communication as rated by romantic partners (Frye-Cox and Hesse, 2013) and higher levels of detachment (Grabe et al., 2001; Inslegers et al., 2012; Karl et al., 2024), and loneliness (Frye-Cox and Hesse, 2013; Lumley, Ovies, et al., 1996; Wu and Guo, 2025) – results driven in many cases by the DDF and EOT facets of alexithymia. Altogether, these findings suggest that alexithymia is not only associated with reduced propensities and/or abilities to express emotions, but that these difficulties with expression are likely to have a negative impact on the quality of one's social relationships.

In order to offer better guidance on how to mitigate these potential negative impacts, we need a stronger understanding of the processes from which these expressive difficulties can arise. From this perspective, it is important to separate the willingness or tendency to express emotions (i.e., *expressive propensities*) from the extent to which one is able to effectively communicate emotion (i.e., *expressive abilities*). Additionally, because expression, or lack thereof, acts as one of the *outputs* of emotional processing (Adolphs and Andler, 2018; Barrett, 2017; Gross, 2015), it is important to examine how difficulties with expression might

arise from propensities or abilities in cognitive processes that *precede and inform* how one might select their expressive actions (e.g., interoception, attention). Consider that an individual who exhibits a restricted variety and frequency of emotion words in their speech might do so because they lack the necessary granularity of or vocabulary for emotion concepts to describe their affective states (i.e., poorer ability to express emotions; Hobson et al., 2019). However, the same pattern of expression could variously arise for multiple other sources, as, for instance: in someone with undifferentiated and/or attenuated representations of interoceptive signals (i.e., interoceptive ability/propensity; Brewer et al., 2021; Murphy et al., 2018), someone who chooses not to express certain types of feelings (i.e., expressive propensity; Levant et al., 2014), or someone steadfast in ignoring their feelings altogether (i.e., attentional propensity; Bilotta et al., 2016; Karl et al., 2024; Panayiotou et al., 2015), even if that individual has an adequately detailed vocabulary for and understanding of emotional states. For example, although alexithymia is generally associated with difficulties in labeling emotional facial expressions (Grynberg et al., 2012), one study by Nook et al. (2015) found that alexithymic deficits were largely resolved when word labels were provided in the task. More specifically, when tasked with identifying whether two stimuli shared the same emotional content (e.g., anger, sadness), alexithymia was negatively correlated with decision sensitivity for face-face pairs but not face-word pairs. These results suggest that alexithymic deficits in emotion recognition might sometimes result from difficulties with concept retrieval, but not necessarily from a paucity of conceptual knowledge. Such findings illustrate that the methods used to probe emotional expression in alexithymia have important implications for the inferences that can be appropriately drawn.

In the following subsections, we discuss extant work on alexithymia and emotional expression as examined through the lens of the propensity/ability framework. Broadly, we suggest that *expressive propensities* in alexithymia have been well-documented through the use of open-ended emotional response prompts (e.g., diary writing, ecological momentary assessments; e.g., Ottenstein and Lischetzke, 2020) and spontaneous facial reactions to emotional stimuli (e.g., Allan and Budd, 2023; Franz et al., 2021). *Expressive abilities*, on the other hand, have been indexed by performance measures testing a participant's emotional vocabulary (e.g., Wotschack and Klann-Delius, 2013) and emotional granularity/differentiation (e.g., Aaron et al., 2018). We end this section with a brief summary and discussion of future directions for the study of emotional expression in alexithymia, pointing in particular to the need for further examination of nonverbal expressions.

2.3.2. Reduced fundamental language abilities are linked to alexithymia

As previously discussed, the complexity of emotional processing lends itself to a variety of failure points that could each independently and/or cooperatively contribute to the presentation of alexithymia. The *alexithymia-language hypothesis* suggests that language deficits are central to at least one of these pathways to alexithymia (Hobson et al., 2019). This hypothesis extends from work in constructionist emotion theory, which suggests that language drives the ability to categorize, and thereby recognize, emotional experiences through its ability to define and connect emotion concepts (Lindquist et al., 2015). The alexithymia-language hypothesis consequently suggests that deficits in the ability to use fundamental, structural features of language (e.g., grammar, vocabulary, reading/verbal comprehension, lexical access) might therefore directly interfere not only with an individual's ability to communicate feelings, but also their ability to represent them (Hobson et al., 2019). Consequently, this hypothesis predicts that alexithymia should be associated with poorer language abilities, and that these abilities underlie the restricted expressivity and self-reported difficulties with identifying and/or describing feelings that characterize alexithymia.

In a recent meta-analytic review of language deficits in alexithymia, Lee et al. (2022) examined the relationship between alexithymia and structural language abilities as well as other features of emotional language (discussed further in sections 2.3.3 and 2.3.4). In our view, their collection of studies regarding the structural features of language tend to use methods that align with our criteria for *ability* including lexical decision tasks (e.g., Suslow and Junghanns, 2002; Yao et al., 2018) and verbal IQ tests indexing multiple features of language use (e.g., vocabulary, syntax, verbal reasoning, literacy, verbal/reading comprehension; Montebarocci et al., 2011; Nishimura et al., 2009; Winstanley et al., 2019). These tasks typically have clear goals (e.g., higher accuracy, lower response times) that are explicitly communicated to the participant. In some cases, response options were also highly structured (e.g., two-alternative forced-choice design in lexical decision tasks; Yao et al., 2018), but in others participants may have significant freedom in their responses (e.g., clinical interviews using open-ended questions to test language comprehension, or free listing of emotion words; Wotschack and Klann-Delius, 2013). Nonetheless, the measures of structural language used in alexithymia research, as reviewed by Lee et al. (2022), generally seem to be good indices of basic language abilities.

Supporting the alexithymia-language hypothesis, Lee et al. (2022) found two lines of evidence at least suggesting that language abilities are implicated in alexithymia. First, across 11 studies primarily studying adults without clinical language impairments, they found a small, but negative pooled effect of alexithymia on structural language ability, such that only 1–2 % of the variance in structural language was associated with alexithymia (i.e., as assessed through self-report or clinical interviews). This relatively small effect size suggests that, while relevant, deficits in basic language abilities are not nearly sufficient to explain alexithymia in the general population and are indicative of a multi-route etiology of alexithymia. Interestingly, in a follow-up analysis of a subset of four studies comparing language-impaired and non-impaired groups, Lee et al. found that alexithymia scores were significantly higher in individuals with language impairments compared to those without language impairments. The moderate size of this effect was much larger than the effect size of structural language abilities in the general population. In other words, individuals with high alexithymia do not necessarily always have poorer language abilities, but individuals with diagnosable language impairments (e.g., developmental language disorder; Hobson and Van Den Bedem, 2021) tend to have notably higher levels of alexithymia. Together, these findings suggest that deficits in language abilities may be "sufficient, but not necessary" to produce an alexithymic phenotype.

2.3.3. Alexithymia is linked to a reduced propensity (and ability?) to express emotions precisely

Although structural language abilities may be foundational to the process of categorizing and interpreting emotional experiences, we might expect alexithymia to be more directly related to differences in more abstract or emotion-specific language. For example, difficulties in identifying and describing feelings might be manifested by reduced *emotional granularity,* that is, a reduced propensity and/or ability to precisely differentiate between emotional states, especially when those states are similar to one another (e.g., same valence; Barrett, 2004; Barrett et al., 2001). Emotional granularity can be quantitatively measured in several ways including: (a) calculating average bivariate correlations of participants' ratings of a set of the same affective items (e.g., emotion words, valence/arousal) over time in a repeated measured design (Barrett et al., 2001); (b) calculating an intraclass correlation coefficient (ICC) of an item set across time (Tugade et al., 2004), (c) calculating an ICC for each measurement occasion across different affect items (i.e., a more state-focused approach; (Hoemann, Barrett, et al., 2021), or (d) calculating the proportion of "specific" versus "general" affective terms, as rated by experimenters, in participants' open-ended

written responses to emotion prompts (e.g., Ottenstein and Lischetzke, 2020).[3] These methods generally meet our criteria for measures of *ability* in that they quantitatively assess a specific target/goal (i.e., precise use or endorsement of emotions terms) and they typically constrain participants' response options (e.g., Likert ratings of arousal/valence or a provided set of standard affect labels) such that the influence of potential confounding variables (e.g., emotional vocabulary/fluency) are reduced. However, participants do not typically seem to be explicitly instructed to respond as precisely as possible, or at least such instructions do not appear to be consistently reported across studies. Consequently, findings from these measures of granularity may reflect mixed influences of both propensity and ability regarding the precision of emotional expression.

As expected, available evidence generally points to a correlation between alexithymia and reduced emotional granularity (Fugate et al., 2025; K. S. Lee et al., 2022). Similar to their results regarding alexithymia and structural language abilities, Lee et al. (2022) found a small, negative pooled correlation effect across 11 publications, such that alexithymia accounted for only about 1 % of variance in emotional granularity. Notably, although the direction of the correlation was the same for both positive and negative emotional granularity, when valenced items were analyzed separately alexithymia was only significantly correlated with negative emotional granularity. Moreover, this effect was only present for the DIF and DDF facets of alexithymia. Related subsequent work has further corroborated the link between alexithymia and negative emotional granularity (Knapp et al., 2024), but has also suggested that alexithymia may not be associated with other measures of emotion language precision (e.g., frequency of unique emotion words used in written responses, emotion word fluency; Hegefeld et al., 2023; Hoemann et al., 2025). Altogether, these findings seem to suggest that alexithymia is associated with imprecise use of emotion words to express one's feelings, particularly for negative emotions, and is possibly due to the entwined relationship between conceptual precision and access to verbal repertoire.

Although there is some ambiguity regarding the extent to which emotional granularity measures have indexed propensity versus ability in the alexithymia literature, in the majority of cases these measures seem to more strongly index ability than propensity. For example, nine of the 11 studies reviewed by Lee et al. (2022) were conducted in lab settings where participants rated the affective dimensions (i.e., valence, arousal) and/or discrete emotions (e.g., excited, scared) of emotional stimuli. By providing participants with emotion/affect labels, these studies reduce the influences of difficulties with lexical access, cognitive effort, and/or attentional avoidance or disinterest in searching for emotion labels. Moreover, by selecting stimuli with particular emotional content, the experimenters were able to control the rate, intensity, and kinds of emotional content to which a participant is exposed. In contrast, open-ended responses and/or ecological momentary assessment generally offer less control over the cognitive efforts/skill required of and emotional situations available to participants; hence emotional granularity measures may more strongly reflect propensities when these latter methods are adopted. Relatively few studies have used these methods to examine the relationship between alexithymia and emotional granularity: Lee et al. (2022) identified only two publications that used experience sampling methods (Boden et al., 2013; Ottenstein and Lischetzke, 2020),[4] and we found only one subsequent publication that directly reported on the relationship (Knapp et al., 2024). Of these three publications using experience sampling methods, only one study showed a significant relationship between alexithymia and emotional granularity (Ottenstein and Lischetzke, 2020). Thus, the majority of extant work on this topic seems to offer at least partial support for a negative relationship between emotional granularity abilities and alexithymia.

In summary, alexithymia appears to be associated with reduced emotional precision, particularly for negative emotions, though the extent to which this relationship reflects reduced abilities versus propensities remains somewhat ambiguous. Future work may disentangle these effects through more intentional consideration of the ability/propensity distinction during study design. For example, studies indexing ability may consider explicitly instructing participants to use emotion words as precisely as possible. Relatively few studies in this area are particularly well suited for examining emotional granularity as a propensity. To remedy this, future work would benefit from additional studies using ecological momentary assessments and free-response methods of measuring emotional granularity. Furthermore, a depth of processing manipulation (e.g., Constantinou et al., 2014) wherein participants are asked to respond more precisely/intentionally in some trials than in others might afford an opportunity to study both propensities and abilities in emotional granularities in a within-participants design.

2.3.4. *Alexithymia is linked to a propensity to express more negative and fewer positive emotions in natural language use*

The propensity to express one's feelings is often indexed by examining verbal responses to open-ended prompts about emotional experiences from daily life experiences (e.g., through ecological momentary assessment; EMAs; e.g., Boemo et al., 2022; Reitsema et al., 2022; Shiffman et al., 2008), the recalling of past intense or traumatic experience (Edwards et al., 2020; Pennebaker and Beall, 1986), or invoked by emotional stimuli in a lab context (e.g., Luminet et al., 2004; Roedema and Simons, 1999). Such studies fit well under our criteria for methods of examining propensity: there is no objectively "correct" way to respond to open-ended prompts (i.e., these tasks are relatively "goal-free"), nor do these studies generally instruct participants to use emotional language in any particular way (i.e., low instructional specificity), and the free-response nature of the prompts affords the participants a great amount of flexibility in their responses (i.e., low response scaffolding).

Consistent with the idea that alexithymia is associated with reduced emotional expression, alexithymia tends to be associated with a lower frequency of emotion words in written responses (Allan and Budd, 2023; Laricchiuta et al., 2022; K. S. Lee et al., 2022) and an increased tendency to report "no emotion" (Aaron et al., 2018) or "I have an emotion I cannot name" (Costache et al., 2024). However, meta-analytic evidence suggests this relationship is valence dependent – when accounting for valence, the pooled effects are stronger and show that alexithymia is actually associated with *increased* frequency of negative emotion language and *decreased* frequency of positive emotion language (K. S. Lee et al., 2022). Some subsequent work has further corroborated this finding, pointing to an increased propensity to express negative emotions in high-alexithymia individuals (Farina and Pepe, 2024), but other work has failed to find an association between emotion word frequency and alexithymia, at least as it is measured by the TAS-20 (Rachele et al., 2025; Ryan and Cogan, 2023). Overall, individuals with higher alexithymia appear to have a tendency to underreport emotional states, but when they do express their feelings, they report a higher frequency of undifferentiated, negative emotional experiences.

2.3.5. *Sociodemographic factors may shape the role of expressive propensities and abilities in alexithymia*

Beyond establishing how alexithymia relates to expressive propensity, it is important to understand what factors guide and shape these propensities. Cultural values and norms regarding emotional expression have been postulated to play a role in the development of alexithymia, with extant work focusing particularly on comparisons between

[3] Interested readers may look to Trull et al. (2015) for a review of emotional granularity measures as they relate to dynamic affective processing.

[4] Note that, although included in the review by Lee et al. (2022), Boden et al. (2013) actually studied emotional clarity, a construct that shares some but not all of the features of alexithymia (Hoemann, Nielson, et al., 2021).

collectivist and individualist cultures (Aival-Naveh et al., 2019; Liu et al., 2025; Mendia et al., 2024). The majority of this work focuses somewhat narrowly on comparisons of East Asian and Western European/North American cultures, often motivated by the contention that Confucianist values in the former encourage less emotional expressivity and greater emotional downregulation compared to the latter (Aival-Naveh et al., 2019; Liu et al., 2025). In general, reviews on cultural comparisons of alexithymia have found individuals from collectivist cultures tend to have higher scores of alexithymia compared to individuals from individualistic cultures, and alexithymia appears to predict negative mental health outcomes for people in both cultures (Aival-Naveh et al., 2019; Liu et al., 2025). Within this literature, some empirical work suggests that endorsement of items reflecting collectivist cultural values mediates this relationship, such that greater endorsement of social conformity, purity from desire, and filial piety predicts greater alexithymia (Dere et al., 2012; Lo, 2014). Notably, however, endorsement of similar values from the Western philosophy of stoicism such as taciturnity (i.e., belief that emotions should not be expressed), serenity (i.e., belief that strong emotions should not be felt), and endurance (i.e., belief that physical suffering should be endured) also predicted higher levels of alexithymia in participants from both Norway and New Zealand (Karl et al., 2024). Likewise, a study comparing Spanish and Uruguayan participants found that although national origin predicted beliefs in the benefits of sharing social emotions, neither gender nor national origin predicted alexithymia. Instead, higher alexithymia was associated with less belief in the potential beneficial effects of social sharing of emotions regardless of national origin (Martínez Sánchez et al., 2013). Thus, while there is strong evidence for cross-cultural differences in alexithymia scores, it seems likely that emotional expression in alexithymia may be more directly informed by an individual's personal beliefs and values about emotional expression.

Emotional expression in alexithymia may be further shaped by more specific identities held by individuals. Gender differences in alexithymia have been particularly well-documented and discussed by the extant literature.[5] Across a variety of cultures, men tend to show higher overall levels of alexithymia than women (Levant et al., 2009; Mendia et al., 2024) and specifically tend to show greater DDF compared to women (Mendia et al., 2024). This gender asymmetry motivated the development of the *normative male alexithymia hypothesis*, which posits that men, or at least men raised in American and European cultures, are predisposed to alexithymia because they are socialized under traditional masculine ideologies that encourage them to restrict their emotional expressivity, especially for emotions that might signal weakness or vulnerability (Levant, 1992). We might therefore expect that at least some men with alexithymia would show a decreased propensity to report certain kinds of emotions. However, although these data likely exist (e.g., in studies of written responses to emotion prompts; Hoemann et al., 2025; Ottenstein and Lischetzke, 2020; Winstanley et al., 2019), they tend not to be the focus of the publication and effects of gender on emotional expression propensity in alexithymia are often left unreported. Still, some work suggests that highly alexithymic men tend to have poorer abilities in labeling emotions – for example, reduced performance in labeling emotional expressions or experiences (Nam et al., 2020; Zammuner, 2011) and poorer lexical recall speed for target emotion words only when those target words were emotions specifically discouraged by traditional masculine norms (Levant et al., 2014). One possible explanation for reduced abilities to accurately or quickly draw on emotion words is that reduced expressive propensities may lead to reduced practice and therefore reduced ability in emotion concept retrieval. The influence of gender socialization on alexithymic presentation thus presents an interesting route through which emotional propensities and abilities reinforce one another without necessarily requiring the learner's intentionality.

Although there are many articles that collect data about the relationship between sociodemographic variables and alexithymia, there are a number of limitations to this body of work. While a variety of sociodemographic variables are collected in many studies, they are the variables of interest in far fewer studies. Consequently, relatively few studies have been designed to specifically probe how these variables influence propensities and abilities for emotion expression. Relatedly, existing work tends to rely heavily on retrospective and self-report data (Aival-Naveh et al., 2019; Mendia et al., 2024), likely because the effect sizes of these differences tend to be small (Mendia et al., 2024) and these self-report approaches tend to be more financially and logistically feasible for data collection across large sample sizes. This methodological focus limits the possibilities for insight into whether and how these sociodemographic variables actually influence behavioral changes in emotional expression, and future research would benefit from examining results from behavioral measures (e.g., written responses, physiological recordings, nonverbal expression monitoring). There is also evidence that alexithymia is related to a variety of other sociodemographic variables including older age (Lane et al., 1998; Mattila et al., 2006; Paradiso et al., 2008), less education (Kokkonen et al., 2001; Lane et al., 1998), and lower socioeconomic status (Kokkonen et al., 2001; Lane et al., 1998). Moreover, various sociodemographic variables might interact with one another to shape alexithymic expression. For example, in their meta-analysis on gender differences Mendia et al. (2024) found that gender differences in the DIF and EOT facets of alexithymia have opposite developmental trajectories – DIF tends to be higher while EOT tends to be lower across increasing age groups (i.e., adolescents, young adults, and adults). Further longitudinal examination is needed to corroborate these findings, as they are primarily drawn from cross-sectional research designs (Aival-Naveh et al., 2019; Mendia et al., 2024). Thus, although extant work has highlighted gender and cultural and individual emotional ideologies as potential moderators of alexithymia, future work needs to use behavioral and longitudinal study designs to delineate their contributions to propensities and abilities in emotional expression.

2.3.6. *Alexithymia may be linked to a reduced propensity to express emotions nonverbally*

Compared to research on linguistic expressions of emotion, nonverbal emotional expression has received somewhat less attention in the literature on alexithymia. Much of this work has focused on the propensity for individuals with high alexithymia to make emotional facial expressions. For example, in one study judges were less accurate in labeling the spontaneous emotional facial expressions of individuals with higher alexithymia (Wagner and Lee, 2008). Notably, when participants were asked to make specific emotional facial expressions, the posed expressions of high and low alexithymia participants were recognized by judges equally accurately, suggesting that alexithymia is not associated with a deficit in the ability to intentionally produce specific emotional expressions. In another study where participants were covertly filmed while reacting to an emotion induction, judges rated individuals with higher DIF scores as being less expressive of positive emotion during a positive mood induction and less expressive of negative emotions during a negative mood induction (McDonald and Prkachin, 1990). However, physiological examinations of facial muscle responses seem to paint a different picture. In one review of 15 studies measuring facial electromyographic (EMG) reactivity to a variety of types of emotion stimuli and emotion induction methods, Panayiotou et al. (2018) found that eight studies showed no relationship with alexithymia across any muscle group indices and 14 found no group differences in at least one index. Where significant associations were found, studies tended to report attenuated levels of facial EMG reactivity in alexithymia, but given that such associations were far outnumbered

[5] Studies on gender and alexithymia tend to examine cisgender men and women, though recent work suggests that alexithymia may also be notably higher in transgender men and women (Kallitsounaki and Williams, 2023; Mazur and Larionow, 2025; Mazzoli et al., 2022).

by null results Panayiotou et al. (2018) suggested that facial reactivity was not a promising biological correlate of alexithymia. Subsequent papers, in contrast, have found that alexithymia may be related to reduced facial EMG reactivity to emotional expressions of adults (Franz et al., 2021; T. Müller et al., 2019; Nordmann et al., 2021), but not children (Nordmann et al., 2021), suggesting that reduced EMG reactivity in alexithymia may depend on particular stimulus characteristics (e.g., social versus non-social content, arousal level). Altogether, the available work on the production of emotional facial expressions in alexithymia seems to suggest that higher alexithymia is associated with a propensity to produce more ambiguous or less interpretable expressions, but not necessarily to show less facial muscle reactivity in response to external emotional information.

There are relatively few studies examining how alexithymia relates to other forms of nonverbal emotional expressivity. For example, while there is published work on how alexithymia might affect the ability to recognize prosodic emotional speech cues (Telli and Bilge, 2024; Wang et al., 2021) and nonverbal cues of non-literal statements (e.g., sarcasm; Jakobson and Pearson, 2021), whether alexithymia is associated with differences in the production of emotional prosody or nonverbal gestures has received very little research attention. Studying these relationships may be particularly important for understanding and addressing the relationship between alexithymia and poorer quality social relationships and interpersonal communication.

2.3.7. Summary

In summary, extant work suggests that alexithymia is related to variation in both the propensity and ability to express one's emotions, though these relationships can be complex and the methods of indexing them do not cleanly delineate propensity from ability. Individuals with high alexithymia seem to have trouble differentiating between similar emotions, especially negative ones, as evidenced by poorer emotional granularity in autobiographical writing tasks and restricted emotional vocabulary (K. S. Lee et al., 2022). However, it is unclear to what extent this reflects a restricted capacity or ability (e.g., imprecise emotional concepts, smaller emotional repertoire/vocabulary, inability to link concepts with labels) versus a propensity to circumvent differentiation by failing to attend to these experiences (e.g., due to avoidance or reduced salience). Regarding propensity, the literature generally suggests that alexithymia is associated with a propensity to use fewer emotion words, especially for positive emotions, but more negative emotion words (Laricchiuta et al., 2022; K. S. Lee et al., 2022), though it remains unclear exactly what drives these propensities. Future work in this area may benefit from examining how the relationship between emotional expressivity measures and alexithymia responds to manipulations of instructional specificity (e.g., explicitly asking for precise emotional expressions) or contextual control (e.g., comparing responses to controlled stimulus sets against responses to uncontrolled, real-world experiences). Additionally, the relationship between alexithymia and the production of nonverbal emotional expressions appears to be largely understudied, leaving a gap in the literature regarding propensities and abilities for non-linguistic expression.

3. General discussion

3.1. Overall summary

To build an accurate neurocognitive (process) model of alexithymia, the field first needs to have a strong understanding of the cognitive mechanisms that contribute to alexithymia. In the present paper, we have adapted and extended past work to develop the *propensity/ability framework* in alexithymia which aims to facilitate clearer communication, evaluation, and design of research on cognitive-behavioral mechanisms of emotional processing in alexithymia. This framework emphasizes the difference between ability, or the functional capacity which an individual possesses, against propensity, the frequency and depth with which an individual actually tends to perform a function. Applied across three domains of emotion-related cognition closely associated with alexithymia – interoception, avoidance, and expression – the propensity/ability framework reveals that extant work in the alexithymia literature displays an interest in the propensity/ability distinction but often falls short of implementing or realizing the methodological criteria required for strong inferences about ability. In each of these domains, researchers have proposed that alexithymia is associated with specific deficits in ability (e.g., interoceptive accuracy, attentional selection, structural language), but the paradigms used to assess abilities in these domains frequently do not explicitly ensure that participants are aware of the target capacity being assessed and/or the goal of the task. Consequently, many of the studies that purportedly assess ability cannot disentangle it from propensity, making it difficult to trace alexithymic presentation back to failures of particular cognitive-emotional mechanisms.

Within each domain, alexithymia shows complex relationships with both abilities and propensities that seem to indicate either the existence of subtypes of alexithymia or that alexithymic presentation is highly dependent on context. In the interoceptive domain, this trend is exemplified by the variety of evidence supporting propensities for both physiological hyperarousal (Hickman et al., 2022; Martin and Pihl, 1985) and hypoarousal (Gaigg et al., 2018; Roedema and Simons, 1999) in individuals with higher alexithymia, as well as findings of both enhanced and attenuated interoceptive accuracy (Scarpazza et al., 2022; Trevisan et al., 2019). Likewise, alexithymia has been associated with both increased and decreased attention towards and avoidance of emotional states (Luminet et al., 2021; Panayiotou et al., 2015) and reduced propensity to express emotions verbally when unprompted (K. S. Lee et al., 2022). Importantly, the valence of emotional states may be important in both attention and expression in alexithymia. In the avoidance domain, individuals with higher alexithymia tend to be less prone to attend to negatively-valenced stimuli in early attention but less likely to disengage from them during attentional maintenance (Luminet et al., 2021a). Similarly in the expression domain, individuals with higher alexithymia are less likely to use emotional words in general, but more likely to report negative emotion words than their lower alexithymia peers and also demonstrate a poorer ability to differentiate between negative emotions (Aaron et al., 2018; K. S. Lee et al., 2022).

Many of the conflicting or mixed findings regarding alexithymia and cognitive-emotional mechanisms seem to use measures of propensities. The mixed findings then may simply reflect the intuition that propensities (compared with abilities) should be less consistent across varying tasks and contexts, and so may require larger samples/more intensive sampling or tighter and more uniformly applied experimental controls in order to draw reliable conclusions. Likewise, the inconsistency in the relationship between alexithymia and ability measures might reflect "contamination" of these ability measures due to the failure of studies to successfully differentiate ability from propensity. To the extent that these contextual effects and inconsistencies are accurate assessments of the relationship between alexithymia and cognitive-emotional functioning, they may reflect the presence of different routes to or subtypes of alexithymia.

A clearer understanding of the multi-route pathway to alexithymia may be particularly useful in understanding how alexithymia relates to various clinical disorders. For example, poorer interoceptive accuracy and/or reduced interoceptive sensibility may be more typical for individuals that present jointly with high alexithymia and an eating disorder diagnosis (Trevisan et al., 2019), as eating disorders are often characterized by reduced salience and accuracy in interpreting hunger cues (Cadena-Schlam, 2015; Morales and Berridge, 2020). In contrast, enhanced interoceptive accuracy may be more typical for individuals that present jointly with high alexithymia and high anxiety or panic, which are thought to be related to increased reports of chest pain that cannot be associated with cardiac problems (Clouse and Carney, 1995; Gonzalez-Ibarra et al., 2024) and increased interoceptive accuracy and

sensibility in heartbeat detection tasks (Limmer et al., 2015; Richards et al., 2003; Zoellner and Craske, 1999). Identifying the different routes to alexithymia based on deficits in causal, transdiagnostic cognitive-emotional mechanisms would afford both a more complete understanding of the affective science of emotional awareness and more specific, individualized treatment plans for individuals with various forms of psychopathologies (Hobson et al., 2019).

Enhanced precision of research models and measures of causal sources of emotional difficulties will also enable more precise information about where clinicians should seek to intervene. For example, if a client already has a strong emotional vocabulary and understanding of when and where to use different emotion labels, the clinical focus may be more on helping the client learn to reduce avoidance of emotions or to distinguish between different types of bodily sensations rather than on learning about emotion words. To this end, both clinical and theoretical work would benefit from a research battery or set of measures with agreed-upon assessment methods beyond self-report alone to measure alexithymia. To achieve such consensus, future work might make use of adversarial/cross-lab collaborations that seek to design work that can resolve disputes between the dominant theoretical orientations in the field. However, alexithymia research must first be able to make clearer distinctions between ability and propensity in cognitive-emotional domains. Without this distinction, we may design measures that simply reflect related tendencies, rather than shared mechanistic failures, hampering the ability to develop accurate theory or reliable, targeted interventions.

3.2. Limitations and future directions

Although we examined and discussed a broad array of literature, the current paper is not a systematic literature review. A systematic review of propensity/ability distinctions would be useful both for the alexithymia literature and psychological literature more broadly. In particular, a review that cuts across multiple domains of psychological and neuroscientific approaches may be particularly useful in refining the criteria used to define appropriate measures of propensity and ability. While the propensity/ability framework is designed to facilitate better experimental design and communication regarding psychological phenomena and their underlying causes, its broad, flexible nature comes with notable limitations. In this paper we have argued that studies should seek to cleanly delineate ability from propensity; however the complexity of psychological variables makes a perfect distinction between these qualities nigh impossible to achieve. In practice, rather than falling cleanly into binary categories of "ability" or "propensity", different methods likely afford different magnitudes of insight into ability and propensity. Nonetheless, even under this "dimensional" view, the propensity/ability framework provides a common language to facilitate more precise discussions regarding the interpretation of an assessment and its limitations.

Relatedly, the criteria we have proposed for what should constitute an assessment of ability are not necessarily comprehensive or infallible. For example, we argue that an assessment of ability should make it explicit and clear to each participant what target goal, strategy, or mechanism is being assessed and what constitutes "success" in the task. However, even if they are aware of the task and have the ability to perform it, an individual might employ an alternative cognitive strategy to accomplish the same result or simply choose not to engage with the task or cognitive mechanism of interest (e.g., in an attempt to avoid uncomfortable experiences). To the extent that a given study design can prevent or at least detect these violations, it will offer stronger insights into ability. In practice, however, it is often infeasible to expect such a level of experimental control, and the number of potential confounding factors to control for may reach intractable levels very quickly. Thus, instructional clarity and explicit objectives are not necessarily sufficient to guarantee that a given assessment is a strong indicator of an ability. Nonetheless, an assessment method that meets these criteria still seems more likely to index ability than would an assessment that does not meet these criteria. Future work may seek to further extend the list of methodological criteria or guidelines for differentiating between ability vs. propensity, to test which of these criteria hold the most influence on the interpretation of an assessment, and/or aim to concurrently and unobtrusively assess motivational engagement (e.g., via eye-tracking or patterns in stimulus response times).

The present perspective overview serves the dual purpose of introducing the propensity/ability framework and applying it to literature on alexithymia, which necessitated a selective scope for both topics. As a consequence, our commentary on alexithymia research was constrained to only three phenomenological domains: interoception, avoidance, and expression. These domains were carefully selected to represent cognitive processing across a broad range of potential time courses and stages of abstraction. Nevertheless, there are several other key domains of cognitive-emotional mechanisms that have been proposed to drive or be driven by alexithymia, including memory (Camia et al., 2020; Donges et al., 2014; Luminet et al., 2021; Meltzer and Nielson, 2010), emotion regulation (Panayiotou et al., 2021; Preece et al., 2023), self-versus-other processing (Di Tella et al., 2024), and perception and representation (Bausch et al., 2011; Felisberti and Cropper, 2023; Lane et al., 2015). Future research may benefit from the development and application of propensity and ability assessments of alexithymia in these domains.

In addition to accounting for a broader scope of cognitive functions, future research in alexithymia should seek to examine the extent to which deficits in these functions are specific to certain contexts or stimulus types. For example, although alexithymia is typically associated with poorer recall for specifically emotion-related words (Luminet et al., 2006; Meltzer and Nielson, 2010), some studies have found that it is simultaneously associated with enhanced memory for illness-related words, despite their presumably negative valence (Meltzer and Nielson, 2010).The relationship between alexithymia and word recall also seems to be impacted by the emotional content, or lack thereof, in the surrounding words in a list. For example, alexithymia has been associated with reduced recall for emotionally-neutral words when they are presented in the absence of positive or negative words (Terock et al., 2019). Likewise, another study found that high alexithymia was only associated with reduced recall for emotion word lists where all of the words were of the same valence (i.e., either positive or negative) – such deficits did not appear for lists of words with mixed valences (Vermeulen, 2021). Together, these studies suggest that alexithymia may be associated with emotion-specific cognitive deficits in some contexts and *domain-general* deficits in others, challenging the traditional conceptualization of alexithymia as a trait that affects only emotional processing.

Future work would also benefit from further emphasis on how relationships between different cognitive mechanisms unfold over time. Previous work has posited that memory deficits in alexithymia can be attributed to either poor encoding or difficulties indexing memories for immediate retrieval (Vermeulen, 2021). For example, if an individual avoids attending to emotional stimuli, we might expect them to retain fewer details of affective information simply because they accessed less information in the first place. Consistent with this notion, work in attention has found that alexithymia is associated with reduced attention to negative stimuli, especially during early avoidance stages (S.-H. Lee and Lee, 2022; Leonidou et al., 2022). However, memory deficits in alexithymia have typically been associated with DIF or DDF whereas attention deficits appear more closely linked to EOT, which instead suggests that deficits in memory and attention in alexithymia stem from different processes (Luminet et al., 2021). Moreover, relatively little work on alexithymia has examined both attention and memory performance simultaneously, making it difficult to know how deficits in early stages of affective processing (e.g., attention, perception) might affect later stages (e.g., encoding, retrieval). Future work would therefore benefit from simultaneously examining multiple cognitive functions

operating at different timescales with the aim of more precisely pinpointing when and where particular strengths vs. deficits in propensities and abilities in affective processing originate.

One major limitation of the present overview is that, like most of the extant literature, it tacitly treats alexithymia questionnaires as the ground-truth measures of alexithymia. Questionnaires have a variety of advantages over behavioral or physiological assessments. At a practical level, they are typically inexpensive, relatively quick for participants to complete, and can usually be completed online without the need for experimenter oversight, making it feasible to collect large samples of data. Moreover, they tend to have much higher reliability than most behavioral or physiological measures, making them particularly well-suited for the study of individual differences (Dang et al., 2020). However, as discussed above, questionnaires rarely offer insight into abilities and thus lack critical information about the sociocognitive and neurobiological mechanisms that underlie the various phenomena they measure. Future work in alexithymia research should seek to identify behavioral and physiological assessments that are sufficiently reliable to derive insights into individual differences. Furthermore, this work should seek to compare behavioral and physiological outcomes against other behavioral and physiological outcomes, in addition to questionnaire scores. In particular, this multimethod modeling problem may benefit from adopting a psychoneurometric approach wherein relationships between latent scale-report, behavioral, and neurometric factors are constructed from an iterative process of selecting experimental task measures, identifying their covarying features, and using this information to refine tasks and measurements (Patrick et al., 2019).

Finally, although the propensity/ability framework is intended to be sufficiently flexible to apply to a variety of psychological phenomena, here we have only examined its application to alexithymia research. A broader review of how propensity and ability have been examined throughout the psychological literature may be warranted and such a review may help further refine the framework. Nonetheless, focusing here on alexithymia offers a detailed illustration of the framework and a direct demonstration of how its application might advance a specific domain of research. Hopefully, further development and application of this framework will help facilitate careful discussion, measurement, and theoretical advancements for researchers across a broad spectrum of psychological domains.

Conflict of Interest

We have no known conflicts of interest to disclose

References

Aaron, R.V., Snodgress, M.A., Blain, S.D., Park, S., 2018. Affect labeling and other aspects of emotional experiences in relation to alexithymia following standardized emotion inductions. Psychiatry Res. 262, 115–123. https://doi.org/10.1016/j.psychres.2018.02.014.

Aaron, R.V., Fisher, E.A., De La Vega, R., Lumley, M.A., Palermo, T.M., 2019. Alexithymia in individuals with chronic pain and its relation to pain intensity, physical interference, depression, and anxiety: a systematic review and meta-analysis. Pain 160 (5), 994–1006. https://doi.org/10.1097/j.pain.0000000000001487.

Adolphs, R., Andler, D., 2018. Investigating emotions as functional states distinct from feelings. Emot. Rev. 10 (3), 191–201. https://doi.org/10.1177/1754073918765662.

Aival-Naveh, E., Rothschild-Yakar, L., Kurman, J., 2019. Keeping culture in mind: a systematic review and initial conceptualization of mentalizing from a cross-cultural perspective. Clinical Psychology Science Practice 26 (4). https://doi.org/10.1111/cpsp.12300.

Alkan Härtwig, E., Aust, S., Heekeren, H.R., Heuser, I., 2020. No words for feelings? Not only for my own: diminished emotional empathic ability in alexithymia. Front. Behav. Neurosci. 14, 112. https://doi.org/10.3389/fnbeh.2020.00112.

Allan, H., Budd, M.-J., 2023. A case for emojis, more or less: an analysis of word and emoji expressivity in text messaging for high and low alexithymia levels. Comput. Hum. Behav. 147, 107845. https://doi.org/10.1016/j.chb.2023.107845.

Bagby, R.M., 2004. A structured interview for assessing alexithymia. J. Psychosom. Res. 56 (6), 597–598. https://doi.org/10.1016/j.jpsychores.2004.04.124.

Bagby, R.M., Parker, J.D.A., Onno, K.A., Mortezaei, A., Taylor, G.J., 2021. Development and psychometric evaluation of an informant form of the 20-item Toronto Alexithymia Scale. J. Psychosom. Res. 141, 110329. https://doi.org/10.1016/j.jpsychores.2020.110329.

Bagby, R.M., Parker, J.D.A., Taylor, G.J., 1994. The twenty-item Toronto Alexithymia Scale—I. Item selection and cross-validation of the factor structure. J. Psychosom. Res. 38 (1), 23–32. https://doi.org/10.1016/0022-3999(94)90005-1.

Bagby, R.M., Parker, J.D.A., Taylor, G.J., 2020. Twenty-five years with the 20-item Toronto Alexithymia Scale. J. Psychosom. Res. 131, 109940. https://doi.org/10.1016/j.jpsychores.2020.109940.

Bagby, R.M., Quilty, L.C., Taylor, G.J., Grabe, H.J., Luminet, O., Verissimo, R., Grootte, I. D., Vanheule, S., 2009. Are there subtypes of alexithymia? Personal. Individ. Differ. 47 (5), 413–418. https://doi.org/10.1016/j.paid.2009.04.012.

Bagby, R.M., Taylor, G.J., Parker, J.D.A., Dickens, S.E., 2005. The development of the Toronto structured interview for alexithymia: Item selection, factor structure, reliability and concurrent validity. Psychother. Psychosom. 75 (1), 25–39. https://doi.org/10.1159/000089224.

Barrett, L.F., 2004. Feelings or words? Understanding the content in self-report ratings of experienced emotion. J. Personal. Soc. Psychol. 87 (2), 266–281. https://doi.org/10.1037/0022-3514.87.2.266.

Barrett, L.F., 2017. The theory of constructed emotion: an active inference account of interoception and categorization. Soc. Cogn. Affect. Neurosci. 1–23. https://doi.org/10.1093/scan/nsw154.

Barrett, L.F., Gross, J., Christensen, T.C., Benvenuto, M., 2001. Knowing what you're feeling and knowing what to do about it: mapping the relation between emotion differentiation and emotion regulation. Cogn. Emot. 15 (6), 713–724. https://doi.org/10.1080/02699930143000239.

Battista, F., Lanciano, T., Curci, A., 2021. Does alexithymia affect memory for a crime? The relationship between alexithymia, executive functions, and memories. Front. Psychol. 12, 669778. https://doi.org/10.3389/fpsyg.2021.669778.

Bausch, S., Stingl, M., Hartmann, L.C., Leibing, E., Leichsenring, F., Kruse, J., Stark, R., Leweke, F., 2011. Alexithymia and script-driven emotional imagery in healthy female subjects: no support for deficiencies in imagination. Scand. J. Psychol. 52 (2), 179–184. https://doi.org/10.1111/j.1467-9450.2010.00847.x.

Benfante, A., Romeo, A., 2023. Alexithymia among people living with HIV: a scoping review. AIDS Behav. 27 (6), 1926–1941. https://doi.org/10.1007/s10461-022-03926-9.

Bermond, B., Bierman, D.J., Cladder, M.A., Moormann, P.P., Vorst, H.C.M., 2010. The cognitive and affective alexithymia dimensions in the regulation of sympathetic responses. Int. J. Psychophysiol. 75 (3), 227–233. https://doi.org/10.1016/j.ijpsycho.2009.11.004.

Bermond, B., Clayton, K., Liberova, A., Luminet, O., Maruszewski, T., Ricci Bitti, P.E., Rimé, B., Vorst, H.H., Wagner, H., Wicherts, J., 2007. A cognitive and an affective dimension of alexithymia in six languages and seven populations. Cogn. Emot. 21 (5), 1125–1136. https://doi.org/10.1080/02699930601056989.

Bermond, B., Vorst, H.C.M., Moormann, P.P., 2006. Cognitive neuropsychology of alexithymia: implications for personality typology. Cogn. Neuropsychiatry 11 (3), 332–360. https://doi.org/10.1080/13546800500368607.

Bilotta, E., Giacomantonio, M., Leone, L., Mancini, F., Coriale, G., 2016. Being alexithymic: necessity or convenience. Negative emotionality × avoidant coping interactions and alexithymia. Psychol. Psychother. Theory Res. Pract. 89 (3), 261–275. https://doi.org/10.1111/papt.12079.

Bird, G., Cook, R., 2013. Mixed emotions: the contribution of alexithymia to the emotional symptoms of autism. Transl. Psychiatry 3 (7), e285. https://doi.org/10.1038/tp.2013.61.

Bird, G., Press, C., Richardson, D.C., 2011. The role of alexithymia in reduced eye-fixation in autism spectrum conditions. J. Autism Dev. Disord. 41 (11), 1556–1564. https://doi.org/10.1007/s10803-011-1183-3.

Blanchard, E.B., Arena, J.G., Pallmeyer, T.P., 1981. Psychometric properties of a scale to measure alexithymia. Psychother. Psychosom. 35 (1), 64–71. https://doi.org/10.1159/000287479.

Boden, M.T., Thompson, R.J., Dizén, M., Berenbaum, H., Baker, J.P., 2013. Are emotional clarity and emotion differentiation related? Cogn. Emot. 27 (6), 961–978. https://doi.org/10.1080/02699931.2012.751899.

Boemo, T., Nieto, Ines, Vazquez, C., Sanchez-Lopez, A., 2022. Relations between emotion regulation strategies and affect in daily life: a systematic review and meta-analysis of studies using ecological momentary assessments. Neurosci. Biobehav. Rev. 139, 104747. https://doi.org/10.1016/j.neubiorev.2022.104747.

Borhani, K., Làdavas, E., Fotopoulou, A., Haggard, P., 2017. Lacking warmth": alexithymia trait is related to warm-specific thermal somatosensory processing. Biol. Psychol. 128, 132–140. https://doi.org/10.1016/j.biopsycho.2017.07.012.

Bradburn, N.M., 1969. The structure of psychological well-being, 35. Aldine. ⟨http://www.jstor.org/stable/2093340?origin=crossref⟩.

Brandt, L., Pintzinger, N.M., Tran, U.S., 2015. Abnormalities in automatic processing of illness-related stimuli in self-rated alexithymia. PLOS ONE 10 (6), e0129905. https://doi.org/10.1371/journal.pone.0129905.

Brewer, R., Cook, R., Bird, G., 2016. Alexithymia: a general deficit of interoception. R. Soc. Open Sci. 3 (10), 150664. https://doi.org/10.1098/rsos.150664.

Brewer, R., Murphy, J., Bird, G., 2021. Atypical interoception as a common risk factor for psychopathology: a review. Neurosci. Biobehav. Rev. 130, 470–508. https://doi.org/10.1016/j.neubiorev.2021.07.036.

Caballero, C., Nook, E.C., Gee, D.G., 2023. Managing fear and anxiety in development: a framework for understanding the neurodevelopment of emotion regulation capacity and tendency. Neurosci. Biobehav. Rev. 145, 105002. https://doi.org/10.1016/j.neubiorev.2022.105002.

Cadena-Schlam, L., 2015. Intuitive eating: an emerging approach to eating behavior. Nutr. óN. Hosp. 3, 995–1002. https://doi.org/10.3305/nh.2015.31.3.7980.

Cage, E., Pellicano, E., Shah, P., Bird, G., 2013. Reputation management: evidence for ability but reduced propensity in autism. Autism Res. 6 (5), 433–442. https://doi.org/10.1002/aur.1313.
Cameron, K., Ogrodniczuk, J., Hadjipavlou, G., 2014. Changes in alexithymia following psychological intervention: a review. Harv. Rev. Psychiatry 22 (3), 162–178. https://doi.org/10.1097/HRP.0000000000000036.
Camia, C., Desmedt, O., Luminet, O., 2020. Exploring autobiographical memory specificity and narrative emotional processing in alexithymia. Narrat. Inq. 30 (1), 59–79. https://doi.org/10.1075/ni.18089.kob.
Cannon, W.B., 1927. The James-Lange theory of emotions: a critical examination and an alternative theory. Am. J. Psychol. 39, 106–124. https://doi.org/10.2307/1415404.
Carrozzino, D., Porcelli, P., 2018. Alexithymia in gastroenterology and hepatology: a systematic review. Front. Psychol. 9, 470. https://doi.org/10.3389/fpsyg.2018.00470.
Cecchetto, C., Korb, S., Rumiati, R.I., Aiello, M., 2017. Emotional reactions in moral decision-making are influenced by empathy and alexithymia. Soc. Neurosci. 13 (2), 226–240. https://doi.org/10.1080/17470919.2017.1288656.
Celikbas, Z., Batmaz, S., Yavuz, K.F., Akpinar Aslan, E., Yesilyaprak, N., Kocakaya, H., Oran Demir, M., Songur, E., Yildiz, M., 2021. How are experiential avoidance and cognitive fusion associated with alexithymia? J. Ration. Emot. Cogn. Behav. Ther. 39 (1), 86–100. https://doi.org/10.1007/s10942-020-00359-y.
Chmiel, J., Wiażewicz-Wójtowicz, P., Stępień-Słodkowska, M., 2025. Neural correlates of alexithymia based on electroencephalogram (EEG)—a mechanistic review. J. Clin. Med. 14 (6), 1895. https://doi.org/10.3390/jcm14061895.
Chugg, K., Barton, C., Antic, R., Crockett, A., 2009. The impact of alexithymia on asthma patient management and communication with health care providers: a pilot study. J. Asthma 46 (2), 126–129. https://doi.org/10.1080/02770900802468525.
Cisler, J.M., Koster, E.H.W., 2010. Mechanisms of attentional biases towards threat in anxiety disorders: an integrative review. Clin. Psychol. Rev. 30 (2), 203–216. https://doi.org/10.1016/j.cpr.2009.11.003.
Clouse, R.E., Carney, R.M., 1995. The psychological profile of non-cardiac chest pain patients. Eur. J. Gastroenterol. Hepatol. 12 (7), 1160–1165. https://doi.org/10.1097/00042737-199512000-00006.
Coffey, E., Berenbaum, H., Kerns, J., 2003. The dimensions of emotional intelligence, alexithymia, and mood awareness: associations with personality and performance on an emotional Stroop task. Cogn. Emot. 17 (4), 671–679. https://doi.org/10.1080/02699930302304.
Connelly, M., Denney, D.R., 2007. Regulation of emotions during experimental stress in alexithymia. J. Psychosom. Res. 62 (6), 649–656. https://doi.org/10.1016/j.jpsychores.2006.12.008.
Constantinou, E., Panayiotou, G., Theodorou, M., 2014. Emotion processing deficits in alexithymia and response to a depth of processing intervention. Biol. Psychol. 103, 212–222. https://doi.org/10.1016/j.biopsycho.2014.09.011.
Coriale, G., Bilotta, E., Leone, L., Cosimi, F., Porrari, R., De Rosa, F., Ceccanti, M., 2012. Avoidance coping strategies, alexithymia and alcohol abuse: a mediation analysis. Addict. Behav. 37 (11), 1224–1229. https://doi.org/10.1016/j.addbeh.2012.05.018.
Costache, M.E., Gioia, F., Vanello, N., Greco, A., Lefebvre, F., Capobianco, A., Weibel, S., Weiner, L., 2024. Exploring emotion control and alexithymia in autistic adults: an ecological momentary assessment study. J. Autism Dev. Disord. https://doi.org/10.1007/s10803-024-06551-8.
Crump, M.J.C., Vaquero, J.M.M., Milliken, B., 2008. Context-specific learning and control: the roles of awareness, task relevance, and relative salience. Conscious. Cogn. 17 (1), 22–36. https://doi.org/10.1016/j.concog.2007.01.004.
Cuve, H.C., Gao, Y., Fuse, A., 2018. Is it avoidance or hypoarousal? A systematic review of emotion recognition, eye-tracking, and psychophysiological studies in young adults with autism spectrum conditions. Res. Autism Spectr. Disord. 55, 1–13. https://doi.org/10.1016/j.rasd.2018.07.002.
Dang, J., King, K.M., Inzlicht, M., 2020. Why are self-report and behavioral measures weakly correlated? Trends Cogn. Sci. 24 (4), 267–269. https://doi.org/10.1016/j.tics.2020.01.007.
Daronco, E.L., Silva, D.S., Seibel, M.K., Cortimiglia, M.N., 2023. A new framework of firm-level innovation capability: a propensity–ability perspective. Eur. Manag. J. 41 (2), 236–250. https://doi.org/10.1016/j.emj.2022.02.002.
Davies, R.N., Griffin, K., 2025. A systematic review of alexithymia in young people and their parents. J. Affect. Disord. 390, 119855. https://doi.org/10.1016/j.jad.2025.119855.
Davydov, D.M., Luminet, O., Zech, E., 2013. An externally oriented style of thinking as a moderator of responses to affective films in women. Int. J. Psychophysiol. 87 (2), 152–164. https://doi.org/10.1016/j.ijpsycho.2012.12.003.
van der Velde, J., Servaas, M.N., Goerlich, K.S., Bruggeman, R., Horton, P., Costafreda, S. G., Aleman, A., 2013. Neural correlates of alexithymia: a meta-analysis of emotion processing studies. Neurosci. Biobehav. Rev. 37 (8), 1774–1785. https://doi.org/10.1016/j.neubiorev.2013.07.008.
Dere, J., Falk, C.F., Ryder, A.G., 2012. Unpacking cultural differences in alexithymia: The role of cultural values among Euro-Canadian and Chinese-Canadian students. J. CrossCult. Psychol. 43 (8), 1297–1312. https://doi.org/10.1177/0022022111430254.
Desmedt, O., Corneille, O., Luminet, O., Murphy, J., Bird, G., Maurage, P., 2020. Contribution of time estimation and knowledge to heartbeat counting task performance under original and adapted instructions. Biol. Psychol. 154, 107904. https://doi.org/10.1016/j.biopsycho.2020.107904.
Desmedt, O., Luminet, O., Maurage, P., Corneille, O., 2025. Discrepancies in the definition and measurement of human interoception: a comprehensive discussion and suggested ways forward. Perspect. Psychol. Sci. 20 (1), 76–98. https://doi.org/10.1177/17456916231191537.
Desmedt, O., Luminet, O., Walentynowicz, M., Corneille, O., 2023. The new measures of interoceptive accuracy: a systematic review and assessment. Neurosci. Biobehav. Rev. 153, 105388. https://doi.org/10.1016/j.neubiorev.2023.105388.
Desmedt, O., Van Den Houte, M., Walentynowicz, M., Dekeyser, S., Luminet, O., Corneille, O., 2022. How does heartbeat counting task performance relate to theoretically-relevant mental health outcomes? A meta-analysis. Collabra Psychol. 8 (1), 33271. https://doi.org/10.1525/collabra.33271.
Di Tella, M., Benfante, A., Airale, L., Castelli, L., Milan, A., 2023. Alexithymia and hypertension: does personality matter? A systematic review and meta-analysis. Curr. Cardiol. Rep. 25 (7), 711–724. https://doi.org/10.1007/s11886-023-01894-7.
Di Tella, M., Benfante, A., Castelli, L., Adenzato, M., Ardito, R.B., 2024. Relatsh. alexithymia Soc. Cogn. A Syst. Rev.
Di Tella, M., Castelli, L., 2016. Alexithymia in chronic pain disorders. Curr. Rheumatol. Rep. 18 (7), 41. https://doi.org/10.1007/s11926-016-0592-x.
Di Tella, M., Tesio, V., Ghiggia, A., Romeo, A., Colonna, F., Fusaro, E., Geminiani, G.C., Bruzzone, M., Torta, R., Castelli, L., 2018. Coping strategies and perceived social support in fibromyalgia syndrome: relationship with alexithymia. Scand. J. Psychol. 59 (2), 167–176. https://doi.org/10.1111/sjop.12405.
Diener, E., Larsen, R.J., Levine, S., Emmons, R.A., 1985. Intensity and frequency: Dimensions underlying positive and negative affect. J. Personal. Soc. Psychol. 48 (5), 1253–1265. https://doi.org/10.1037/0022-3514.48.5.1253.
Dishon-Berkovits, M., Algom, D., 2000. The Stroop effect: it is not the robust phenomenon that you have thought it to be. Mem. Cogn. 28 (8), 1437–1449. https://doi.org/10.3758/BF03211844.
Donfrancesco, R., Di Trani, M., Gregori, P., Auguanno, G., Melegari, M.G., Zaninotto, S., Luby, J., 2013. Attention-deficit/hyperactivity disorder and alexithymia: a pilot study. ADHD Atten. Deficit Hyperact. Disord. 5 (4), 361–367. https://doi.org/10.1007/s12402-013-0115-9.
Donges, U.-S., Kersting, A., Suslow, T., 2014. Alexithymia and perception of emotional information: a review of experimental psychological findings. Univ. Psychol. 13 (2), 745–756. https://doi.org/10.11144/Javeriana.UPSY13-2.apei.
Durtette, A., Schmid, F., Barrière, S., Obert, A., Lang, J., Raucher-Chéné, D., Gierski, F., Kaladjian, A., Henry, A., 2023. Facial emotion recognition processes according to schizotypal personality traits: an eye-tracking study. Int. J. Psychophysiol. 190, 60–68. https://doi.org/10.1016/j.ijpsycho.2023.06.006.
Eastabrook, J.M., Lanteigne, D.M., Hollenstein, T., 2013. Decoupling between physiological, self-reported, and expressed emotional responses in alexithymia. Personal. Individ. Differ. 55 (8), 978–982. https://doi.org/10.1016/j.paid.2013.08.001.
Edel, M.-A., Rudel, A., Hubert, C., Scheele, D., Brüne, M., Juckel, G., Assion, H.-J., 2010. Alexithymia, emotion processing and social anxiety in adults with ADHD. Eur. J. Med. Res. 15 (9), 403. https://doi.org/10.1186/2047-783X-15-9-403.
Edwards, E.R., Shivaji, S., Micek, A., Wupperman, P., 2020. Distinguishing alexithymia and emotion differentiation conceptualizations through linguistic analysis. Personal. Individ. Differ. 157, 109801. https://doi.org/10.1016/j.paid.2019.109801.
Erbas, Y., Ceulemans, E., Lee Pe, M., Koval, P., Kuppens, P., 2014. Negative emotion differentiation: its personality and well-being correlates and a comparison of different assessment methods. Cogn. Emot. 28 (7), 1196–1213. https://doi.org/10.1080/02699931.2013.875890.
Farina, E., Pepe, A., 2024. Metaphors of adolescence during COVID-19 pandemic: a mixed-method analysis in relation to well-being and alexithymia. Front. Psychol. 15, 1355752. https://doi.org/10.3389/fpsyg.2024.1355752.
Fazio, R.H., Sanbonmatsu, D.M., Powell, M.C., Kardes, F.R., 1986. On the automatic activation of attitudes. J. Personal. Soc. Psychol. 50 (2), 229–238. https://doi.org/10.1037/0022-3514.50.2.229.
Feldman, M.J., Bliss-Moreau, E., Lindquist, K.A., 2024. The neurobiology of interoception and affect. S1364661324000093 Trends Cogn. Sci.. https://doi.org/10.1016/j.tics.2024.01.009.
Felisberti, F.M., Cropper, S.J., 2023. Mental imagery in aesthetic appreciation and the understanding of the self and others. Psychol. Aesthet. Creat. Arts. https://doi.org/10.1037/aca0000568.
Fournier, A., Luminet, O., Dambrun, M., Dutheil, F., Pellissier, S., Mondillon, L., 2019. Importance of considering interoceptive abilities in alexithymia assessment. PeerJ 7, e7615. https://doi.org/10.7717/peerj.7615.
Franz, M., Olbrich, R., Croissant, B., Kirsch, P., Schmitz, N., Schneider, C., 1999. Gefühl ohne sprache oder sprache ohne gefühl? Der Nervenarzt 70 (3), 216–224. https://doi.org/10.1007/s001150050425.
Franz, M., Popp, K., Schaefer, R., Sitte, W., Schneider, C., Hardt, J., Decker, O., Braehler, E., 2008. Alexithymia in the German general population. Soc. Psychiatry Psychiatr. Epidemiol. 43 (1), 54–62. https://doi.org/10.1007/s00127-007-0265-1.
Franz, M., Nordmann, M.A., Rehagel, C., Schäfer, R., Müller, T., Lundqvist, D., 2021. It is in your face—alexithymia impairs facial mimicry. Emotion 21 (7), 1537–1549. https://doi.org/10.1037/emo0001002.
Franz, M., Schaefer, R., Schneider, C., 2003. Psychophysiological response patterns of high and low alexithymics under mental and emotional load conditions. J. Psychophysiol. 17 (4), 203–213. https://doi.org/10.1027/0269-8803.17.4.203.
Frye-Cox, N.E., Hesse, C.R., 2013. Alexithymia and marital quality: the mediating roles of loneliness and intimate communication. J. Fam. Psychol. 27 (2), 203–211. https://doi.org/10.1037/a0031961.
Fuchs, M., Kersting, A., Suslow, T., Bodenschatz, C.M., 2024. Recognizing and looking at masked emotional faces in alexithymia. Behav. Sci. 14 (4), 343. https://doi.org/10.3390/bs14040343.
Fugate, J.M.B., Gendron, M., Hoemann, K., 2025. Links between emotion word, usage, understanding, accuracy, and emotion dysregulation: an integrative analysis. Affect. Sci. 6 (2), 224–235. https://doi.org/10.1007/s42761-024-00284-8.

Fujiwara, E., 2018. Looking at the eyes interferes with facial emotion recognition in alexithymia. J. Abnorm. Psychol. 127 (6), 571–577. https://doi.org/10.1037/abn0000361.
Gaigg, S.B., Cornell, A.S., Bird, G., 2018. The psychophysiological mechanisms of alexithymia in autism spectrum disorder. Autism 22 (2), 227–231. https://doi.org/10.1177/1362361316667062.
Galderisi, S., Mancuso, F., Mucci, A., Garramone, S., Zamboli, R., Maj, M., 2008. Alexithymia and cognitive dysfunctions in patients with panic disorder. Psychother. Psychosom. 77 (3), 182–188. https://doi.org/10.1159/000119738.
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. Biol. Psychol. 104, 65–74. https://doi.org/10.1016/j.biopsycho.2014.11.004.
Ghalehban, M., Besharat, M.A., 2011. Examination and comparison of alexithymia and self-regulation in patients with substance abuse disorder and normal individuals. Procedia Soc. Behav. Sci. 30, 38–42. https://doi.org/10.1016/j.sbspro.2011.10.008.
Gignac, G.E., Szodorai, E.T., 2016. Effect size guidelines for individual differences researchers. Personal. Individ. Differ. 102, 74–78. https://doi.org/10.1016/j.paid.2016.06.069.
Goerlich, K.S., Votinov, M., 2023. Hormonal abnormalities in alexithymia. Front. Psychiatry 13, 1070066. https://doi.org/10.3389/fpsyt.2022.1070066.
Goerlich-Dobre, K.S., Votinov, M., Habel, U., Pripfl, J., Lamm, C., 2015. Neuroanatomical profiles of alexithymia dimensions and subtypes: structural correlates of alexithymia subtypes. Hum. Brain Mapp. 36 (10), 3805–3818. https://doi.org/10.1002/hbm.22879.
Goerlich, K.S., Witteman, J., Aleman, A., Martens, S., 2011. Hearing feelings: affective categorization of music and speech in alexithymia, an ERP study. PLoS ONE 6 (5), e19501. https://doi.org/10.1371/journal.pone.0019501.
Goldin, P.R., Manber, T., Hakimi, S., Canli, T., Gross, J.J., 2009. Neural bases of social anxiety disorder: emotional reactivity and cognitive regulation during social and physical threat. Arch. Gen. Psychiatry 66 (2), 170. https://doi.org/10.1001/archgenpsychiatry.2008.525.
Gonzalez-Ibarra, F., Cruz-Ruiz, M., Murillo Llanes, J., Achem, S.R., Fass, R., 2024. The role of psychological factors in noncardiac chest pain of esophageal origin. J. Neurogastroenterol. Motil. 30 (3), 272–280. https://doi.org/10.5056/jnm23166.
Grabe, H.J., Spitzer, C., Freyberger, H.J., 2001. Alexithymia and the temperament and character model of personality. Psychother. Psychosom. 70 (5), 261–267. https://doi.org/10.1159/000056264.
Green, D.M., Swets, J.A., 1966. Signal detection theory and psychophysics (pp. xi). John Wiley, p. 455 (pp. xi).
Gross, J.J., 2015. The extended process model of emotion regulation: elaborations, applications, and future directions. Psychol. Inq. 26 (1), 130–137. https://doi.org/10.1080/1047840X.2015.989751.
Gross, J.J., Barrett, L.F., 2011. Emotion generation and emotion regulation: one or two depends on your point of view. Emot. Rev. 3 (1), 8–16. https://doi.org/10.1177/1754073910380974.
Grynberg, D., Chang, B., Corneille, O., Maurage, P., Vermeulen, N., Berthoz, S., Luminet, O., 2012. Alexithymia and the processing of Emotional Facial Expressions (EFEs): Systematic review, unanswered questions and further perspectives. PLoS ONE 7 (8), e42429. https://doi.org/10.1371/journal.pone.0042429.
Grynberg, D., Vermeulen, N., Luminet, O., 2014. Amplification of attentional blink by distress-related facial expressions: relationships with alexithymia and affectivity. Int. J. Psychol. 49 (5), 371–380. https://doi.org/10.1002/ijop.12006.
Guassi Moreira, J.F., Sahi, R., Ninova, E., Parkinson, C., Silvers, J.A., 2022. Performance and belief-based emotion regulation capacity and tendency: mapping links with cognitive flexibility and perceived stress. Emotion 22 (4), 653–668. https://doi.org/10.1037/emo0000768.
Güleş, Z., Aksu, H., Özgür, B., 2018. Investigation of alexithymia, depression and childhood ADHD symptom levels in parents of children with ADHD. Anatol. J. Psychiatry 1. https://doi.org/10.5455/apd.285569.
Habibi Asgarabad, M., Salehi Yegaei, P., Jafari, F., Azami-Aghdash, S., Lumley, M.A., 2023. The relationship of alexithymia to pain and other symptoms in fibromyalgia: a systematic review and meta-analysis. Eur. J. Pain. 27 (3), 321–337. https://doi.org/10.1002/ejp.2064.
Hadji-Michael, M., McAllister, E., Reilly, C., Heyman, I., Bennett, S., 2019. Alexithymia in children with medically unexplained symptoms: a systematic review. J. Psychosom. Res. 123, 109736. https://doi.org/10.1016/j.jpsychores.2019.109736.
Hayes, S.C., Wilson, K.G., Gifford, E.V., Follette, V.M., Strosahl, K., 1996. Experiential avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. J. Consult. Clin. Psychol. 64 (6), 1152–1168. https://doi.org/10.1037/0022-006X.64.6.1152.
Hegefeld, H.M., Satpute, A.B., Ochsner, K.N., Davidow, J.Y., Nook, E.C., 2023. Fluency generating emotion words correlates with verbal measures but not emotion regulation, alexithymia, or depressive symptoms. Emotion 23 (8), 2259–2269. https://doi.org/10.1037/emo0001229.
Heiberg, A.N., 1980. Alexithymic characteristics and somatic illness. Psychother. Psychosom. 34 (4), 261–266. https://doi.org/10.1159/000287467.
Herrero, H., Tarrada, A., Haffen, E., Mignot, T., Sense, C., Schwan, R., EL-Hage, W., Maillard, L., Hingray, C., 2020. Skin conductance response and emotional response in women with psychogenic non-epileptic seizures. Seizure 81, 123–131. https://doi.org/10.1016/j.seizure.2020.07.028.
Hickman, L.J., Keating, C.T., Ferrari, A., Cook, J.L., 2022. Skin conductance as an index of alexithymic traits in the general population. Psychol. Rep. 125 (3), 1363–1379. https://doi.org/10.1177/00332941211005118.
Hobson, H., Brewer, R., Catmur, C., Bird, G., 2019. The role of language in alexithymia: moving towards a multiroute model of alexithymia. Emot. Rev. 11 (3), 247–261. https://doi.org/10.1177/1754073919838528.
Hobson, H., Van Den Bedem, N.P., 2021. The association between parent and child-report measures of alexithymia in children with and without developmental language disorder. Int. J. Environ. Res. Public Health 18 (16), 8309. https://doi.org/10.3390/ijerph18168309.
Hoemann, K., Nielson, C., Yuen, A., Gurera, J.W., Quigley, K.S., Barrett, L.F., 2021. Expertise in emotion: a scoping review and unifying framework for individual differences in the mental representation of emotional experience. Psychol. Bull. 147 (11), 1159–1183. https://doi.org/10.1037/bul0000327.
Hoemann, K., Barrett, L.F., 2019. Concepts dissolve artificial boundaries in the study of emotion and cognition, uniting body, brain, and mind. Cogn. Emot. 33 (1), 67–76. https://doi.org/10.1080/02699931.2018.1535428.
Hoemann, K., Barrett, L.F., Quigley, K.S., 2021. Emotional granularity increases with intensive ambulatory assessment: methodological and individual factors influence how much. Front. Psychol. 12, 704125. https://doi.org/10.3389/fpsyg.2021.704125.
Hoemann, K., Warfel, E., Mills, C., Allen, L., Kuppens, P., Wormwood, J.B., 2025. Using freely generated labels instead of rating scales to assess emotion in everyday life. Assessment 32 (6), 859–877. https://doi.org/10.1177/10731911241283623.
Holmes, A., Marella, P., Rodriguez, C., Glass, Ii, D., Goerlich, K.S., 2022. Alexithymia and cutaneous disease morbidity: a systematic review. Dermatology 238 (6), 1120–1129. https://doi.org/10.1159/000524736.
Honkalampi, K., Jokela, M., Lehto, S.M., Kivimäki, M., Virtanen, M., 2022. Association between alexithymia and substance use: a systematic review and meta-analysis. Scand. J. Psychol. 63 (5), 427–438. https://doi.org/10.1111/sjop.12821.
Hsing, C., HofelichMohr, A., Stansfield, R.B., Preston, S., 2013. Alexithymia slows performance but preserves spontaneous semantic decoding of negative expressions in the EmoStroop task. Int. J. Psychol. Res. 6, 56–67. https://doi.org/10.21500/20112084.719.
Inslegers, R., Vanheule, S., Meganck, R., Debaere, V., Trenson, E., Desmet, M., 2012. Interpersonal problems and cognitive characteristics of interpersonal representations in alexithymia: a study using a self-report and interview-based measure of alexithymia. J. Nerv. Ment. Dis. 200 (7), 607–613. https://doi.org/10.1097/NMD.0b013e31825bfad9.
Izuma, K., Matsumoto, K., Camerer, C.F., Adolphs, R., 2011. Insensitivity to social reputation in autism. Proc. Natl. Acad. Sci. 108 (42), 17302–17307. https://doi.org/10.1073/pnas.1107038108.
Jakobson, L.S., Pearson, P.M., 2021. Alexithymic traits predict the speed of classifying non-literal statements using nonverbal cues. Cogn. Emot. 35 (3), 569–575. https://doi.org/10.1080/02699931.2020.1715346.
James, W., 1884. What is an emotion? Mind 9 (34), 188–205. https://doi.org/10.1093/mind/os-IX.34.188.
Jardin, E., Allen, P.A., Levant, R.F., Lien, M.-C., McCurdy, E.R., Villalba, A., Mallik, P., Houston, J.R., Gerdes, Z.T., 2019. Event-related brain potentials reveal differences in emotional processing in alexithymia. J. Cogn. Psychol. 31 (5–6), 619–633. https://doi.org/10.1080/20445911.2019.1642898.
Jarecki, J.B., Tan, J.H., Jenny, M.A., 2020. A framework for building cognitive process models. Psychon. Bull. Rev. 27 (6), 1218–1229. https://doi.org/10.3758/s13423-020-01747-2.
Kallitsounaki, A., Williams, D.M., 2023. An exploration of alexithymia in autistic and nonautistic transgender adults. Autism Adulthood 5 (2), 210–216. https://doi.org/10.1089/aut.2022.0113.
Kano, M., Fukudo, S., 2013. The alexithymic brain: the neural pathways linking alexithymia to physical disorders. Biopsychosoc. Med. 7 (1), 1. https://doi.org/10.1186/1751-0759-7-1.
Kano, M., Hamaguchi, T., Itoh, M., Yanai, K., Fukudo, S., 2007. Correlation between alexithymia and hypersensitivity to visceral stimulation in human. Pain 132 (3), 252–263. https://doi.org/10.1016/j.pain.2007.01.032.
Kano, M., Muratsubaki, T., Yagihashi, M., Morishita, J., Mugikura, S., Dupont, P., Takase, K., Kanazawa, M., Van Oudenhove, L., Fukudo, S., 2020. Insula activity to visceral stimulation and endocrine stress responses as associated with alexithymia in patients with irritable bowel syndrome. Psychosom. Med. 82 (1), 29–38. https://doi.org/10.1097/PSY.0000000000000729.
Karl, J.A., Lassen, E.R., Solem, S., Fischer, R., 2024. Between can't and won't: the relationship between trait mindfulness, stoic ideology, and alexithymia in Norway and New Zealand. Mindfulness 15 (11), 2812–2824. https://doi.org/10.1007/s12671-024-02459-7.
Kashdan, T.B., Barrios, V., Forsyth, J.P., Steger, M.F., 2006. Experiential avoidance as a generalized psychological vulnerability: comparisons with coping and emotion regulation strategies. Behav. Res. Ther. 44 (9), 1301–1320. https://doi.org/10.1016/j.brat.2005.10.003.
Keefer, K.V., Taylor, G.J., Parker, J.D.A., Bagby, R.M., 2019. Taxometric analysis of the Toronto structured interview for alexithymia: further evidence that alexithymia is a dimensional Cconstruct. Assessment 26 (3), 364–374. https://doi.org/10.1177/1073191117698220.
Keysers, C., Gazzola, V., 2014. Dissociating the ability and propensity for empathy. Trends Cogn. Sci. 18 (4), 163–166. https://doi.org/10.1016/j.tics.2013.12.011.
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., Zucker, N., 2018. Interoception and mental health: a roadmap. Biological Psychiatry Cognitive Neuroscience Neuroimaging 3 (6), 501–513. https://doi.org/10.1016/j.bpsc.2017.12.004.

Kinnaird, E., Stewart, C., Tchanturia, K., 2019. Investigating alexithymia in autism: a systematic review and meta-analysis. Eur. Psychiatry 55, 80–89. https://doi.org/10.1016/j.eurpsy.2018.09.004.
Kleiman, A., Kramer, K.A., Wegener, I., Koch, A.S., Geiser, F., Imbierowicz, K., Zur, B., Conrad, R., 2016. Psychophysiological decoupling in alexithymic pain disorder patients. Psychiatry Res. 237, 316–322. https://doi.org/10.1016/j.psychres.2016.01.021.
Knapp, K.S., Bradizza, C.M., Zhao, J., Linn, B.K., Wilding, G.E., LaBarre, C., Stasiewicz, P. R., 2024. Emotion differentiation among individuals in a randomized clinical trial for alcohol use disorder: within- and between-person associations with affect, craving, and alcohol use in daily life. Behav. Res. Ther. 173, 104474. https://doi.org/10.1016/j.brat.2024.104474.
Koelsch, S., Remppis, A., Sammler, D., Jentschke, S., Mietchen, D., Fritz, T., Bonnemeier, H., Siebel, W.A., 2007. A cardiac signature of emotionality. Eur. J. Neurosci. 26 (11), 3328–3338. https://doi.org/10.1111/j.1460-9568.2007.05889.x.
Kokkonen, P., Karvonen, J.T., Veijola, J., Läksy, K., Jokelainen, J., Järvelin, M.-R., Joukamaa, M., 2001. Prevalence and sociodemographic correlates of alexithymia in a population sample of young adults. Compr. Psychiatry 42 (6), 471–476. https://doi.org/10.1053/comp.2001.27892.
Kooiman, C.G., Spinhoven, P., Trijsburg, R.W., 2002. The assessment of alexithymia A critical review of the literature and a psychometric study of the Toronto Alexithymia Scale-20. J. Psychosom. Res. 8.
Koppelberg, P., Kersting, A., Suslow, T., 2023. Alexithymia and interpersonal problems in healthy young individuals. BMC Psychiatry 23 (1), 688. https://doi.org/10.1186/s12888-023-05191-z.
Kreitler, S., Niv, D., 2001. Pain and alexithymia: the nature of a relation. Pain. Clin. 13 (1), 13–38. https://doi.org/10.1163/15685690152385745.
Kumari, V., Antonova, E., Mahmood, S., Shukla, M., Saifullah, A., Pandey, R., 2023. Dispositional mindfulness, alexithymia and sensory processing: emerging insights from habituation of the acoustic startle reflex response. Int. J. Psychophysiol. 184, 20–27. https://doi.org/10.1016/j.ijpsycho.2022.12.002.
Kuppens, P., Verduyn, P., 2017. Emotion dynamics. Curr. Opin. Psychol. 17, 22–26. https://doi.org/10.1016/j.copsyc.2017.06.004.
Lane, R.D., 2020. Affective agnosia: a core affective processing deficit in the alexithymia spectrum. Biopsychosoc. Med. 14. https://doi.org/10.1186/s13030-020-00184-w.
Lane, R.D., Ahern, G.L., Schwartz, G.E., Kaszniak, A.W., 1997. Is alexithymia the emotional equivalent of blindsight? Biol. Psychiatry 42 (9), 834–844. https://doi.org/10.1016/S0006-3223(97)00050-4.
Lane, R.D., Lee, S., Reidel, R., Weldon, V., Kaszniak, A., Schwartz, G.E., 1996. Impaired verbal and nonverbal emotion recognition in alexithymia. Psychosom. Med. 58 (3), 203–210. https://doi.org/10.1097/00006842-199605000-00002.
Lane, R.D., Sechrest, L., Riedel, R., 1998. Sociodemographic correlates of alexithymia. Compr. Psychiatry 39 (6), 377–385. https://doi.org/10.1016/S0010-440X(98)90051-7.
Lane, R.D., Quinlan, D.M., Schwartz, G.E., Walker, P.A., Zeitlin, S.B., 1990. The Levels of emotional awareness scale: a cognitive-developmental measure of emotion. J. Personal. Assess. 55 (1–2), 124–134. https://doi.org/10.1080/00223891.1990.9674052.
Lane, R.D., Subic-Wrana, C., Greenberg, L., Yovel, I., 2022. The role of enhanced emotional awareness in promoting change across psychotherapy modalities. J. Psychother. Integr. 32 (2), 131–150. https://doi.org/10.1037/int0000244.
Lane, R.D., Weihs, K.L., Herring, A., Hishaw, A., Smith, R., 2015. Affective agnosia: expansion of the alexithymia construct and a new opportunity to integrate and extend Freud's legacy. Neurosci. Biobehav. Rev. 55, 594–611. https://doi.org/10.1016/j.neubiorev.2015.06.007.
Laricchiuta, D., Termine, A., Fabrizio, C., Passarello, N., Greco, F., Piras, F., Picerni, E., Cutuli, D., Marini, A., Mandolesi, L., Spalletta, G., Petrosini, L., 2022. Only words count; the rest is mere chattering: a cross-disciplinary approach to the verbal expression of emotional experience. Behav. Sci. 12 (8), 292. https://doi.org/10.3390/bs12080292.
Larsen, R.J., Augustine, A.A., Prizmic, Z., 2009. A process approach to emotion and personality: using time as a facet of data. Cogn. Emot. 23 (7), 1407–1426. https://doi.org/10.1080/02699930902851302.
Lee, K.S., Murphy, J., Catmur, C., Bird, G., Hobson, H., 2022. Furthering the language hypothesis of alexithymia: an integrated review and meta-analysis. Neurosci. Biobehav. Rev. 141, 104864. https://doi.org/10.1016/j.neubiorev.2022.104864.
Lee, S.-H., Lee, K.-T., 2022. Attentional processing of unpleasant stimuli in alexithymia, 003329412211469 Psychol. Rep.. https://doi.org/10.1177/00332941221146917.
Lee, S.-H., Lee, K.-T., 2023. The impact of pandemic-related stress on attentional bias and anxiety in alexithymia during the COVID-19 pandemic. Sci. Rep. 13 (1), 6327. https://doi.org/10.1038/s41598-023-33326-5.
Leonidou, C., Constantinou, E., Panteli, M., Panayiotou, G., 2022. Attentional processing of unpleasant stimuli in alexithymia: early avoidance followed by attention maintenance bias. Cogent Psychol. 9 (1), 2054531. https://doi.org/10.1080/23311908.2022.2054531.
Levant, R.F., 1992. Toward the reconstruction of masculinity. J. Fam. Psychol. 5 (3–4), 379–402. https://doi.org/10.1037/0893-3200.5.3-4.379.
Levant, R.F., Hall, R.J., Williams, C.M., Hasan, N.T., 2009. Gender differences in alexithymia. Psychol. Men. Masc. 10 (3), 190–203. https://doi.org/10.1037/a0015652.
Levant, R.F., Allen, P.A., Lien, M.-C., 2014. Alexithymia in men: how and when do emotional processing deficiencies occur? Psychol. Men. Masc. 15 (3), 324–334. https://doi.org/10.1037/a0033860.
Leweke, F., Bausch, S., Leichsenring, F., Walter, B., Stingl, M., 2009. Alexithymia as a predictor of outcome of psychodynamically oriented inpatient treatment. Psychother. Res. 19 (3), 323–331. https://doi.org/10.1080/10503300902870554.
Li, F., Zhang, Y., 1998. Measuring self-monitoring ability and propensity: a two-dimensional Chinese scale. J. Soc. Psychol. 138 (6), 758–765. https://doi.org/10.1080/00224549809603261.
Li, S., Zhang, B., Guo, Y., Zhang, J., 2015. The association between alexithymia as assessed by the 20-item Toronto Alexithymia Scale and depression: a meta-analysis. Psychiatry Res. 227 (1), 1–9. https://doi.org/10.1016/j.psychres.2015.02.006.
Limmer, J., Kornhuber, J., Martin, A., 2015. Panic and comorbid depression and their associations with stress reactivity, interoceptive awareness and interoceptive accuracy of various bioparameters. J. Affect. Disord. 185, 170–179. https://doi.org/10.1016/j.jad.2015.07.010.
Linden, W., Lenz, J.W., Stossel, C., 1996. Alexithymia, defensiveness, and cardiovascular reactivity to stress. J. Psychosom. Res. 41 (6), 575–583. https://doi.org/10.1016/s0022-3999(96)00229-2.
Lindquist, K.A., Satpute, A.B., Gendron, M., 2015. Does language do more than communicate emotions? Curr. Dir. Psychol. Sci. 24 (2), 99–108. https://doi.org/10.1177/0963721414553440.
Liu, Z., He, S., Hou, C., 2025. The effect of alexithymia on depression: evidence from meta-analysis. Front. Psychol. 16, 1465286. https://doi.org/10.3389/fpsyg.2025.1465286.
Lo, C., 2014. Cultural values and alexithymia, 2158244014555117 Sage Open 4 (4). https://doi.org/10.1177/2158244014555117.
Luminet, O., Bagby, R.M., Taylor, G.J. (Eds.), 2018. Alexithymia: advances in research, theory, and clinical practice. Cambridge University Press. https://doi.org/10.1017/9781108241595.
Luminet, O., Nielson, K.A., 2025. Alexithymia: toward an experimental, processual affective science with effective interventions. Annu. Rev. Psychol. 76 (1), 741–769. https://doi.org/10.1146/annurev-psych-021424-030718.
Luminet, O., Nielson, K.A., Ridout, N., 2021. Cognitive-emotional processing in alexithymia: an integrative review. Cogn. Emot. 35 (3), 449–487. https://doi.org/10.1080/02699931.2021.1908231.
Luminet, O., Rimé, B., Bagby, R.M., Taylor, G., 2004. A multimodal investigation of emotional responding in alexithymia. Cogn. Emot. 18 (6), 741–766. https://doi.org/10.1080/02699930341000275.
Luminet, O., Vermeulen, N., Demaret, C., Taylor, G.J., Bagby, R.M., 2006. Alexithymia and levels of processing: evidence for an overall deficit in remembering emotion words. J. Res. Personal. 40 (5), 713–733. https://doi.org/10.1016/j.jrp.2005.09.001.
Lumley, M.A., Ovies, T., Stettner, L., Wehmer, F., Lakey, B., 1996. Alexithymia, social support and health problems. J. Psychosom. Res. 41 (6), 519–530. https://doi.org/10.1016/S0022-3999(96)00227-9.
Lumley, M.A., Stettner, L., Wehmer, F., 1996. How are alexithymia and physical illness linked? a review and critique of pathways. J. Psychosom. Res. 41 (6), 505–518. https://doi.org/10.1016/S0022-3999(96)00222-X.
Lundh, L., Simonsson-Sarnecki, M., 2001. Alexithymia, emotion, and somatic complaints. J. Personal. 69 (3), 483–510. https://doi.org/10.1111/1467-6494.00153.
Lundh, L.-G., Simonsson-Sarnecki, M., 2002. Alexithymia and cognitive bias for emotional information. Personal. Individ. Differ. 32 (6), 1063–1075. https://doi.org/10.1016/S0191-8869(01)00110-6.
Lyvers, M., Dark, S., Jaguru, I., Thorberg, F.A., 2024. Adult symptoms of ASD and ADHD in relation to alcohol use: potential roles of transdiagnostic features. Alcohol 120, 109–117. https://doi.org/10.1016/j.alcohol.2024.03.011.
Mann, L.S., Wise, T.N., Trinidad, A., Kohanski, R., 1994. Alexithymia, affect recognition, and the five-factor model of personality in normal subjects. Psychol. Rep. 74 (2), 563–567. https://doi.org/10.2466/pr0.1994.74.2.563.
Marchesi, C., Ossola, P., Tonna, M., De Panfilis, C., 2014. The TAS-20 more likely measures negative affects rather than alexithymia itself in patients with major depression, panic disorder, eating disorders and substance use disorders. Compr. Psychiatry 55 (4), 972–978. https://doi.org/10.1016/j.comppsych.2013.12.008.
Martin, J.B., Pihl, R.O., 1985. The stress-alexithymia hypothesis: theoretical and empirical considerations. Psychother. Psychosom. 43 (4), 169–176. https://doi.org/10.1159/000287876.
Martínez Sánchez, F., Blanco Larrieux, M.L., Páez Rovira, D., 2013. Beliefs about the effects of social sharing of emotion in alexithymia. Psicothema 2 (25), 179–184. https://doi.org/10.7334/psicothema2012.142.
Martínez-Sánchez, F., Marin Serrano, J., 1997. Influencia del nivel de alexitimia en el procesamiento de estímulos emocionales en una tarea stroop [Influence of the alexithymia level in the emotional stimuli processing in a Stroop colour-naming task]. Psicothema 9 (3), 519–527.
Martino, G., Caputo, A., Schwarz, P., Bellone, F., Fries, W., Quattropani, M.C., Vicario, C. M., 2020. Alexithymia and inflammatory bowel disease: a systematic review. Front. Psychol. 11, 1763. https://doi.org/10.3389/fpsyg.2020.01763.
Mattila, A.K., Salminen, J.K., Nummi, T., Joukamaa, M., 2006. Age is strongly associated with alexithymia in the general population. J. Psychosom. Res. 61 (5), 629–635. https://doi.org/10.1016/j.jpsychores.2006.04.013.
Mazur, M., Larionow, P., 2025. Alexithymia in gender diverse people: a scoping review protocol. INPLASY Int. Platf. Regist. Syst. Rev. MetaAnal. Protoc. https://doi.org/10.37766/inplasy2025.3.0004.
Mazzoli, F., Cassioli, E., Ristori, J., Castellini, G., Rossi, E., Cocchetti, C., Romani, A., Angotti, T., Giovanardi, G., Mosconi, M., Lingiardi, V., Speranza, A.M., Ricca, V., Vignozzi, L., Maggi, M., Fisher, A.D., 2022. Apparent autistic traits in transgender people: a prospective study of the impact of gender-affirming hormonal treatment. J. Endocrinol. Investig. 45 (11), 2059–2068. https://doi.org/10.1007/s40618-022-01835-1.
McAtamney, K., Mantzios, M., Egan, H., Wallis, D.J., 2023. A systematic review of the relationship between alexithymia and emotional eating in adults. Appetite 180, 106279. https://doi.org/10.1016/j.appet.2022.106279.

McDonald, P.W., Prkachin, K.M., 1990. The expression and perception of facial emotion in alexithymia: a pilot study. Psychosom. Med. 52 (2), 199–210. https://doi.org/10.1097/00006842-199003000-00007.
McDougall, J., 1982. Alexithymia: a psychoanalytic viewpoint. Psychother. Psychosom. 38 (1–4), 81–90. https://doi.org/10.1159/000287617.
Meltzer, M.A., Nielson, K.A., 2010. Memory for emotionally provocative words in alexithymia: a role for stimulus relevance. Conscious. Cogn. 19 (4), 1062–1068. https://doi.org/10.1016/j.concog.2010.05.008.
Mendia, J., Zumeta, L.N., Cusi, O., Pascual, A., Alonso-Arbiol, I., Díaz, V., Páez, D., 2024. Gender differences in alexithymia: insights from an updated meta-analysis. Personal. Individ. Differ. 227, 112710. https://doi.org/10.1016/j.paid.2024.112710.
Montebarocci, O., Surcinelli, P., Rossi, N., Baldaro, B., 2011. Alexithymia, verbal ability and emotion recognition. Psychiatr. Q. 82 (3), 245–252. https://doi.org/10.1007/s11126-010-9166-7.
Morales, I., Berridge, K.C., 2020. Liking' and 'wanting' in eating and food reward: brain mechanisms and clinical implications. Physiol. Behav. 227, 113152. https://doi.org/10.1016/j.physbeh.2020.113152.
Moriguchi, Y., Decety, J., Ohnishi, T., Maeda, M., Mori, T., Nemoto, K., Matsuda, H., Komaki, G., 2007. Empathy and judging other's pain: an fMRI study of alexithymia. Cereb. Cortex 17 (9), 2223–2234. https://doi.org/10.1093/cercor/bhl130.
Moriguchi, Y., Komaki, G., 2013. Neuroimaging studies of alexithymia: physical, affective, and social perspectives. Biopsychosoc. Med. 7 (1), 8. https://doi.org/10.1186/1751-0759-7-8.
Mueller, J., Alpers, G.W., Reim, N., 2006. Dissociation of rated emotional valence and Stroop interference in observer-rated alexithymia. J. Psychosom. Res. 61 (2), 261–269. https://doi.org/10.1016/j.jpsychores.2006.02.017.
Müller, J., Bühner, M., Ellgring, H., 2004. The assessment of alexithymia: psychometric properties and validity of the bermond–vorst alexithymia questionnaire. Personal. Individ. Differ. 37 (2), 373–391. https://doi.org/10.1016/j.paid.2003.09.010.
Müller, T., Schäfer, R., Hahn, S., Franz, M., 2019. Adults' facial reaction to affective facial expressions of children and adults. Int. J. Psychophysiol. 139, 33–39. https://doi.org/10.1016/j.ijpsycho.2019.01.001.
Murphy, J., Brewer, R., Hobson, H., Catmur, C., Bird, G., 2018. Is alexithymia characterised by impaired interoception? Further evidence, the importance of control variables, and the problems with the heartbeat counting task. Biol. Psychol. 136, 189–197. https://doi.org/10.1016/j.biopsycho.2018.05.010.
Murphy, J., Catmur, C., Bird, G., 2018. Alexithymia is associated with a multidomain, multidimensional failure of interoception: evidence from novel tests. J. Exp. Psychol. Gen. 147 (3), 398–408. https://doi.org/10.1037/xge0000366.
Murphy, J., Catmur, C., Bird, G., 2019. Classifying individual differences in interoception: implications for the measurement of interoceptive awareness. Psychon. Bull. Rev. 26 (5), 1467–1471. https://doi.org/10.3758/s13423-019-01632-7.
Murphy, J., Millgate, E., Geary, H., Catmur, C., Bird, G., 2019. No effect of age on emotion recognition after accounting for cognitive factors and depression. Q. J. Exp. Psychol. 72 (11), 2690–2704. https://doi.org/10.1177/1747021819859514.
Nam, G., Lee, H., Lee, J.-H., Hur, J.-W., 2020. Disguised emotion in alexithymia: subjective difficulties in emotion processing and increased empathic distress. Front. Psychiatry 11, 698. https://doi.org/10.3389/fpsyt.2020.00698.
Nemiah, J.C., 1975. Denial revisited: reflections on psychosomatic theory. Psychother. Psychosom. 26 (3), 140–147. https://doi.org/10.1159/000286923.
Nemiah, J.C., 1977. Alexithymia: theoretical considerations. Psychother. Psychosom. 28 (1–4), 199–206. https://doi.org/10.1159/000287064.
Nemiah, J.C., Sifneos, P.E., 1970. Psychosomatic illness: a problem in communication. Psychother. Psychosom. 18 (1–6), 154–160. https://doi.org/10.1159/000286074.
Neumann, S.A., Sollers, J.J., Thayer, J.F., Waldstein, S.R., 2004. Alexithymia predicts attenuated autonomic reactivity, but prolonged recovery to anger recall in young women. Int. J. Psychophysiol. 53 (3), 183–195. https://doi.org/10.1016/j.ijpsycho.2004.03.008.
Newton, T.L., Contrada, R.J., 1994. Alexithymia and repression: contrasting emotion-focused coping styles. Psychosom. Med. 56 (5), 457–462. https://doi.org/10.1097/00006842-199409000-00011.
Nishimura, H., Komaki, G., Igarashi, T., Moriguchi, Y., Kajiwara, S., Akasaka, T., 2009. Validity issues in the assessment of alexithymia related to the developmental stages of emotional cognition and language. Biopsychosoc. Med. 3 (1), 12. https://doi.org/10.1186/1751-0759-3-12.
Nook, E.C., Lindquist, K.A., Zaki, J., 2015. A new look at emotion perception: concepts speed and shape facial emotion recognition. Emotion 15 (5), 569–578. https://doi.org/10.1037/a0039166.
Nordmann, M.A., Schäfer, R., Müller, T., Franz, M., 2021. Alexithymia and facial mimicry in response to infant and adult affect-expressive faces. Front. Psychol. 12, 635648. https://doi.org/10.3389/fpsyg.2021.635648.
Nowakowski, M.E., McFarlane, T., Cassin, S., 2013. Alexithymia and eating disorders: a critical review of the literature. J. Eat. Disord. 1 (21). https://doi.org/10.1186/2050-2974-1-21.
O'Driscoll, C., Laing, J., Mason, O., 2014. Cognitive emotion regulation strategies, alexithymia and dissociation in schizophrenia, a review and meta-analysis. Clin. Psychol. Rev. 34 (6), 482–495. https://doi.org/10.1016/j.cpr.2014.07.002.
Ogrodniczuk, J.S., Piper, W.E., Joyce, A.S., 2004. Alexithymia as a predictor of residual symptoms in depressed patients who respond to short-term psychotherapy. Am. J. Psychother. 58 (2), 150–161. https://doi.org/10.1176/appi.psychotherapy.2004.58.2.150.
Ogrodniczuk, J.S., Piper, W.E., Joyce, A.S., 2008. Alexithymia and therapist reactions to the patient: expression of positive emotion as a mediator. Psychiatry. Interpers. Biol. Process. 71 (3), 257–265. https://doi.org/10.1521/psyc.2008.71.3.257.
Ogrodniczuk, J.S., Piper, W.E., Joyce, A.S., 2011. Effect of alexithymia on the process and outcome of psychotherapy: a programmatic review. Psychiatry Res. 190 (1), 43–48. https://doi.org/10.1016/j.psychres.2010.04.026.
Ottenstein, C., Lischetzke, T., 2020. Development of a novel method of emotion differentiation that uses open-ended descriptions of momentary affective states. Assessment 27 (8), 1928–1945. https://doi.org/10.1177/1073191119839138.
Oussi, A., Hamid, K., Bouvet, C., 2023. Managing emotions in panic disorder: a systematic review of studies related to emotional intelligence, alexithymia, emotion regulation, and coping. J. Behav. Ther. Exp. Psychiatry 79, 101835. https://doi.org/10.1016/j.jbtep.2023.101835.
Ozdemir, E., Xiao, Z., Griffiths, H., MacBeth, A., 2025. Alexithymia in Schizophrenia and psychosis vulnerability: a systematic review and meta-analysis. J. Clin. Psychol. 81 (6), 410–424. https://doi.org/10.1002/jclp.23788.
Panayiotou, G., Leonidou, C., Constantinou, E., Hart, J., Rinehart, K.L., Sy, J.T., Björgvinsson, T., 2015. Do alexithymic individuals avoid their feelings? Experiential avoidance mediates the association between alexithymia, psychosomatic, and depressive symptoms in a community and a clinical sample. Compr. Psychiatry 56, 206–216. https://doi.org/10.1016/j.comppsych.2014.09.006.
Panayiotou, G., Leonidou, C., Constantinou, E., Michaelides, M.P., 2020. Self-awareness in alexithymia and associations with social anxiety. Curr. Psychol. 39 (5), 1600–1609. https://doi.org/10.1007/s12144-018-9855-1.
Panayiotou, G., Panteli, M., Vlemincx, E., 2018. Processing emotions in alexithymia: a systematic review of physiological markers. In: Luminet, In.O., Bagby, R.M., Taylor, G.J. (Eds.), Alexithymia: Advances in research, theory, and clinical practice (1st ed. Cambridge University Press, pp. 291–320. https://doi.org/10.1017/9781108241595.018.
Panayiotou, G., Panteli, M., Vlemincx, E., 2021. Adaptive and maladaptive emotion processing and regulation, and the case of alexithymia. Cogn. Emot. 35 (3), 488–499. https://doi.org/10.1080/02699931.2019.1671322.
Pandey, R., 1995. Stroop interference effect of emotion-arousing words in alexithymia. J. Indian Acad. Appl. Psychol. 21 (1), 21–28.
Papciak, A.S., Feuerstein, M., Spiegel, J.A., 1985. Stress reactivity in alexithymia: decoupling of physiological and cognitive responses. J. Hum. Stress 11 (3), 135–142. https://doi.org/10.1080/0097840X.1985.9936750.
Paradiso, S., Vaidya, J.G., McCormick, L.M., Jones, A., Robinson, R.G., 2008. Aging and alexithymia: association with reduced right rostral cingulate volume. Am. J. Geriatr. Psychiatry 16 (9), 760–769. https://doi.org/10.1097/JGP.0b013e31817e73b0.
Parker, J.D.A., Keefer, K.V., Taylor, G.J., Bagby, R.M., 2008. Latent structure of the alexithymia construct: a taxometric investigation. Psychol. Assess. 20 (4), 385–396. https://doi.org/10.1037/a0014262.
Parker, J.D.A., Taylor, G.J., Bagby, R.M., 1993a. Alexithymia and the recognition of facial expressions of emotion. Psychother. Psychosom. 59 (3–4), 197–202. https://doi.org/10.1159/000288664.
Parker, J.D.A., Taylor, G.J., Bagby, R.M., 1993b. Alexithymia and the processing of emotional stimuli: an experimental study. N. Trends Exp. Clin. Psychol. 9, 9–14.
Parker, J.D.A., Taylor, G.J., Bagby, R.M., 2003. The 20-Item Toronto Alexithymia Scale: III. Reliability and factorial validity in a community population. J. Psychosom. Res. 55 (3), 269–275. https://doi.org/10.1016/S0022-3999(02)00578-0.
Patrick, C.J., Iacono, W.G., Venables, N.C., 2019. Incorporating neurophysiological measures into clinical assessments: fundamental challenges and a strategy for addressing them. Psychol. Assess. 31 (12), 1512–1529. https://doi.org/10.1037/pas0000713.
Peasley-Miklus, C.E., Panayiotou, G., Vrana, S.R., 2016. Alexithymia predicts arousal-based processing deficits and discordance between emotion response systems during emotional imagery. Emotion 16 (2), 164–174. https://doi.org/10.1037/emo0000086.
Pennebaker, J.W., Beall, S.K., 1986. Confronting a traumatic event: toward an understanding of inhibition and disease. J. Abnorm. Psychol. 95 (3), 274–281. https://doi.org/10.1037/0021-843X.95.3.274.
Pinna, F., Manchia, M., Paribello, P., Carpiniello, B., 2020. The impact of alexithymia on treatment response in psychiatric disorders: a systematic review. Front. Psychiatry 11, 311. https://doi.org/10.3389/fpsyt.2020.00311.
Pizarro, C., Ceric, F., 2023. Interoception in emotional processing: from sensation to psychopathology. Pap. Del. Psicólogo Psychol. Pap. 44 (2), 102–109. https://doi.org/10.23923/pap.psicol.3017.
Pollatos, O., Gramann, K., 2011. Electrophysiological evidence of early processing deficits in alexithymia. Biol. Psychol. 87 (1), 113–121. https://doi.org/10.1016/j.biopsycho.2011.02.016.
Pollatos, O., Schubö, A., Herbert, B.M., Matthias, E., Schandry, R., 2008. Deficits in early emotional reactivity in alexithymia. Psychophysiology 45 (5), 839–846. https://doi.org/10.1111/j.1469-8986.2008.00674.x.
Pollatos, O., Werner, N.S., Duschek, S., Schandry, R., Matthias, E., Traut-Mattausch, E., Herbert, B.M., 2011. Differential effects of alexithymia subscales on autonomic reactivity and anxiety during social stress. J. Psychosom. Res. 70 (6), 525–533. https://doi.org/10.1016/j.jpsychores.2010.12.003.
Poprelka, K., Fasilis, T., Patrikelis, P., Stefanatou, M., Ntinopoulou, E., Verentzioti, A., Alexoudi, A., Stavrinou, L.C., Korfias, S., Gatzonis, S., 2025. Emotional processing in epilepsy: investigating alexithymia and its associated factors. Epilepsy Behav. 170, 110469. https://doi.org/10.1016/j.yebeh.2025.110469.
Preece, D.A., Becerra, R., Allan, A., Robinson, K., Dandy, J., 2017. Establishing the theoretical components of alexithymia via factor analysis: introduction and validation of the attention-appraisal model of alexithymia. Personal. Individ. Differ. 119, 341–352. https://doi.org/10.1016/j.paid.2017.08.003.
Preece, D.A., Becerra, R., Robinson, K., Allan, A., Boyes, M., Chen, W., Hasking, P., Gross, J.J., 2020. What is alexithymia? Using factor analysis to establish its latent

structure and relationship with fantasizing and emotional reactivity. J. Personal. 88 (6), 1162–1176. https://doi.org/10.1111/jopy.12563.
Preece, D.A., Becerra, R., Boyes, M.E., Northcott, C., McGillivray, L., Hasking, P.A., 2020. Do self-report measures of alexithymia measure alexithymia or general psychological distress? A factor analytic examination across five samples. Personal. Individ. Differ. 155, 109721. https://doi.org/10.1016/j.paid.2019.109721.
Preece, D.A., Becerra, R., Robinson, K., Dandy, J., Allan, A., 2018. The psychometric assessment of alexithymia: development and validation of the Perth Alexithymia Questionnaire. Personal. Individ. Differ. 132, 32–44. https://doi.org/10.1016/j.paid.2018.05.011.
Preece, D.A., Mehta, A., Petrova, K., Sikka, P., Bjureberg, J., Becerra, R., Gross, J.J., 2023. Alexithymia and emotion regulation. J. Affect. Disord. 324, 232–238. https://doi.org/10.1016/j.jad.2022.12.065.
Preece, D.A., Petrova, K., Mehta, A., Sikka, P., Gross, J.J., 2024. Alexithymia or general psychological distress? Discriminant validity of the Toronto Alexithymia Scale and the Perth Alexithymia Questionnaire. J. Affect. Disord. 352, 140–145. https://doi.org/10.1016/j.jad.2024.01.271.
Putica, A., 2024. Examining the role of emotion and alexithymia in cognitive behavioural therapy outcomes for posttraumatic stress disorder: clinical implications. Cogn. Behav. Ther. 17, e15. https://doi.org/10.1017/S1754470X2400014X.
Qi, M., Shen, X., Zeng, Y., Lin, X., Suliman, M., Li, P., 2025. Interoception and mental health in middle-aged and elderly adults: a systematic review and meta-analysis. Neurosci. Biobehav. Rev. 172, 106104. https://doi.org/10.1016/j.neubiorev.2025.106104.
Quan, S., Wang, Z., Liu, Y., 2020. The emotional Stroop effect is modulated by the biological salience and motivational intensity inherent in stimuli. Front. Psychol. 10, 3023. https://doi.org/10.3389/fpsyg.2019.03023.
Quilty, L.C., Taylor, G.J., McBride, C., Bagby, R.M., 2017. Relationships among alexithymia, therapeutic alliance, and psychotherapy outcome in major depressive disorder. Psychiatry Res. 254, 75–79. https://doi.org/10.1016/j.psychres.2017.04.047.
Rabavilas, A.D., 1987. Electrodermal Activity in low and high alexithymia neurotic patients. Psychother. Psychosom. 47 (2), 101–104. https://doi.org/10.1159/000288004.
Rachele, M., Giovanna, M.M., Alessia, R., Isabella, M., Michela, D.T., Massimo, P., 2025. The weight of words: An analysis of autobiographical narratives and psychopathological measures in anorexia nervosa. J. Psycholinguist. Res. 54 (3), 32. https://doi.org/10.1007/s10936-025-10150-8.
Rammensee, R.A., Morawetz, C., Basten, U., 2023. Individual differences in emotion regulation: personality tendency in strategy selection is related to implementation capacity and well-being. Emotion 23 (8), 2331–2343. https://doi.org/10.1037/emo0001234.
Reitsema, A.M., Jeronimus, B.F., Van Dijk, M., De Jonge, P., 2022. Emotion dynamics in children and adolescents: a meta-analytic and descriptive review. Emotion 22 (2), 374–396. https://doi.org/10.1037/emo0000970.
Richards, J.C., Cooper, A.J., Winkelman, J.H., 2003. Interoceptive accuracy in nonclinical panic. Cogn. Ther. Res. 27 (4), 447–461. https://doi.org/10.1023/A:1025476514714.
Roedema, T.M., Simons, R.F., 1999. Emotion-processing deficit in alexithymia. Psychophysiology 36 (3), 379–387. https://doi.org/10.1017/S0048577299980290.
Rohr, M., Wentura, D., 2021. Degree and complexity of non-conscious emotional information processing: a review of masked priming studies. Front. Hum. Neurosci. 15, 689369. https://doi.org/10.3389/fnhum.2021.689369.
Rohr, M., Wentura, D., 2022. How emotion relates to language and cognition, seen through the lens of evaluative priming paradigms. Front. Psychol. 13, 911068. https://doi.org/10.3389/fpsyg.2022.911068.
Romero-Martínez, Á., Lila, M., Moya-Albiol, L., 2020. Alexithymia as a predictor of arousal and affect dysregulations when batterers with attention deficit hyperactivity disorder cope with acute stress. Behav. Sci. 10 (4), 70. https://doi.org/10.3390/bs10040070.
Rosenberg, N., Ihme, K., Lichev, V., Sacher, J., Rufer, M., Grabe, H.J., Kugel, H., Pampel, A., Lepsien, J., Kersting, A., Villringer, A., Suslow, T., 2020. Alexithymia and automatic processing of facial emotions: behavioral and neural findings. BMC Neurosci. 21 (1), 23. https://doi.org/10.1186/s12868-020-00572-6.
Russell, J.A., 1980. A circumplex model of affect. J. Personal. Soc. Psychol. 39 (6), 1161–1178. https://doi.org/10.1037/h0077714.
Ryan, C., Cogan, S., 2023. Eliciting expressions of emotion: an exploratory analysis of alexithymia in adults with autism utilising the APRQ. J. Autism Dev. Disord. 53 (6), 2499–2513. https://doi.org/10.1007/s10803-022-05508-z.
Salminen, J.K., Saarijärvi, S., Äärelä, E., Toikka, T., Kauhanen, J., 1999. Prevalence of alexithymia and its association with sociodemographic variables in the general population of Finland. J. Psychosom. Res. 46 (1), 75–82. https://doi.org/10.1016/S0022-3999(98)00053-1.
Saxe, R., Houlihan, S.D., 2017. Formalizing emotion concepts within a Bayesian model of theory of mind. Curr. Opin. Psychol. 17, 15–21. https://doi.org/10.1016/j.copsyc.2017.04.019.
Scarpazza, C., Zangrossi, A., Huang, Y.-C., Sartori, G., Massaro, S., 2022. Disentangling interoceptive abilities in alexithymia. Psychol. Res. 86 (3), 844–857. https://doi.org/10.1007/s00426-021-01538-x.
Schandry, R., 1981. Heart beat perception and emotional experience. Psychophysiology 18 (4), 483–488. https://doi.org/10.1111/j.1469-8986.1981.tb02486.x.
Schimmack, U., Diener, E., 1997. Affect intensity: separating intensity and frequency in repeatedly measured affect. J. Personal. Soc. Psychol. 73 (6), 1313–1329. https://doi.org/10.1037/0022-3514.73.6.1313.
Schmitz, N., Napieralski, J., Schroeder, D., Loeser, J., Gerlach, A.L., Pohl, A., 2021. Interoceptive sensibility, alexithymia, and emotion regulation in individuals suffering from fibromyalgia. Psychopathology 54 (3), 144–149. https://doi.org/10.1159/000513774.
Schoeller, F.A., Zhang, B., Garcia, T., Reggente, N., 2025. There is no such thing as interoception. Front. Psychol. 16, 1488415. https://doi.org/10.3389/fpsyg.2025.1488415.
Schroeders, U., Kubera, F., Gnambs, T., 2022. The structure of the Toronto Alexithymia Scale (TAS-20): a meta-analytic confirmatory factor analysis. Assessment 29 (8), 1806–1823. https://doi.org/10.1177/10731911211033894.
Sharpe, E., Wallis, D.J., Ridout, N., 2016. The influence of variations in eating disorder-related symptoms on processing of emotional faces in a non-clinical female sample: an eye-tracking study. Psychiatry Res. 240, 321–327. https://doi.org/10.1016/j.psychres.2016.04.065.
Shen, H., Li, J., Zeng, R., He, Y., Dai, J., Li, Z., Li, Y., Wei, G., 2025. Depression may not be related to impaired interoceptive sensibility: the role of alexithymia. Behav. Sci. 15 (8), 995. https://doi.org/10.3390/bs15080995.
Shiffman, S., Stone, A.A., Hufford, M.R., 2008. Ecological momentary assessment. Annu. Rev. Clin. Psychol. 4 (1), 1–32. https://doi.org/10.1146/annurev.clinpsy.3.022806.091415.
Sifneos, P.E., 1973. The prevalence of "alexithymic" characteristics in psychosomatic patients. Psychother. Psychosom. 22 (2–6), 255–262. https://doi.org/10.1159/000286529.
Silvers, J.A., Guassi Moreira, J.F., 2019. Capacity and tendency: a neuroscientific framework for the study of emotion regulation. Neurosci. Lett. 693, 35–39. https://doi.org/10.1016/j.neulet.2017.09.017.
Silvestro, O., Ricciardi, L., Catalano, A., Vicario, C.M., Tomaiuolo, F., Pioggia, G., Squadrito, G., Schwarz, P., Gangemi, S., Martino, G., 2023. Alexithymia and asthma: a systematic review. Front. Psychol. 14, 1221648. https://doi.org/10.3389/fpsyg.2023.1221648.
Sivik, T., 1993. Alexithymia and hypersensitivity to touch and palpation. Integr. Physiol. Behav. Sci. 28 (2), 130–136. https://doi.org/10.1007/BF02691215.
Smith, R., Parr, T., Friston, K.J., 2019. Simulating emotions: an active inference model of emotional state inference and emotion concept learning. Front. Psychol. 10, 2844. https://doi.org/10.3389/fpsyg.2019.02844.
Smith, R., Persich, M., Lane, R.D., Killgore, W.D.S., 2022. Higher emotional awareness is associated with greater domain-general reflective tendencies. Sci. Rep. 12 (1), 3123. https://doi.org/10.1038/s41598-022-07141-3.
Starita, F., Làdavas, E., Di Pellegrino, G., 2016. Reduced anticipation of negative emotional events in alexithymia. Sci. Rep. 6 (1), 27664. https://doi.org/10.1038/srep27664.
Stewart, S.H., Zvolensky, M.J., Eifert, G.H., 2002. The relations of anxiety sensitivity, experiential avoidance, and alexithymic coping to young adults' motivations for drinking. Behav. Modif. 26 (2), 274–296. https://doi.org/10.1177/0145445502026002007.
Stone, L.A., Nielson, K.A., 2001. Intact physiological response to arousal with impaired emotional recognition in alexithymia. Psychother. Psychosom. 70 (2), 92–102. https://doi.org/10.1159/000056232.
Surber, C., Hoepfel, D., Günther, V., Kersting, A., Rufer, M., Suslow, T., Bodenschatz, C. M., 2024. Deployment of attention to facial expressions varies as a function of emotional quality—but not in alexithymic individuals. Front. Psychiatry 15, 1338194. https://doi.org/10.3389/fpsyt.2024.1338194.
Suslow, T., Junghanns, K., 2002. Impairments of emotion situation priming in alexithymia. Personal. Individ. Differ. 32 (3), 541–550. https://doi.org/10.1016/S0191-8869(01)00056-3.
Suslow, T., Kersting, A., 2021. Beyond face and voice: a review of alexithymia and emotion perception in music, odor, taste, and touch. Front. Psychol. 12, 707599. https://doi.org/10.3389/fpsyg.2021.707599.
Taylor, G.J., 1984. Psychotherapy with the boring patient. Can. J. Psychiatry 29 (3), 217–222. https://doi.org/10.1177/070674378402900306.
Taylor, G.J., 2000. Recent developments in alexithymia theory and research. Can. J. Psychiatry 45 (2), 134–142. https://doi.org/10.1177/070674370004500203.
Taylor, G.J., Bagby, R.M., 2013. Psychoanalysis and empirical research: the example of alexithymia. J. Am. Psychoanal. Assoc. 61 (1), 99–133. https://doi.org/10.1177/0003065112474066.
Taylor, G.J., Bagby, R.M., Parker, J.D.A., 1991. The alexithymia construct: a potential paradigm for psychosomatic medicine. Psychosomatics 32 (2), 153–164.
Taylor, G.J., Bagby, R.M., Ryan, D.P., Parker, J.D., Doody, K.F., Keefe, P., 1988. Criterion validity of the Toronto Alexithymia Scale. Psychosom. Med. 50 (5), 500–509. https://doi.org/10.1097/00006842-198809000-00006.
Taylor, G.J., Porcelli, P., Bagby, R.M., 2024. Alexithymia: a defense of the original conceptualization of the construct and a critique of the attention-appraisal model. Clin. Neuropsychiatry 21 (5), 329–357. https://doi.org/10.36131/cnfioritieditore20240501.
Telli, B., Bilge, A.R., 2024. Literally or prosodically? Recognising emotional discourse in alexithymia. Cogn. Emot. 1–15. https://doi.org/10.1080/02699931.2024.2380762.
Terasawa, Y., Oba, K., Motomura, Y., Katsunuma, R., Murakami, H., Moriguchi, Y., 2021. Paradoxical somatic information processing for interoception and anxiety in alexithymia. Eur. J. Neurosci. 54 (11), 8052–8068. https://doi.org/10.1111/ejn.15528.
Terock, J., Van Der Auwera, S., Janowitz, D., Klinger-König, J., Schmidt, C.O., Freyberger, H.J., Grabe, H.J., 2019. The relation of alexithymia, chronic perceived stress and declarative memory performance: results from the general population. Psychiatry Res. 271, 405–411. https://doi.org/10.1016/j.psychres.2018.12.024.
Tolmunen, T., Heliste, M., Lehto, S.M., Hintikka, J., Honkalampi, K., Kauhanen, J., 2011. Stability of alexithymia in the general population: an 11-year follow-up. Compr. Psychiatry 52 (5), 536–541. https://doi.org/10.1016/j.comppsych.2010.09.007.

Torunsky, N.T., Knauz, S., Vilares, I., Marcoulides, K.M., Koutstaal, W., 2023. What is the relationship between alexithymia and experiential avoidance? a latent analysis using three alexithymia questionnaires. Personal. Individ. Differ. 214, 112308. https://doi.org/10.1016/j.paid.2023.112308.

Treisman, A.M., Gelade, G., 1980. A feature-integration theory of attention. Cogn. Psychol. 12 (1), 97–136. https://doi.org/10.1016/0010-0285(80)90005-5.

Trevisan, D.A., Altschuler, M.R., Bagdasarov, A., Carlos, C., Duan, S., Hamo, E., Kala, S., McNair, M.L., Parker, T., Stahl, D., Winkelman, T., Zhou, M., McPartland, J.C., 2019. A meta-analysis on the relationship between interoceptive awareness and alexithymia: distinguishing interoceptive accuracy and sensibility. J. Abnorm. Psychol. 128 (8), 765–776.

Trull, T.J., Lane, S.P., Koval, P., Ebner-Priemer, U.W., 2015. Affective dynamics in psychopathology. Emotion Review 7 (4), 355–361. https://doi.org/10.1177/1754073915590617.

Tsubaki, K., Shimizu, E., 2024. Psychological treatments for alexithymia: a systematic review. Behav. Sci. 14 (12), 1173. https://doi.org/10.3390/bs14121173.

Tugade, M.M., Fredrickson, B.L., Barrett, L.F., 2004. Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. J. Personal. 72 (6), 1161–1190. https://doi.org/10.1111/j.1467-6494.2004.00294.x.

Tull, M.T., Medaglia, E., Roemer, L., 2005. An investigation of the construct validity of the 20-Item Toronto Alexithymia Scale through the use of a verbalization task. J. Psychosom. Res. 59 (2), 77–84. https://doi.org/10.1016/j.jpsychores.2005.02.016.

Vaiouli, P., Panayiotou, G., 2021. Alexithymia and autistic traits: Associations with social and emotional challenges among college students. Front. Neurosci. 15, 733775. https://doi.org/10.3389/fnins.2021.733775.

Van Bael, K., Scarfo, J., Suleyman, E., Katherveloo, J., Grimble, N., Ball, M., 2024. A systematic review and meta-analysis of the relationship between subjective interoception and alexithymia: implications for construct definitions and measurement. PLOS ONE 19 (11), e0310411. https://doi.org/10.1371/journal.pone.0310411.

Veirman, E., Van Ryckeghem, D.M.L., Verleysen, G., De Paepe, A.L., Crombez, G., 2021. What do alexithymia items measure? a discriminant content validity study of the Toronto-alexithymia-scale–20. PeerJ 9, e11639. https://doi.org/10.7717/peerj.11639.

Venta, A., Hart, J., Sharp, C., 2012. The relation between experiential avoidance, alexithymia and emotion regulation in inpatient adolescents. Clin. Child Psychol. Psychiatry 18 (3), 398–410. https://doi.org/10.1177/1359104512455815.

Vermeulen, N., 2021. Alexithymia disrupts verbal short-term memory. Cogn. Emot. 35 (3), 559–568. https://doi.org/10.1080/02699931.2019.1701418.

Vermeulen, N., Luminet, O., Corneille, O., 2006. Alexithymia and the automatic processing of affective information: evidence from the affective priming paradigm. Cogn. Emot. 20 (1), 64–91. https://doi.org/10.1080/02699930500304654.

Vorst, H.C.M., Bermond, B., 2001. Validity and reliability of the Bermond–Vorst Alexithymia Questionnaire. Personal. Individ. Differ. 30 (3), 413–434. https://doi.org/10.1016/S0191-8869(00)00033-7.

de Vroege, L., Emons, W.H.M., Sijtsma, K., van der Feltz-Cornelis, C.M., 2018. Psychometric properties of the Bermond–Vorst Alexithymia Questionnaire (BVAQ) in the general population and a clinical population. Front. Psychiatry 9, 111. https://doi.org/10.3389/fpsyt.2018.00111.

Wagner, H., Lee, V., 2008. Alexithymia and individual differences in emotional expression. J. Res. Personal. 42 (1), 83–95. https://doi.org/10.1016/j.jrp.2007.04.001.

Wang, Z., Chen, M., Goerlich, K.S., Aleman, A., Xu, P., Luo, Y., 2021. Deficient auditory emotion processing but intact emotional multisensory integration in alexithymia. Psychophysiology 58 (6), e13806. https://doi.org/10.1111/psyp.13806.

Wegner, D.M., Schneider, D.J., Carter III, S.R., White, T.L., 1987. Paradoxical effects of thought suppression. J. Personal. Soc. Psychol. 53 (1), 5–13. https://doi.org/10.1037/0022-3514.53.1.5.

Wehmer, F., Brejnak, C., Lumley, M., Stettner, L., 1995. Alexithymia and physiological reactivity to emotion-provoking visual scenes. J. Nerv. Ment. Dis. 183 (6), 351–357. https://doi.org/10.1097/00005053-199506000-00001.

Weissman, D.G., Nook, E.C., Dews, A.A., Miller, A.B., Lambert, H.K., Sasse, S.F., Somerville, L.H., McLaughlin, K.A., 2020. Low emotional awareness as a transdiagnostic mechanism underlying psychopathology in adolescence. Clin. Psychol. Sci. 8 (6), 971–988. https://doi.org/10.1177/2167702620923364.

Wenk, T., Günther, A.-C., Webelhorst, C., Kersting, A., Bodenschatz, C.M., Suslow, T., 2024. Reduced positive attentional bias in patients with borderline personality disorder compared with non-patients: results from a free-viewing eye-tracking study. Bord. Personal. Disord. Emot. Dysregulation 11 (1), 24. https://doi.org/10.1186/s40479-024-00267-y.

Westwood, H., Kerr-Gaffney, J., Stahl, D., Tchanturia, K., 2017. Alexithymia in eating disorders: systematic review and meta-analyses of studies using the Toronto Alexithymia Scale. J. Psychosom. Res. 99, 66–81. https://doi.org/10.1016/j.jpsychores.2017.06.007.

Wiebe, A., Kersting, A., Suslow, T., 2017. Deployment of attention to emotional pictures varies as a function of externally-oriented thinking: an eye tracking investigation. J. Behav. Ther. Exp. Psychiatry 55, 1–5. https://doi.org/10.1016/j.jbtep.2016.11.001.

Wieser, M.J., Pauli, P., Weyers, P., Alpers, G.W., Mühlberger, A., 2009. Fear of negative evaluation and the hypervigilance-avoidance hypothesis: an eye-tracking study. J. Neural Transm. 116 (6), 717–723. https://doi.org/10.1007/s00702-008-0101-0.

Williams, J.M.G., Mathews, A., MacLeod, C., 1996. The emotional Stroop task and psychopathology. Psychol. Bull. 120 (1), 3–24. https://doi.org/10.1037/0033-2909.120.1.3.

Wingenfeld, K., Riedesel, K., Petrovic, Z., Philippsen, C., Meyer, B., Rose, M., Grabe, H.J., Barnow, S., Löwe, B., Spitzer, C., 2011. Impact of childhood trauma, alexithymia, dissociation, and emotion suppression on emotional Stroop task. J. Psychosom. Res. 70 (1), 53–58. https://doi.org/10.1016/j.jpsychores.2010.06.003.

Winstanley, M., Webb, R.T., Conti-Ramsden, G., 2019. Psycholinguistic and socioemotional characteristics of young offenders: do language abilities and gender matter? Leg. Criminol. Psychol. 24 (2), 195–214. https://doi.org/10.1111/lcrp.12150.

Wotschack, C., Klann-Delius, G., 2013. Alexithymia and the conceptualization of emotions: a study of language use and semantic knowledge. J. Res. Personal. 47 (5), 514–523. https://doi.org/10.1016/j.jrp.2013.01.011.

Wu, X., Guo, Z., 2025. The impact of loneliness on alexithymia among Chinese adolescents: the mediating role of problematic smartphone use and the moderating effect of fear of negative evaluation. BMC Public Health 25 (1), 2812. https://doi.org/10.1186/s12889-025-23721-0.

Xia, R., Chen, X., Engel, T.A., Moore, T., 2024. Common and distinct neural mechanisms of attention. Trends Cogn. Sci. 28 (6), 554–567. https://doi.org/10.1016/j.tics.2024.01.005.

Xiao, Y., Tian, J., Pan, Y.-F., Dai, Y., Sun, Y.-J., Zhou, Y., Yu, Y.-F., 2024. The prevalence of alexithymia in schizophrenia: a systematic review and meta-analysis. Asian J. Psychiatry 102, 104280. https://doi.org/10.1016/j.ajp.2024.104280.

Yao, B., Keitel, A., Bruce, G., Scott, G.G., O'Donnell, P.J., Sereno, S.C., 2018. Differential emotional processing in concrete and abstract words. J. Exp. Psychol. Learn. Mem. Cogn. 44 (7), 1064–1074. https://doi.org/10.1037/xlm0000464.

Zakiei, A., Ghasemi, S.R., Gilan, N.R., Reshadat, S., Sharifi, K., Mohammadi, O., 2017. Mediator role of experiential avoidance in relationship of perceived stress and alexithymia with mental health. East. Mediterr. Health J. 23 (5), 335–341. https://doi.org/10.26719/2017.23.5.335.

Zammuner, V.L., 2011. People's active emotion vocabulary: free listing of emotion labels and their association to salient psychological variables. In: Esposito, In.A., Vinciarelli, A., Vicsi, K., Pelachaud, C., Nijholt, A. (Eds.), Analysis of verbal and nonverbal communication and enactment. The processing issues, 6800. Springer Berlin Heidelberg, pp. 449–460. https://doi.org/10.1007/978-3-642-25775-9_40.

Zhang, L., Zhu, C., Ye, R., Cao, Z., Tian, Y., Yang, P., Hu, P., Wang, K., 2011. Impairment of conflict processing in alexithymic individuals. Neurosci. Lett. 504 (3), 261–264. https://doi.org/10.1016/j.neulet.2011.09.043.

Zoellner, L.A., Craske, M.G., 1999. Interoceptive accuracy and panic. Behav. Res. Ther. 37 (12), 1141–1158. https://doi.org/10.1016/S0005-7967(98)00202-2.

Zorzella, K.P.M., Muller, R.T., Cribbie, R.A., Bambrah, V., Classen, C.C., 2019. The role of alexithymia in trauma therapy outcomes: examining improvements in PTSD, dissociation, and interpersonal problems. Psychol. Trauma. Theory Res. Pract. Policy 12 (1), 20. https://doi.org/10.1037/tra0000433.

Zucchelli, M.M., Starita, F., Bertini, C., Giusberti, F., Ciaramelli, E., 2019. Intentionality attribution and emotion: the knobe effect in alexithymia. Cognition 191, 103978. https://doi.org/10.1016/j.cognition.2019.05.015.