Received: 28 August 2020 | Revised: 20 January 2022 | Accepted: 3 February 2022

DOI: 10.1002/job.2612

RESEARCH ARTICLE

WILEY Journal of Organizational Behavior

How COVID-19 can promote workplace cheating behavior via employee anxiety and self-interest – And how prosocial messages may overcome this effect

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Funding information
Social Sciences and Humanities Research Council of Canada, Grant/Award Number: 435-2016-1477

Summary

While scholars have debated whether environmental factors (e.g., air pollution) can prompt unethical behavior (e.g., crime), we argue that the COVID-19 pandemic provides a unique opportunity to inform this theoretical debate by elaborating on *why* these effects may occur, identifying *how* they can be overcome, and addressing methodological issues. Drawing on appraisal theories of emotion, we argue that appraising COVID-19 (i.e., an environmental factor) as a threat can elicit anxiety. This can focus employees on their own self-interest and prompt cheating behavior (i.e., unethical workplace behavior). However, we propose that these detrimental effects can be attenuated by prosocial messages (i.e., highlighting the meaningful and positive impact that employees' work can have on others). Our predictions were supported using a two-wave survey ($N = 396$) and an experiment ($N = 163$) with samples of full-time employees during the COVID-19 pandemic. Theoretically, our studies inform this ongoing debate by highlighting the importance of state anxiety and self-interest as key mechanisms and that drawing peoples' attention towards others can serve as a boundary condition. Practically, we provide insight into the ethical costs of COVID-19 in the workplace and identify a simple yet effective strategy that organizations can use to curtail workplace cheating behavior.

KEYWORDS
anxiety, appraisal theory, cheating, COVID-19, unethical behavior

1 | INTRODUCTION

> *It is normal to feel anxious while we deal with the effects of this pandemic. We know this situation is stressful.*
>
> Centre for Addiction and Mental Health

> *Anxiety was born in the very same moment as [hu]mankind. And since we will never be able to master it, we will have to learn to live with it.*
>
> Paulo Coelho

The COVID-19 pandemic has created significant ethical challenges for organizations. For example, a global integrity report from Ernst and Young (2020) indicated that 90% of companies report that COVID-19 poses a risk to ethical conduct in the workplace. Similarly, the popular press has highlighted the ethical toll of the pandemic with headlines such as "COVID-19 accelerates unethical behavior" (National Herald, 2020). Indeed, a survey conducted during the COVID-19 pandemic indicated that many employees are willing to engage in unethical behavior, including falsifying customer records (32%) or providing false information to management (29%) (Bhattacharyya, 2020). This raises important questions related to *why* unethical behavior is a prevalent issue

during the COVID-19 pandemic and *how* these effects can be mitigated.

Interestingly, this critical issue for organizations has arisen while significant theoretical debate is occurring about whether environmental factors can be related to unethical behavior. More precisely, Lu, Lee, et al. (2018) and Lu et al. (2020) recently provided evidence that air pollution (i.e., an environmental threat) is related to unethical behavior (e.g., crime) via anxiety. However, Heck et al. (2020) questioned these findings and provided evidence that air pollution did not predict crime beyond seasonal trends. Responding to this debate, Fiedler (2020) argued that attempts to examine the "causal effects" of air pollution on crime by both research teams were severely limited by methodology issues (e.g., the inability to rule out third variable explanations in large-scale field studies). While this debate remains unresolved in the social psychology literature, Heck et al. (2020) argued that one way to shed light on the debate is to examine these relationships with a more specific environmental threat and a specific type of unethical behavior. Moreover, both Lu et al. (2020) and Heck et al. (2020) argued that more research is needed examining state (as opposed to trait) anxiety as a mediator in the relationship between environmental factors and unethical behavior.

We argue that examining the relationship between environmental factors and unethical behavior in the context of the COVID-19 pandemic offers a unique opportunity to inform this theoretical debate while also providing insight into why unethical behavior has increased in the workplace during the COVID-19 pandemic and how organizations may address these ethical challenges. Drawing on appraisal theories of emotion (e.g., Lazarus, 1991), we propose that employees who appraise COVID-19 (an environmental factor) as threatening can experience state anxiety, which can prompt them to focus their attention on advancing their own self-interest. In turn, this focus on self-interest can prompt *workplace cheating behavior*—a self-interested unethical behavior that is intended to benefit the actor (e.g., Mitchell et al., 2018). That is, appraising COVID-19 as a threat may be associated with workplace cheating behavior because this appraisal can elicit anxiety and focus employees' attention on their own interests. Importantly, we also propose that these detrimental effects may be attenuated by prosocial messages (i.e., shifting employees' focus by highlighting the positive and meaningful impact of their work for others). Figure 1 displays our overall model.

We aim to make three key theoretical contributions. First, we illuminate *how* and *why* the COVID-19 pandemic may be associated with cheating behavior in the workplace. Drawing on appraisal theories of emotion (e.g., Lazarus, 1991), we propose that employees evaluate factors in *their* environment, which may originate within or outside of the organization. These appraisals are important because they can elicit emotional and behavioral reactions that have implications within the workplace. By examining appraisal processes, we provide insight into the underlying theoretical processes that can explain why the COVID-19 pandemic may be associated with ethical issues and how it can influence behavior within organizations. Addressing these questions is critical because unethical behavior can have detrimental consequences for those that engage in the behavior (e.g., Hillebrandt & Barclay, 2020) as well as the organization (e.g., reputational damage and decreased financial performance; for a review, see De Cremer & Moore, 2020). While organizations have typically been under significant pressure to curtail unethical behavior (e.g., Treviño et al., 2006), the increased concerns about this behavior and the economic toll of the COVID-19 pandemic have heightened the importance of effectively managing unethical workplace behavior to promote organizational viability and financial recovery.

Second, a key question underlying the above-mentioned debate relates to *why* there may be a relationship between environmental factors and unethical behavior. While anxiety has been explored as a mechanism underlying this relationship, there have been several calls to further examine *state* (vs. trait) anxiety and to examine a more specific unethical behavior as opposed to broad categories of unethical behavior (e.g., crime; see Heck et al., 2020; Lu, Lee, et al., 2018; Lu et al., 2020). Answering these calls, we examine state anxiety with workplace cheating behavior—a specific unethical behavior that can emerge in the workplace. Importantly, we also elaborate on the process through which an environmental factor can promote unethical behavior by identifying self-interest as a mechanism underlying the relationship between anxiety and cheating behavior. That is, we propose that state anxiety can direct people's attention towards their own self-interest, which can promote cheating behavior (i.e., a self-interested unethical behavior). In doing so, we provide a more nuanced understanding of anxiety and its effects. This is important because while anxiety has been recognized as "*the* main motivating force in human affairs" (Lazarus, 1991, p. 234; emphasis in original), numerous calls have been made to further understand its effects in the workplace (e.g., Barclay & Kiefer, 2019; Cheng & McCarthy, 2018; Cropanzano et al., 2011) and its relationship with unethical behaviors (e.g., Heck et al., 2020).

Third, given the pervasive and damaging implications of workplace cheating behavior, it is critical to curtail this unethical behavior (see De Cremer & Moore, 2020; Treviño et al., 2006). By highlighting

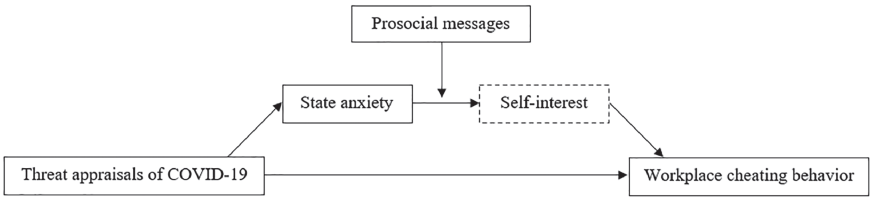

FIGURE 1 Theoretical model

the appraisal processes underlying workplace cheating behavior, we identify a critical point of intervention. More precisely, we propose that prosocial messages, which draw employees' attention to the importance of their work for others, can attenuate the relationship between anxiety and workplace cheating behavior. More precisely, whereas anxiety can narrow focus to one's own self-interest thereby prompting self-interested unethical behavior (i.e., cheating), we argue that prosocial messages can attenuate this relationship by drawing people's attention towards others. By identifying this theoretically relevant boundary condition, we provide further theoretical insight into how anxiety and self-interest can motivate workplace cheating behavior as well as practical insight into how these effects can be overcome by redirecting attention. Understanding what organizations can do to mitigate these effects may be especially critical in the context of COVID-19 where workplace cheating behavior may not only harm the organization but also the larger community that is served by the organization.

2 | THEORETICAL BACKGROUND

Given the debate in the literature about the relationship between environmental factors and unethical behavior (e.g., Fiedler, 2020; Heck et al., 2020; Lu, Lee, et al., 2018; Lu et al., 2020), it is critical to understand *why* this relationship may occur and *how* it can be overcome. More precisely, while anxiety has been argued to serve as a key mechanism in this relationship, there are significant questions about why anxiety should be a driving force and how it may exert its effects (e.g., Heck et al., 2020). We argue that appraisal theories of emotion (e.g., Lazarus, 1991) can provide a theoretical foundation for understanding and elaborating on the process underlying this relationship. More precisely, appraisal theories of emotion (e.g., Lazarus, 1991) indicate that people are motivated to appraise factors in their environment to determine possible implications for themselves. That is, people tend to assess whether environmental factors are personally relevant. If so, they are motivated to assess whether these factors may harm or benefit them and how these factors may change their relationship with the environment. Importantly, the meaning of these appraisals is captured in discrete emotions. For example, anxiety can be elicited when people appraise environmental factors as potential threats and are concerned about the possibility of future harm. Importantly, discrete emotions are theorized to guide people's attentional focus and subsequent behavioral responses. While appraisal theories of emotion underscore that these processes may facilitate adaptation to the environment, the outcomes of these processes (i.e., behavior) may also have detrimental implications for other stakeholders.

Building on the tenets of appraisal theories of emotion (e.g., Lazarus, 1991), we argue that people can be motivated to assess the personal implications of environmental factors, such as COVID-19. Employees that perceive COVID-19 as a threat can experience anxiety, which can focus their attention on their own self-interest. We propose that this attentional focus may prompt them to engage in behavior that is consistent with this attentional focus—that is, behavior that can promote their own self-interest (e.g., cheating behavior within the workplace). We outline our theoretical rationale for these relationships below.

2.1 | Appraising COVID-19 as a threat predicts employee anxiety

Appraisal theories of emotion (e.g., Lazarus, 1991) indicate that individuals are motivated to assess and respond to factors in the environment that have the potential to impact the person-environment relationship. That is, individuals are motivated to appraise the personal relevance of environmental factors and assess whether there is potential to harm or benefit them. Given that COVID-19 has sparked a global pandemic, we argue that individuals are likely to appraise this environmental factor to determine whether it is threatening (i.e., personally relevant with the possibility of harm). For example, individuals may evaluate to what extent COVID-19 has the potential to harm their physical health or that of close others (e.g., their children or elderly parents) and/or threaten their financial well-being (e.g., by jeopardizing their job security). However, there should be variability in the degree to which people appraise COVID-19 to be a threat because individuals may differ on the degree to which they believe that COVID-19 is personally relevant to them and/or has the potential for harm (e.g., is threatening to their health or financial situation). For example, a healthy individual may perceive COVID-19 as less threatening than an immunocompromised individual because appraisals can incorporate assessments of one's own personal vulnerability (e.g., Witte et al., 1996). That is, although both individuals may perceive COVID-19 as personally relevant and with the potential for harm, they may differ in their assessment of the potential threat of COVID-19 for themselves.

Importantly, appraisal theories of emotion indicate that discrete emotions capture the meaning of individuals' appraisals (Lazarus, 1991). In general, negative discrete emotions are elicited when individuals perceive that a factor in their environment is personally relevant and is incongruent with the individual's goals (e.g., has the potential for harm). However, the specific discrete negative emotion that is elicited relates to how individuals appraise the meaning or implications of the situation. For example, anger is elicited in response to appraising a situation as involving a "demeaning offense against me and mine" whereas anxiety is elicited when individuals appraise that they are "facing uncertain, existential threat" (Lazarus, 1991, p. 122). More precisely, individuals are likely to feel anxiety when they appraise their environment as containing a potential threat and experience uncertainty about what may happen (or when it may happen). Given that threat appraisals of COVID-19 indicate that one has evaluated the situation as having the potential for future harm, we propose that this is likely to elicit anxiety.

Hypothesis 1. Threat appraisals of COVID-19 are positively related to state anxiety.

2.2 | Employee anxiety predicts workplace cheating behavior

Appraisal theories of emotion highlight that discrete emotions can redirect one's attention. More precisely, "emotions *focus attention* on some concerns and, by the same token, *distract attention* away from other concerns that are not so pressing" (Lazarus, 1991, p. 17, emphasis in the original). Given that anxiety is elicited when one perceives a potential threat in the environment, anxiety has been theorized to narrow one's focus to the self and advancing one's own self-interest (e.g., Zhang et al., 2020). Building on this, we argue that anxiety not only focuses individuals on their own self-interest, but this attentional focus can prompt behavior that is aligned with this emphasis (i.e., self-interested behavior).

Within the context of the workplace, we propose that anxiety may prompt workplace cheating behavior—a self-interested unethical behavior that is intended to advance one's own interests at work while violating widely shared norms or rules (e.g., misrepresenting work activity to appear more productive; Mitchell et al., 2018). Although workplace cheating behavior is intended to advance one's own interests rather than harm the organization, this behavior is considered unethical because it involves deliberate acts (e.g., deception) that violate widely accepted norms or rules. Importantly, the self-interested nature of workplace cheating behavior distinguishes it from other forms of unethical workplace behavior that are not motivated by self-interest, such as unethical pro-organizational behavior (i.e., behavior that is intended to benefit the organization; Umphress & Bingham, 2011) and deviant behavior that is driven by a motivation to harm the organization (e.g., vandalism, sabotage; Jones, 2009).

Building on the above, we propose that anxiety can prompt cheating because this self-interested unethical behavior is consistent with a focus on one's own self-interest. That is, anxiety can draw attentional focus to one's own interests, which can make employees less likely to consider moral standards (e.g., Zhang et al., 2020) and/or less attentive to the consequences of their behavior for others (e.g., Kouchaki & Desai, 2015). In turn, this can prompt unethical behavior. That is, anxiety may prompt individuals to prioritize themselves while being less likely to consider other people's needs and interests because they are focused on quick decisions or actions that may advance their own interests (e.g., Shalvi et al., 2012). Consistent with these theoretical arguments, (experimentally induced) anxiety has been positively related to unethical behavior (e.g., Kouchaki & Desai, 2015; Zhang et al., 2020). Integrating the above theorizing and empirical evidence, we predict that anxiety can prompt workplace cheating behavior.

> **Hypothesis 2.** Anxiety is positively related to cheating behavior.

Further integrating our arguments, we propose that anxiety serves as a mechanism linking threat appraisals related to COVID-19 to workplace cheating behavior. That is, threat appraisals related to COVID-19 can elicit employee anxiety, which in turn can prompt workplace cheating behavior because state anxiety focuses employees on their own self-interest and should therefore promote self-interested behavior that is consistent with this attentional focus.

> **Hypothesis 3.** Threat appraisals related to COVID-19 have a positive indirect effect on cheating behavior via employee anxiety.

2.3 | The moderating role of prosocial messages

Above, we argued that anxiety focuses individuals on their own self-interest and can prompt workplace cheating behavior because this self-interested behavior is aligned with attentional focus on the self. Theoretically, this suggests that drawing employees' attention towards the interests and concerns of *other people* may attenuate the relationship between anxiety and workplace cheating behavior. We propose that organizations may accomplish this by delivering prosocial messages—ideological messages that "enabl[e] employees to understand how their contributions will benefit others" (Grant & Hofmann, 2011, p. 176; see also Thompson & Bunderson, 2003). Given that prosocial messages can help employees understand how their work can benefit other people (e.g., Grant, 2008; Grant & Hofmann, 2011), such messages should theoretically shift employees' attentional focus towards the concerns and interests of others and away from their own self-interest. Indeed, public health studies have indicated that prosocial messages can amplify the tendency for individuals to engage in behaviors that can benefit their community (e.g., Kelly & Hornik, 2016; Li et al., 2016; Pittman, 2020). For instance, Heffner et al. (2021, p. 110420) found that prosocial messages during the COVID-19 pandemic (e.g., "Together, we can stop the coronavirus. Everyone's actions count … Together, by self-isolating we can save millions of lives") can enhance the tendency to self-isolate (see Jordan et al., 2021 for a similar effect with vaccination decisions). That is, drawing individuals' attention towards needs of others can enhance these behaviors.

Within organizational settings, prosocial messages are commonly delivered by organizational leaders (e.g., Grant & Hofmann, 2011; Thompson & Bunderson, 2003). For instance, leaders can highlight the positive impact of employees' work on society, provide mission communications that emphasize the significance of employees' work for customers or beneficiaries, or draw employees' attention to their contributions to the community. Examples of prosocial messages provided during the COVID-19 pandemic include Weston's (2020) (CEO of Loblaw Companies) message noting: "Our extraordinary teams are motivated by what they see as a responsibility to Canadians and the opportunity to make a difference." Similarly, Metro Inc. (n.d.) (a grocery store chain) issued the statement: "The METRO family plays an essential role within its communities, and this is truer today than ever before."

Taken together, we propose that prosocial messages can attenuate the effect of employee anxiety on cheating behavior. Specifically,

anxiety is theorized to enhance cheating behavior by focusing the individual on their self-interest. However, we argue that prosocial messages may dampen this relationship by highlighting the importance of others' interests. This may broaden employees' attentional focus, encourage employees to consider moral standards, and/or highlight the potential impact of focusing on their own self-interest. Thus, we hypothesize that prosocial messages moderate our proposed mediation model, such that state anxiety has a weaker positive relationship with workplace cheating behavior when prosocial messages are high (vs. low).

> **Hypothesis 4.** Prosocial messages moderate the mediated effect of threat appraisals of COVID-19 on cheating behavior, such that the indirect effect via anxiety is weaker when prosocial messages are high (vs. low).

3 | OVERVIEW OF STUDIES

We test our theoretical model across two studies using different methodologies. Study 1 uses a two-wave survey with a 1-week time separation between waves and a sample of full-time employees who were working in their regular work environment during the pandemic. Study 2 uses an experimental design with random assignment and a heterogeneous sample of full-time employees, manipulates COVID-19 threat appraisals and prosocial messages to enhance internal validity, and empirically examines the role of self-interest in the relationship between state anxiety and cheating behavior. Importantly, our studies answer calls (see Fiedler, 2020; Heck et al., 2020) to examine a specific environmental threat (i.e., COVID-19) and specific unethical behavior (i.e., workplace cheating behavior) over a shorter period of time and with research designs that can help rule out third variable explanations (i.e., by controlling for theoretically relevant alternatives in the field survey in Study 1 and by using an experiment with random assignment in Study 2). Moreover, our studies examine state (vs. trait) anxiety as a proximal predictor of unethical behavior, which is important to enhance theoretical alignment and specificity (see Heck et al., 2020). Thus, our combination of studies can also address methodological issues to better inform the debate in the literature.

3.1 | Study 1 method

3.1.1 | COVID-19 context

We collected our data for Study 1 during the COVID-19 pandemic (May 2020) from a sample of full-time employees in the United States and Canada. At the time of data collection, over 1.2 million confirmed COVID-19 cases had been reported in these countries. Governments responded to this virus by shuttering nonessential businesses and/or implementing strict safety measures (e.g., physical distancing protocols). However, many employees were expected to continue working to serve the broader community (e.g., grocery stores, banks, and pharmacies; Secon & Woodward, 2020). We focused on employees who continued to work in their typical workplace environments to capture our relationships in a natural setting (see Heck et al., 2020).

3.1.2 | Participants and procedure

Given the pandemic and importance of physical distancing, we collected our data online using Prolific (see Palan & Schitter, 2018; Peer et al., 2017). Using this platform, full-time employees ($N = 900$) residing in the United States and Canada were recruited to complete two surveys, separated by 1 week. The criteria for inclusion in the sample were full-time employment in a workplace environment with coworkers at the time of the study; those working from home were excluded. These criteria were especially important at the time of the data collection because many individuals were being laid off, furloughed, and/or had not yet fully transitioned to work from home. That is, we used these criteria to ensure that employees had the opportunity to engage in cheating behavior in the workplace during the early stages of the pandemic. Participants were paid 1.67 GBP (approximately 2.08 USD) per survey.

A total of 570 participants completed the T1 survey and met the criteria for inclusion. These participants were invited to complete T2, with 479 completing the second survey (84% retention rate). However, 83 respondents no longer qualified for inclusion in the sample at T2 (i.e., reported not having worked full-time or did not work in an environment with coworkers during the past week). Unique participant identification codes (Prolific IDs) were used to match the T1 and T2 data. Following best practices for ensuring the quality of online data, we screened for inattentiveness with four attention checks and excluded 23 participants who failed one or more attention checks from the analyses (see Goldammer et al., 2020). The final sample ($N = 373$) was 33.8% female with an average age of 33.99 years ($SD = 9.54$), work experience of 13.94 years ($SD = 10.16$), and tenure of 5.62 years ($SD = 5.79$). Managers comprised 27.3% of the sample. Respondents were employed in a variety of industries, including health care and social assistance (22.3%), retail (12.3%), manufacturing (10.7%), government (5.4%), and construction (4.6%).

The T1 survey measured threat appraisals of COVID-19, state anxiety, prosocial messages, and baseline workplace cheating behavior. Consistent with appraisal theories of emotion (e.g., Lazarus, 1991), threat appraisals of COVID-19 were assessed before state anxiety and our measure of state anxiety was targeted at COVID-19. The T2 survey assessing workplace cheating behavior was collected 1 week later. We chose a 1-week time separation because emotion-related processes can unfold quickly (Lazarus, 1991). A 1-week separation allows enough time for behavioral reactions to emerge but is also short enough to be appropriate from a theoretical perspective (i.e., alternative explanations may be introduced if the chosen time separation is too long; George & Jones, 2000, also see Fiedler, 2020). A 1-week time separation can also reduce common method bias between assessments of the same behavior since participants are

unlikely to remember their responses from a week ago (see Podsakoff et al., 2012). By including T1 cheating behavior as a covariate, we ensured that the observed effects go beyond employees' general tendencies to engage in cheating behavior.

3.1.3 | Measures

Threat appraisals of COVID-19 were assessed with three items that were adapted from the Perceived Threat dimension of Witte et al.'s (1996) Risk Behavior Diagnosis scale. While this scale was originally developed to assess perceived health threats, we adapted the scale to fit the COVID-19 context and also chose items that assess threat appraisals that have personal relevance. The latter was important to align with appraisal theories of emotion, which indicate that people's emotional and behavioral responses are typically generated by appraisals that are deemed to be self-relevant (e.g., Lazarus, 1991). The items were "COVID-19 poses a serious risk to me," "COVID-19 is unlikely to affect me" (reverse coded), and "COVID-19 may harm me." The question stem was: Please indicate how much you agree with the following statements. The response scale ranged from (1) *strongly disagree* to (5) *strongly agree*.

State anxiety was assessed with the anxiety items from Diener and Emmons (1984; two items: "anxious" and "worried"). We ensured that our measure assessed *state* anxiety and was targeted at COVID-19 by using the question stem: "Please indicate how you feel right now about the COVID-19 pandemic." The response scale ranged from (1) *not at all* to (5) *very much*.

Prosocial messages were assessed with a four-item scale that was originally validated by Morgeson and Humphrey (2006). However, we adapted the question stem and items to reflect prosocial messages from one's organization. The question stem was "In the past month, my organization has communicated to me that ...." The items were "My work can benefit others in my community," "My work will have a positive impact on others," "If I perform my job well, people in my community will benefit," and "If I succeed at my job, other people will be better off." The response scale ranged from (1) *not at all* to (5) *to a great extent*.

Workplace cheating behavior was assessed at T1 and T2 with Mitchell et al.'s (2018) scale. We chose this scale because it was validated for assessing *workplace* cheating behavior using best practices for scale development and validation. Importantly, this scale excludes behavior (e.g., sabotage and vandalism) that is aimed at harming other people or the organization (i.e., deviant behavior that may be driven by a motivation to inflict harm rather than to advantage oneself). Moreover, this scale has been shown to be empirically distinct from unethical behavior that focuses on harm or benefit to others (e.g., antisocial behavior, social undermining, and unethical pro-organizational behavior). These features were important to ensure alignment between our theorizing and operationalization. Mitchell et al.'s (2018) scale comprises seven items: "Misrepresented work activity to make it look as though you have been productive," "Made it look like you were working when you were not," "Made up work activity to look better," "Exaggerated work hours to look more productive," "Came in late and didn't report it," "Made up an excuse to avoid being in trouble for not completing work," and "Lied about the reason you were absent." The prompt was "Please indicate how often you engaged in each of the following behaviors in the past week." The response scale ranged from (1) *never* to (5) *always*.

3.1.4 | Control variables

Given the calls in the literature to rule out third variable explanations in the relationship between environmental factors and unethical behaviors (e.g., Fiedler, 2020), we also measured several control variables that have been theoretically and/or empirically associated with our dependent variables. At T1, we assessed variables that reflect the notion that people may engage in unethical behavior when they need to "balance the scales." Within the context of COVID-19, employees who remained working may have felt that they were being treated inequitably since others were not working or working from home, that they had more job demands placed on them, or that they were not being sufficiently supported. As such, we assessed *perceived inequity* using Van Yperen's (1996) scale (six items, e.g., "I work myself too hard considering my outcomes"). Similarly, we assessed *job demands* with an adapted version of Caldwell et al.'s (2004) Individual Job Impact scale (four items, e.g., "I am expected to do more work than I used to"), using four items that assessed changes in job demands but not including two items from the original scale that assessed changes in work processes. The question stem was "Please think about how your work situation has changed since the beginning of the COVID-19 pandemic." Both response scales ranged from (1) *strongly disagree* to (5) *strongly agree*. Since employees who do not feel supported by the organization may be more likely to engage in unethical behavior (e.g., Biron, 2010), we assessed *perceived organizational support* with an abbreviated version of Eisenberger et al.'s (1986) scale (eight items, e.g., "My organization fails to appreciate any extra effort from me" [reverse coded]). The response scale ranged from (1) *strongly disagree* to (5) *strongly agree*. Finally, previous studies have shown that anger may prompt unethical behavior (e.g., Mitchell et al., 2018) and have also highlighted the importance of distinguishing between anger and anxiety (e.g., Barclay & Kiefer, 2019). To ensure our effects were driven by anxiety (vs. anger), we assessed *state anger* with a one-item measure ("angry"). The question stem was "Please indicate how you feel right now about the COVID-19 pandemic". The response scale ranged from (1) *not at all* to (5) *very much*.

At T2, we assessed several personality traits that are theoretically associated with anxiety and/or unethical behavior. *Neuroticism* refers to a tendency to experience poor emotional adjustment and high levels of negative affect (Goldberg, 1999). Given that neuroticism can be predictive of anxiety (e.g., Jorm et al., 2000), we assessed it with the IPIP equivalent of the NEO-PI-R scale (Goldberg, 1999; 10 items, e.g., "I panic easily"). *Moral disengagement* refers to a tendency to

justify or rationalize unethical behavior and has been positively associated with unethical workplace behavior (Moore et al., 2012); we assessed it with Shu et al.'s (2011) scale (six items, e.g., "Sometimes getting ahead of the curve is more important than adhering to rules"). *Moral identity internalization* captures the degree to which moral traits are central to one's self concept and is predictive of unethical behavior (Hertz & Krettenauer, 2016); we assessed it with Aquino and Reed's (2002) scale (five items, e.g., "It would make me feel good to be a person who has these characteristics"). *Belief in a dangerous world* captures a general belief that the social world is dangerous and threatening (Altemeyer, 1988) and has been associated with anxiety (e.g., Warner & Thrash, 2020); we assessed it with Leiser et al.'s (2017) scale (five items, e.g., "Any day now chaos and anarchy could erupt around us, all the signs are pointing to it"). For all trait scales, participants were asked to indicate how much they agreed with each statement "in general." All response scales ranged from (1) *strongly disagree* to (5) *strongly agree*.

3.2 | Study 1 results

Table 1 presents the means, standard deviations, reliabilities, and correlations. Before testing our hypotheses, we conducted a confirmatory factor analysis (CFA) to confirm the factor structure of our measurement model, which included threat appraisals, state anxiety, prosocial messages, and workplace cheating behavior (T1 and T2). Each item only loaded on its corresponding factor and all factors were allowed to correlate. Given the repeated items for workplace cheating behavior, correlations were specified between the error terms of the repeated items (see Kline, 2011). The model had a good fit ($\chi^2(213) = 527.75$, $p < .001$; RMSEA = .06; CFI = .94), and all factor loadings were significant (all $p < .001$). Further, our five-factor model fit the data significantly better than alternative models, including a four-factor model in which the threat appraisals items and state anxiety items loaded on a single factor ($\chi^2(217) = 748.89$, $p < .001$; RMSEA = .08; CFI = .90; difference: $\Delta\chi^2(4) = 293.47$, $p < .001$) and a one-factor model ($\chi^2(223) = 2957.22$, $p < .001$; RMSEA = .18; CFI = .46; $\Delta\chi^2(10) = 2429.47$, $p < .001$).

We conducted our hypothesis tests with all control variables (see Section 3.1.3) included in the analyses. We also included baseline (T1) workplace cheating behavior as a control variable to ensure that the hypothesized effects hold while controlling for employees' general tendencies to engage in this behavior. Following our main analyses, we conducted supplemental analyses without control variables, which resulted in substantively similar results. We present all our analyses *with* control variables first, followed by the supplemental analyses *without* control variables in the next section (see Section 3.2.1).

To test Hypotheses 1 and 2, we conducted hierarchical linear regression analyses with the control variables and T1 workplace cheating behavior entered in step 1 (see Table 2 Model 1).[1] Results indicated that threat appraisals of COVID-19 were positively associated with state anxiety, $b = 0.49$, $SE = 0.05$, $t(359) = 9.57$, $p < .001$. Hypothesis 1 was supported. State anxiety was positively associated with workplace cheating behavior at T2, $b = 0.05$, $SE = 0.02$, $t(359) = 2.38$, $p = .02$. Hypothesis 2 was supported. Models 2 and 3 in Table 2 present the results.

To test Hypotheses 3 and 4, we used PROCESS v4.0 (Hayes, 2018). We used bootstrapping (10 000 resamples) to calculate percentile confidence intervals (CIs) for the hypothesized indirect effect of threat appraisals on workplace cheating behavior via state anxiety. With bootstrapping, mediation inferences are based on the indirect effect itself (where the indirect effect is the product of the effect of the independent variable on the mediator and the effect of the mediator on the outcome variable).[2] When the CI for the indirect effect does not include zero, this is considered evidence for mediation (see Hayes, 2009). In our study, the indirect effect was significant, estimate = .03, $SE = 0.01$, 95% CI [.001, .05]. Hypothesis 3 was supported.

To test the moderating effect of prosocial messages, this variable was added to the mediation model as a second-stage moderator (i.e., moderating the effect of state anxiety on workplace cheating behavior). The interaction between state anxiety and prosocial messages was significant, $b = -0.03$, $SE = 0.01$, $p = .03$. We used the Johnson–Neyman technique implemented in PROCESS to identify the values of the moderator at which the effect of state anxiety on workplace cheating behavior was significant. The moderator value of 3.50 was found to define the significance region—the effect of anxiety on workplace cheating behavior was significant at levels of prosocial messages below 3.50 (as measured on our 5-point scale) but nonsignificant at or above 3.50. Figure 2 displays the interaction.

Finally, we tested our complete moderated mediation model. First, we assessed the index of moderated mediation—a "quantification of the association between an indirect effect and a moderator" that can be used to test whether an indirect effect depends on a moderator (Hayes, 2015, p. 2). When the CI for the index of moderated mediation does not include zero, one can conclude that the indirect effect is moderated. In our study, the CI did not include zero, index = −.02, $SE = 0.01$, 95% CI [−.03, −.002]. Consistent with our theoretical arguments, probing the interaction revealed that the indirect effect of threat appraisals on workplace cheating behavior via state anxiety was significant at low (16th percentile) levels of prosocial messages (estimate = .05, $SE = 0.02$, 95% CI [.02, .08]) but not at high levels (84th percentile) of prosocial messages (estimate = .00, $SE = 0.02$, 95% CI [−.03, .04]). Table 2 Model 4 presents the full results. Hypothesis 4 was supported.

3.2.1 | Supplemental analyses

To ensure that the observed findings were not driven by the inclusion of our theoretically derived control variables, we reran our analyses only controlling for T1 workplace cheating behavior. Results indicated that threat appraisals of COVID-19 were positively associated with state anxiety, $b = 0.66$, $SE = 0.06$, $t(370) = 12.04$, $p < .001$, $R^2 = .29$.

TABLE 1 Study 1: Means, standard deviations, zero-order correlations, and reliabilities

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Workplace cheating behavior (T1)	1.51	0.61	(.85)												
2. Threat appraisals of COVID-19	3.63	0.94	−.01	(.81)											
3. State anxiety	3.27	1.18	.13*	.53**	(.88)										
4. Prosocial messages	3.29	1.21	−.10*	.09	.05	(.94)									
5. Workplace cheating behavior (T2)	1.52	0.59	.76**	.04	.20**	−.10	(.85)								
6. Perceived inequity	2.96	1.13	.11*	.22**	.25**	−.16**	.17**	(.93)							
7. Job demands	3.19	1.17	−.03	.25**	.25**	.13*	.00	.39**	(.91)						
8. Perceived organizational support	3.19	1.05	−.20**	−.18**	−.17**	.28**	−.25**	−.74**	−.21**	(.94)					
9. State anger	2.29	1.24	.11*	.17**	.44**	−.01	.15**	.20**	.16**	−.18**	(-)				
10. Neuroticism	2.49	0.90	.16**	.22**	.45**	−.16**	.20**	.26**	.08	−.30**	.31**	(.91)			
11. Moral disengagement	2.43	0.69	.22**	−.07	.02	−.12*	.31**	.11*	−.03	−.16**	.07	.11*	(.75)		
12. Moral identity internalization	4.44	0.57	−.13*	.14**	.10*	.13*	−.15**	−.02	.11*	.07	−.04	−.11*	−.16**	(.72)	
13. Belief in a dangerous world	2.97	0.95	.10*	.15**	.28**	−.01	.15**	.24**	.13*	−.22**	.33**	.34**	.07	−.05	(.85)

Note: Reliabilities are shown on the diagonal.
*$p < .05$.
**$p < .01$.

TABLE 2 Study 1: Hierarchical linear regression results

	State anxiety				Workplace cheating behavior (T2)			
	Model 1		Model 2		Model 3		Model 4	
Variables	*b* (*SE*)	*p*	*b* (*SE*)	*p*	*b* (*SE*)	*p*	*b* (*SE*)	*p*
Intercept	−1.30 (0.66)	.05	minus;2.20 (0.60)	<.001	0.38 (0.26)	.15	0.03 (0.31)	.93
Control variables								
Workplace cheating behavior (T1)	0.15 (0.09)	.09	0.17 (0.08)	.03	0.67 (0.03)	<.001	0.67 (0.03)	<.001
Perceived inequity	0.14 (0.07)	.05	0.12 (0.06)	.07	0.00 (0.03)	.97	0.01 (0.03)	.85
Job demands	0.12 (0.05)	.009	0.06 (0.04)	.17	−0.01 (0.02)	.75	−0.01 (0.02)	.78
Perceived organizational support	0.14 (0.07)	.06	0.16 (0.07)	.01	−0.04 (0.03)	.17	−0.04 (0.03)	.22
State anger	0.28 (0.04)	<.001	0.26 (0.04)	<.001	0.00 (0.02)	.94	−0.00 (0.02)	.93
Neuroticism	0.45 (0.06)	<.001	0.36 (0.06)	<.001	−0.01 (0.03)	.77	−0.01 (0.03)	.67
Moral disengagement	−0.05 (0.08)	.51	0.00 (0.07)	.98	0.12 (0.03)	<.001	0.11 (0.03)	<.001
Moral identity internalization	0.29 (0.09)	.001	0.18 (0.08)	.03	−0.05 (0.04)	.18	−0.05 (0.04)	.18
Belief in a dangerous world	0.06 (0.06)	.33	0.04 (0.05)	.46	0.02 (0.02)	.42	0.02 (0.02)	.32
Hypothesized predictors								
Threat appraisals of COVID-19			**0.49 (0.05)**	**<.001**			−0.01 (0.03)	.79
State anxiety					**0.05 (0.02)**	**.02**	0.15 (0.05)	.003
Prosocial messages							0.11 (0.05)	.03
State anxiety × prosocial messages interaction							**−0.03 (0.01)**	**.02**
R^2	.35		.48		.61		.62	

Note: *b* = unstandardized regression coefficient. *SE* = standard error estimates (shown in parentheses). Values in bold are relevant to hypothesis tests.

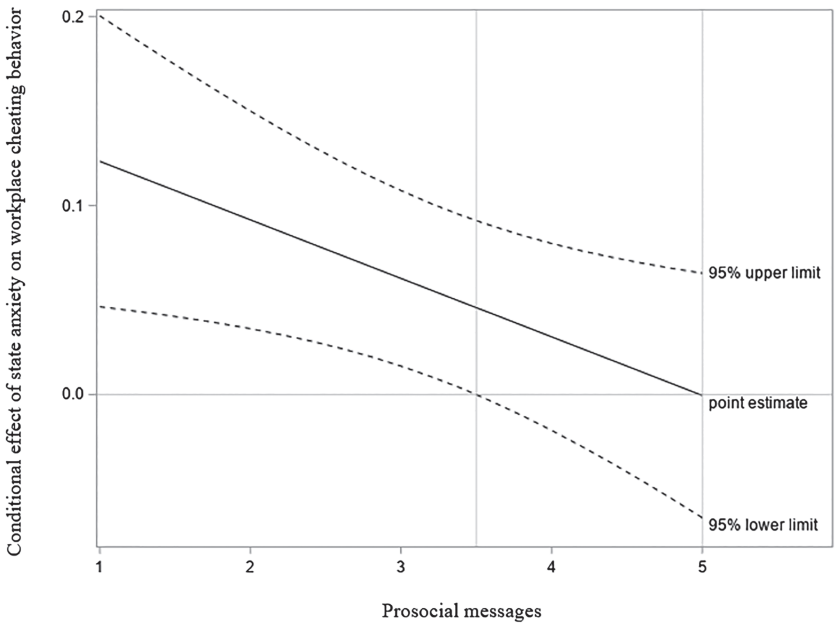

FIGURE 2 Study 1: Conditional effect of state anxiety on workplace cheating behavior (T2) as a function of prosocial messages

State anxiety was positively associated with workplace cheating behavior at T2, $b = 0.05$, $SE = 0.02$, $t(370) = 3.04$, $p = .003$, $R^2 = .58$. The indirect effect of threat appraisals on workplace cheating behavior via state anxiety was significant, estimate = .04, $SE = 0.01$, 95% CI [.01, .07]. To test the moderating effect of prosocial messages, this variable was added to the mediation model as a second-stage

moderator. The interaction between state anxiety and prosocial messages was significant, $b = -0.03$, $SE = 0.01$, $p = .02$. Probing the interaction using the Johnson–Neyman technique indicated that the effect of anxiety on cheating behavior was significant for prosocial messages that had values below 3.74. Finally, our complete moderated mediation model was significant, index = −.02, $SE = 0.01$, 95% CI [−.04, −.004]. As predicted, the indirect effect of threat appraisals on workplace cheating behavior via state anxiety was significant at low (effect = .06, $SE = 0.02$, 95% CI [.03, .10]) but not at high levels of prosocial messages (effect = .01, $SE = 0.02$, 95% CI [−.03, .05]). Thus, the results from our supplemental analyses indicated that excluding the control variables from the analyses did not substantively impact the results.[3]

3.3 | Study 1 discussion

Study 1 demonstrates that threat appraisals related to COVID-19 are associated with workplace cheating behavior via employees' state anxiety. Importantly, prosocial messages from the organization buffered the effects of employee anxiety on workplace cheating behavior. While these findings provide empirical evidence supporting our theorizing, we deemed a second study to be necessary to further enhance theoretical and empirical rigor. Theoretically, we argued that employees' state anxiety may prompt cheating behavior by focusing their attention on their own self-interest. Further, we proposed that prosocial messages can mitigate this effect by drawing employees' attentional focus towards other people's interests. Although Study 1 empirically supported the theorized relationship between state anxiety and workplace cheating behavior as well as the moderating role of prosocial messages, this study did not empirically test the underlying role of self-interest. In Study 2, we test a moderated serial mediation model (see Figure 1) in which the relationship between threat appraisals and cheating behavior is serially mediated by state anxiety and self-interest and moderated by prosocial messages.

Empirically, Study 1 examined our relationships with a two-wave survey design. Study 2 uses an experimental design that manipulates both threat appraisals and prosocial messages to provide further confidence in the temporal ordering of our model (i.e., to enhance internal validity). Moreover, whereas Study 1 used a sample of full-time employees working onsite only, Study 2 retests our arguments with a sample of full-time employees that were working onsite and/or from home to provide further confidence in the generalizability of our findings (i.e., to enhance external validity). Finally, we use a different measure of cheating behavior in Study 2 to minimize potential method bias (see Podsakoff et al., 2012). Whereas Study 1 used a self-reported measure of cheating behavior, Study 2 uses an objective behavioral measure—a coin toss task (Bucciol & Piovesan, 2011). We selected this task because it provides anonymity and offers a strong sense of privacy (Lilleholt et al., 2020), which makes it unlikely to be influenced by impression management motives (see Paulhus, 1984).

3.4 | Study 2

Underlying our theorizing is the notion that state anxiety can prompt cheating behavior because it focuses employees on their own self-interest.[4] In Study 2, we empirically examine this relationship. That is, we elaborate our model to include self-interest (i.e., we test a moderated serial mediation model). Moreover, by empirically examining self-interest as a second-stage mediator, we also create the opportunity to clarify the role of our moderator. More precisely, although prosocial messages should weaken the relationship between anxiety and cheating behavior, our theorizing suggests that this is because prosocial messages moderate the relationship between state anxiety and self-interest (i.e., the relationship between the first and second mediator). That is, prosocial messages should attenuate the relationship between anxiety and self-interest by broadening employees' attentional focus, encouraging them to consider moral standards, and/or highlighting the potential negative impact of focusing on their own self-interest. By explicitly incorporating self-interest in Study 2, we create the opportunity to empirically test this argument.

> **Hypothesis 5.** Prosocial messages moderate the positive relationship between anxiety and self-interest, such that this relationship is weaker when employees perceive prosocial messages to be high (vs. low).

Building on the above, Study 2 enables a full test of our theoretical model (see Figure 1). More precisely, we propose that threat appraisals of COVID-19 can elicit anxiety, which in turn can prompt individuals to focus their attention on their self-interest. Focusing on one's self-interest can prompt cheating behavior—a self-interested unethical behavior that is theoretically consistent with this attentional focus. However, as argued above, we propose that prosocial messages can attenuate the relationship between anxiety and self-interest. Taken together, we propose a moderated serial mediation model.

> **Hypothesis 6.** The relationship between threat appraisals related to COVID-19 and cheating behavior is explained by a moderated serial mediation, such that the positive relationship between threat appraisals related to COVID-19 and cheating behavior is serially mediated by anxiety and self-interest, with prosocial messages moderating the relationship between anxiety and self-interest.

3.5 | Study 2 method

3.5.1 | COVID-19 context

We collected the data for Study 2 during the COVID-19 pandemic (March 2021) from a sample of full-time employees in the United States and Canada. At the time of the data collection, several vaccines had been developed. However, few people had

been vaccinated and strict safety measures (e.g., physical distancing protocols) were still being enforced. Although many employees were working in their regular workplaces, others were working from home.

3.5.2 | Participants and procedure

Participants ($N = 208$) residing in the United States and Canada were recruited via Prolific (see Palan & Schitter, 2018; Peer et al., 2017). In our recruitment advertisement, we noted that participation was restricted to those who were employed full time. We did not restrict the sample to those who were working onsite to enhance external generalizability (i.e., those working from home were allowed to participate). A total of 171 participants met our criteria for inclusion in the sample. Participants were paid 2.09 GBP (approximately 2.87 USD).

Participants were randomly assigned to conditions in a 2 (threat appraisal: experimental vs. control) × 2 (prosocial messages: experimental vs. control) factorial design. We manipulated *threat appraisals* by asking participants in the experimental condition to write a few sentences about factors that they perceived to be threatening about the COVID-19 situation. Participants in the control condition did not receive this prompt. The *prosocial messages* manipulation was designed to be conceptually similar to our measure of prosocial messages from Study 1. However, the wording was adapted to be appropriate and relevant for the context of this experiment. We also ensured that the participants would actively consider (vs. skip) the communication. More precisely, in the experimental condition, participants were asked to consider the following: "These are challenging times, but you can benefit others in your community and help other people be better off. Please take a few minutes to think. Then, in two or three sentences, please tell us about some ways you can have a positive impact on other people." Participants in the control condition did not receive this prompt.

Consistent with our theoretical model (see Figure 1), we manipulated threat appraisals first. Then, participants completed our measure of state anxiety. Next, we manipulated prosocial messages, followed by our measure of self-interest (see Section 3.5.3). Finally, participants completed a commonly used behavioral measure of cheating—a coin toss task (Bucciol & Piovesan, 2011; for a review, see Lilleholt et al., 2020). This was an important feature of our study to establish the temporal ordering of our variables.

Consistent with our definition of cheating behavior, this task gave participants an opportunity to advantage themselves by violating widely held social and moral norms. Specifically, the instructions were "We have been given permission to distribute a number of £0.40 bonuses to participants in this study. To allocate this money *fairly and randomly*, we are asking all participants to flip a coin twice. If you toss 'heads' both times, you will receive a £0.40 bonus. You may either flip an actual coin or use an external coin flip website such as: https://justflipacoin.com." Participants then indicated whether they had tossed "heads" both times (yes/no) and were paid in accordance with their self-reported outcome. This task (known as a population inferred cheating task) does not require individual cheaters to be identified; rather, cheating on the task is inferred statistically by examining the effect of a predictor variable on probabilities of self-reported "heads" tosses. As noted above, this task has been widely used in the behavioral ethics literature because it can avoid participants' suspicion of being monitored by the researchers (see Lilleholt et al., 2020). Following the coin toss task, participants completed our manipulation checks.

We screened for inattentiveness with two attention checks and excluded six participants who failed one or more attention checks from the analyses (see Goldammer et al., 2020). We also excluded eight participants who did not follow the instructions corresponding to their condition (e.g., skipped a manipulation). The final sample ($N = 157$) was 43.3% female with an average age of 33.53 years ($SD = 8.01$), work experience of 12.84 years ($SD = 8.08$), and tenure of 6.12 years ($SD = 5.09$). Managers comprised 35.0% of the sample. Respondents were employed in a variety of industries, the most common being postsecondary education (12.1%), finance and insurance (9.6%), government and public administration (8.9%), health care and social assistance (8.3%), information services and data processing (7.0%), scientific or technical services (5.1%), and software (5.1%). With respect to their workplace, 14.0% indicated that they were still commuting to their regular workplace every day, 15.9% were working from home at least 1 day per week, and the remaining respondents indicated working from home every day.

3.5.3 | Measures

Threat appraisal manipulation check was assessed with a two-item scale ("I perceive the COVID-19 situation as a personal threat" and "The COVID-19 situation is risky for me and my loved ones"). The response scale ranged from (1) *strongly disagree* to (5) *strongly agree*.

Prosocial messages manipulation check was assessed with the question: "As part of this study, did you think about the positive impact you can have on other people?" The response options were: *yes*, *no*, and *unsure*.

State anxiety was assessed with a scale from Brooks and Schweitzer (2011; four items: "anxious," "worried," "nervous," and "apprehensive"). Consistent with Study 1, we ensured that our measure assessed state anxiety and was targeted at COVID-19 by using the following question stem: "Please indicate how you feel right now about the COVID-19 pandemic." The response scale ranged from (1) *not at all* to (5) *very much*.[5]

Self-interest was measured with three items adapted from De Dreu and Nauta (2009). Two items were taken directly from the scale: "I am concerned about my own needs and interests" and "My personal goals and aspirations are important to me." We adapted one item by changing it from "I consider my own wishes and desires to be relevant" to "I am preoccupied with enhancing benefits for myself." We made this modification to ensure that the item reflected self-interest rather than personal relevance (which is a component of appraisals). Consistent with our theoretical

argument that state anxiety can focus attention to one's own self-interest, we measured self-interest as a state variable (for a similar approach, see Mitchell et al., 2018; Winterich et al., 2014) by asking participants to report their self-interest "right now." We also measured self-interest after our state anxiety measure to enhance confidence in the temporal ordering of our variables. The prompt was "Please indicate how much you agree with the following statements right now." The response scale ranged from (1) *not at all* to (5) *very much*.

Cheating behavior was assessed with a coin toss task (Lilleholt et al., 2020; see Section 3.5.2 for details). The self-reported outcomes were coded as 1 (two "heads") versus 0 (not two "heads").

3.6 | Study 2 results

Table 3 presents the means, standard deviations, reliabilities, and correlations. Before testing our hypotheses, we conducted a CFA to confirm the factor structure of our measurement model, which included state anxiety and self-interest. Each item only loaded on its corresponding factor, and all factors were allowed to correlate. The model had excellent fit ($\chi^2(13) = 16.46$, $p = .23$; RMSEA = .04; CFI = .99), and all factor loadings were significant ($p < .001$). The model fit the data significantly better ($\Delta\chi^2(1) = 92.98$, $p < .001$) than an alternative one-factor model ($\chi^2(14) = 109.44$, $p < .001$; RMSEA = .21; CFI = .80).

Next, we assessed our manipulation checks. The threat appraisal manipulation check was tested with analysis of variance (ANOVA). Results indicated that the manipulation for threat appraisals was effective; participants rated threat appraisals to be higher when the manipulation was *present* ($M = 3.65$, $SD = .92$) versus *absent* ($M = 3.33$, $SD = 1.12$), $F(1,155) = 3.85$, $p = .05$, $\eta^2 = .02$. The prosocial messages manipulation check was tested with a chi-square test. Results indicated that participants were significantly more likely to have thought of their positive impact on other people (i.e., to have responded "yes" to the manipulation check) when the prosocial messages manipulation was present versus absent, $\chi^2(1) = 55.54$, $p < .001$. Thus, we deemed both of our manipulations to be effective.

Consistent with our theorizing, linear regression results indicated that the manipulation of threat appraisals (coded as 1 = experimental condition; 0 = control condition) was positively related to state anxiety, $b = 0.36$, $SE = 0.18$, $t(155) = 2.23$, $p = .03$, $R^2 = .03$. Further, state anxiety had a significant interaction effect with the manipulation of prosocial messages (coded as 1 = experimental condition; 0 = control condition) on self-interest, $b = -0.22$, $SE = 0.11$, $t(153) = -1.95$, $p = .05$, $R^2 = .02$. Figure 3 displays the interaction. Consistent with our theorizing, state anxiety was marginally significantly associated with self-interest in the control condition, $b = 0.14$, $SE = 0.08$, $p = .08$. By contrast, state anxiety was not significantly associated with self-interest in the experimental condition (i.e., when the prosocial messages manipulation was present), $b = -0.07$, $SE = 0.08$, $p = .34$. Hypothesis 5 was supported. A logistic regression indicated that self-interest was positively related to cheating behavior (i.e., self-reported "wins" on the coin toss task), $b = 0.59$, $SE = 0.24$, $p = .01$. Table 4 displays the full regression results.

We tested Hypothesis 6 using PROCESS (see Hayes, 2018). The threat appraisal manipulation was treated as the predictor variable, state anxiety and self-interest as (serial) mediators, and cheating behavior as the dependent variable. The prosocial messages manipulation was treated as a second-stage moderator (i.e., moderating the effect of state anxiety on self-interest). Consistent with Preacher et al.'s (2010) recommendation that a 90% CI should be considered when testing indirect effects to reflect the directional nature of this test, we used a 90% CI in Study 2 to reflect our a priori directional hypothesis, which was supported by empirical evidence from Study 1. A 90% CI corresponds to a one-tailed hypothesis test at $\alpha = .05$; this recommendation has been extensively used in recent studies (e.g., Calderwood et al., 2018; Sun et al., 2021; Taylor et al., 2019). Results indicated that the index of moderated serial mediation (Hayes, 2015) was significant, index = −.05, $SE = 0.04$, 90% CI [−.130, −.001]. Consistent with our theoretical arguments, the indirect effect of threat appraisals on cheating behavior via state anxiety and self-interest was significant when no prosocial messages were

TABLE 3 Study 2: Means, standard deviations, zero-order correlations, and reliabilities

Variable	*M*	*SD*	1	2	3	4	5	6
1. Threat appraisals manipulation[a]	0.53	0.50	-					
2. State anxiety	2.95	1.02	.18*	(.89)				
3. Prosocial messages manipulation[b]	0.50	0.50	.05	−.08	-			
4. Self-interest	3.70	0.71	−.01	.04	−.04	(.71)		
5. Cheating behavior[c]	0.53	0.50	.00	.11	−.13	.20*	-	
6. Threat appraisals manipulation check	3.50	1.03	.16*	.54**	.03	.08	.02	(.70)

Note: Reliabilities are shown on the diagonal.
[a]Conditions for threat appraisals were coded as 1 (experimental condition) versus 0 (control condition).
[b]Conditions for prosocial messages were coded as 1 (experimental condition) versus 0 (control condition).
[c]Coin tosses were coded as 1 (two "heads") versus 0 (not two "heads").
*$p < .05$.
**$p < .01$.

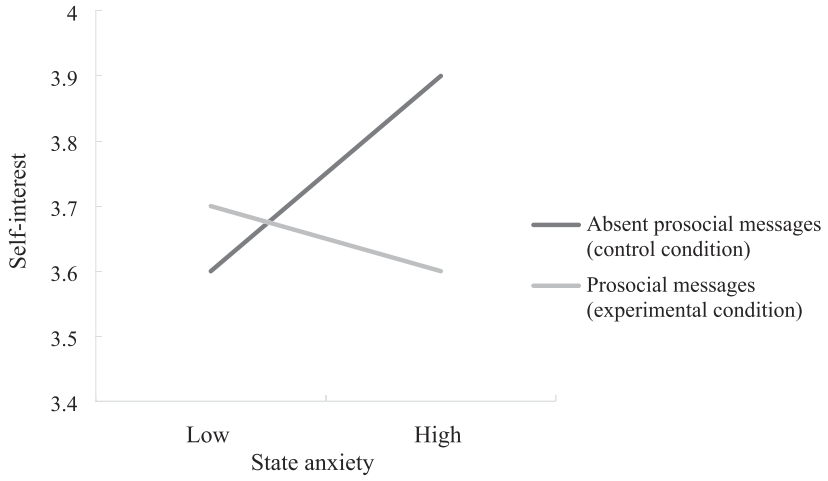

FIGURE 3 Study 2: Self-interest as a function of state anxiety and prosocial messages

TABLE 4 Study 2: Results of regression analyses

	State anxiety		Self-interest		Cheating behavior[c,d]	
	***b* (*SE*)**	***p***	***b* (*SE*)**	***p***	***b* (*SE*)**	***p***
Intercept	2.76 (0.12)	<.001	3.30 (0.25)	<.001	−2.74 (1.03)	.01
Threat appraisals manipulation[a]	**0.36 (0.16)**	**.03**	−0.05 (0.12)	.68	−0.07 (0.33)	.85
State anxiety			0.15 (0.08)	.07	0.25 (0.17)	.13
Prosocial messages manipulation			0.61 (0.35)	.08		
State anxiety × prosocial messages manipulation[b]			**−0.23 (0.11)**	**.049**		
Self-interest					**0.58 (0.24)**	**.02**
R^2	.03		.03			

Note: *b* = unstandardized regression coefficient. *SE* = standard error estimates (shown in parentheses). Values in bold are relevant to hypothesis tests.
[a]Conditions for threat appraisals were coded as 1 (experimental condition) versus 0 (control condition).
[b]Conditions for prosocial messages were coded as 1 (experimental condition) versus 0 (control condition).
[c]Coin tosses were coded as 1 (two "heads") versus 0 (not two "heads").
[d]Logistic regression was used to estimate the effects on cheating behavior (i.e., self-reported coin tosses). Results are expressed in a log-odds metric.

present (i.e., in the control condition; estimate = .03, *SE* = 0.03, 90% CI [.001, .092]) but was nonsignificant when prosocial messages were present (i.e., the experimental condition; estimate = −.02, *SE* = 0.02, 90% CI [−.057, .012]).[6] Taken together, Study 2 provides further empirical evidence for the role of anxiety and self-interest in the relationship between threat appraisals of COVID-19 and cheating behavior as well as the moderating effect of prosocial messages.

3.6.1 | Supplemental analyses

Drawing on appraisal theories of emotion (Lazarus, 1991), we argued that appraising a factor in one's environment as a personally relevant threat can elicit anxiety. Consistent with appraisal theories, this argument assumes that anxiety can be elicited *regardless of why* people perceived COVID-19 as a personal threat (i.e., for health vs. financial reasons). To further test this assumption, we conducted supplemental analyses to explore why participants appraised COVID-19 as threatening and whether the content of these evaluations may have influenced their reactions. The first author and a research assistant (who was blind to the research question and hypotheses) content-coded participants' open-ended responses in the experimental condition of the threat appraisal manipulation to assess whether COVID-19 was perceived as a *health threat* (no = 0; yes = 1) and/or a *financial threat* (no = 0; yes = 1). The intraclass correlation coefficient (ICC_2) was .94 for health threat and .97 for financial threat, indicating excellent intercoder agreement (cf. Koo & Li, 2016). Discrepancies were resolved through discussion.

Results indicated that the majority of participants (70%) perceived that COVID-19 posed a health threat and 29% perceived that COVID-19 posed a financial threat. To further explore the potential influence of health versus financial threat, we entered the dummy-coded *health threat* and *financial threat* variables in our main analyses as control variables. However, controlling for these variables did not substantively influence any results: The interaction between anxiety and prosocial messages remained significant, *b* = −0.23, *SE* = 0.11, *t*

(151) = −2.03, $p = .04$; state anxiety was positively associated with self-interest in the prosocial messages control condition, $b = 0.16$, $SE = 0.08$, $p = .05$, but not in the prosocial messages experimental condition, $b = -0.07$, $SE = 0.08$, $p = .40$. The effect of self-interest on cheating remained substantively similar, $b = 0.59$, $SE = 0.24$, $p = .01$, as did the index of moderated mediation for the indirect effect of anxiety on cheating via self-interest moderated by prosocial messages, index = −.13, $SE = 0.10$, 90% CI [−.314, −.009].

These supplemental analyses indicate that (a) the majority of participants perceived COVID-19 as a health threat and (b) perceiving COVID-19 as a health versus financial threat did not substantively affect any results. This is consistent with the theoretical tenet that anxiety is elicited whenever an individual perceives a threat in their environment (i.e., a factor that is personally relevant and has the potential to cause harm; Lazarus, 1991). That is, perceiving COVID-19 as a threat to one's well-being can indirectly prompt cheating behavior, regardless of whether it is perceived as threatening for health or financial reasons. These supplemental analyses also help rule out the alternative explanation that our threat manipulation may have motivated cheating on the coin toss task simply by prompting participants to think about their financial situation (e.g., to compensate for a perceived threat to their finances).

4 | GENERAL DISCUSSION

The COVID-19 pandemic created a unique opportunity to inform the theoretical debate surrounding the relationship between environmental factors and unethical behavior, while also providing theoretical and practical insights into why unethical behavior has increased in the *workplace* during the COVID-19 pandemic and how organizations can address these ethical challenges. Using a two-wave survey and an experimental study, we found that threat appraisals of COVID-19 (an environmental factor) can elicit employee anxiety, which can focus people's attention on their own self-interest and prompt cheating behavior (i.e., self-interested unethical behavior). However, prosocial messages can mitigate these detrimental effects. We discuss the theoretical and practical implications of our findings below.

4.1 | Informing the environmental threat—Unethical behavior debate

Our studies provide empirical support for Lu et al.'s (2020) assertion that the relationship between environmental factors, state anxiety, and unethical behavior is unlikely to be limited to air pollution but rather can more broadly apply to other environmental factors. Importantly, we designed our studies in accordance with extant recommendations for how to "resolve" the debate (e.g., by examining more specific constructs, using short time frames, and by ruling out third variable explanations; see Fiedler, 2020; Heck et al., 2020). Thus, our findings also inform this debate by demonstrating that this relationship was significant with a specific threat (COVID-19) and specific unethical behavior (workplace cheating behavior). Our studies also provide evidence that time does not explain the relationships (i.e., results replicated with a 1-week time separation and in an experiment). Moreover, we ruled out potential third variable explanations, which can enhance confidence in these relationships (see Fiedler, 2020). Our studies also provide insights that can further advance this conversation by highlighting the importance of threat appraisals for understanding how environmental factors may exert these effects, by providing empirical support for *state* anxiety as a central mechanism, and by identifying self-interest as an explanation for how anxiety motivates unethical behavior.

4.2 | Workplace cheating behavior through the lens of appraisal theories

While scholars have identified how unethical behavior can be prompted by factors internal to the organization (e.g., organizational climate, leadership, peer influence; for a review, see Treviño et al., 2014), our findings highlight the importance of recognizing that employees' threat appraisals related to factors from the *environment* may impact cheating behavior within the workplace. More precisely, our findings demonstrate that employees can appraise the potential threat associated with environmental factors (e.g., COVID-19) and these appraisal processes can prompt emotional and behavioral reactions that can have implications within the organization. That is, employees may appraise and respond to threats from *their* environment—whether that environment is internal or external to the organization. This insight is theoretically important because it suggests that it is critical to broaden our conceptualization of the factors that may serve as antecedents for workplace behavior beyond the strong emphasis on factors internal to the organization and towards factors that employees are likely to appraise, regardless of their source. This suggests that it may be beneficial to consider what employees conceptualize as the relevant environment (i.e., what they are likely to appraise). Doing so can provide a better understanding of the challenges that employees can face and how these challenges can impact their workplace behavior and create implications for the organization that need to be managed.

Building on the above, while the COVID-19 pandemic represents a pervasive and significant environmental factor that has impacted employees around the world, appraisal theories of emotion suggest that employees' appraisals of any personally relevant event that has implications for the individual can elicit emotional and behavioral responses. This suggests that future research may benefit from examining whether these effects generalize with factors that may generate similar threat-related appraisals (i.e., appraisals that have personal relevance with the potential to harm). This may include external environmental factors (e.g., natural disasters), organizational factors (e.g., downsizing), interpersonal or social factors (e.g., divorce, spousal layoff), and/or personal factors (e.g., diagnosis of a life-threatening illness). Moreover, employees may appraise these factors in ways other

than as threatening, which may elicit different discrete emotions. For example, individuals may experience hope ("fearing the worst but yearning for better") or compassion ("being moved by another's suffering and wanting to help"; Lazarus, 1991, p. 122), which may focus people's attention on others and prompt altruistic behavior. This highlights the importance of understanding how employees appraise the situation, especially since the same stimuli may lead to very different emotional experiences and behavior because of differences in employees' assessments.

4.3 | The importance of examining discrete emotions in the workplace

Our studies provide insight into how organizations' ethical challenges in the context of COVID-19 may be related to employee anxiety about COVID-19. This insight is especially important given that some estimates indicate that 80% of the general population is experiencing heightened levels of state anxiety because of the COVID-19 pandemic (Roy et al., 2020; see also Huang & Zhao, 2020). That is, increased concerns about unethical behavior in organizations during the COVID-19 pandemic may be due to the presence of enhanced anxiety. Importantly, identifying a driving force for these effects can enable organizations to mitigate these effects.

From a theoretical perspective, our findings support the theoretical tenet that state anxiety can focus individuals on their own self-interest and prompt behavior that aligns with this attentional focus (i.e., cheating behavior—a self-interested unethical behavior). These findings advance the literature on anxiety in the workplace by highlighting the importance of considering context. More precisely, previous research indicates that anxiety may result in beneficial outcomes (e.g., Cheng & McCarthy, 2018). For example, Barclay and Kiefer (2019) found that anxiety elicited by a problematic work issue can encourage employees to address the issue through problem prevention behavior. However, employees are unlikely to be able to effectively address broader environmental issues, such as a global pandemic. In these cases, anxiety may have detrimental effects by encouraging employees to engage in behavior that advances their own interests. Given that people who are experiencing anxiety generally prefer to take some action rather than doing nothing (e.g., Gal & Lazarus, 1975), future research should explore whether proactively providing strategies that can channel anxiety towards beneficial behaviors may enable anxiety to have less detrimental effects for employees and the organization.

4.4 | The role of self-interest

Our findings also shed light on *why* anxiety may relate to unethical behavior. More precisely, our findings are consistent with the theoretical notion that anxiety can focus attention on one's own self-interest. Thus, it is critical to consider how emotions direct attentional focus since this can guide behavior. Theoretically, this also suggests that it is important to explore how self-interest may impact other outcomes of relevance within the workplace. For example, employees who feel threatened may also be less likely to tend to the needs of others (e.g., engage in helping or supportive behavior towards others in the organization). Self-interest may also prompt other behaviors that are aimed at advancing (e.g., impression management) or protecting one's interests (e.g., defensive coping) but that are not necessarily unethical.

It is also important to recognize that self-interest does not always result in unethical behavior. For example, employees may eschew self-interested unethical behavior when this behavior is perceived as being too "risky" (i.e., when it is in their self-interest not to engage in the behavior; Lu, Zhang, et al., 2018). While this suggests that organizations may be able to prevent unethical behavior by having a strong ethical code and/or punishments in place, it is also possible that anxiety may "override" these cognitive/rational considerations. That is, anxiety may impede and/or make cost–benefit analyses less likely because employees may be focused on their short-term interests versus downstream consequences. Future research may benefit from exploring how self-interest prompted by anxiety may impact other workplace outcomes.

4.5 | Prosocial messages as a strategy for intervention

By recognizing the explanatory role of self-interest, we also identified a critical point of intervention and strategy to overcome these deleterious effects. Consistent with our theoretical argument, our findings demonstrate that the relationship between anxiety and workplace cheating behavior can be attenuated by prosocial messages that direct focus towards the concerns and needs of others. This supports the notion that prosocial messages can be an important intervention strategy. Moreover, this strategy can be easily administered, especially since leaders can (and frequently do) strategically provide prosocial messages to influence employees' perceptions and behavior in the workplace (e.g., Grant & Hofmann, 2011; Piccolo & Colquitt, 2006; Purvanova et al., 2006). Moreover, employees who are aware of the importance of prosocial messages can also self-administer this intervention.

While this intervention has the practical advantage of being simple to implement, our studies also raise questions related to the prosocial messages, including the source and timing of the messages. While our studies indicate that prosocial messages can have beneficial effects regardless of the source of the message (e.g., regardless of whether it originates from oneself or the organization), it may be beneficial to further explore whether the effectiveness of prosocial messages may be impacted by the sender. For example, employees may be especially likely to attend to and experience shifts in attention with messages originating from their leaders that are tailored to the situation at hand. Alternatively, Grant and Hofmann (2011) found that receiving prosocial messages from beneficiaries may also

be especially impactful. It is also important to explore *when* prosocial messages may be most beneficial and how long the effects of this intervention may last. For example, our studies demonstrate that prosocial messages can be effective when these messages are delivered as employees are navigating the perceived threat. This is consistent with our theoretical argument that employees that are experiencing anxiety may need to have their attention drawn to concerns other than their own self-interest. Future research should also examine the effectiveness of this intervention if it is administered proactively (i.e., before the perceived threat emerges) and the longevity of the intervention.

4.6 | Strengths and limitations

We tested our hypotheses across two studies using full-time employees from the United States and Canada. Study 1 focused on full-time employees who were working in their normal workplace setting during the COVID-19 pandemic (i.e., "essential" workers). We made this decision because many employees were being furloughed or had reduced hours at the time of this data collection, which may have been problematic for our frequency-based measure of cheating behavior. However, it is possible that the nature of the work, characteristics of these workers, and/or opportunity to engage in cheating behavior may differ from other workers. For example, many "essential" jobs were labor intensive (e.g., manufacturing, grocery cashiers) or required postsecondary education (e.g., physicians and bankers). Importantly, Study 2 demonstrated that our findings generalized with a more heterogenous sample (e.g., those that were working in their normal workplace setting as well as those working at home). Nonetheless, our samples may not be representative of those who were laid off or furloughed during the pandemic. Moreover, it is possible that the observed effects may be influenced by employees' socioeconomic status and/or the industry in which they work. For example, socioeconomic status has been positively related to unethical behavior (Piff et al., 2012), and prosocial messages may be more influential in some industries (e.g., health care) in which employees may have self-selected into jobs that they perceive provide prosocial value by positively impacting others. Future research may benefit from further examining the generalizability of these findings with other samples and contexts.

Given the pandemic and importance of physical distancing, we collected our data online. We followed best practices for online surveys (e.g., using attention checks; Cheung et al., 2017) and for reducing common method bias (Podsakoff et al., 2012). Given that appraisal theories indicate that appraisals temporally precede discrete emotions (i.e., appraisals elicit discrete emotions; Lazarus, 1991), we measured threat appraisals *before* anxiety in both studies to ensure the temporal ordering of our variables. While this strategy aligns with the key tenets of appraisal theories, it is possible that this may have primed anxiety (i.e., increased the tendency for participants to report anxiety). Future research may wish to further explore these relationships.

Given the nature of our research question, we assessed anxiety related to the COVID-19 pandemic because discrete emotions are targeted emotional reactions (vs. generalized affective states, such as mood) and the target of the emotion may have disparate implications for behavioral outcomes (Hillebrandt & Barclay, 2017). We measured rather than manipulated anxiety in Study 2 due to the lack of validated inductions to stimulate anxiety about COVID-19 (i.e., having participants watch a video or experience a stimulus that induces anxiety is not sufficient because the anxiety needs to be targeted at the COVID-19 pandemic to align with our theorizing). Future research may benefit from further exploring the effects of anxiety and whether these effects generalize to other forms of anxiety (e.g., generalized anxiety).

In Study 1, we controlled for baseline workplace cheating behavior in our analyses to ensure that the observed effects went beyond employees' general tendencies to engage in this behavior. We chose to measure T2 workplace cheating behavior 1 week after the initial survey to allow sufficient time for these behavioral reactions to emerge. In Study 2, we used a population inferred cheating task that provides a behavioral measure but does not allow the identification of individual cheaters. While our results replicated across both studies, future research may benefit from studying these relationships with other methodologies (e.g., longitudinal studies), different time separations between the predictor and outcome variables (see George & Jones, 2000), and/or further exploring how these relationships unfold over time.

4.7 | Practical implications

Our research highlights the importance of considering the COVID-19 pandemic for effectively managing behavior in organizations. Importantly, organizational leaders should recognize the detrimental effects that may emanate from employees' appraisals of environmental threats and ensure that organizational responses to potentially threatening environmental factors include effectively managing employees' reactions. For example, organizations may benefit from ensuring that structural mechanisms are in place that can help employees manage their anxiety, such as appropriate safety protocols and/or supportive systems (e.g., employee assistance programs). However, our findings also highlight the importance of recognizing that employees react to *their* environment (i.e., employees' behavior is not just driven by factors within the organization). This suggests that other supportive mechanisms (e.g., open communication channels) are also important so that employees can approach their leaders to receive and/or be directed towards support as they navigate perceived threats, including those that may be more specific to their own environment. These strategies may not only reduce anxiety but may also help guide employees away from unethical behavior and towards behavior that may facilitate the interests of both employees and organizations in a functional manner.

Importantly, when organizations are not able to prevent and/or directly address threats from the environment, our study shows that

focusing employees' attention on the benefits of their work for others can curtail the negative effects of anxiety. That is, providing prosocial messages can provide an evidence-based method for curtailing dysfunctional employee behavior. Moreover, this strategy is simple, easy to implement, and cost effective. Curtailing unethical behavior and its detrimental downstream outcomes is critical since these can have pervasive and damaging implications for the organization and its stakeholders (e.g., Treviño et al., 2006).

5 | CONCLUSION

While the health and economic costs of COVID-19 are clear, our findings highlight that the COVID-19 pandemic may also have insidious effects on unethical behavior in the workplace. More precisely, our studies highlight the importance of recognizing that workplace cheating behavior may be driven by employees' anxiety related to perceiving an environmental factor as a potential threat. These effects are critical to recognize given that unethical behavior can have a wide range of detrimental consequences that can create additional challenges as organizations attempt to recover from the economic toll of the pandemic. However, our findings also suggest that organizations can curtail cheating behavior by focusing employees' attention on the benefits of their work for others. This can mitigate ethical issues related to environmental threats, which is especially important given the detrimental effects of unethical behavior for employees, organizations, and society at large. Thus, we encourage companies to recognize the importance of external environmental threats and employees' anxiety in the workplace.

ACKNOWLEDGMENT

This research was supported by a grant from the Social Sciences and Humanities Research Council of Canada awarded to Laurie J. Barclay (No. 435-2016-1477).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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ENDNOTES

[1] In an exploratory manner, we also examined several demographic covariates: age, work experience, tenure, gender, and manager status. However, including these variables did not substantively affect our results. Given that we did not have a theoretical rationale for including these control variables, we did not include them in our final analyses.

[2] Hayes (2009, p. 14) noted that mediation can occur in the absence of a significant total effect and recommended that "researchers not require a significant total effect before proceeding with tests of indirect effects" (see also MacKinnon et al., 2000; Shrout & Bolger, 2002). Instead, a nonsignificant zero-order correlation between a predictor and outcome variable (e.g., threat appraisal and workplace cheating behavior; see Table 1) highlights the importance of considering potential moderators. In our model, we examine prosocial messages as a moderator.

[3] Results also remained substantively similar when T1 cheating behavior was removed from the analyses.

[4] Self-interest has been conceptualized in different ways in the literature, including as a motive (e.g., De Dreu & Nauta, 2009) or as a state of attention (e.g., Mitchell et al., 2018; Winterich et al., 2014). Consistent with our theorizing, we conceptualize self-interest as a state reflecting one's attentional focus. To align our theorizing with our operationalization, we measure self-interest as a state rather than a more stable trait or motivational orientation.

[5] A key concern in the debate surrounding anxiety and unethical behavior relates to the measurement of anxiety as a state versus a trait. We ensured that our measures of anxiety were *state* for theoretical consistency and to address calls to examine state rather than trait anxiety (see Lu et al., 2020 and Heck et al., 2020). In Study 1, we used a commonly used measure of state anxiety from the psychology literature (two items: anxious, worried) whereas Study 2 uses a commonly used measure of state anxiety from the organizational behavior literature (anxious, worried, nervous, and apprehensive). Supplemental analyses indicated that a two-item measure comprised of anxious and worried yielded substantively similar results to the four-item measure in Study 2. The two and four item measures were also correlated at $r = .95$.

[6] To provide further confidence in our theorizing and the theoretical positioning of our moderator, we also conducted a post hoc analysis that tested the moderating role of prosocial messages for the relationship between self-interest and cheating behavior. The interaction between prosocial messages and self-interest was nonsignificant, $b = -.06$, $SE = .48$, $p = .91$, which provides further empirical support for our theorizing.

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How to cite this article: Hillebrandt, A., & Barclay, L. J. (2022). How COVID-19 can promote workplace cheating behavior via employee anxiety and self-interest – And how prosocial messages may overcome this effect. *Journal of Organizational Behavior*, *43*(5), 858–877. https://doi.org/10.1002/job.2612