



Exploring 40 years on affective correlates to procrastination: a literature review of situational and dispositional types

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Accepted: 20 December 2021

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Abstract

The relationship between different emotions with situational (e.g., academic) and dispositional (chronic) procrastination was examined extensively in the literature since the early days of procrastination research. A review of empirical studies over the past 40 years might shed light on the role of emotions in procrastination in different contexts with different populations. The current paper reviewed 83 studies (from 1977 to 2021) exploring the relationship between 9 different emotions and situational and dispositional procrastination. The emotions examined, listed in the order of the extent of focus of scholarly research are: anxiety, fear, shame, guilt, regret, boredom, frustration, anger, and revenge. Findings highlight the important role of emotions as motives, antecedents, correlates, or consequences of situational and dispositional procrastination. Based on the findings, a lack of a comprehensive theory summarizing dispositional and situational procrastination is pointed out and avenues for future research are outlined and recommended.

Keywords Emotions · Dispositional procrastination · Situational procrastination · Literature review

Introduction

It is said that “*everyone procrastinates, but not everyone is a procrastinator*” (Ferrari, 2010). Many people delay, wait, or postpone the start or completion of a particular task, yet some people engage in a delayed tendency of most tasks across contexts and on a regular basis in all domains of their life. The main construct of procrastination is defined in the current review as the “voluntary delay of important, necessary, and intended action despite knowing there will be negative consequences for this delay” (Sirois & Giguère, 2018, p. 404; Sirois & Pychyl, 2013). The prevalence of situational procrastination, such as academic behaviors, is reported as

high as 75% in college students (Day et al., 2000; Ferrari et al., 2007). While delaying some tasks because of prioritizing one task over other tasks may be acceptable and appropriate, habitually and compulsively failing to begin or complete intended tasks is a self-defeating act termed (dispositional) *chronic procrastination* (Burka & Yuen, 1983; Ferrari, 2010; Ferrari & Tibbett, 2017). In fact, chronic procrastination is a global, widespread phenomenon affecting as many as 20% of normal, non-clinical adults in the U.S. and in many western and eastern countries (see Diaz-Morales et al., 2006; Ferrari et al., 2005; Ferrari et al., 2009; Harriett & Ferrari, 1996; Mariani & Ferrari, 2012). Both types of procrastination lead to different negative consequences. Situational procrastination was linked to low academic achievement (Ferrari, 2010; Özer et al., 2009; for a meta-analysis see Kim & Seo, 2015), dispositional procrastination to delays in health seeking behaviors (Pychyl et al., 2000), and both procrastination types are associated with poor well-being (vanEerde, 2013; Sirois & Pychyl, 2016) and increased reports of symptoms of depression (Ferrari et al., 1995; Flett et al., 1995, 2016).

Some theories of procrastination model this behavior as a way to manage one's emotions (e.g., anxiety) by engaging in tasks that are pleasurable at the moment rather than tackling the task they have been dreading (Sirois & Pychyl, 2013; Tice & Bratslavsky, 2000). Emotion regulation research

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has looked at ways individuals use different tactics (e.g., cognitive reappraisal) to manage the emotions they feel and manifest (Gross, 1998). Procrastination as a type of avoidance tactic only alleviates negative emotions in the short term at the expense of long-term goal achievement (Sirois & Giguère, 2018). The important role of emotions in this context highlights the need for the present review that summarize the state-of-the-art on the links between empirical research on emotional antecedents, correlates, and consequences of both types of procrastination. Our conceptualization of procrastination (regardless of the type) as an avoidance behavior in this review is one of the ways this behavior has been understood in the literature. In terms of avoidance, procrastination can be thought of as a coping strategy against a task that is undesirable or aversive (Sirois & Kitner, 2015). This operationalization of procrastination fits in the mood regulation model explained above. Some examples of these types of tasks are studying for a mid-term test one perceives as difficult and important, doing one's taxes if one perceives it to be a boring and frustrating task, or going to the dentist for a root canal, an important procedure they dread due to fear of possible pain.

Understanding the type of emotions and their extent of association with procrastination in the literature will help researchers understand the mechanism by which these emotions influence or result from procrastination. Identifying these emotions and understanding their relationship will also help in deciding what emotions to target in overcoming procrastination and what emotion regulation skills to teach individuals (Eckert et al., 2016). Research points to the strong effect of emotion regulation strategies (e.g., tolerating and modifying aversive emotions: e.g., fear of failure) on reducing procrastination (Eckert et al., 2016). The type and effectiveness of an emotion regulation tactic depends on the type of emotion experienced by the individual, hence procrastination researchers would be able to design and deploy appropriate tactics particular to specific emotions to help in overcoming procrastination.

Early research on procrastination focused on *emotions* (such as anxiety, shame, guilt; e.g., Fee & Tangney, 2000) and this trend continues to the present (e.g., Constantin et al., 2018; Martinčková & Enright, 2020; Wartberg et al., 2021). Despite the focus on emotions, no comprehensive published review has encompassed and summarized findings regarding affect domains with either procrastination type. This review is particularly important since there are often inconsistent findings regarding the association of certain emotions with procrastination (situational or dispositional). Moreover, a survey of studies enables future researchers to identify gaps in the empirical literature linking emotions and procrastination (situational or dispositional). The current review sheds light on the trends of focuses of empirical studies in the past four decades on situational or dispositional procrastination.

In this review, emotions identified to be related to procrastination (situational or dispositional) reported in the literature are examined and a summary of the empirical research is presented in the order of amount of research on each particular emotion. More specifically, the main question addressed here is: What is the relationship between procrastination and different emotions (e.g., anxiety, fear, shame, guilt, anger, boredom, frustration, regret, revenge, etc.)? Studies of both dispositional and situational procrastination are included in this review.

Differentiating Between Situational vs. Dispositional Procrastination

There are two major types of procrastination that are addressed in the literature: *situational* and *dispositional* or *chronic* (Ferrari, 1989; Ferrari et al., 1995; Milgram et al., 1992). An individual may procrastinate in one or few life domains (e.g., paying bills, health-related behaviors, studying or reading for a class) but not in others (Hen & Goroshit, 2018). This type of procrastination is termed *situational procrastination*. In such cases, procrastination is a domain-specific maladaptive behavior tendency (limited to delaying in one or a few (but not all) domains of life). An example of situational procrastination is *academic procrastination*, where students delay tasks such as studying, completing assignments, registering for classes, seeing an advisor or mentor, working on course-related activities (Ferrari & Tibbett, 2017; Milgram et al., 1992). Another common example of situational procrastination is *bedtime procrastination*, intentionally putting off going to bed without a rational reason, resulting in a lack of sleep (Kroese et al., 2014, 2016; Sirois et al., 2019). These two examples of situational procrastination refer to cases where the individual procrastinates in one area of life, however, individuals procrastinating in more than one context are also called situational procrastinators. Additionally, the term situational procrastination is not exclusive to academic procrastination, rather that is the type that has garnered more attention in the literature, while procrastination in other domains is comparatively understudied. There is need for more studies on domain-specificity and generality of procrastination (Mann, 2016). For instance, Klingsieck (2013) found procrastination to be domain specific, but Subotnick et al. (1999) found 40% of their participants to procrastinate in three to four domains of their lives.

Ferrari and Tibbett (2017) define *chronic* or *dispositional procrastination* as “the purposive and frequent delay in beginning or completing a task to the point of experiencing subjective discomfort” (p. 1). Chronic procrastination, as a stable, domain-general behavior, was linked to certain personality variables, such as high neurosis, social anxiety, impulsivity, depression, and low conscientiousness (Burka

& Yuen, 1983; Ferrari et al., 1995; van Eerde, 2004). A person may delay and postpone across settings, contexts, and time for years. This tendency is widespread across daily life activities (e.g., paying bills after multiple late notes, refusing their auto, food shopping until the fridge is empty).

The demarcation between dispositional and situational procrastination is critical, yet these two terms are often confused by researchers and in the media (Ferrari & Tibbett, 2017; Sirois & Pychyl, 2016). Chronic, everyday procrastination may result in certain negative consequences that are unlikely to occur in case of an occasional incident of situational procrastination (e.g., one instance of academic procrastination in working on an assignment versus chronically procrastinating) (Sirois & Pychyl, 2016). In other words, the common saying stated at the beginning reflects that “everyone procrastinates” (i.e., situational procrastination), but not everyone is a “procrastinator” (i.e., chronic procrastination, habitually postponing something that must be done) encapsulates this distinction (Ferrari, 2010; Ferrari & Tibbett, 2017). In this review, studies have been grouped under each emotion based on their focus on the either type of procrastination identified above.

Emotions Linked to Procrastination

Before summarizing the findings of the empirical studies, the following discusses how these emotions are linked to procrastination.

Anxiety is experienced when one perceives a situation stressful. Research evidence suggests that individuals are more likely to intentionally put off doing tasks they perceive as effortful, aversive, and stress-provoking (Ferrari et al., 1995; Haghbin et al., 2012; Solomon & Rothblum, 1984). Anxiety is also thought to stem from fear of failure and fear of negative evaluations. Chronic procrastination as a self-defeating behavior is linked to irrational *fears* and self-criticism that stems from the belief that failure is inevitable and standards are too high (Ferrari et al., 1995; Schouwenburg, 1992). To avoid the consequences of this failure, procrastinators put off the task until it is not possible to complete it on time. By putting off doing what is needed to accomplish the task, the final product will not reflect the full ability of the procrastinator. Now if the procrastinator fails or receives a negative evaluation, they blame the limited time rather than their own self to protect their ego (Ferrari et al., 1995). In other words, procrastinators are terrified that their best work would be judged inadequate. This fear is exacerbated by their assumption that their self-worth is tied to their ability and performance (Burka & Yuen, 2008).

Chronic dispositional procrastinators have also been considered perfectionists, putting unrealistic demands on themselves (self-oriented perfectionism), setting irrational standards for tasks, and ending up not being able to

accomplish what they initially aimed (Knaus, 1979). When the ideal outcomes perfectionists strive for does not realize, they feel anxiety and depression, but to temporarily avoid these negative feelings, they procrastinate (Knaus, 1979). In other words, chronic procrastination reduces anxiety in the short term at the cost of future failure. Both procrastinators and perfectionists share beliefs about the high standards of performance and wanting to avoid social disapproval (Flett et al., 1995). Burka and Yuen (1983) summarize the “Procrastinator’s Code”, assumptions that chronic procrastinators operate under, as the desire to be perfect, that everything should be accomplished effortlessly, and it is better to do nothing than take a risk and fail. Perfectionism is also associated with fear of failure (Pacht, 1984). Fear of failure and shame often also manifests in the case of *socially-prescribed perfectionism*, where one is afraid not to be able to meet performance standards, norms concerning delay, and expectations set for them by others (Flett et al., 1995).

Many works in the literature examined the link between situational and dispositional procrastination and moral emotions, such as *shame and guilt* (see Fee & Tangney, 2000). Although guilt and shame are sometimes used interchangeably in popular language, these moral affects are distinctly different constructs (Tangney, 1993). The difference between the two emotions is in whether the individual negatively evaluates their global self as opposed to a behavior (Fee & Tangney, 2000). *Guilt* is experienced when one focuses on a particular behavior, and subsequently feels remorse and regret post a moral transgression. On the other hand, *shame* is experienced when the individual focuses on and negatively evaluates the self (e.g., I failed at doing this, I’m incompetent) after some offense to others. The negative self-evaluation of one’s overall worth or ability (or feelings of shame) is reported as the main motive for dispositional and situational procrastination (Burka & Yuen, 1983). In other words, individuals procrastinate (chronically or situationally in particular life domains) to avoid feelings of shame and self-protect from negative evaluations (from self and others) (Ferrari et al., 1995). Shame and guilt are also conceptualized as both a motive and consequence of (situational or dispositional) procrastination. Early theoretical accounts of both dispositional and situational procrastination report associations with guilt (e.g., Burka & Yuen, 1983; Ferrari & Beck, 1998), and other works emphasized feeling of shame as an emotion associated with dispositional (e.g., Fee & Tangney, 2000) and situational procrastination (e.g., Martinčková & Enright, 2020).

In general, it is argued that individuals tend to procrastinate on tasks that are not stimulating enough; are unpleasant and unenjoyable; or difficult (Blunt & Pychyl, 2005). *Boredom* is argued to “contribute to the inability to suppress task-irrelevant emotions and cognitions and guard the

intended activity from competing action tendencies” (Blunt & Pychyl, 2005, p. 1778).

Boredom is linked with *frustration*, task resentment, and task aversiveness as well (Blunt & Pychyl, 2005; Milgram et al., 1995). For example, in the context of academic or situational procrastination, students were found to procrastinate more on tasks they find unpleasant, boring, or difficult (Milgram et al., 1995). Given the relationship between task aversiveness and situational procrastination, it is reasonable to expect a relationship between boredom, frustration, and procrastination (Kuhl, 1994). Persevering in the face of boredom and frustration calls for a degree of self-control and emotion regulation to inhibit “task-irrelevant emotions and cognitions” (Kuhl, 1994, p. 16). Frustration as a negative emotion is often regulated by engaging in a distracting activity, like watching task-irrelevant videos and playing video games (Pychyl et al., 2000).

Anger is an emotion individuals experience when they are in control of performing an activity, but the activity is subjectively aversive (Pekrun et al., 2007). Dispositional procrastination was studied as a strategy for *revenge* for mistreatment by others or life inequities with the motive to achieve justice, reciprocity, and equality (Ferrari & Emmons, 1994). *Passive-aggressive* persons express their anger indirectly by stubbornness, forgetfulness, resistance to fulfilling the expectations of others, and chronic procrastination (Ferrari et al., 1995). Lastly, chronic procrastinators report greater feelings of *regret* regarding never completing or accomplishing life events in different settings compared to non-procrastinators (Ferrari, 2011; Ferrari et al., 2009; Goroshit et al., 2020).

Results

To address the research question for this review (namely: *What is the relationship between procrastination and different emotions such as anxiety, shame, guilt, boredom, regret,*

revenge, etc.?), the body of research published between 1977 to 2021 was reviewed in the following academic databases: PsycINFO, PsycARTICLES, ERIC, and Web of Science. Additionally, a searched was run on *Google Scholar* to ensure no relevant published studies were missed. The earliest study found on emotions and procrastination (either situational or dispositional) was carried out in 1977, hence the starting point of the review was set accordingly. To perform the search, the focus was on the terms related to specific emotions which were later combined those with the term “procrastination” one by one. The emotions searched for included: anxiety, fear, shame, guilt, regret, anger, revenge, boredom, and frustration. However, no distinction was made between chronic, dispositional, every day, and situational procrastination during the search initially in order to include all published studies addressing procrastination. With these search terms, the title, abstract, and keywords were searched, depending on what the search engine of each database allowed.

Subsequently, each potential study was examined for inclusion thoroughly by title, reading the abstract, and skimming the works to ensure the studies addressed that the relationship between emotions and procrastination. Unrelated or duplicate studies were discarded. Next, relevant data from each selected study was extracted to accumulate evidence for the review. The resulting collection of studies included a total of 167 papers. Of these studies, a total of 83 works (49% of all studies) passed all filters listed above and were included in the final review. All papers were published between 1977 and 2021, although no filters were applied for range of years to capture studies. Older works and works unavailable at the authors’ University Libraries were obtained through Interlibrary Loan service. Table 1 summarizes the themes of the studies reviewed here in terms of the number of studies on each emotion focusing on situational or dispositional procrastination and whether the associated emotion is considered a motive (antecedent) or consequence of procrastination. As argued in the literature,

Table 1 A summary of the themes of the reviewed empirical studies

Emotion	# of Studies	# situational	# dispositional	Relation to Procrastination
Anxiety	34	24	10	Motive and consequence
Fear of failure	20	18	2	Motive
Fear of success	2	2	0	Motive
Fear of missing out	1	1	0	Motive
Shame and guilt	7	4	3	Motive and consequence
Boredom	7	6	1	Motive
Regret	4	3	1	Motive and consequence
Frustration	2	2	0	Motive
Anger	3	3	0	Motive and consequence
Passive aggression	2	0	2	Motive
Revenge	1	0	1	Motive

anxiety, shame and guilt, regret, and anger are considered negative consequences of procrastination. The rest of the emotions were found to be (direct or indirect) motives or precursors for procrastinatory behavior.

In this review, studies of academic procrastination are grouped under the category of situational procrastination, since this area is one where individuals most prominently procrastinate. Studies involving other domains of situational procrastination, such as bedtime procrastination or health behavior procrastination, have been excluded from this review. In order to group studies under either dispositional or dispositional procrastination categories, the way authors operationalized procrastination and the measures they administered to collect data was examined, such as an academic procrastination self-report survey (e.g., PASS, AIP) or a dispositional procrastination survey (e.g., GPS). In the process of selection of studies for inclusion in the current review, a graduate student of the first author reviewed the papers obtained in the search process based on the criteria and disagreements were resolved by discussion.

Given the goal of the present review, the authors opted to conduct a conventional literature review over following protocols such as PRISMA, that are more geared toward meta-analyses and systematic reviews of interventions. In the following sections, a summary of findings of empirical research is presented on the relationship emotions and situational and dispositional procrastination. The order in which the emotions are presented corresponds to the extent of focus in the literature and the number of studies obtained during the search for each emotion.

Procrastination and Anxiety

Anxiety is by far the most researched emotion related to situational and dispositional procrastination categories since the mid 1980s. In total, 34 studies were found (40.1% of all reviewed studies) examining the relationship between anxiety and either type of procrastination (24 (70.5%) situational and 10 (29.5%) dispositional procrastination). Results on this relationship are complex, and at times controversial.

The seminal study on the relationship between anxiety and academic (*situational*) procrastination was conducted by Solomon and Rothblum (1984), who surveyed 342 college students on their trait anxiety, self-esteem, study habits, depression, and irrational beliefs. Results found a significant positive correlation between academic procrastination and depression, irrational beliefs, low self-esteem, anxiety, and ineffective study habits. In examining the reasons for academically-related delay behaviors, participants reported fear of failure and task aversiveness. In a later study of college students (Rothblum et al., 1986), they found that high academic procrastinators reported higher levels of test anxiety, lower levels of self-control, and greater anxiety-related

physical symptoms. Earlier, Aitken (1982) linked anxiety to academic procrastination (slight correlation of $r=0.21$, $p<0.05$). Beswick et al. (1988) later reported a higher correlation ($r=0.40$, $p<0.05$) between academic procrastination and anxiety. In further examination, Flett et al. (1995) indicated that for women and men, academic procrastination was associated positively with the worry component of test anxiety ($r=0.27$, $p<0.001$). Studies pointed to no significant gender differences for the relationship between anxiety and procrastination (e.g., Ferrari, 1992). In another study, Senecal et al. (1995) found anxiety, depression and self-esteem to account for 14% of variance in students' academic procrastination. Situational procrastination was also found to relate to statistics anxiety, test anxiety, and general anxiety in undergraduates in a multitude of other studies (Ariani & Susilo, 2018; Constantin et al., 2018; Custer, 2018; Dunn, 2014; Farran, 2004; Gadosey et al., 2021; Glick et al., 2014; Przepiorka et al., 2021; Pyman, 2020; Rahardjo & June-man, 2013; Rahimi, 2019; Saddler & Buley, 1999; Walsh & Ugumba-Agwunobi, 2002; Yang et al., 2019; Yerdelen et al., 2016; Xu et al., 2016). Besides procrastination, anxiety was found to be linked to fear of failure (Custer, 2018; Walsh & Ugumba-Agwunobi, 2002) and depression (Constantin et al., 2018).

Research findings points to an overall consensus on the positive association between situational/academic procrastination and anxiety. A few earlier studies (Lay & Silverman, 1996; Lay et al., 1989) found no relationship between *situational* procrastination and anxiety. This finding was not substantiated in other studies. The majority of participants studied in the reviewed papers consisted of undergraduate university students. In fact, two studies examined *situational* procrastination in high school age children (Lay et al., 1989; Milgram & Tourbiana, 1999), one in elementary students (Scher & Osterman, 2001), and two studies with graduate students as participants (Azure, 2011; Onwuegbuzie, 2004). In terms of dispositional procrastination, studies point to a positive correlation between procrastination and high levels of agitation (mediated by lower levels of perceived control of time) (Lay & Schouwenburg, 1993), lower grades in exams (Tice & Baumeister, 1997), increased levels of worry (Stober & Joormann, 2001), depression, anxiety, and stress (Ashwin et al., 2019; Haycock et al., 1998; Sirois 2014; Spada et al., 2006).

In terms of measures of procrastination, nearly all studies employed self-report measures, namely General Procrastination Scale (GPS: Lay, 1986) (7.1% of situational and 61.5% of dispositional procrastination studies), Procrastination Assessment Scale for Students (PASS: Solomon & Rothblum, 1984) (57.1% of situational and 0% of dispositional procrastination studies), Adult Inventory of Procrastination (AIP: Aitken, 1982) (7.1% of situational and 7.7% of dispositional procrastination studies), Tuckman's Procrastination

Scale (TPS: Tuckman, 1991) (0% of situational and 15.3% of dispositional procrastination studies), and Decisional Procrastination Scale (Mann, 1982) (0% of situational and 15.3% of dispositional procrastination studies). Three of the studies of situational procrastination (21.4%) used measures other than the ones mentioned above. Self-report measures of anxiety employed included *State Trait Anxiety Inventory* (STAI: Spielberger et al., 1968), *Multidimensional Anxiety Scale* (MAS: Endler et al., 1989), the *Test Anxiety Scale* (TAS: Sarason, 1972), and *Academic Emotions Questionnaire* (AEQ: Pekrun et al., 2002). STAI was the most frequently used measure of anxiety. Please note that some of these anxiety scales only measure academic or situational anxiety (e.g., TAS, AEQ), versus general, every day, and trait anxiety.

Procrastination and Fear

In this section, the varied motives of fear reported in the literature are examined. In total, 33.8% of all studies reviewed in this paper examined fear of failure, social disapproval, success, and missing out, combined.

Fear of Failure

In this section, a review of empirical studies on the relationship between *situational* (academic) procrastination and fear of failure is presented. *Fear of failure* in the literature is defined as an achievement-related fear that results in avoidance behavior (Schouwenburg, 1995; Solomon & Rothblum, 1984). In total, 20 studies (28.2% of all reviewed studies) were found examining the relationship between fear of failure and either type of procrastination (18 (90%) situational and 2 (10%) dispositional procrastination). Early studies point to the link between these two constructs (e.g., Ellis & Knaus, 1977; Solomon & Rothblum, 1984). In surveys of university students, Schouwenburg (1991 cited in Schouwenburg, 1992) found fear of failure as an important predictor of academic procrastination, and that students who scored high on trait procrastination and trait fear of failure showed higher instances of academic procrastination. In other words, procrastination by itself was unrelated to fear of failure, but combined (trait procrastination and fear of failure) they could “result in increased actual procrastination behavior” (Schouwenburg, 1992, p. 225). According to Schouwenburg (1992), procrastinatory behavior could be the result of more variables than mere trait procrastination. In a factor analysis of reasons for procrastination in academic settings, Solomon and Rothblum (1984) identified fear of failure (e.g., performance anxiety, perfectionism, lack of self-confidence) and task aversiveness as primary reasons for academic procrastination (49.4% and 18% of total variance in academic procrastination explained, respectively).

Fear of failure was also reported as a reason for procrastination by university students (Özer et al., 2009), and as one of the maladaptive aspects of academic procrastination (Schraw et al., 2007). Senecal et al. (1995) also found high correlation between academic procrastination and fear of failure factors. Fear of failure is also linked moderately to neuroticism as a personality factor, that in turn correlates with self-reported academic procrastination (Watson, 2001). In another study, Ferrari et al. (1992) found that no Myers-Briggs personality factor predicted fear of failure as a reason for procrastination. In other studies, perfectionism was linked to fear of failure and procrastination (Flett et al., 1992). Several other studies found associations between fear of failure and situational procrastination (Azure, 2011; Balkis & Duru, 2019; Milgram et al., 1995, 1992; Helmke & Schrader, 2000; Onwuegbuzie & Collins, 2001).

Overall, there is an inconsistency in the magnitude and significance level of the association between fear of failure and academic procrastination, and this inconsistency is attributed to the argument that the level of competence of the participants had a moderating effect on their fear of failure (Haghbin et al., 2012). In other words, fear of failure has an indirect effect on academic procrastination. Haghbin et al. (2012) found that when fear of failure is high among high competence students, they procrastinate less on academic tasks; however, if their sense of control (autonomy) goes down, they report engaging in more academic procrastination.

Fear of Success

In addition to fear of failure, procrastinators could be fearful of *success*. This argument might sound counterintuitive. After accomplishing something successfully, they are not able to enjoy it to the full extent, probably because the success and being good at something does not fit their self-image or they do not deserve success (Burka & Yuen, 2008). Only the proposal of fear of success by Burka and Yuen (2008) was found as a motive for situational or dispositional procrastination. This possibility sounds plausible, but clearly additional research is needed to support and expand the link.

Other Fears as Motives for Procrastination

Another type of fear considered a possible motive for dispositional or situational procrastination is the *fear of social disapproval* defined as “the possible threat to getting along with peers for quality performance” (Ferrari et al., 1998, p. 204). In total, four studies (5.6% of all reviewed studies) were found examining the relationship between three types of fear (1 fear of social disapproval, 1 fear of success, and 2 fear of missing out) and situational procrastination. In a factor analysis of a survey of 26 reasons for academic

procrastination (i.e., PASS), Ferrari et al. (1998) found that students' academic procrastination was motivated by task aversiveness, fear of failure, and fear of social disapproval. Fear of task failure and fear of social disapproval was the major reasons for academic procrastination among students in the non-selective college (i.e., a college with low GPA and SAT admission requirement). These students also reported using legitimate and fraudulent excuses to put off doing their assignments.

Most recently, two studies looked at *fear of missing out* (FoMO), defined as “a pervasive apprehension that other people might be having rewarding experience when one is absent, and a compulsive desire to keep up with what other people are doing” (Przybylski et al., 2013, p. 1841). In a study of high school students, Wang et al. (2019) reported sensation seeking as a significant predictor of academic procrastination and having a large effect on smartphone addiction. The relationship between sensation seeking and adolescent smartphone addiction was mediated by FOMO and academic procrastination. In another study, Muller et al. (2020) examined the relationship between tendencies to maximize decision outcomes, academic procrastination, and social media use. Their findings indicate that academic procrastination mediated the effect of maximization of decision outcomes on problematic social media use. Furthermore, academic procrastination had a significant effect on FOMO and it in turn had a direct effect on problematic social media use. As the literature search indicated, fears of social disapproval and FOMO are not examined extensively in the literature, and clearly more research is needed to investigate these types of fears in association with dispositional and situational procrastination.

Procrastination and Shame and Guilt

In total, 7 studies (8.4% of the all reviewed studies) were found that examined the relationship between shame and guilt and either type of procrastination (4 (50%) situational and 3 (50%) dispositional procrastination). The relationship between procrastination (both situational and dispositional) and shame and guilt received little attention as compared to anxiety and stress. Empirical studies examining the association between *guilt* and procrastination focused mostly on situational or academic procrastination, frequently reporting a positive correlation between the two constructs (e.g., Pychyl et al., 2000; Rahimi, 2019). The feeling of guilt is mostly due to enjoying an alternative distracting activity, where these activities show the individual's lack of engagement in the important task they have been avoiding by procrastinating.

Fee and Tangney (2000) reported that *dispositional* procrastination is associated with vulnerability to feeling of *shame* about the self (shame proneness), rather than guilt. They further identify shame as a motive for dispositional

procrastination and a more important emotion in the context of dispositional procrastination compared to guilt. In other words, they found that chronic, everyday procrastinators responded to failures by feeling shame about their self. They also reported shame-proneness as a moderator between dispositional procrastination and perfectionism. Martinčková and Enright (2020) also found similar associations between dispositional procrastination and shame- and guilt-proneness.

On the other hand, Reinecke et al. (2014) found a strong relationship between dispositional procrastination (associated with entertaining media use) and guilt as a “media-based stress recovery process” (p. 569). In their study, the feelings of guilt negatively affected the enjoyment of media (video games and TV). The feeling of *guilt* motivates one to take measures to alleviate the issues brought about because of procrastination (Lewis, 1971). In other words, guilt is a motivator for the individual to take reparative action and avoid failure next time, whereas shame motivates one to hide, avoid, or sink to the floor (Tangney et al., 1992). In a study of *dispositional* procrastination on the internet, a positive correlation was found between *dispositional* procrastination and feelings of guilt about ‘cyberguilt’ or using the Internet to avoid doing tasks that require completion (Lavoie & Pychyl, 2001). The notion of association between feeling of guilt and consumption of entertaining media is also supported by findings by Panek (2014). In the context of situational procrastination (academic procrastination), Ferrari and Beck (1998) found that procrastinators reported negative feelings such as shame, guilt, regret, frustration, and nervousness during, after, and when reflecting on phony excuses to avoid completing tasks.

Procrastination and Boredom and Frustration

Among the emotions studied in relation to (situational or dispositional) procrastination, *boredom* and *frustration* received some of the least attention despite their importance (vanEerde, 2013). In total, 7 studies (8.4% of all reviewed studies) were found examining the relationship between boredom and either type of procrastination (2 (16.7%) situational and 5 (83.3%) dispositional procrastination). Early studies pointed to the relationship between susceptibility to boredom and dispositional procrastination (Ferrari, 1992). Boredom-procrastination relationship is also argued to be based on the individual's perception of time, where they perceive time as passing more slowly and also underestimate the amount of time needed to accomplish a task (Watt, 1991 as cited in Blunt & Pychyl, 1998). In other words, the feeling of boredom is due to the lack of desire, motivation, interest, and energy to work on a task: a task that is perceived to be monotonous, boring, and no longer interesting (Vodanovich & Rupp, 1999).

Blunt and Pychyl (1998) studied the relationship between boredom proneness, situational procrastination, and state orientation in academic settings. Their findings pointed to a positive association between boredom-proneness, decisional procrastination, and general procrastination (only among female participants). Milgram et al. (1995) examined academic procrastination among 195 10th grade students and found that the participants delayed more on tasks they found boring, unpleasant, and difficult. Vodanovich and Rupp (1999) examined how boredom proneness and dispositional procrastination are related reporting that individuals high in procrastination expressed higher overall boredom-proneness scores, on four out of the five subscales of perceived lack of external and internal stimulation, affective responses, and perception of time. This study looked at boredom and dispositional procrastination from a trait perspective or the general tendency of an individual to feel bored and procrastinate. They recommend state and situational measures of procrastination and boredom be deployed for a clearer understanding of both constructs and their relationship in different situations. Ferrari (2000) examined how young adults self-reported their *dispositional* and *chronic* procrastination ((behavioral), and decisional (cognitive)), attention deficits, boredom, intelligence, and self-esteem. They report that all three forms of procrastination were associated with boredom proneness, attention deficits, and low self-esteem. Indecision as a cognitive form of procrastination was related to the individual's need for sensory stimulation. In another study, Wan et al. (2014) studied the relationship between boredom, dispositional procrastination, emotional intelligence, and job stress among employees at several companies. Procrastinators in the study reported significantly higher levels of boredom and job stress. In a more recent study of 825 graduate and 359 undergraduate students from 74 and 54 countries, respectively, Rahimi (2019) found moderate correlations between academic procrastination and feelings of boredom (along with anger, anxiety, shame, and guilt). In this study, AEQ (Achievement Emotions Questionnaire; Pekrun et al., 2007) was administered as the measure of emotions related to learning situations in their study.

In terms of *frustration*, few studies examined the relationship between this emotion and situational procrastination. In total, 2 studies (2.8% of the all reviewed studies) were found examining the relationship between frustration and situational procrastination. Ellis and Knaus (1977), for instance, contended that low frustration tolerance, that include beliefs about emotional intolerance, demands for comfort, and immediate gratification, “constitutes the main and the most direct cause of procrastination” (p. 19). According to Ellis and Knaus (1977), low frustration tolerance leads to self-defeating behaviors arising from the belief that the individual cannot or does not want to endure present pain for future gain. Frustration could in turn lead to anger

and depression, depending on the cognitive appraisal associated with the activity.

Harrington (2005) examined the relationship between four sub-scales of *frustration intolerance* (discomfort intolerance, emotional intolerance, achievement frustration, and entitlement) and academic (situational) procrastination. Their findings reveal discomfort intolerance (as one's intolerance of task difficulty) as a predictor of academic (situational) procrastination, and a correlation between emotional intolerance and increased academic (situational) procrastination problems as well as reduced procrastination frequency. They further explain the latter finding by highlighting the role of anxiety in motivating individuals to work, however, later when situational procrastination engenders anxiety, the anxiety becomes a problem in itself. In another study, Sudler (2014) surveyed 150 undergraduate students on their frustration intolerance beliefs and academic procrastination and found that frustration intolerance and perfectionism were strong mediators for academic procrastination.

Procrastination, Revenge, Anger, and Passive Aggression

The search for studies tackling the relationship between anger and either of the two types of procrastination (dispositional and situational) yielded six studies (3.3% of all reviewed studies) (3 focusing on anger and 2 on passive-aggressiveness, 1 on *revenge* as way to express one's anger).

Dispositional procrastination was studied as a strategy for revenge for mistreatment by others or life inequities with the motive to achieve justice, reciprocity, and equality (Ferrari & Emmons, 1994). Ferrari and Emmons (1994) surveyed a large group of university students about their dispositional procrastination, revenge, and irrational beliefs in a just world. Their findings point to a weak positive relationship between chronic procrastination and revenge and they recommend future studies to examine this relationship further. Ferrari and Emmons (1994) also argue that the affective component of revenge is associated with *anger* as the dominant emotion. This link will be further explored later in this review. To the best of our knowledge, this study (Ferrari & Emmons, 1994) is the only study examining the link between dispositional procrastination as vengeance.

In a study of parental authority and dispositional procrastination, Ferrari and Olivette (1994) surveyed a group of young women and their parents with regards to parental authority, dysfunctional chronic procrastination (as a form of passive-aggression), and anger. Their findings showed that chronic dysfunctional female procrastinators reported higher anger suppression and state anger, perceived their fathers as more authoritative, and had mothers who reported being high in indecision. Ferrari and Olivette (1994) recommend future studies to look into more

balanced samples that include males, and further explore the reasons for the relationship between parenting styles and chronic procrastination. In later studies, Balkis (2013) examined the role of rational beliefs about studying and academic procrastination and found that students with high academic procrastination and low rational beliefs about studying experience anxiety, frustration, and anger due to working under time pressure because of procrastinating academically. Grunschel et al. (2013) also investigated academic procrastination in relation to its antecedents and consequences by interviewing 35 college students. Analyses of student interviews revealed that anger, anxiety, discomfort, and shame were the top four negative consequences of academic procrastination. More recently, Rahimi (2019) examined the relationship between anger (among other emotions) and academic procrastination in a large international sample of graduate and undergraduate students and found moderate correlation between the two constructs in both samples of students. Anger toward oneself is argued to stem from retrospectively feeling that they were not able to stay on track to accomplish their goal, and got disengaged to do other more pleasant things.

The link between dispositional procrastination and certain personality disorders, such as *passive aggression*, is studied in the literature. For the current review, the focus is on empirical studies on passive-aggressive tendencies due to its link to feelings of anger. Passive-aggressive persons express their anger indirectly by stubbornness, forgetfulness, resistance to fulfilling the expectations of others, and chronic procrastination (Ferrari et al., 1995). In other words, procrastination (situational or dispositional) and avoidance are the major components of passive-aggression. Passive-aggressive tendency helps the chronic procrastinator to maintain control over an anxiety-provoking and threatening situation, without acknowledging their underlying aversion to these types of situations (Milgram et al., 1992). Milgram et al. (1992) found that passive-aggressive individuals procrastinated chronically to a higher extent, particularly due to the experimenter-determined schedule for activities inciting their underlying passive-aggressiveness toward authority. In a study of the relationship between anger and aggressive tendencies and dispositional procrastination, Ferrari et al. (1995) found a significant relationship between anger (suppressive and expressive) and dispositional procrastination. Furthermore, they ran a factor analysis of the self-report scales and found anger expression, social desirability, and dispositional procrastination loading on one of the two major factors. Given the link between either procrastination type and anger, as substantiated by the studies above, it is important to explore the link further in diverse and different populations.

Procrastination and Regret

A review of empirical studies examining the relationship between procrastination and feelings of *regret* indicated that chronic procrastinators report greater feelings of regret regarding never completing or accomplishing life events in different settings compared to non-procrastinators (Ferrari, 2011; Ferrari et al., 2009, 2019; Goroshit et al., 2020). In total, 5 studies (5.6% of the all reviewed studies) were found examining the relationship between regret and either type of procrastination (2 (25%) situational and 3 (75%) dispositional procrastination).

Ferrari et al. (2009) reported that chronic procrastinators experienced more regret in six different life domains (education, parenting, health, friend interactions, financial planning), compared to non-procrastinators. The regret in chronic procrastinators resulted from waiting too long to make a decision or take action. Goroshit et al. (2020) found strong positive relationship between procrastination measures and regret about chronic procrastination in life events, such as career and community, interpersonal relationships, personal development, and self-enhancement. In terms of situational (academic) procrastination, Kuhnle et al. (2011) found that students procrastinated less to avoid future regret. Regret stems from the gap between intention and action that procrastinators experience when they focus on the opportunities they have lost by choosing not to act on in particular circumstances (Ferrari, 2010). On the other hand, Börsch-Supan et al. (2018) found savings regret is not explained by procrastination in their sample of older adults (60–79 year olds).

Tibbett and Ferrari (2018) surveyed 2271 adults on indecision (decisional procrastination), life satisfaction, and regret in twelve life domains. Their findings suggested an inverse relationship between indecision and life satisfaction, mediated by mean *regret* scores. In other words, consistently waiting to make a decision and take action would increase regret and negatively affect their well-being. Sumner (2009, cited in Ferrari, 2011) argued what holds chronic procrastinators back from moving forward is the constant rumination about their past failures and regrets about life events they never finished.

Cohen and Ferrari (2010) reported that neutral, nondepressed, reflective rumination and indecision, defined as postponing a decision within a specific timeframe, (as a cognitive form of procrastination) help the creative process. Indecision was identified as an adaptive process in creativity. Rumination linked with behavioral, cognitive-behavioral, and experiential avoidance. Habitual avoidance is identified as one of the main characteristics of procrastinators, and the relationship between (situational or dispositional) procrastination and avoidance could be contextualized this way. Other researchers also reported an association between situational

or dispositional procrastination and rumination (Constantin et al., 2018 (dispositional procrastination); Flett et al., 2016 (situational procrastination); Stainton et al., 2000 cited in Cohen & Ferrari, 2010 (dispositional procrastination)).

Taken together, these studies examined situational/academic procrastination. Participants in the majority of studies were university students, except for a few that surveyed high schoolers (Milgram et al., 1995), older adults (Börsch-Supan et al., 2018), and adolescents (Wang et al., 2019). In terms of the measures of procrastination, eight studies employed PASS, six administered GPS, one used AIP, one drew from interview data, and two used PPS questionnaire.

Discussion and Future Directions

Researchers focused on the study of emotions since the early days of procrastination research. Given the importance of affect in understanding procrastination behavior, a synthesis of findings of this body of research in the past four decades seems timely. This review surveyed the literature for rigorous empirical studies examining the relationship between procrastination (situational and dispositional) and different emotions. In terms of the type of emotion, anxiety has received the most attention from researchers, followed by fear (of failure, success, missing out), shame, boredom, frustration, guilt, regret, anger, and revenge. This is reflected in the number of studies found in the search process. Almost all studies in this review measured procrastination (either dispositional or situational) using self-report questionnaire measures, such as GPS (Lay, 1986) and the AIP (McCown & Johnson, 1989). Only a handful of studies employed an alternative mode of measurement, such as experience sampling (e.g., Ferrari & Scher, 2000; Pychyl et al., 2000; Scher & Ferrari, 2000) or experimental designs. More recently, there has been calls to explore other experimental and behavioral measures in conjunction with self-report measures, bolstering the claims and inferences from data (e.g., see the Editorial note by Saklofske, 2018).

Based on the results of this review, a preliminary theoretical model explaining the link between different emotions and procrastination outlines specific aspects of each emotion that could be targeted and alleviated by a concrete emotion regulation skill. According to Berking et al., (2008, Berking & Whitley, 2014), emotion regulation skills include eleven subcomponents of (a) being aware of the emotion, (b) identifying and labeling the emotion, (c) interpreting emotions related to bodily sensations, (d) understanding the prompt of the emotion, (e) supporting oneself in a aversive emotional situation, (f) acknowledging and modifying the emotion, (g) accepting the emotion, (h) tolerating the negative emotion, (i) confronting the aversive situation to achieve one's goal, (j) practicing self-support, and (k) modifying the negative

and aversive emotion (see Berking & Whitley, 2014; Eckert et al., 2016). In short, the ability to acknowledge, tolerate, and modify negative emotions is key in regulation of emotions. In the case of procrastination, to deal with frustration, boredom, and fear, the individual can be encouraged to tolerate the negative emotion by reminding themselves of their resilience and the personal value of their goal and to persist despite aversive feelings. More specific strategies outlined by Eckert et al. (2016) include engaging in relaxation exercises, cognitively reappraising the situation, considering the probability of possible threat, and deciding to continue working on the task. After the task is completed, looking back at the accomplishment in the particular task will enhance the individual's self-efficacy and gradually disentangle the negative affects associated with the aversive task, leading to less procrastination in similar tasks in future. Additional research examining the particular strategies to ameliorate different negative emotions associated with procrastination could contribute to a more comprehensive theoretical model of emotional components of procrastination, incorporating insights from different existing emotion regulation (e.g., Gross, 1998) and procrastination theories.

The current review covering over 40 years on the study of emotions in relation to procrastination (dispositional and situational) indicates that this line of research has entered its “middle age”, however, there is still a search for an identity, because there is no comprehensive theory that summarizes either situational or dispositional procrastination. This review highlights that it is critical for researchers to identify the type of procrastination they are examining in their studies, given the distinctions between the two main types (dispositional and situational). This demarcation sheds light on the differential effects or associations of emotions with the two types of procrastination and allows us to better understand the interplay of emotions and procrastination within theoretical frameworks.

With advances in the fields of learning analytics, affective computing, and learning sciences, future studies may employ new data sources, such as face videos of participants to be analyzed by computers in real-time for emotions, physiological sensor data (e.g., electrodermal activity) to detect ‘spikes’ in physiological response indicating anxiety, millisecond-level logs of students’ interactions with digital learning environments (e.g., online learning management systems), and other types of data. These data might be triangulated with self-reports of emotions and daily activities in questionnaires for more reliable inferences regarding procrastination behavior and emotions. An example of the use of such measures is in examining the physiological aspects of dispositional procrastination or procrastination motivated by a need for thrill seeking (Ferrari, 1992). Some of these measures are more amenable to lab-based experimental studies than studies ‘in the wild’, nevertheless they serve as a

next step in better understanding the dimensions of procrastination and affect. Another way forward is conducting longitudinal studies, instead of relying on cross sectional studies, to investigate how, under what circumstances, when, and in what ways individuals procrastinate (Ferrari, 2010; Sirois & Pychyl, 2016). These studies also help in distinguishing procrastination from strategic delay, that could be the result of prioritizing one task over the other for a logical reason (e.g., a closer deadline). In the words of Pychyl (2013, p. 15) “while all procrastination is delay, not all delay is procrastination”. Additionally, a large majority of situational procrastination studies have focused on academic procrastination, and there is a need for more studies examining other forms of situational procrastination and affect such as bedtime procrastination (e.g., Kroese et al., 2016).

Understanding the role of affect in procrastination behavior is critical since procrastination is a maladaptive emotion regulation practice providing a “short term mood repair and hedonic shift” (Pychyl & Sirois, 2016, p. 13). In other words, individuals procrastinate a way to upregulate negative emotions (e.g., anxiety) associated with an unpleasant task. After detecting emotions such as anxiety, interventions in the form of effective emotion regulation strategies (to accept, be resilient toward, cope with, and modify aversive emotions) could be taught to individuals to reduce procrastination (Eckert et al., 2016). Future work in theory could integrate more emotions, besides anxiety, in conceptualization of procrastination and include mechanisms by which these emotions are experienced, exhibited, and managed. Given the multifaceted nature of emotions (e.g., physiological, cognitive), novel interventions based on prompting cognitive reappraisals of (potential harm and probability of threat of) aversive, anxiety-laden, boring, or frustrating tasks and situations would prove beneficial to advancement of scholars’ understanding of procrastination construct.

Funding This material is based upon work supported by the National Science Foundation under Grant No. (1917949) awarded to the first author.

Data Availability Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

Declarations

Ethics Approval and Informed Consent This is a literature review summarizing existing studies in the scholarly literature. This literature review does not entail any data collection from any human participant, and because of this no IRB approval was sought nor any informed consent obtained.

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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