You Don't Need to Answer Right Away! Receivers Overestimate How Quickly Senders Expect Responses to Non-Urgent Work Emails

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Abstract

Workplaces increasingly use response speed as a proxy for hard work, signaling to employees that the only way to succeed is to be "always on." Drawing on boundary theory and egocentrism, we examine a problematic bias around expectations of response speed for work emails, namely that receivers *overestimate* senders' response speed expectations to non-urgent emails sent outside normative work hours (e.g., on the weekend). We label this phenomenon *the email urgency bias* and document it across eight pre-registered experimental studies (N = 4,004). This bias led to discrepancies in perceived stress of receiving emails, and was associated with lower subjective well-being via greater experienced stress. A small adjustment on the *sender's* side alleviated the email urgency bias (a brief note senders can add in their emails to clarify their response expectations). This paper demonstrates the importance of perspective differences in email exchanges and the need to explicitly communicate non-urgent expectations.

Keywords: work connectivity; boundary theory; subjective well-being; work-life balance; egocentrism

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The proliferation of communication technologies, such as email and other online messaging tools, has enabled easier and faster information sharing (Higa et al., 2000; Sproull & Kiesler, 1986). At the same time, this increased connectivity coupled with the difficulty of measuring actual performance in today's knowledge economy has led workplaces to use response speed as a proxy for hard work, signaling to employees that the only way to succeed is to be "always on" (Giurge et al., 2020; Major & Germano, 2006; Middleton, 2007). Although prior work has examined the negative well-being and productivity implications of employees' constant connection to work (Fritz & Sonnentag, 2006; Sonnentag, 2018; Steed et al., 2019; West et al., 2020), relatively little research has investigated the drivers of work connectivity or tested solutions to mitigate it.

A particularly pervasive phenomenon related to work connectivity is email communication. Employees have been estimated to spend, on average, more than two hours a day reading and responding to over 100 emails, which is the equivalent of 28% of their workweek (The Radicati Group, 2015). Even more problematic is the number of emails sent outside normative work hours (e.g., on the weekend). Analyzing a representative sample of 1,515 US employees from an archival dataset (*National Study of the Changing Workforce*, 2017), we found that 51.1% of employees sent or responded to emails *outside* normative work hours. Arguably most off-hours emails do not require an immediate response. Yet, according to some estimates (Kelleher, 2013), majority of employees (76%) typically reply within the hour, with 32% indicating that they would reply within 15 minutes. These statistics suggest that email is not only a primary medium of communication (Rosen et al., 2019), but is also a source and symbol

of stress (Barley et al., 2011) that undermines employees' productivity and well-being (Brown et al., 2014; Reinke & Chamorro-Premuzic, 2014). Notably, while email creates additional work for everyone (Barley et al., 2011), it tends to create a greater volume of work for recipients as compared to senders (Bälter, 2000; Dawley & Anthony, 2003).

In this paper, we seek to better understand the differential effects of the role we take in email communication. Integrating insights from boundary theory and the egocentrism literature, we suggest that email senders and receivers have divergent expectations in terms of response speed. That is, receivers assume senders expect a faster response than they actually do. We specifically focus on non-urgent work emails sent outside normative work hours (e.g., during the weekend or in the evening) as these emails are likely to be the most problematic yet avoidable stressors. We label this phenomenon *the email urgency bias*, and we argue that this error is the result of an egocentric bias that leads receivers to *overestimate* senders' response speed expectations. We further examine whether the email urgency bias creates a well-being discrepancy – that is, to the extent that receivers overestimate senders' response speed expectations, they will also perceive emails that show up in their inbox to be more stressful than senders predict them to be. Finally, unlike prior work in the egocentrism literature that focuses on mitigating bias from the bias holders' perspective (i.e., receiver's side), we show that a small adjustment on the sender's side that makes their implicit response speed expectations more explicit helps to mitigate the email urgency bias.

Overall, our research and our introduction of the email urgency bias makes three contributions to the literature. First, we expand prior work on email communication and employee well-being (Barley et al., 2011) by introducing a novel perspective that acknowledges how the role we take in email communication is not created equal when it comes to response

speed expectations, and that these perspective discrepancies have important downstream consequences for employee well-being via stress. Second, we expand the boundary work literature (Kreiner et al., 2009) by showing how others might unintentionally act as boundary violators via non-urgent work communication sent during off-hours. Finally, we expand recent findings in the egocentrism literature (Eyal et al., 2018) by providing evidence that egocentric biases can be mitigated when people more explicitly communicate their implicit expectations.

From a practical perspective, our research can help mitigate the spread of unhealthy work cultures where employees feel pressured to stay connected to their work even when they are not expected to do so. Given that email continues to be one of the primary modes of workplace communication (Rosen et al., 2019) and among the most widespread online activities (Purcell, 2011), our goal for limiting its negative impact should not necessarily be *less* email, but rather *better* email. That is, our paper provides a compelling case for why employees should strive to make their *non-urgent* expectations explicit, just as they regularly do for urgent expectations. Failure to clearly communicate both levels of our expectations might be a key driver of the rise in the "always on" work culture.

The Well-Being Effects of Email

Email communication is one of the most prevalent and preferred forms of communication at work (Rosen et al., 2019). Its popularity is largely attributed to its advantages, such as asynchrony and flexibility that allow for rapid and widespread information sharing (Barley et al., 2011; Byron, 2008). However, these very advantages have transformed email into a unique job demand because it facilitates "anytime" sharing or requesting of input. As a result, email tends to create additional work for everyone, and in particular for recipients who have to monitor, sort, and respond to a diverse set of incoming messages (Bälter, 2000; Dawley & Anthony, 2003).

Prior work has shown that employees feel compelled to read and respond to email in real-time to avoid anxiety about missing important information (Barley et al., 2011; Jerejian et al., 2013; Mazmanian et al., 2013). Likewise, email is associated with expectations of quick responses that intensifies employees' sense of urgency (Barley et al., 2011; Mazmanian et al., 2013; Rosen et al., 2018). Indeed, there is an expectation that every message will be read and responded to as soon as it arrives in one's inbox, and it has been codified into workplace norms about continuous connectivity and instant responsiveness (Brown et al., 2014).

Email communication and its associated norms undermine work quality by fragmenting employees' attention and derailing their progress on core work tasks (Czerwinski et al., 2004; Harris et al., 2015; Russell et al., 2017). For example, Jackson et al. (2003) found that employees required, on average, 64 seconds to resume work after a session of reading and managing new incoming emails. Across a regular eight-hour work day, this would translate to 96 micro-interruptions or the equivalent of an hour and a half of unproductive time. Similarly, in an in-depth qualitative study, Mark et al. (2005) discovered that employees tend to do 2.3 small activities after an interruption like email before resuming work on the same task. One reason email creates additional work is because it is a relatively costless way to make requests. Dabbish et al. (2005) estimated that one third of all messages sent via email involve "request(s) for action." As a result, recipients face a greater volume of work that they might not be able to easily ignore (Bälter, 2000; Dawley & Anthony, 2003).

Even more problematic is that email threatens employees' well-being. Indeed, prior work has shown that email overload is a unique source of stress that explains variance in well-being above and beyond other job demands (Brown et al., 2014; Reinke & Chamorro-Premuzic, 2014). The vast research in the work-home literature has further shown that email impedes employees'

life outside of work, in part because email makes it easier for work to spill over to times and places that are typically reserved for family and personal time (Boswell & Olson-Buchanan, 2007; Duxbury & Smart, 2011; Murray & Rostis, 2007; Towers et al., 2006). For example, Belkin et al. (2016) found that time spent on email after hours interfered with employees' work-life balance via greater work burnout – i.e., the feeling of being overextended and depleted physiologically, emotionally, and mentally (Maslach & Jackson, 1981; Maslach & Leiter, 2008).

On a broader level, email communication has been associated with reduced subjective well-being (Kushlev & Dunn, 2015). Subjective well-being refers to a person's overall evaluation of how satisfied they are with their life and includes a cognitive component (i.e., assessments of one's life quality) and an emotional component (i.e., high positive affect and low negative affect; Diener, 1984). One reason email has a negative effect on employees' subjective well-being is because it leads to greater workload (Barley et al., 2011; Dawley & Anthony, 2003; Veldhoven et al., 2002). Employees coping tactics are often counterproductive: they tend to speed up their work pace, pursue trivial tasks, and engage in multitasking (Leroy, 2009; Sullivan, 2008; Zhu et al., 2018). These strategies, however, often increase employees' stress and reduce their subjective well-being (Giurge et al., 2020; Puranik et al., 2020).

Although the above research alludes to perspective differences in email communication that may prove consequential, it does not explain what precisely *is* different between the perspectives of receiver and sender. We argue that people will have divergent expectations of response speed depending on whether they are receiving or sending an email, and that these discrepancies may lead to differences in subjective well-being via greater stress. To understand this asymmetry and specifically the role of receivers and senders in email communication, we turn to research on boundary theory (Ashforth et al., 2000).

Email is a Two-Way Street: The Role of Boundary Theory

Boundaries are broadly defined as "physical, temporal, emotional, cognitive, and/or relational limits" (Ashforth et al., 2000; p. 474) that help people make sense of the world around them and delineate one entity from another. Given the broad conceptualization of boundaries, boundary theory has been applied across contexts and has helped address how people navigate between roles (Powell & Greenhaus, 2010) or identities (Kreiner, 2006). Researchers have also examined individual differences in boundary settings, showing that there is variation in individuals' preferences for segmentation or integration between entities (Rothbard et al., 2005).

Most central to our paper is the work-nonwork research where boundary theory is used to understand how people create, maintain, and change boundaries between their work and their personal life (Nippert-Eng, 1996). Much of this research has focused on documenting the clash between work and home demands, with "work-family conflict" being a key operationalization of this tension (French et al., 2018; Kreiner et al., 2009). Modern technology has exacerbated this phenomenon such that employees who are constantly available to both work and family through technology tend to experience boundary violations that lead to greater work-life conflict (Boswell & Olson-Buchanan, 2007) and overall lower quality of life (Steed et al., 2019).

A key insight stemming from the work-nonwork research is that others can influence how individuals define and manage boundaries (Clark, 2000; Kreiner et al., 2009). According to Clark (2000), spouses, children, co-workers, and supervisors can act as "border-keepers" helping employees maintain work-life balance. Qualitative research provides support for this claim (Dumas et al., 2013; Dumas & Perry-Smith, 2018; Kreiner et al., 2009; Trefalt, 2013). For example, in their qualitative study on boundary maintenance tactics, Kreiner et al. (2009) discovered that their informants (clerical members) actively used other people, such as their staff

members or their wives, as a "firewall" against potential interruptions that could compromise the work-life boundary. However, the opposite is also true: other people can act as "boundary violators" and hinder employees' attempts to maintain desired boundaries (Perlow, 1998).

This work represents a step forward in considering the social construction of boundaries. We build and expand this research by considering how people might *unintentionally* violate others' boundaries. Specifically, we expect that colleagues might unintentionally hinder one another's attempts at maintaining work-nonwork boundaries by assuming one's expectations and assumptions around response speed go without saying, and thus failing to explicitly communicate when one does not expect an immediate response to a non-urgent work email. Consequently, recipients may mistakenly assume that they should respond right away, leading them to feel compelled to tackle non-urgent work tasks during off-hours.

The Role of Egocentrism in Email Response Speed Expectations

The egocentrism literature helps to explain why our expectations regarding response speed might diverge when we are in the receiver compared to the sender position. A key insight from this literature is that people are anchored on their own perspective in the moment and often fail to appreciate the different ways in which someone else in a different position from us might be interpreting the same situation (Epley et al., 2004; Hart et al., 2020). Importantly, egocentric biases can lead to miscommunication, as we mistakenly assume that others know how *we* feel (Gilovich et al., 1998) and what *our* intentions are (Kruger et al., 2005), while at the same time being overconfident in our own ability to interpret *others'* feelings and intentions.

In the domain of email specifically, Kruger et al. (2005) have shown that email senders assume receivers will be able to read the sarcasm in their written statements, and email receivers similarly assume they have accurately identified the sarcasm in senders' statements. However,

participants in both roles turn out to be overconfident in their assessment of how well they have communicated with one another. Extending this research to the important domain of the "always on" work culture, we argue that a similar communication breakdown regularly occurs in terms of response speed expectations. That is, receivers assume that senders expect a quick response to their emails, even when they are sent during off-hours, and fail to "get" that there is in fact no urgent need to respond, the same way receivers failed to "get" the sarcasm in senders' emails in the studies conducted by Kruger and colleagues.

Notably, all email users are both receivers and senders over a period of time. However, we are specifically interested in exploring the psychological experience of being in the position of "receiver," i.e., the corresponding moment when a person receives an email or hears that "ding" on their phone during off-hours, versus "sender," i.e., the given moment during which a person initiates or decides to get an email off their plate during off-hours. We argue that this exchange impacts us in different ways, depending on whether we take the receiver or the sender perspective. In particular, we argue that when we look at our inbox as a receiver, we become more concerned with others' expectations of response speed and how they might perceive us depending on how soon we get back to them. By contrast, when we look at our inbox as a sender, we are primarily concerned with others' reactions to the content of the email we are about to send rather than others' response speed. (As senders we might even secretly wish others do not get back to us as soon as we hit the send button).

In line with research on the ideal worker norm, we argue that employees are socialized to think of response speed as a way to signal commitment and dedication for their work. Historically, the ideal worker norm refers to the traditional organizational imperative that the best workers are those who place a primacy on work and demonstrate complete commitment to

their work (Kelly et al., 2010; Williams, 2001). In today's digital economy, there is a growing sentiment that the ideal worker can primarily signal their devotion and commitment to their work by responding to requests right away (see Æon et al., 2020; Feldman et al., 2020 for similar theoretical arguments), and irrespective of whether these requests are made via asynchronous communication means such as email. As a result, employees may feel that waiting to respond will be perceived as a shortcoming or a failure to signal that they are an ideal worker, prepared to prioritize work above everything else. Yet, the egocentrism literature suggests that employees' concerns about this supposed failing are likely to be exaggerated. Indeed, research has shown that we tend to believe others will judge us more harshly for our presumed failures than they actually do. For example, Savitsky and colleagues (2001) found that people have overly pessimistic expectations of how negatively others will judge them across a variety of potential shortcomings, including embarrassing social blunders (e.g., failing to bring a gift for a party host) and intellectual failures (e.g., poor performance when solving anagrams).

Applying the above insights to the email context, when we receive a work email, we might perceive the negative consequences of not responding right away as larger than they actually are. As a receiver, we may think we must respond right away or else we will be judged by others as a less-than-ideal worker. However, senders might not hold such high response speed expectations of receivers, especially when it comes to non-urgent emails sent outside normative work hours. Ironically, these response speed discrepancies might be further exacerbated by the asynchronous nature of email communication whereby *sending* an email helps us achieve a sense of closure by addressing a specific request or task, whereas *receiving* an email triggers the need to achieve closure, thereby creating overly high response speed expectations.

Overall, we expect receivers to perceive waiting to respond as a much harsher shortcoming than it actually is, and as a result come to believe that senders expect a faster response than they actually do. Formally, our first hypothesis is:

> *Hypothesis 1 (H1): Receivers and senders have divergent expectations regarding email response speed, with receivers assuming they need to respond more quickly than senders expect—i.e., the email urgency bias.*

Although the email urgency bias may occur both during and outside of normative work hours (e.g., evening, weekends; Young & Melin, 2019), our primary focus is to document this effect outside of normative work hours because that is when it is likely to have the strongest yet *avoidable* negative effects on employees' well-being.

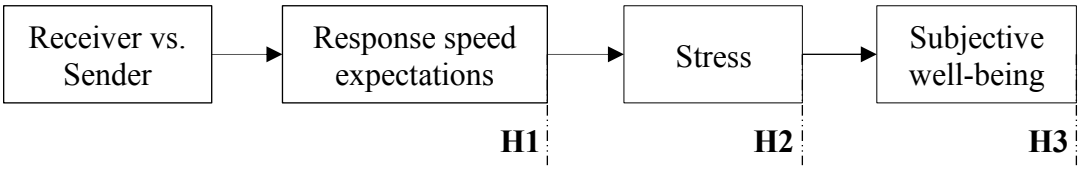
We further hypothesize that there will be a discrepancy between receivers' and senders' judgments of the stress caused by receiving non-urgent work emails, and that response speed expectations will at least partly explain these differences. According to the egocentrism and social prediction literatures (Byron, 2008; Van Boven, Loewenstein & Dunning, 2005), emotional states, such as feelings of sadness, stress, or guilt, are the most difficult to simulate and therefore the most difficult for people to accurately predict. As a result, people are often more attuned to the extrinsic aspects of others' behaviors (e.g., their concern with looking professional) compared to others' emotional states. In line with this evidence, we posit senders will be unlikely to fully appreciate the stress experienced by the recipient of their email at the moment of sending it. At the same time, to the extent that *receivers* overestimate *senders'* email response speed expectations, they will perceive receiving non-urgent off-hours emails to be more stressful than senders predict them to be. Formally, our second hypothesis is:

Hypothesis 2 (H2): The email urgency bias will result in divergent perceptions of how stressful receiving an email is, such that receivers will perceive receiving a non-urgent off-hours email to be more stressful than senders predict it to be.

Finally, we expect the email urgency bias to explain, at least partially, why email undermines subjective well-being via stress (see Figure 1 for our conceptual model). This prediction draws on prior research described above showing that email tends to create more work for receivers, compared to senders (Bälter, 2000; Dawley & Anthony, 2003), and that email communication, especially when off-hours, can lead to increased stress and impaired well-being (Barley et al., 2011; Belkin et al., 2016; Brown et al., 2014; Kushlev & Dunn, 2015; Reinke & Chamorro-Premuzic, 2014; Steed et al., 2019). While it is evident that receiving more emails would result in greater workload, the email urgency bias further suggests that email recipients might not only experience disproportionately *greater* workload (i.e., more work to do), but also disproportionately *urgent* workload (i.e., less perceived time to do the work), creating even more stress and subsequently lower well-being. Our final hypothesis is:

Hypothesis 3 (H3): The email urgency bias will lead to differences in subjective well-being via greater stress.

Figure 1. The Email Urgency Bias Model



Overview of Studies

We test *the email urgency bias* across eight pre-registered experimental studies, two of which are presented in the Online Supplement (N = 4,004). In all studies, the primary comparison is between receivers' and senders' response speed expectations (H1), for which we find a medium to large effect size (Cohen's d = .54).

In Study 1, conducted among public sector employees living in Spain, we tested our primary model by documenting the discrepancy in response speed expectations when employees recalled the experience of either receiving or sending non-urgent emails outside normative work hours (H1) and showing that this discrepancy was associated with lower subjective well-being via greater stress (H3). Supplemental Study 1A replicates and extends these findings for emails sent *within* normative work hours. Having provided evidence for our primary model in a sample of employees working in a public organization, in the remaining studies we focused on the individual components of our model, garnering additional experimental evidence of the email urgency bias (H1), its impact on perceived stress (H2), and exploring possible boundary conditions, as well as a solution to mitigate this bias.

Specifically, in Study 2 we document the email urgency bias for emails sent outside of normative work hours when participants imagined receiving or sending a hypothetical non-urgent email in the evening. Supplemental Study 2A provides additional evidence for H1 and examines the email urgency bias from an observer's perspective.

Although, as noted, our focus is specifically on *non-urgent work emails sent outside normative work hours* as these are unintentional yet avoidable burdens on employees' well-being, we also examined two boundary conditions. In Study 3, we tested whether urgency moderates the asymmetry in response speed expectations when participants imagined receiving

or sending urgent versus non-urgent work emails during the weekend. In Study 4, we tested whether work time moderates the asymmetry in response speed expectations when participants imagined receiving or sending emails either in the evening, after the organization's normative work hours were over, or during the day, within the organization's normative work hours.

In Study 5, we examined whether receivers and senders have divergent perceptions of how stressful receiving a non-urgent email feels and whether discrepancies in response speed expectations partially mediate these divergent stress perceptions. Finally, in Study 6, we examined whether a simple adjustment on the sender's end helps align receivers' response speed expectations with those of the senders.

For each study, we disclose all manipulations and measures, and report how we determined the sample size. Across all studies, except Study 1, participants answered an initial attention check; those who failed it were automatically excluded and their data was not recorded. In Studies 4-6, we included an additional attention check question at the end of the study; those who failed it were excluded from our data analyses. We report sample characteristics (Table S1), email habits, additional analyses, manipulation checks (for Studies 3-6), and the two supplemental studies in the Online Supplement. Table 1 provides a summary of all our studies and their primary findings. We posted all study materials, data, code, and preregistrations at an online repository: https://osf.io/adfre/.

Table 1. Summary of All Studies

Study	Sample	Manipulations	Measures	Hypotheses tested	Additional findings
1	Employees	Receiver vs. Sender (outside normative work hours)	1. Response speed expectations 2. Experienced stress 3. Well-being	H1 (supported) H3 (supported)	--
1A	*Prolific workers*	*Receiver vs. Sender (within normative work hours)*	*1. Response speed expectations* *2. Experienced stress* *3. Well-being*	*H1 (supported)* *H3 (supported)*	--
2	Prolific workers	Receiver vs. Sender (outside normative work hours)	1. Response speed expectations	H1 (supported)	--
2A	*Prolific workers*	*Receiver vs. Sender vs. Observer (outside normative work hours)*	*1. Response speed expectations*	*H1 (supported)*	*Observers' response speed expectations fall in between those of the receivers and senders.*
3	Prolific workers	Receiver vs. Sender x High vs. Low urgency (outside normative work hours)	1. Response speed expectations	H1 (supported)	Email urgency did not moderate the email urgency bias.
4	Prolific workers	Receiver vs. Sender x Outside vs. Within normative work hours	1. Response speed expectations	H1 (supported)	Work time did not moderate the email urgency bias.
5	Prolific workers	Receiver vs. Sender x Outside vs. Within normative work hours	1. Response speed expectations 2. Perceived stress	H1 (supported) H2 (supported)	Work time moderated the email urgency bias. Work time also moderated the indirect effect of perspective on perceived stress.
6	Prolific workers	Receiver vs. Sender x Outside vs. Within work hours x Adjustment vs. Control	1. Response speed expectations 2. Perceived stress	H1 (supported) H2 (supported)	Work time moderated the email urgency bias. Work time also moderated the indirect effect of perspective on perceived stress. Making senders' implicit response speed expectations explicit alleviated receivers' response speed expectations for non-urgent emails sent outside normative work hours.

Note. Study 1A and 2A are presented in the Online Supplement as additional evidence in support of our hypotheses. For the studies conducted on Prolific, we recruited people living in the United States and for Studies 3-6, we specifically recruited only full-time employees.

Study 1: The Well-Being Consequences of the Email Urgency Bias in an Employee Sample

In Study 1 we tested our primary model (H1 and H3) among employees working in a public organization. Specifically, we examined the email urgency bias when employees recalled the experience of receiving or sending non-urgent emails outside normative work hours (e.g., evenings, weekends). We further examined whether employees who are prone to the email urgency bias experience greater stress and, as a result, lower subjective well-being.

Method

Participants. We collected the data between the 9th and 23rd of December 2020 from 739[1] working adults living in Spain as part of a larger survey examining work experiences and well-being. Given the organizational setting of this survey, we did not include attention check or manipulation check questions. We analyzed the data following a preregistered analytic plan (aspredicted.org/blind.php?x=kc975p).

Procedure. All materials were translated and back-translated into Catalan. In line with prior research (Giurge et al., 2021; Whillans et al., 2017), we captured the cognitive aspect of *subjective well-being* with one item that asked participants to indicate their overall life satisfaction: "Taking all things together, how happy would you say you are?" on a scale from 0 (*not at all*) to 10 (*extremely*). Next, we also measured the affective component of subjective well-being by asking participants to rate their positive and negative affect over the past four weeks using the Schedule for Positive and Negative Affect scale (Diener et al., 2010; positive affect, $\alpha = .88$; negative affect, $\alpha = .82$). Following our preregistered analytic plan, we standardized and combined these measures to create a subjective well-being composite.

[1] Our preregistration indicates a smaller sample size that corresponds to how many participants provided full answers to our critical measure of response speed expectations.

We included two additional proxies for well-being that are relevant for employees. First, we measured *work burnout* with three items adapted from Maslach and Jackson (1981; e.g. item: "How often have you felt burned out from your work?"; α = .86; from 1 = *very rarely/never* to 5 = *very often/always*). Second, we measured *work-life balance* with five items adapted from Netemeyer et al. (1996; e.g., item: "I am satisfied with the balance I achieved between my work and non-work activities"; α = .96; from 1 = *disagree strongly* to 7 = *agree strongly*).

As a proxy for *stress*, we adapted a 5-item measure of workload from Veldhoven et al. (1994; e.g. item: "How often have you felt that you have too much work to do?"; α = .83; from 1 = *very rarely/never* to 5 = *very often/always*). Work burnout, work-life balance, and stress were introduced with the following stem: "*Thinking about the past four weeks*."

We then randomly assigned participants to condition (perspective: receiver vs. sender of non-urgent work emails) in a between-subjects design. In the *receiver* condition (coded as 0), participants read: "Please take a moment to think about a couple of non-urgent emails you received from colleagues outside regular work hours (e.g., weekends, evenings) over the past few days while you have been working remotely." In the *sender* condition (coded as 1), participants read: "Please take a moment to think about a couple of non-urgent emails you have sent your colleagues outside regular work hours (e.g., weekends, evenings) over the past few days while you have been working remotely."[2] In both conditions, participants used a text-entry box to write about what they have been thinking or feeling when receiving/sending such emails. We use a similar text-entry prompt across all our studies.

After participants wrote about their experience of either receiving or sending emails outside normative work hours, we measured *response speed expectations* with three statements

[2] All employees were working remotely in light of government regulations in Spain at the time. Our prompts were therefore tailored to this context.

(α = .87) worded based on the *receiver* (sender) condition: "To what extent do you *think your colleague expects a response from you* (expect a response from your colleague) right away?", "To what extent do you *think your colleague wants* (want) to receive a response from *you* (your colleague) right away?", and "How important is it for *your colleague* (you) to receive a response from *you* (your colleague) right away?" (1 = *not at all*; 7 = *very much*).

Note that in this study, we used an experimental design whereby we measured our dependent variable (subjective well-being) and one of the mediator variables (experienced stress) prior to our manipulations. We did this because we wanted to capture employees' subjective well-being and experienced stress independent of the response speed expectations measure (this procedure is in line with prior field survey research where subjective well-being is measured first so that it is context neutral and not influenced by respondents' answers on other scales; see Giurge et al., 2021). This design provides a direct test of H1 (response speed expectations was measured *after* the recall manipulation), but a more indirect test of H3 such that we could examine, within the sender and the receiver condition, whether employees who experience greater response speed expectations would also report experiencing greater stress and as a result lower subjective well-being. All other studies use the more traditional experimental design of measuring all the dependent variables *after* the manipulations, allowing for a more conservative test of the causal effects of being a receiver (vs. sender) on well-being.

Results

We hypothesized that receivers and senders would have divergent expectations regarding response speed, with receivers assuming they needed to respond more quickly to emails than senders expected—i.e., *the email urgency bias* (H1). Providing initial support for our first hypothesis, we found that participants in the receiver condition thought senders expected a

response more quickly ($M = 3.64$, $SD = 1.75$), compared to what participants in the sender condition said they expected ($M = 2.63$, $SD = 1.54$), $t(711) = 8.17$, $p < .001$, $d = .61$.

Next, we tested our pre-registered serial mediation model of the perspective condition on subjective well-being, with response speed expectations as the first mediator, and stress as the second mediator using the PROCESS macro Model 6 (Hayes, 2008; see Hideg et al., 2018 for a similar procedure). For these analyses, we re-coded the perspective condition such that *receiver* = 1 and *sender* = 0 to ease the interpretation of our results. Consistent with H3, there was a significant indirect effect of perspective on subjective well-being through response speed expectations and stress, operating sequentially, $B_{indirect} = -.01$, 95%CI = [-.0123; -.0029]. To the extent that participants in the receiver condition reported greater response speed expectations, they also reported experiencing greater stress, which led to lower subjective well-being (see Table S3a in the Online Supplement for detailed results).

We further found a significant serial indirect effect for work burnout ($B_{indirect} = .09$, 95%CI = [.0504; .1296]) and, respectively for work-life balance ($B_{indirect} = -.11$, 95%CI = [-.1611; -.0623]). In other words, to the extent that participants in the receiver condition reported greater response speed expectations, they also reported experiencing greater stress, which then led to greater work burnout. Similarly, to the extent that participants in the receiver condition reported greater response speed expectations, they also reported experiencing greater stress, which then led to lower work-life balance. See Tables S3b and S3c in the Online Supplement for detailed results, as well as significant serial indirect effects for other pre-registered exploratory work outcomes (i.e., job satisfaction, self-reported task performance, and turnover intentions).

Discussion

Study 1 provides initial support for the email urgency bias, namely that there is a

divergence between receivers' and senders' expectations of response speed expectations (H1). This study also provides indirect evidence for H3: employees who were more prone to the email urgency bias experienced greater stress, and as a result lower subjective well-being.

We find similar effects for non-urgent work emails sent *within* normative work hours, suggesting that the email urgency bias might exist both within and outside normative work hours (see Supplemental Study 1A in the Online Supplement; notably in Study 1A we followed the more traditional experimental design of measuring all dependent and mediator variables *after* our recall manipulation, thus providing more direct and causal evidence for H3).

In the next studies, we focus on gathering additional evidence for the email urgency bias (H1) as well as the causal impact of being a receiver (vs. sender) on differential perceived stress of receiving a non-urgent email via response speed expectations (H2). We also explore possible boundary conditions (email urgency and work time) and test a solution to mitigate this bias.

Study 2: The Email Urgency Bias

Study 2 attempts to replicate the email urgency bias using hypothetical scenarios to manipulate the roles of "receiver" and "sender" – a well-known procedure used in previous research on role differences in the related domain of social influence (Bohns & Flynn, 2010; Flynn & Lake, 2008). We focused on non-urgent emails sent in the evening, which is a typical outside normative work hours context (Fritz & Sonnentag, 2006).

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=xb582f) and recruited 251 participants from Prolific Academic on a Tuesday evening. Prolific Academic is an online participant panel similar to Amazon Mechanism Turk but whose participants tend to be more diverse and less familiar with research studies (Peer et al., 2017).

Procedure. We randomly assigned participants to condition (perspective: receiver vs. sender) in a between-subjects design. Participants in the *receiver* condition read: "Imagine it's the end of the work day and you've just arrived home. You check your email and there is a message from a colleague with a non-urgent work question." Participants in the *sender* condition read: "Imagine it's the end of the work day and you have a non-urgent work question to ask a colleague. You know this colleague has already gone home for the day, so you send off an email." Next, we measured response speed expectations with the 3-item scale used in Study 1 but replaced "right away" with "tonight" (e.g., item: "To what extent do *you think your colleague expects* [you expect] a response from *you* [your colleague] tonight?"; $\alpha = .89$).

Results

Following our preregistration plan, we conducted a t-test analysis to examine the effect of the perspective condition (coded as 0 = *receiver*; 1 = *sender*) on response speed expectations. Consistent with H1, we found that participants in the receiver condition thought they needed to respond more quickly ($M = 4.01$, $SD = 1.59$), compared to the expectations expressed by participants in the sender condition ($M = 3.19$, $SD = 1.77$), $t(249) = 3.87$, $p < .001$, $d = .49$.

Discussion

Study 2 provides additional evidence for the email urgency bias—i.e., that receivers and senders have divergent expectations regarding response speed, with receivers assuming they need to respond more quickly than senders expect. We replicate the email urgency bias in Supplemental Study 2A, where we include an additional neutral observer condition[3] (see Online

[3] We find that *both* receivers and senders may err when it comes to response speed expectations. However, this error is larger on the receivers' side, indicating that receivers' exaggerated expectations of needing to respond right away are substantially driving this discrepancy.

Supplement). In Study 3 we provide additional evidence for the email urgency bias and examine a boundary condition of this bias: email urgency.

Study 3: Moderation by Email Urgency

Arguably, divergent expectations for *non-urgent* work emails sent outside normative work hours are more problematic than urgent work emails. This is because while urgent emails, by definition, do in fact often require an urgent response, non-urgent emails do not. Indeed, the sending of non-urgent emails outside normative work hours might be an unintentional yet avoidable stressor. That said, it is worth testing whether this same asymmetry would also extend to urgent emails and whether the email urgency bias might be stronger or weaker for urgent, compared to non-urgent, work emails; we examine this question in Study 3.

To further increase the generalizability of our effect, we tested the email urgency bias in a different non-normative work time context: during the weekend. Weekends are one of the most taken-for-granted examples of collective time-off that has been shown to have benefits for well-being (West et al., 2020; Young & Melin, 2019) and work outcomes (Fritz & Sonnentag, 2006).

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=vv3gx9) and recruited 603[4] participants from Prolific Academic on a Saturday. We relied on Prolific's predefined filters and made our study available only to full-time employees, living in the United States (U.S.), and who did not participate in our previous studies.

Procedure. We randomly assigned participants to condition in a 2 (perspective: receiver vs. sender) by 2 (urgency: low vs. high) between-subjects design. Participants in the *urgent* (non-urgent) receiver condition read: "Imagine it's the weekend, you check your email and there is a

[4] Our sample is slightly different from our pre-registered sample because of how Prolific counts survey completion.

message from a colleague with *an urgent* (a non-urgent) work question." Participants in the *urgent* (non-urgent) sender condition read: "Imagine it's the weekend and you have *an urgent* (a non-urgent) work question to ask a colleague, so you send off an email."

Next, we measured response speed expectations with the 3-item scale from Study 1 (α = .86). At the end of the study, we included two manipulation check questions[5] that confirmed our manipulations were successful (see Online Supplement for detailed results).

Results

Following our preregistration plan, we conducted two separate t-test analyses to examine the effect of the perspective (coded as 1 = *receiver*; -1 = *sender*), and, respectively the urgency condition (coded as 1 = *urgent*; -1 = *non-urgent*) on response speed expectations. In line with H1 and replicating our findings from Studies 1-2, we found that participants in the receiver condition thought senders expected a response more quickly (M = 4.87, SD = 1.63), compared to what participants in the sender condition said they expected (M = 4.27, SD = 1.82), $t(601) = 4.25$, $p < .001$, d = .35.

Participants in the low urgency condition reported lower response speed expectations (M = 3.72, SD = 1.79), compared to participants in the high urgency condition (M = 5.45, SD = 1.18), $t(601) = -13.97$, $p < .001$, d = -1.14. Surprisingly, we found no significant interaction between the perspective and the urgency condition, $F(1,603) = 1.18$ $p = .279$, $\eta^2 = .00$.

Discussion

The results from this study replicate the email urgency bias found in Studies 1-2. We also find that urgency has a main effect on response speed expectations such that an urgent (vs. non-

[5] We preregistered that we would exclude participants who failed our manipulation checks (n = 154). However, in line with comments that arose in the review process, in the main text we present results based on the full sample. We find similar results on the restricted sample (see the Online Supplement for these results).

urgent) email increases the felt urgency of having to respond right away; yet, surprisingly, urgency did not moderate the asymmetry in response speed expectations between receivers and senders. These results suggest that receivers think they need to respond more quickly to an email than senders expect them to, both when the email is urgent and non-urgent – the latter being especially noteworthy. By definition, non-urgent emails, especially those sent outside normative work hours such as in the evening or during the weekend, should *not* require an immediate response. Yet, in line with our theory, this study provides additional support for our first hypothesis that people feel compelled to respond to our non-urgent work emails more quickly than we realize, which can have consequences for well-being (as shown in Study 1 and 1A).

Overall, Studies 1-3 provide evidence for the theorized divergence in response speed expectations between receivers and senders, such that receivers assumed they needed to respond more quickly than senders expected them to within the context of non-urgent emails sent outside normative work hours—either in the evening or during the weekend (H1); our findings from Study 3 further suggest that the urgency of an email does not moderate the email urgency bias. Notably, however, while receivers' beliefs that they should respond immediately to urgent emails may not be an issue, and may even be advantageous, the fact that receivers also mistakenly believe they must respond immediately to *non*-urgent emails is more problematic.

Study 4: Moderation by Work Time

Thus far we have provided evidence for the email urgency bias outside normative work hours (weekend, evenings), and, in one study, during normative work hours (Supplemental Study 1A). In Study 4, we directly compared these two contexts to one another by examining whether the theorized divergence in response speed expectations between receivers and senders was stronger when participants imagined receiving (sending) non-urgent emails outside normative

work hours, as compared to within normative work hours. Arguably, divergent expectations for non-urgent emails sent *outside* normative work hours are the most problematic because aside from being an avoidable stressor, such emails risk exacerbating an "always on" work mentality where employees feel they should be online even though they might not be expected to.

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=mm6kv2) and recruited 411 participants[6] from Prolific Academic on a Saturday. All participants passed our attention check (see below). Using Prolific's predefined filters, we made our study available only to full-time employees, living in the U.S., and who did not participate in our previous studies.

Procedure. We randomly assigned participants to condition in a 2 (perspective: receiver vs. sender) by 2 (work time: outside vs. within normative work hours) between-subjects design. Participants in the *outside* (within) normative work hours receiver condition read: "Imagine it's *in the evening, after your organization's normative work hours are over* (during the day, in the middle of your organization's normative work hours), you check your email and there is a message from a colleague with a non-urgent work question."

Participants in the *outside* (within) normative work hours sender condition read: "Imagine it's *in the evening, after your organization's normative work hours are over* (during the day, in the middle of your organization's normative work hours), and you have a non-urgent work question to ask a colleague, so you send off an email."

Next, we measured response speed expectations with the 3-item scale ($\alpha = .86$) from our prior studies. Then, participants answered an attention check question (i.e., asking them to select

[6] We opened slots for 450 participants in line with our pre-registration. However, several participants returned the survey due to an error that prevented them from inputting their Prolific ID.

something soft from a list of 10 items), followed by two manipulation check questions that confirmed the success of our manipulations (see Online Supplement for detailed results).

Results

As per our preregistration plan, we conducted an ANOVA of perspective (coded as 1 = *receiver*; -1 = *sender*) X work time (coded as 1 = *within normative work hours*; -1 = *outside normative work hours*) on response speed expectations. Surprisingly, we found no significant interaction between the two conditions, $F(1411) = 1.94$ $p = .164$, $\eta^2 = .01$. However, in line with H1 and replicating our findings from Studies 1-3, we found a main effect of perspective on response speed expectations such that participants in the receiver condition thought they needed to respond more quickly ($M = 3.73$, $SD = 1.44$), compared to the expectations expressed by participants in the sender condition ($M = 3.22$, $SD = 1.57$), $F(1,407) = 11.67$ $p = .001$, $\eta^2 = .03$.

We also found a main effect of work time, such that outside normative work hours emails have lower response speed expectations ($M = 2.88$, $SD = 1.48$), compared to within normative work hours emails ($M = 4.03$, $SD = 1.36$), $F(1,407) = 67.24$, $p < .001$, $\eta^2 = .14$.

Discussion

We once again found support for our main hypothesis (H1) that email receivers and senders would diverge in their response speed expectations. Further, this discrepancy was not moderated by work time: it persisted for both non-work and work hours. Notably, while receivers' beliefs that they should respond immediately to non-urgent emails sent *during* work hours can be problematic for work productivity in particular (Puranik et al., 2020; Rosen et al., 2019), the fact that this mistaken belief extends to non-work hours may be more problematic by perpetuating an "always on" work mentality that can undermine both work productivity and well-being (as shown in Study 1 and 1A) but that could arguably be avoided.

Study 5: Discrepancy in Perceived Stress

Thus far we have found robust support for the predicted divergence in response speed expectations between email receivers and senders – i.e., the email urgency bias (H1). While we found no support for the moderating role of either email urgency or work time, our theory suggests that the more problematic instances of this bias are the mistaken perceptions receivers hold that they must respond immediately to non-urgent emails sent during off-hours.

In Study 5, we expand these findings by examining whether receivers and senders have divergent perceptions of the well-being implications (i.e., perceived stress) of receiving non-urgent work emails, and whether response speed expectations partially mediate this discrepancy (H2). Since it is possible that work time does not moderate the email urgency bias but does moderate its impact on perceived stress, we further examine work time as a moderator.

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=pu9mi2) and recruited 450 participants from Prolific Academic on a Saturday. We again relied on Prolific's predefined filters and made our study available only to full-time employees, living in the U.S., and who did not participate in our previous studies. One participant failed the attention check (described below), leaving a sample of 449 for analyses.

Procedure. We randomly assigned participants to condition in a 2 (perspective: receiver vs. sender) by 2 (work time: outside vs. within normative work hours) between-subjects design. We used the same instructions as in Study 4, and the same 3-item measure of response speed expectations ($\alpha = .85$) as in our prior studies. We measured perceived stress ($\alpha = .96$) with seven items capturing predicted (expected) impact of receiving a non-urgent email in terms of feeling: tense, stressed, on edge, wound up, busy, anxious, and uneasy (1 = *not at* all; 7 = *very much*).

Then, participants answered the attention and manipulation check questions from Study 4; once again our manipulations were successful (see Online Supplement for detailed results).

Results

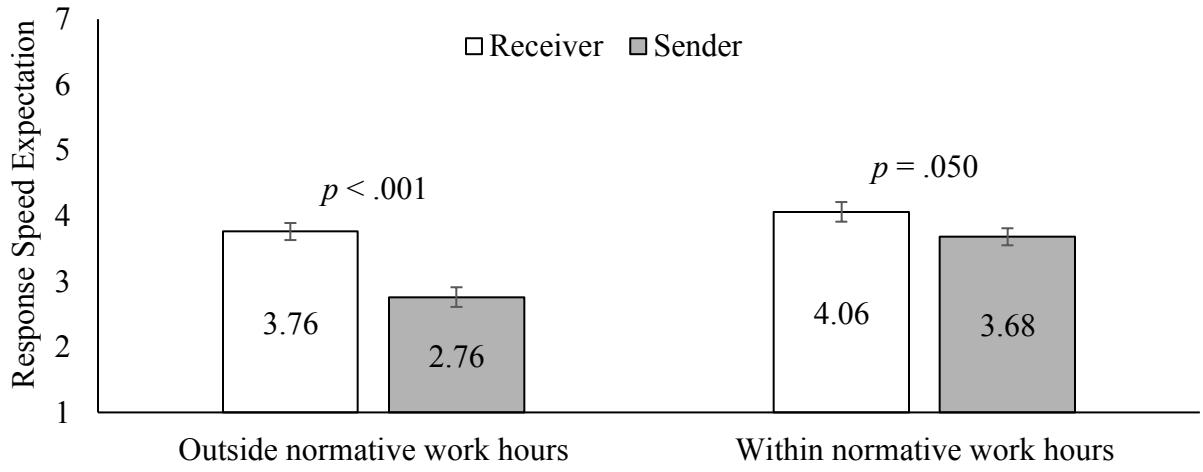
Perspective x Work Time

As per our preregistration plan, we conducted an ANOVA of perspective (coded as 1 = *receiver*; -1 = *sender*) X work time (coded as -1 = *outside normative work hours*; 1 = *within normative work hours*) on response speed expectations. Unlike Study 4, we found a significant interaction, $F(1,449) = 5.11$, $p = .024$, $\eta^2 = .011$ (see Figure 2). Deconstructing this interaction, the discrepancy between receivers' and senders' response speed expectations was significant among participants in the outside normative work hours condition ($M_{\text{Receiver}} = 3.76$, $SD = 1.59$ vs. $M_{\text{Sender}} = 2.76$, $SD = 1.51$), $F(1,445) = 27.20$ $p < .001$, $\eta^2 = .06$, and marginally significant among participants in the within normative work hours condition ($M_{\text{Receiver}} = 4.06$, $SD = 1.25$ vs. $M_{\text{Sender}} = 3.68$, $SD = 1.37$), $F(1,445) = 3.87$, $p = .050$, $\eta^2 = .01$.

These results provide the first evidence we have seen suggesting that the email urgency bias might be stronger outside, compared to within, normative work hours.

Consistent with our preregistration, we also conducted an ANOVA of perspective X work time on perceived stress. We found no significant interaction $F(1,449) = .06$, $p = .815$, $\eta^2 = .00$. However, we did find a main effect of perspective on perceived stress, such that participants in the receiver condition found receiving the non-urgent email to be more stressful ($M = 2.71$, $SD = 1.53$), compared to what participants in the sender condition predicted ($M = 2.35$, $SD = 1.20$), $F(1,449) = 5.96$, $p = .015$, $\eta^2 = .01$. We also found a main effect of work time: outside normative work hours emails were perceived as creating more stress ($M = 2.73$, $SD = 1.46$), compared to within normative work hours emails ($M = 2.32$, $SD = 1.28$), $F(1,449) = 8.25$, $p = .004$, $\eta^2 = .02$.

Figure 2. Perspective x Work Time on Response Speed Expectations (Study 5)



Note. Error bars represent standard errors.

Mediation and Moderated-Mediation Analyses

Following our preregistration plan, we examined whether response speed expectations would explain the effect of the perspective condition on perceived stress using the PROCESS macro Model 4 (Hayes, 2008). Supporting H2, these analyses showed that there was an indirect effect of perspective on perceived stress through response speed expectations ($B_{\text{indirect effect}} = .08$, 95%CI = [.0367, .1226]). To the extent that participants in the receiver (vs. sender) condition reported greater response speed expectations, they also reported that receiving a non-urgent email felt more stressful. See Figure S6a in the Online Supplement for detailed results.

Next, we examined *where* work time might moderate this indirect effect. Specifically, we first examined whether this indirect effect is moderated by work time on the path between perspective and response speed expectations using the PROCESS macro Model 7 (Hayes, 2008). Results indicated that the indirect effect of perspective on perceived stress through response speed expectations was significant both outside normative work hours ($B_{\text{indirect effect}} = .12$, 95%CI = [.0619, .1920]) and within normative work hours ($B_{\text{indirect effect}} = .05$, 95%CI = [.0052, .0994]);

note that in this case work time interacted with perspective to predict response speed expectations (B = -.15, 95%CI = [-.2822, -.0117]). The difference between the two indirect effects was significant ($B_{index\ of\ moderation}$ = -.07, 95%CI = [-.1467, -.0064]), suggesting that the negative consequences of response speed expectations on receivers in terms of perceived stress were stronger outside, compared to, within normative work hours. See Figure S6b in the Online Supplement for the full model results.

Second, we examined whether this indirect effect is moderated by work time on the path between response speed expectations and perceived stress using the PROCESS macro Model 14 (Hayes, 2008). Results indicated that the indirect effect of perspective on perceived stress through response speed expectations was significant both outside normative work hours ($B_{indirect\ effect}$ = .09, 95%CI = [.0426, .1527]) and within normative work hours ($B_{indirect\ effect}$ = .08, 95%CI = [.0326, .1455]); note that in this case work time did not interact with response speed expectations to predict perceived stress (B = -.02, 95%CI = [-.1014, .0660]). The difference between the two indirect effects was also not significant ($B_{index\ of\ moderation}$ = -.01, 95%CI = [-.0684, .0452]), suggesting that response speed expectations is perceived to be stressful irrespective of work time. See Figure S6c in the Online Supplement for detailed results.

Discussion

Study 5 provided additional evidence that receivers overestimate senders' response speed expectations for non-urgent emails sent outside normative work hours (H1). We further found that the discrepancy in response speed expectations between receivers and senders was stronger outside, compared to within, normative work hours. Similar to our findings from Study 4, there was an indirect effect of perspective on perceived stress of receiving non-urgent emails via response speed expectations (H2). Work time moderated this indirect effect such that the email

urgency bias explained why receivers perceived receiving non-urgent emails sent outside (vs. within) normative work hours to be more stressful, as compared to senders' predictions.

Study 6: Small Adjustment on the Sender's Side

In our final study we sought to replicate these effects and further examine the effectiveness of a small adjustment on the sender's side (making their implicit response speed expectations more explicit) in alleviating the email urgency bias. Our key proposition is that email senders may unintentionally violate receivers' work-nonwork boundaries by failing to clearly convey what they expect of receivers, which makes receivers unsure of senders' response speed expectations. We thus expect an adjustment on the sender's side (as opposed to the receiver's side) to be particularly effective for alleviating receivers' misguided expectations of response speed. This adjustment builds on research in behavioral science that has shown how low-cost, small nudges can have a significant impact on people's perceptions and behaviors (Rogers et al., 2015; Thaler & Sunstein, 2009), and on research showing that more direct communication can alleviate egocentric biases (Eyal et al., 2018).

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=gr7sh6) and recruited 854 participants from Prolific Academic on a Saturday. As in prior studies, we relied on Prolific's predefined filters and made our study available only to full-time employees, living in the U.S., and who did not participate in our previous studies. Two participants failed the attention check (described below), leaving a sample of 852 for analyses.

Procedure. We randomly assigned participants to condition in a 2 (perspective: receiver vs. sender) by 2 (work time: outside vs. within normative work hours) by 2 (adjustment: email

note vs. control) between-subjects design. We used the same instructions as in Studies 4-5 for participants in the *control* condition.

Participants in the *email note* receiver *(*outside*/within normative time)* condition read: "Imagine it's (in the evening, after your organization's normative work hours are over/*during the day, in the middle of your organization's normative work hours*), you check your email and there is a message from a colleague with a non-urgent work question. At the end of the email, your colleague added: "This is not an urgent matter so you can get to it whenever you can.""

Participants in the *email note* sender *(*outside*/within normative time)* condition read: "Imagine it's (in the evening, after your organization's normative work hours are over/ *it's during the day, in the middle of your organization's normative work hours*) and you have a non-urgent work question to ask a colleague, so you send off an email. At the end of the email, you also add: "This is not an urgent matter so you can get to it whenever you can.""

Importantly, the additional information conveyed in the email note was not new information—in all conditions participants read in the study materials that the emails were non-urgent. However, we theorized that this information, while redundant with what participants already knew, would be more effective if it was specifically conveyed by the sender, since it would make senders' ambiguous expectations explicit.

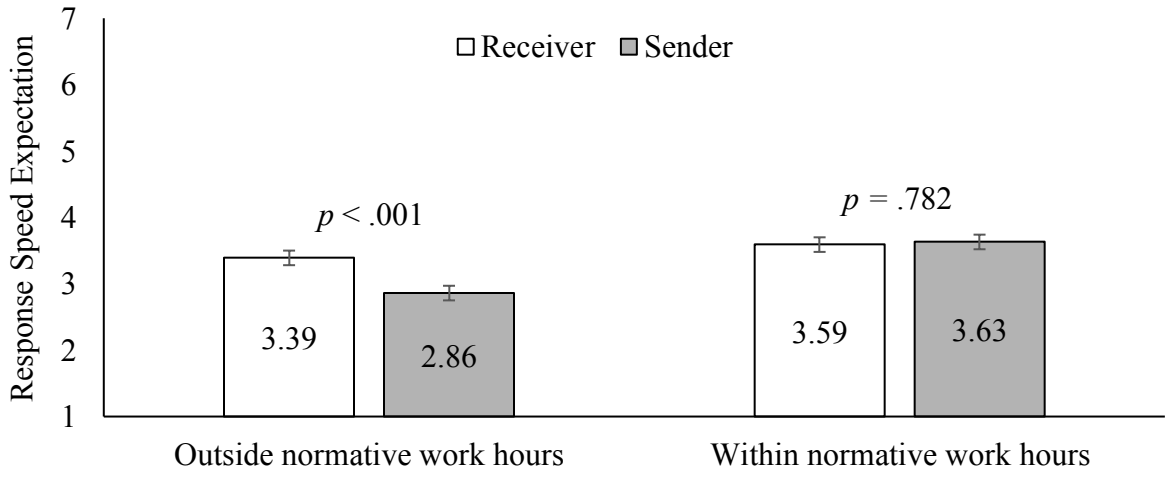
We used the same 3-item measure of response speed expectations ($\alpha = .88$) as in our earlier studies, and the same 7-item measure of perceived stress of receiving non-urgent emails ($\alpha = .97$) as in Study 5. Thereafter, we asked participants the same attention check question as in Studies 4-5 and three manipulation check questions that confirmed our manipulations were successful (see Online Supplement for detailed results).

Results

Perspective X Work Time[7]

In line with our results from Study 5, we found a significant interaction between perspective (coded as 1 = *receiver*; -1 = *sender*) and work time (coded as 1 = *within normative work hours*; -1 = *outside normative work hours*) on response speed expectations, $F(1,852) = 7.03$, $p = .008$, $\eta^2 = .01$ (see Figure 3). Deconstructing this interaction, the discrepancy between receivers' and senders' response speed expectations was significant for participants in the outside normative work hours condition ($M_{Receiver} = 3.39$, $SD = 1.62$ vs. $M_{Sender} = 2.86$, $SD = 1.70$), $F(1,848) = 12.08$ $p = .001$, $\eta^2 = .01$, but non-significant for participants in the within normative work hours condition ($M_{Receiver} = 3.59$, $SD = 1.53$ vs. $M_{Sender} = 3.63$, $SD = 1.47$), $F(1,848) = .08$, $p = .782$, $\eta^2 = .00$.

Figure 3. Perspective x Work Time on Response Speed Expectations (Study 6)



Note. Error bars represent standard errors.

[7] In line with our preregistered analytic plan, we conducted two separate ANOVAs of perspective X adjustment on response speed expectations and perceived stress. For brevity and because these interactions are not central to our theory, we present these results in the Online Supplement.

Similar to Study 5, we found no significant interaction on perceived stress, $F(1,852) = .22$, $p = .638$, $\eta^2 = .00$. In this study we further found no significant main effects of perspective, $F(1,852) = 1.21$, $p = .272$, $\eta^2 = .00$, or work time, $F(1,852) = 2.31$, $p = .129$, $\eta^2 = .00$, on perceived stress of receiving the email.

Replicating Study 5 results and providing additional support for H2, we did, however, find a significant indirect effect of perspective on perceived stress through response speed expectations ($B_{indirect} = .04$, 95%CI = [.0053, .0861]). This indirect effect was significant outside normative work hours ($B_{indirect} = .10$, 95%CI = [.0399, .1608]) but *not* within normative work hours ($B_{indirect} = -.01$, 95%CI = [-.0614, .0442]); note that in these analyses work time was entered as a moderator on the path between perspective and response speed expectations and, similar to Study 5, this interaction was significant, B = -.14, 95%CI = [-.2503, -.0374]. The difference between the two conditional indirect effects was also significant ($B_{index\ of\ moderation} = -.11$, 95%CI = [-.1902, -.0272]. Work time further moderated the link between response speed expectations and perceived stress (B = .10, 95%CI = [.0449, .1591]), such that the indirect effect of perspective on perceived stress through response speed expectations was significant both outside normative work hours ($B_{indirect} = .04$, 95%CI = [.0038, .0718]) and within normative work hours ($B_{indirect} = .06$, 95%CI = [.0065, .1157]); unlike Study 5, the difference between the two conditional indirect effects was significant ($B_{index\ of\ moderation} = .02$, 95%CI = [.0014, .0573][8]. Interestingly, this indirect effect appears to be larger within than outside normative work hours. However, given that we did not find this same pattern in Study 5, this finding should be interpreted with caution. See Figures S7a-c in the Online Supplement for detailed results.

[8] We find similar results when we restrict our sample to participants who were assigned to the control condition, thus mimicking the same conditions from Study 5. We present these results in the Online Supplement.

Overall, these results provide additional support for H2 and suggest the email urgency bias, and the resulting differences in perceived stress of receiving non-urgent emails, might be especially strong for non-urgent emails exchanged outside (vs. within) normative work hours.

Perspective x Work Time x Adjustment

We found a marginally significant 3-way interaction on response speed expectations, $F(1,852) = 3.22$, $p = .073$, $\eta^2 = .00$, and a non-significant 3-way interaction on perceived stress $F(1,852) = .82$, $p = .366$, $\eta^2 = .00$. Thus, in line with our preregistered analytic plan, we conducted our primary ANOVAs of perspective X adjustment conditions on response speed expectations and perceived stress by splitting the sample by work time condition. There were no significant interactions among participants in the within normative work hours condition[9]. Hereafter we therefore focus on participants in the *outside* normative work hours condition.

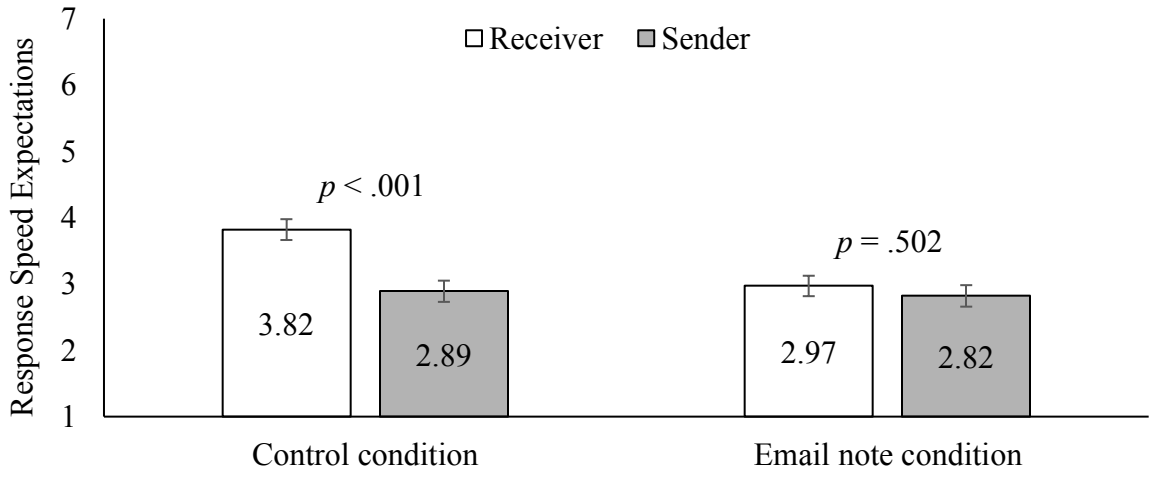
Perspective x Adjustment in the Outside Work Hours Condition

Among participants in the outside normative work hours condition ($n = 427$), we found a significant interaction between the perspective and adjustment (coded as 1 = *email note;* -1 = *control*) conditions on response speed expectations, $F(1, 427) = 6.10$, $p = .014$, $\eta^2 = .01$; see Figure 4. The discrepancy between senders' and receivers' response speed expectations was significant among participants in the control condition ($M_{Receiver} = 3.82$, $SD = 1.53$ vs. $M_{Sender} = 2.89$, $SD = 1.75$), $F(1,423) = 17.31$, $p < .001$, $\eta^2 = .04$, but non-significant among participants in the email note condition ($M_{Receiver} = 2.97$, $SD = 1.61$ vs. $M_{Sender} = 2.82$, $SD = 1.65$), $F(1,423) = .45$, $p = .502$, $\eta^2 = .00$.

[9] Among participants in the within normative work hours condition ($n = 425$), there was a non-significant interaction between perspective and the adjustment conditions on response speed expectations, $F(1,425) = .01$, $p = .934$, $\eta^2 = .00$, and on perceived stress $F(1,425) = 1.50$, $p = .222$, $\eta^2 = .00$. There was, however, a significant main effect of the adjustment condition on response speed expectations, such that participants in the email note condition indicated lower response speed expectations ($M = 3.18$, $SD = 1.45$), compared to those in the control condition ($M = 4.04$, $SD = 1.42$), $F(1,425) = 38.22$, $p < .001$, $\eta^2 = .08$. These results suggest that making implicit response speed expectations explicit might be beneficial within work hours irrespective of whether we are a receiver or a sender.

These results suggest that when senders make their implicit assumptions that non-urgent outside normative work hours emails do *not* require an immediate response more explicit by directly noting this in their email, receivers' response speed expectations align to their own, thus reducing the email urgency bias.

Figure 4. Perspective x Adjustment on Response Speed Expectations Off-Hours (Study 6)



Note. Error bars represent standard errors.

In terms of perceived stress of receiving non-urgent emails, there was no significant interaction, $F(1,427) = .01$, $p = .944$, $\eta^2 = .00$, or direct effect of the perspective, $F(1,427) = 1.15$, $p = .284$, $\eta^2 = .00$, or the adjustment condition, $F(1,427) = 2.63$, $p = .106$, $\eta^2 = .01$. However, exploratory analyses suggested that the adjustment condition moderated the indirect effect of perspective on perceived stress through response speed expectations such that this indirect effect was significant among participants in the control condition ($B_{indirect} = .14$, 95%CI = [.0635, .2348]) and non-significant among participants in the email note condition ($B_{indirect} = .02$, 95%CI = [-.0434, .0909]); note that we entered the adjustment condition as a moderator on the path between perspective and response speed expectations and this interaction was significant, B = -

.20, 95%CI = [-.3510, -.0399]. The difference between the two indirect effects was also significant ($B_{\text{index of moderation}}$ = -.12, 95%CI = [-.2343, -.0223]. See Figure S8 in the Online Supplement for detailed results.

These results suggest that the small adjustment was further beneficial for alleviating perceived stress for non-urgent emails received outside normative work hours.

Discussion

Study 6 provided additional support for the theorized email urgency bias (H1), as well as the indirect effect of perspective on perceived stress of receiving non-urgent emails via response speed expectations (H2). Replicating our findings from Study 5, we found that this indirect effect was particularly likely to emerge outside, compared to within, normative work hours. Most importantly, in this study we found that a simple adjustment on the senders' side (i.e., in the form of a simple note in the email that makes their ambiguous response speed expectations more explicit) helped align receivers' and senders' response speed expectations for non-urgent emails received *outside* normative work hours, thereby alleviating the email urgency bias.

General Discussion

Across six main studies and two supplemental studies (N = 4,004) we found consistent evidence for the email urgency bias. That is, we found that there is a discrepancy between receivers' and senders' response speed expectations for non-urgent work emails sent outside normative work hours. First, we documented the email urgency bias among a sample of public sector employees who recalled the experience of sending or receiving non-urgent emails outside normative work hours (Study 1). We also documented that the email urgency bias was associated with lower subjective well-being via greater experienced stress. We found additional evidence for the email urgency bias and its effects on well-being within normative work hours in

Supplemental Study 1A. Study 2 and Supplemental Study 2A provided additional experimental evidence of the email urgency bias.

We further found that the email urgency bias was not moderated by email urgency (Study 3), but that it was at times (Studies 5-6), but not always (Study 4), moderated by work time (outside vs. within normative work hours), suggesting that although the email urgency bias is more prevalent outside normative work hours, it may also extend to within normative work hours. Importantly, the email urgency bias resulted in divergent perceptions between receivers and senders of how stressful a non-urgent email would feel to receivers, especially when received outside normative work hours (Studies 5-6). In our last study (Study 6) we documented the effectiveness of a small adjustment on the sender's side. Namely, we found that senders can help receivers feel less pressure to respond right away to non-urgent work emails sent off-hours simply by making their expectations of response speed explicit through a note in their email that specifically states they do not expect a response right away.

Theoretical Implications

Our paper makes three primary contributions to the literature. First, we expand the literature on email communication and employee well-being by challenging existing assumptions that the role we take – that of a sender or a receiver – is created equal and that small, trivial, and non-urgent tasks like "business as usual" emails, especially when sent off-hours are not problematic. Prior research has documented that email is a unique source of stress for employees, undermining performance and well-being at work, and decreasing life satisfaction and work-life balance outside of work hours (Barley et al., 2011a; Brown et al., 2014a; Dawley & Anthony, 2003; Mazmanian et al., 2013; Reinke & Chamorro-Premuzic, 2014; Rosen et al., 2019). This prior research seems to suggest that there is something inherently bad about email

communication and, as a result, the solution for its negative effects must be less email. For example, (Mazmanian et al., 2013) found that employees who adopted mobile email devices in order to have *more* control over when they worked, ended up having *less* control by working anywhere and anytime – i.e., the autonomy paradox.

Why do people end up working all the time when they have access to their devices? Our findings suggest that one reason might be the implicit assumptions we make about how quickly we are expected to respond to every email we receive, even on the weekend. By having nonstop access to our email and given that workplaces today tend to associate responsiveness with hard work and dedication (i.e., the 'modern' ideal worker), we have come to erroneously think we need to immediately—and thus constantly—respond to our work emails, even though others don't necessarily expect us to do so. By further showing that the email urgency bias is associated with lower subjective well-being via stress and that this bias is particularly prevalent during non-work hours, our paper brings much needed nuance in terms of *when* and *why* email communication might undermine well-being.

Second, we illustrate the benefits of integrating insights from the egocentrism literature with those from the boundary work literature to help explain how others might act as unintentional boundary violators. Although it is increasingly clear that people struggle to achieve their core work tasks during work hours and further struggle to maintain work-nonwork boundaries (Butts et al., 2013; Sonnentag, 2018), existing scholarship has overlooked the role of those who might unintentionally push these boundaries (Trefalt, 2013). Drawing on the egocentrism literature (Epley et al., 2004), our paper highlights that egocentric biases can lead us to underestimate the impact that non-urgent work emails have on our colleagues (Kruger et al., 2005), and we may thereby unintentionally hinder their well-being at work (by creating an

overwhelming, response speed driven culture) and outside of work (by perpetuating an "always on" work culture). By focusing on the two roles embedded in email communication, our research further illustrates the importance of studying boundary management not only at the domain level (work vs. home) as is typically the case in this literature (Rothbard et al., 2020), but also at the perspective level (receiver vs. sender).

Third, we expand the egocentrism literature by providing initial evidence that making an implicit assumption explicit—in our case noting that non-urgent emails are non-urgent—can reduce self-other discrepancies. Prior research in this sphere has shown that self-other biases can sometimes be mitigated by making people aware that they are prone to making mistakes through perspective taking. For example, Falk and Johnson (1977) showed that groups who were instructed to take the perspective of their members were characterized by better communication in terms of better sharing and understanding of information. Perspective taking, however, is unlikely to be efficient in email communication because it often takes time to properly engage in it (Epley et al., 2004). And more recent work suggests that *getting* perspective, in the form of communicating directly about one's beliefs and assumptions, is far superior to attempting to take another person's perspective (Eyal et al., 2018). In line with this insight, our research shows the benefits of making our implicit assumptions explicit in the realm of email communication (e.g., that one does not expect an immediate response to non-urgent work emails sent off-hours).

More broadly, by introducing the email urgency bias, our paper echoes calls from management scholars to develop and test new theoretical frameworks to better understand people's work lives in today's workplace environment where the responsibility of setting workplace boundaries is quickly shifting from the organization to the employee (Ashford et al., 2018; Petriglieri et al., 2019). In particular, our research calls into question the overly optimistic

representation of fluid organizational boundaries as a tool for providing employees a better work-life balance. Research drawing on boundary theory (Nippert-Eng, 1996) has primarily focused on understanding work-nonwork boundaries in *boundary settings* (e.g., how do employees push the work-life boundary by either enlarging the work domain or protecting their home domain; Perlow, 1998). However, "the workplace" is no longer necessarily a discrete physical location and technology has facilitated the emergence of boundaryless organizations, virtual workspaces, and the possibility to constantly be connected to one's work (Spreitzer et al., 2017). These changing circumstances around the nature of work suggest the need to understand more complex work-nonwork interactions and, in particular, how employees maintain boundaries that are necessary for well-being and productivity when work can easily spill over to hours when one is *not* expected to work.

Practical Implications

Understanding how to help employees be productive during work hours but also disconnect from work outside of work hours is arguably one of the most pressing issues that organizations and modern societies face. Our research draws attention to the role of digital technology as both a solution and a driver of employees' inability to disconnect from work. Our findings suggest that one way to help employees disconnect from work is by paying attention to how employees themselves approach email communication. With email continuing to be one of the primary and preferred means of communication at work (Rosen et al., 2019), organizations need to mitigate the development of unintentional workplace norms around the meaning and use of email that have turned its benefits—asynchrony and flexibility—into constant stressors.

Our research further tested the effectiveness of a simple and low-cost adjustment that senders can do to help align their response speed expectations to those of the receivers (i.e.,

explicitly noting their implicit response speed expectations). There are other ways in which senders can make the implicit explicit. For instance, senders could clarify expectations around work hours by adding a line or two in the email footer, such as "My working hours may differ from yours and I don't expect a response outside your usual working hours". Relatedly, senders could compose emails during times that are convenient for them but schedule sending them only during normative work hours. By testing the efficiency of small adjustments in email communication and, in general, around digital communication norms, organizations can start to address the broader issue of how to ensure that workplace innovations that are desired by many employees, like remote working, can help rather than harm them (Leslie et al., 2012).

Limitations and Future Directions

In this paper we find consistent evidence for the email urgency bias – i.e., receivers assume they need to respond more quickly to non-urgent off-hours work emails than senders expect. Although we find no evidence for the moderating role of email urgency and mixed evidence for work time, there could be additional boundary conditions. First, an important moderator to consider, especially within organizational settings, is power. Future research could examine whether the relative power of the receiver and sender might moderate the email urgency bias. In line with research showing that power decreases perspective taking (Galinsky et al., 2006), senders in a high-power position might be especially unlikely to appreciate the pressure receivers feel to respond right away. However, research has shown that power can also trigger responsibility (Bohns et al., 2018). Thus, power might actually increase senders' awareness of the pressure recipients feel to respond right away. Similar power dynamics could emerge when we are in the receiver role. Because power tends to embolden individuals to do what they want (Galinsky et al., 2003), receivers in a high-power position might feel less worried about others'

expectations of an immediate response. Overall, the predictions for the effects of power on a person's response speed expectations when they are in the receiver role compared to the sender role are not as obvious as they may seem at first glance and warrant future research.

Aside from power, there are other factors that might matter. For example, the email urgency bias could be particularly problematic for jobs where there are no or weak temporal norms (Aeon & Aguinis, 2017) or where there are no clear temporal structures imposed by the organization around normative work hours. Initial analyses from Study 2 and 2A (but not Studies 1, 1A, 3, or 4) where we measured emails habits outside work hours suggest that the email urgency bias might be more pronounced in organizations where colleagues never or rarely respond to non-urgent work emails sent outside work hours (see Online Supplement for detailed results). Similarly, although we focused on divergence in response speed expectations in the moment, time zone differences could help mitigate or exacerbate the email urgency bias and its negative consequences. Indeed, the email urgency bias might be less strong when the sender is sending non-urgent work emails outside their own normative work hours but the receiver sees those emails within their normative work hours. In addition, individuals' preferences for work-home integration (vs. segmentation; Kreiner, 2006) could moderate the impact of the email urgency bias such that individuals with a preference to maintain the work and nonwork domains completely separate might be less affected by the email urgency bias, as compared to those who generally allow elements from one domain to cross over into the other domain.

The characteristics of the email itself could further intensify or alleviate the email urgency bias. Although we found no significant moderation of email urgency in Study 3, other possible characteristics include email importance or whether a response is required (e.g., the email communicates information vs. asks a question, as was the case in all our studies, except

Study 1 and 1A). In line with the egocentrism literature and our current findings, we would expect that just as receivers find it difficult to predict senders' response speed expectations for emails that ask a question, they might also find it difficult to predict senders' implied importance of the email or whether the email requires a response at all, unless senders make their expectations explicit in the email. For example, although senders might only communicate information in their email, receivers might feel that a response is required if only to acknowledge the email or to express gratitude. Overall, more research is needed to understand how to develop better email communication, and more broadly, better digital interactions.

Third and relatedly, we studied discrepancies in response speed expectations within the context of email communication for three main reasons. First, email is one of the primary means of communication at work, in part because of its asynchronous nature that, at least in theory, allows employees to have greater autonomy over how and when they work (Barley et al., 2011; Byron, 2008). Second, despite its advantages, email has been shown to be a unique job demand that further creates uneven burdens between receivers and senders (Bälter, 2000). Third, workplaces developed expectations around email communication that have turned its advantages into disadvantages, such as expectations of a response to emails as soon as they arrive in one's inbox (Brown et al., 2014). Our research has shown that part of the problem with email communication is the divergent expectations between senders and receivers of response speed to non-urgent emails sent off-hours. However, similar discrepancies might emerge for other means of communication. For example, it is possible that discrepancies in response speed expectations are *less* pronounced on instant or synchronous means of communication where the expectations on both sides might be clearer in that it is expected to be an ongoing dialog. At the same time, it is possible that discrepancies in response speed expectations are actually *more* pronounced on

synchronous communication platforms because there are greater expectations of an instant response. Future research should test these competing predictions.

Finally, our goal in this paper was to document the email urgency bias that we argue exists in the moment, depending on whether we view a non-urgent email from the receiver versus sender perspective. For that reason, we relied on recall paradigms (Study 1 and Supplemental Study 1A) and hypothetical scenarios to manipulate the roles of "receiver" and "sender." These procedures have been used in prior research on role differences in the related domain of social influence (Bohns & Flynn, 2010; Flynn & Lake, 2008). There are several advantages to these procedures, most notably it allowed us to isolate the asymmetry in *perceptions* of email response speed expectations. However, as is the case with any research paradigm, these procedures are not without limitations, including concerns with inaccurate or biased recall and potential lack of external validity. Future research could address these limitations by examining the email urgency bias over time using longitudinal designs.

Conclusion

Across eight preregistered experimental studies, we consistently found a discrepancy between receivers' and senders' response speed expectations to non-urgent emails sent off-hours, i.e., *the email urgency bias*. This bias led to discrepancies in perceived stress of receiving such emails, and was associated with lower subjective well-being via greater stress. We also found that a small adjustment on the sender's side was successful in leading to more accurate expectations for receivers, thereby helping to mitigate the email urgency bias. Thus, the next time you find yourself sending a non-urgent work email, especially outside normative work hours, consider making your response speed expectations explicit with a simple note in the email, just like you would for an urgent email (e.g., clearly note that you do not expect an

immediate response). As our research shows, others will *not* simply know when our requests are non-urgent, and a failure to clearly communicate our expectations may contribute to the spread of the unhealthy "always on" work culture.

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Online Supplement For

You Don't Need to Answer Right Away! Receivers Overestimate How Quickly Senders Expect Responses to Non-Urgent Work Emails

This document includes:

Verbatim materials, data, code, and preregistrations are available at: https://osf.io/adfre/

Characteristics of Participants Across All Studies

Table S1 presents an overview of demographic characteristics of participants across all studies, including sample size and number of participants who failed the attention check question (where applicable).

Table S1. Demographic Characteristics of Participants Across All Studies

Study	n recruited	*n* failed attention check question	*n* final analysis sample	Mean (*SD*) age, years	% female	% with a master degree or above	Median household income
1	739	--	713[a]	47.94 (8.90)	69.3%	86.6%	€3-5K monthly
1A	*450*	--	*450*	*32.84 (8.56)*	48.9%	*36.2%*	*$70-$80 K*
2	251	--	251	36.35 (10.77)	50.2%	24.8%	$50-$75
2A	*246*	--	*246*	*34.53 (9.64)*	*46.7%*	*35.2%*	*$50-$75*
3	603	--	603	34.43 (9.35)	33.8%	50.6%	$75-$100
4	411	0	411	34.13 (9.16)	41.1%	39%	$75-$100
5	450	1	449	35.15 (9.81)	43.7%	44.6%	$75-$100
6	854	2	852	36.27 (10.71)	44.4%	42.1%	$75-$100

Note. [a] Sample size varies across analyses and this number reflects how many participants provided complete answers to our core outcome of response speed expectations. Study 1A and 2A are presented in the Online Supplement as additional evidence in support of our hypotheses.

Manipulation Checks Across Studies 3-6

Study 3: Manipulation Checks

To confirm the success of the perspective and urgency manipulations we asked: 1. "In the scenario presented to you in this study, who sent the email during the weekend?" (1 = *I did*; 2 = *My colleague did*), 2. "In the scenario presented to you in this study, what was the email about?" (1 = *A non-urgent work question*; 2 = *An urgent work question*). The majority of participants in the receiver condition (78.4%) correctly identified that they received the email; the majority of participants in the sender condition (88.3%) correctly identified that they sent the email, $X^2(1,603) = 288.71$, $p < .001$. Similarly, the majority of participants in the non-urgent condition correctly identified the urgency of the email (84.5%); the majority of participants in the urgent condition (91.4%) correctly identified the urgency of the email, $X^2(1,603) = 389.44$, $p < .001$.

Study 4: Manipulation Checks

To confirm the success of the perspective and work time manipulations we asked: "In the scenario presented to you in this study, who sent the email?" (1 = *I did*; 2 = *My colleague did*), and "In the scenario presented to you in this study, when was the email sent?" (1 = *In the middle of your organizations' standard work hours*; 2 = *After your organization's standard work hours were over*). The majority of participants in the receiver condition (99.5%) correctly identified that they received the email; the majority of participants in the sender condition (93.2%) correctly identified that they sent the email; $X^2(1,411) = 453.17$, $p < .001$. Similarly, the majority of participants in the outside normative work time condition (96.5%) correctly identified that the email was sent outside work hours; the majority of participants in the within normative work time condition (98.1%) correctly identified that the email was sent within work hours, $X^2(1,411) = 468.43$, $p < .001$.

Study 5: Manipulation Checks

We used the same manipulation check questions as in Study 4. The majority of participants in the receiver condition (98.7%) correctly identified that they received the email; the majority of participants in the sender condition (96%) correctly identified that they sent the email; $X^2(1,449) = 514.64$, $p < .001$. Similarly, the majority of participants in the outside normative work time condition (96.9%) correctly identified that the email was sent outside work hours; the majority of participants in the within normative work time condition (97.3%) correctly identified that the email was sent within work hours, $X^2(1,449) = 504.73$, $p < .001$.

Study 6: Manipulation checks

We used the same two manipulation check questions for the perspective and the work time conditions as in Studies 4-5. For the adjustment condition, we asked two additional manipulation check questions worded by (*receiver*/*sender*) perspective: "In the scenario presented to you in this study, did (*your colleague*/you) add a note in (*their*/the) email?" (1 = *Yes*; 2 = *No*). The majority of participants in the receiver condition (98.2%) correctly identified that they received the email; the majority of participants in the sender condition (93.8%) correctly identified that they sent the email; $X^2(1,852) = 903.27$, $p < .001$. Similarly, the majority of participants in the outside normative work time condition (95.6%) correctly identified that the email was sent outside work hours; the majority of participants in the within normative work time condition (96%) correctly identified that the email was sent within work hours, $X^2(1,852) = 882.96$, $p < .001$. Finally, the majority of participants in the email note condition (92.3%) correctly identified the presence of a note in the email; the majority of participants in the control condition (79.8%) correctly identified that the email did not have the additional note, $X^2(1,852) = 506.94$, $p < .001$.

Study 1: The Well-Being Consequences of the Email Urgency Bias in an Employee Sample

Study 1: Email Habits & Serial Mediation Results

Table S2 presents an overview of the email habits of participants and their colleagues. Tables S3a-c present the results of our pre-registered serial mediation models and Tables S3d-f present the results of our exploratory pre-registered serial mediation models with work outcomes.

Exploratory pre-registered analyses suggested that participants' email habits (F[3,536] = .48, p = .747), or others' email habits (F[3,536] = .45, p = .717) did not moderate these effects.

Table S2. Email Habits for Self and Colleagues (Study 1)

	Frequency of responding to work emails	Frequency of colleagues responding to their work emails
Before 9am	4.8%	0.7%
During 9am-5pm	83.3%	89%
After 5pm	1.3%	0.6%
At night	0.6%	0.2%
In the weekend	--	--
Whenever I have a moment during the day or night	10%	9.5%

Table S3a. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Subjective well-being
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	.02
Mediators			
Response speed expectations		.20***	.04
Stress			-.17***
Model summary information	R^2 = .09 F (1, 711) = 66.71***	R^2 = .04 F (2, 710) = 14.34***	R^2 = .03 F (3, 709) = 6.93***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.03	.04	[-.0312; .0670]
Direct effect	-.01	.04	[-.0445; .0572]
Indirect effect via Response Speed Expectations on Subjective well-being	-.01	.01	[-.0062; .0251]
Indirect effect via Stress on Subjective well-being	-.01	.01	[.0011; .0211]
Indirect effect via Response Speed Expectations and Stress on Subjective well-being	.01	.00	[-.0120; -.0029]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S3b. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Work burnout
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	-.09
Mediators			
Response speed expectations		.20***	.05
Stress			.69***
Model summary information	R^2 = .09	R^2 = .04	R^2 = .50
	F (1, 711) = 66.71***	F (2, 710) = 14.34***	F (3, 709) = 235.36***

	Estimate	**Boot SE**	**95%CI**
Total effect	.10	.08	[-.2562, .0549]
Direct effect	.10	.06	[-.2123, .0194]
Indirect effect via Response Speed Expectations on Work burnout	-.03	.02	[-.0032, .0724]
Indirect effect via Stress on Work burnout	.13	.06	[-.2345, -.0158]
Indirect effect via Response Speed Expectations and Stress on Work burnout	-.09	.02	[.0509, .1315]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S3c. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Work-life balance
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	-.07
Mediators			
Response speed expectations		.20***	.05
Stress			-.56***
Model summary information	R^2 = .09 F (1, 711) = 66.71***	R^2 = .04 F (2, 710) = 14.34***	R^2 = .31 F (3, 709) = 104.21***

	Estimate	**Boot SE**	**95%CI**
Total effect	.03	.12	[-.2595, .2141]
Direct effect	.11	.11	[-.3199, .0948]
Indirect effect via Response Speed Expectations on Work-life balance	-.04	.03	[-.0186, .1110]
Indirect effect via Stress on Work-life balance	-.15	.07	[.0157, .2910]
Indirect effect via Response Speed Expectations and Stress on Work-life balance	.11	.03	[-.1630, -.0628]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S3d. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Job Satisfaction
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	-.06
Mediators			
Response speed expectations		.20***	.04
Stress			-.20***
Model summary information	R^2 = .09 F (1, 711) = 66.71***	R^2 = .04 F (2, 710) = 14.34***	R^2 = .20 F (3, 709) = 9.74***

	Estimate	**Boot SE**	**95%CI**
Total effect	.03	.10	[-.2298, .1603]
Direct effect	.08	.10	[-.2821, .1198]
Indirect effect via Response Speed Expectations on Job Satisfaction	-.03	.03	[-.0328, .1022]
Indirect effect via Stress on Job Satisfaction	-.05	.02	[.0046, .0929]
Indirect effect via Response Speed Expectations and Stress on Job Satisfaction	.03	.01	[-.0538, -.0159]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S3e. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Task performance
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	-.01
Mediators			
Response speed expectations		.20***	-.03
Stress			-.20***
Model summary information	R^2 = .09	R^2 = .04	R^2 = .05
	F (1, 711) = 66.71***	F (2, 710) = 14.34***	F (3, 709) = 11.04***

	Estimate	**Boot SE**	**95%CI**
Total effect	.02	.07	[-.1498, .1183]
Direct effect	.01	.07	[-.1471, .1283]
Indirect effect via Response Speed Expectations on Task performance	.02	.02	[-.0595, .0273]
Indirect effect via Stress on Task performance	-.03	.02	[.0034, .0649]
Indirect effect via Response Speed Expectations and Stress on Task performance	.02	.01	[-.0388, -.0105]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S3f. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1)

	Response speed expectations (M1)	Stress (M2)	Turnover intentions
Predictors			
Condition (1 = *Receiver*)	.59***	-.17*	.02
Mediators		.20***	
Response speed expectations			.05
Stress			.18***
Model summary information	R^2 = .09 F (1, 711) = 66.71***	R^2 = .04 F (2, 710) = 14.34***	R^2 = .04 F (3, 709) = 9.94***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.04	.07	[-.0909, .1714]
Direct effect	-.02	.07	[-.1142, .1559]
Indirect effect via Response Speed Expectations on Turnover intentions	-.03	.02	[-.0142, .0718]
Indirect effect via Stress on Turnover intentions	.03	.01	[-.5870, -.0030]
Indirect effect via Response Speed Expectations and Stress on Turnover intentions	-.02	.01	[.0086, .0345]

Note. N = 713. M = Mediator. * $p < .05$, ** $p < .01$, *** $p < .001$.

Study 1A: The Well-Being Consequences of the Email Urgency Bias Within Work Hours

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=ps6445) and recruited 450 full-time employees from Prolific between 9:00am and 4:00pm ET on a Tuesday. We targeted full-time employees who had recently transitioned to remote work (see Table S1 for sample demographics and Tables S4a-b for email habits).

Procedure. We randomly assigned participants to condition (perspective: receiver vs. sender of non-urgent work email) in a between-subjects design. In the *sender* condition (coded as 1), participants read: "Please take a moment to think about a couple of non-urgent work emails you have sent your colleagues over the past few days while you have been working remotely." As a characteristic response, one participant wrote: "Usually I am hoping that they still respond to me in a timely manner. I don't want the email to be lost in the fray."

In the *receiver* condition (coded as 0), participants read: "Please take a moment to think about a couple of non-urgent emails you received from colleagues over the past few days while you have been working remotely." As a characteristic response, one participant wrote: "When receiving these non-urgent emails, I have felt more overwhelmed and anxious about them than necessary. It seems like a distraction and inconvenience when I am trying to prioritize other items."

Thereafter, participants completed the measures described below.

Measures

We used the same scales as in Study 1 to capture *response speed expectations* (3-item scale; $\alpha = .84$), *stress* (5-item scale of workload as a proxy of stress; $\alpha = .80$), *work burnout* (3-item scale; $\alpha = .91$). Unlike Study 1, we measured *home-to-work conflict* with 5 items adapted

from Netemeyer, Boles, and McMurrian (1996) (e.g. item: "How often have you felt that you had to put off doing things for your work because of the demands on your time from home"; α = .92) and *subjective well-being* with a 3-item scale of affect adapted from Diener et al. (2009) (e.g. item: "How often have you felt that you are unable to control the important things in your life"; α = .71). For all outcomes we used a 5-point Likert response scale (1 = *very rarely/never* to 5 = *very often/always)* and the following stem: "Since you started working from home."

On an exploratory basis and in line with theoretical and qualitative research on the ideal worker norm, we also captured: 1. *pressure to signal productivity*: "How much pressure do you feel to show that you are productive now that you are working from home?" (1 = *not at all*; 7 = *very much*), and 2. *sense of control*: "Does trying to keep up with work make you feel less or more in control of the current situation?" (1 = *much less in control*; 7 = *much more in control*). We recoded sense of control such that higher values reflect greater sense of control.

Results

Participants in the receiver condition thought they needed to respond more quickly (M = 4.14, SD = 1.25), compared to the expectations expressed by participants in the sender condition (M = 3.61, SD = 1.39), $t(448) = 4.19$, $p < .001$, $d = .30$ (consistent with H1). Exploratory analyses suggested that neither participants' email habits ($F[4,450] = .60$, $p = .661$), nor others' email habits moderate these effects ($F[5,450] = .45$, $p = .814$).

Next and in line with Study 1, we conducted serial mediation models of the perspective condition on our outcome variables, with response speed expectation as the first mediator, and stress as the second mediator using PROCESS Model 6; for these analyses, perspective was coded as *receiver* = 1 and *sender* = 0. As in Study 1 and consistent with H3, the data supported a serial indirect effect pattern for affect, which we treated as the primary proxy of subjective well-

being ($B_{indirect}$ = .03, 95%CI = [.0084; .0487]). In addition, we found a significant serial indirect effect pattern for the other measured outcomes: work burnout ($B_{indirect}$ = .04, 95%CI = [.0146; .0785]), home-to-work conflict ($B_{indirect}$ = .03, 95%CI = [.0086; .0472]), pressure to signal productivity ($B_{indirect}$ = .04, 95%CI = [.0144; .0801]), and sense of control ($B_{indirect}$ = -.01, 95%CI = [-.0275; -.0015]). See Tables S5a-e for the full results of these models.

Table S4a. Email Habits for Self and Colleagues (Study 1A)

	Frequency of responding to work emails	Frequency of colleagues responding to their work emails
Before 9am	3.1%	1.1%
During 9am-5pm	72.2%	76.7%
After 5pm	4%	3.8%
At night	2.9%	3.3%
In the weekend	-	0.4
Whenever I have a moment during the day or night	17.8%	14.7%

Note. Statistics available only for those who indicated that they are currently working.

Table S4b. Changes in % of Urgent and Non-urgent Emails by Condition (Study 1A)

	Receivers	Senders	Statistical test
Since working from home:			
% of non-urgent emails	65.17	62.46	t (448) = 1.11, p = .267
% of urgent emails	34.83	37.55	t (448) = -1.11, p = .267
Change in % of:			
Non-urgent emails	3.24	3.13	t (448) = 1.31, p = .190
Urgent emails	2.93	2.95	t (448) = -.33, p = 735

Note. N = 450. Change in % of non-urgent/urgent work emails was measured on a scale from 1 = *much lower* to 5 = *much higher*.

Table S5a. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1A)

	Response speed expectations (M1)	Stress (M2)	Affect
Predictors			
Condition (1 = *Receiver*)	.39***	-.05	.13
Mediators			
Response speed expectations			.00
Stress		.17***	.51***
Model summary information	R^2 = .04 F (1, 448) = 17.57***	R^2 = .03 F (2, 447) = 6.25***	R^2 = .27 F (3, 446) = 54.80***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.11	.07	[-.0369, .2471]
Direct effect	-.10	.06	[-.0247, .2240]
Indirect effect via Response Speed Expectations on Affect	-.00	.01	[-.0277, .0301]
Indirect effect via Stress on Affect	.02	.04	[-.0990, .0514]
Indirect effect via Response Speed Expectations and Stress on Affect	-.03	.01	[.0083, .0488]

Note. N = 450. M = Mediator**.** * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S5b. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1A)

	Response speed expectations (M1)	Stress (M2)	Work burnout
Predictors			
Condition (1 = *Receiver*)	.39***	-.05	.04
Mediators			
Response speed expectations		.17***	-.00
Stress			.62***
Model summary information	R^2 = .04 F (1, 448) = 17.57***	R^2 = .03 F (2, 447) = 6.25***	R^2 = .39 F (3, 446) = 93.71***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.05	.10	[-.1408, .2469]
Direct effect	-.05	.08	[-.1093, .2012]
Indirect effect via Response Speed Expectations on Work burnout	.00	.02	[-.0339, .0354]
Indirect effect via Stress on Work burnout	.03	.06	[-.1589, .0886]
Indirect effect via Response Speed Expectations and Stress on Work burnout	-.04	.02	[.0148, .0786]

Note. N = 450. M = Mediator**.** * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S5c. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1A)

	Response speed expectations (M1)	Stress (M2)	Home-work conflict
Predictors			
Condition (1 = *Receiver*)	.39***	-.05	.14
Mediators			
Response speed expectations		.17***	.02
Stress			.42***
Model summary information	R^2 = .04 F (1, 448) = 17.57***	R^2 = .03 F (2, 447) = 6.25***	R^2 = .39 F (3, 446) = 33.32***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.14	.04	[-.0342, .3129]
Direct effect	-.13	.08	[-.0333, .2882]
Indirect effect via Response Speed Expectations on Home-work conflict	-.01	.02	[-.0282, .0448]
Indirect effect via Stress on Home-work conflict	.02	.04	[-.0961, .0531]
Indirect effect via Response Speed Expectations and Stress on Home-work conflict	-.03	.01	[.0086, .0466]

Note. N = 450. M = Mediator**.** * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S5d. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1A)

	Response speed expectations (M1)	Stress (M2)	Pressure to signal productivity
Predictors			
Condition (1 = *Receiver*)	.39***	-.05	.09
Mediators			
Response speed expectations		.17***	.10*
Stress			.41***
Model summary information	R^2 = .04 F (1, 448) = 17.57***	R^2 = .03 F (2, 447) = 6.25***	R^2 = .39 F (3, 446) = 35.40***

	Estimate	**Boot SE**	**95%CI**
Total effect	-.22	.15	[-.0765, .5167]
Direct effect	-.15	.14	[-.1215, .4247]
Indirect effect via Response Speed Expectations on Pressure to signal productivity	-.06	.03	[-.0017, .1363]
Indirect effect via Stress on Pressure to signal productivity	.03	.06	[-.1567, .0897]
Indirect effect via Response Speed Expectations and Stress on Pressure to signal productivity	-.04	.02	[.0142, .0796]

Note. N = 450. M = Mediator**.** * $p < .05$, ** $p < .01$, *** $p < .001$.

Table S5e. Standardized Regression Coefficients and Model Summary for the Serial Mediation Model (Study 1A)

	Response speed expectations (M1)	Stress (M2)	Sense of control
Predictors			
Condition (1 = *Receiver*)	.39***	-.05	-.15
Mediators			
Response speed expectations		.17***	-.04
Stress			-.13**
Model summary information	R^2 = .04 F (1, 448) = 17.57***	R^2 = .03 F (2, 447) = 6.25***	R^2 = .03 F (3, 446) = 3.97***

	Estimate	**Boot SE**	**95%CI**
Total effect	.25	.14	[-.5160, .0258]
Direct effect	.22	.14	[-.4940, .0544]
Indirect effect via Response Speed Expectations on Sense of control	.02	.03	[-.0876, .0334]
Indirect effect via Stress on Sense of control	-.01	.02	[-.0284, 0509]
Indirect effect via Response Speed Expectations and Stress on Sense of control	.01	.01	[-.0279, -.0017]

Note. N = 450. M = Mediator**.** * $p < .05$, ** $p < .01$, *** $p < .001$.

Study 1A: Additional Preregistered Measures and Analyses

Additional Measures

In Study 1A we also measured differences between *receivers* and senders in felt compliance to reply with one item: "How likely is it that *your colleagues* (you) would respond to *your* (your colleagues') non-urgent emails right away?" (1 = *not at all* to 7 = *extremely*). We further captured response speed by asking *senders* (receivers): "How quickly do *you* (your colleagues) expect *your colleagues* (you) to reply to *your* (their) non-urgent emails?" (1 = *within minutes*, 2 = *within hours*, 3 = *within a day*, 4 = *within a few days*, 5 = *within a week*, 6 = *within a few weeks*, 7= *more than a few weeks, or not at all*).

Additional Results

A t-test analysis revealed that there was no significant difference between receivers (M = 4.31, SD = 1.73) and senders (M = 4.27, SD = 1.31), $t(448) = .31$, $p = .753$, $95\%CI_{\text{mean difference}}$ = [-.24; .33], $d = .03$ on likelihood to respond. However, a t-test analysis on response speed indicated that participants in the receivers condition thought they needed to respond quicker[1] (M = 2.87, SD = .96) compared to the expectations of participants in the sender condition (M = 3.11, SD = .93), $t(447) = -2.71$, $p = .007$, $95\%CI_{\text{mean difference}}$ = [-.42; -.07],], $d = -.25$. Given that response speed is a categorical variable, we also ran a chi-square test showing a similar pattern, $X^2(6) = 11.80$, $p = .067$ (see Table S6).

Finally, mediation analyses using the Bootstrapping PROCESS Macro Model 4 with 10,000 bootstraps (95% CI) showed that response speed expectations mediated the effect of condition (re-coded for these analyses as 1 = *receiver*; 0 = *sender*) on likelihood to respond and,

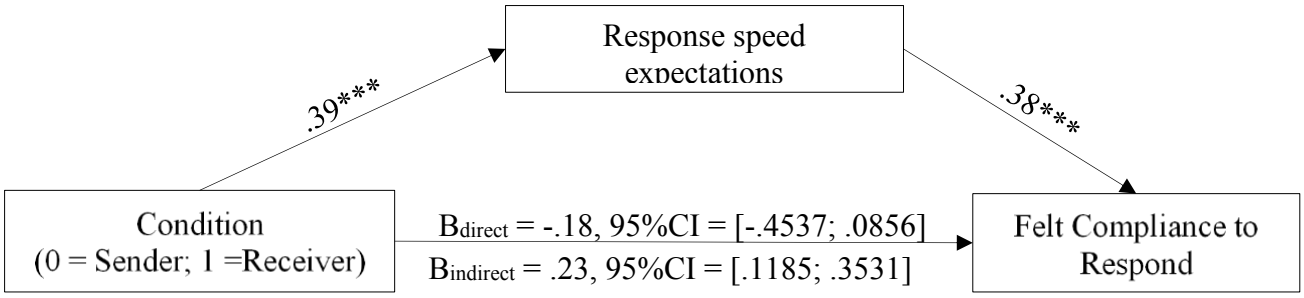
[1] Note that on this scale, smaller values reflect faster response speed expectations.

respectively, on response speed (Figure S1a-b). We replicate this mediation pattern in Study 2 with a longer measure of likelihood to respond.

Table S6. Analyses of Differences Between Conditions on Our Focal Variables (Study 1A)

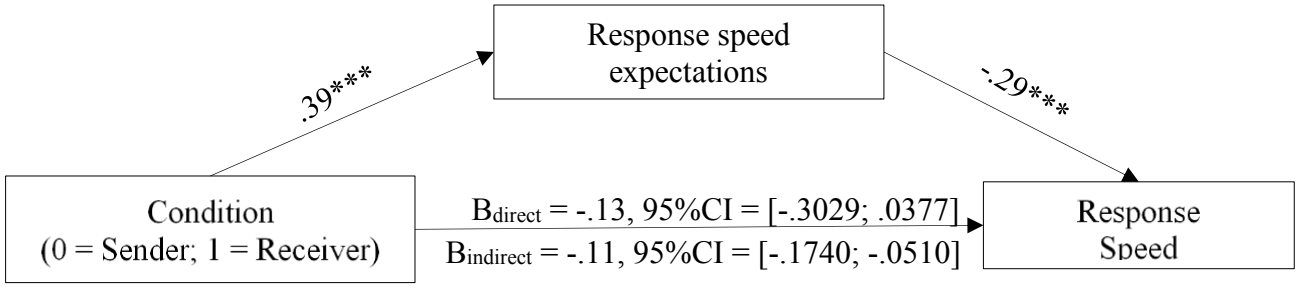
Response Speed	**Receivers**	**Senders**
Within minutes	4.8%	3.2%
Within hours	32.2%	21.6%
Within a day	38.8%	42.8%
Within a few days	21.1%	26.6%
Within a week	2.2%	5.4%
Within a few weeks	.4%	.5%
More than a few weeks, or not at all	.4%	0%

Figure S1a. Mediation Results with Response Speed Expectations (Study 1A)



Note. Values are standardized coefficients. ***$p < .001$.

Figure S1b. Mediation Results with Response Speed (Study 1A)



Note. Values are standardized coefficients. ***$p < .001$.

Study 2: The Email Urgency Bias

Study 2: Email Habits Descriptives

We measured habits around sending/receiving work emails after hours with 2 items: 1. "How often do you send or respond to work emails in the evening?" and 2. "How often do your colleagues or people in your field send or respond to work emails in the evening?" (1 = *always*; 5 = *never).*

Table S7 presents participants' and their colleagues' email habits in evening. Exploratory analyses among those currently working (n = 237) suggested that participants' email habits did not moderate the effects of perspective on response speed expectations (F[4,236] = 1.84, p = .122). However, others' email habits did moderate these effects (F[4,237] = 2.58, p = .038). Pairwise comparisons suggested that the greatest divergence between receivers and senders emerged among employees whose colleagues sometimes (F[1,227] = 5.79, p = .017) or never (F[1,227] = 16.94, p < .001) send or respond to work emails in the evening. These results provide initial evidence that others' email habits might moderate the email urgency bias (we find a similar pattern in Study 2A but not in Study 1A or Study 3 where we measured this).

Table S7. Email Habits for Self and Colleagues (Study 2)

	Frequency of sending/responding to work emails in the evening	Frequency of colleagues sending/responding to work emails in the evening
Always	2.8%	2.4%
Most of the time	12%	10.4%
About half the time	8%	14.7%
Sometimes	46.6%	51%
Never	24.7%	15.9%
N/A – not currently working	6%	5.6%

Note. Statistics available only for those who indicated that they are currently working.

We further preregistered that we would run our main analyses controlling for email habits. The effect of condition on response speed expectations remains significant when controlling for these two items (see Table S8).

Table S8. Response Speed Expectations Controlling for Email Habits (Study 2)

Variables	β	*B*	*SE*	*p-value* for predictor	*F-value for model*	*p-value for model*	R^2
Condition (1 = *Sender*)	-.83	-.24	.20	<.001			
Email habits (self)	-.29	-.19	.12	.012			
Email habits (colleagues)	-.27	-.17	.12	.031			
					15.88	< .001	.16

Note. $N = 250$.

Study 2: Additional Preregistered Measures and Analyses

Additional Measures

In Study 2 we also captured differences between receivers and senders in felt compliance to reply to non-urgent work emails in the evening with 4 items worded depending on condition (α = .90). Specifically, we asked *receivers* (senders): 1. "How likely is it that *you* (your work colleague) would respond to this email tonight, rather than waiting until the following workday?", 2. "How pressured would *you* (your work colleague) feel to respond to this email tonight?", 3. "How obligated would *you* (your work colleague) feel to respond to this email tonight?", and 4. "How guilty would *you* (your work colleague) feel for waiting until the next day to respond to this email?" (1 = *not at all*; 7 = *extremely*).

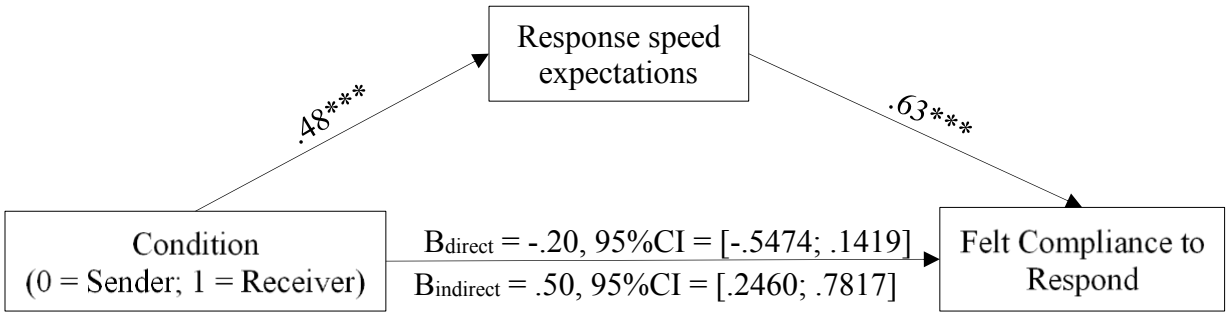
Additional Results

A t-test analysis indicated that participants in the receivers condition felt more pressure to reply to the non-urgent after-hours work email ($M = 3.44$, $SD = 1.88$), compared to how

participants in the sender condition indicated they would feel (M = 3.14, SD = 1.48), but this difference was not statistically significant $t(249) = 1.41$, $p = .160$, $d = .18$. Next, we examined whether the difference between receivers' and senders' felt compliance to respond was at least partially mediated by differences in response speed expectations between receivers and senders. In line with our preregistered analytic plan, we ran a regression analysis using the Bootstrapping PROCESS Macro Model 4 with 10,000 bootstraps (95% CI) and entered perspective (1 = *receiver*; 0 = *sender*) as the predictor variable, response speed expectations as the mediator, and felt compliance to respond as the outcome variable. As predicted, response speed expectations mediated the effect of condition on felt compliance to respond (Figure S2).

On an exploratory basis, a t-test analysis with the 4 items entered individually indicated that there was a statistically significant difference between receivers and senders only on the "likelihood to respond" item ($M_{Receivers}$ = 4.32, $SD_{Receivers}$ = 2.17 vs. $M_{Senders}$ = 3.60, $SD_{Senders}$ = 1.62), $t(249) = 2.97$, $p = .003$, $d = .38$.

Figure S2. Mediation with the Felt Compliance to Respond Composite Scale (Study 2)



Note. Values are standardized coefficients. ***$p < .001$.

Study 2A: Observer's Expectations of Email Response Speed

We have theorized that the email urgency bias is driven by receivers' tendency to overestimate the speed at which senders expect a response to their emails. However, it is also possible that senders are instead, or in part, responsible for this bias. It may be that receivers' assumptions around response speed are more aligned with what the assumptions of a neutral party would be, and senders instead are downplaying the pressure their emails place on receivers. To tease out this possibility, in Study 2A we compared receivers' and senders' response speed expectations to those of a neutral observer.

Method

Participants. We preregistered this study (aspredicted.org/blind.php?x=vm6ef8) and aimed for at least 100 participants per condition (see Table S1 for sample demographics and Table S9 for email habits). We were able to recruit 246 participants from Prolific Academic[2] between 8:00pm and 11:50pm ET on a Tuesday.

Table S9. Email Habits for Self and Colleagues (Study 2A)

	Frequency of sending/responding to work emails in the evening	Frequency of colleagues sending/responding to work emails in the evening
Always	5.3%	2%
Most of the time	17.5%	15.9%
About half the time	11.4%	20.3%
Sometimes	43.5%	49.2%
Never	22.4%	12.6%

Note. $N = 246$.

[2] Due to an error, the study was posted for 300 respondents (vs. 350 that we aimed for). The attention check question in our study prevented participants from continuing with our survey and many did not return the study, leading Prolific platform to count these participants as contributing to our sample size, when in fact they didn't.

Table S10. Response Speed Expectations Controlling for Email Habits (Study 2A)

Variables	β	*B*	*SE*	*p-value* for predictor	*F-value for model*	*p-value for model*	R^2
Condition	.32	.63	.12	<.001			
Email habits (self)	-.28	-.39	.11	<.001			
Email habits (colleagues)	.05	.08	.13	.551			
					14.52	< .001	.15

Note. $N = 245$. Condition was coded as: -1 = sender condition, 0 = neutral condition, 1 = receiver condition.

Procedure. We randomly assigned participants to condition (perspective: receiver vs. sender vs. observer) in a between-subjects design. We used the exact same prompts as in Study 2 for participants in the receiver (coded as 1) and sender (coded as -1) condition. Participants in the *observer* condition (coded as 0) read: "Imagine that employee A realizes at the end of the work day that they have a non-urgent work question to ask one of their colleagues, employee B. Employee A knows that employee B has already gone home for the day, so they decide to send off an email. When Employee B arrives home, they check their email and see that there is a message from employee A with a non-urgent work question."

Next, we captured response speed expectations with the 3-item scale from Study 2 (α = .88). For participants in the observer condition, we worded these items to capture senders' expected response speed expectations (e.g., "To what extent do you think employee A expects a response from employee B tonight?").

As in Study 2, we measured habits around sending/receiving work emails after hours with 2 items: 1. "How often do you send or respond to work emails in the evening?" and 2. "How often do your colleagues or people in your field send or respond to work emails in the evening?" (1 = *always*; 5 = *never).* The effect of condition on response speed expectations remains significant when controlling for these items (see Table S10).

Results

As predicted, we found a significant main effect of condition on response speed expectations, F [2, 245] = 12.10, $p < .001$. Planned contrast tests indicated that participants in the receiver condition assumed they needed to respond more quickly ($M = 3.89$, $SD = 1.58$), compared to the expectations expressed by participants in the sender condition ($M = 2.68$, $SD = 1.64$), $t(243) = 4.92$, $p < .001$, $d = .75$ (consistent with H1), and compared to what participants in the observer condition thought senders' expected response speed expectations were ($M = 3.31$, $SD = 1.49$), $t(243) = 2.36$, $p = .019$, $d = .38$. We also found a significant difference in response speed expectations between participants in the sender and those in the observer condition, $t(243) = 2.56$, $p = .011$, $d = .40$.

Exploratory analyses among those who were currently working and excluding those in the observer condition ($n = 164$) suggested that participants' email habits did not moderate the effects of perspective on response speed expectations ($F[4,164] = .89$, $p = .473$). However, similar to our findings from Study 2, others' email habits did moderate these effects ($F[4,164] = 3.50$, $p = .009$). Pairwise comparisons suggested that the greatest divergence between receivers and senders emerged among employees whose colleagues send or respond to work emails in the evening about half the time ($F[1,154] = 15.75$, $p < .001$), sometimes ($F[1,154] = 6.15$, $p = .014$) or never ($F[1,154] = 13.81$, $p < .001$).

Discussion

This study replicates and expands our findings from Studies 1-2 by showing that being both in the receiver and the sender role seems to impact participants' judgments of response speed compared to neutral observers. While receivers do indeed seem to exaggerate the pressure on them to respond immediately to an email, as compared to neutral observers, senders also seem

to downplay the pressure receivers would feel to respond compared to neutral observers, who seem more aware of this dynamic. Altogether, this study provides additional evidence for H1 and further suggests that *both* senders and receivers may err when it comes to response speed expectations, although the mistake is larger on the receivers' side.

Study 2A: Additional Preregistered Measures and Analyses

Additional Measures

We captured differences between receivers and senders in felt compliance to reply to non-urgent work emails. We used the "likelihood to reply" item from Study 2 given that results with individual items in Study 2 suggested that differences in felt compliance to respond between receivers and senders was statistically significant only for this item.

In Study 2A we further asked participants to indicate their agreement with two statements capturing their consciousness ($r = .47$, $p < .001$) on a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*): 1. "I would describe myself as disorganized and careless", 2. "I would describe myself as dependable and self-disciplined." Using the same 7-point scale, we asked participants to indicate their agreement with the same two statements but adapted to capture their coworkers/colleagues' consciousness ($r = .45$, $p < .001$): "I would describe my coworkers/colleagues at my main job as:" 1. Disorganized and careless, and 2. Dependable and self-disciplined. We reverse-scored the first item for both scales.

We then asked participants to indicate their agreement with four statements capturing work-beliefs on a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*): 1. "Work should come first even if it means less spare time." 2. "I live in a place where people tend to value work over leisure", 3. "Even if I were financially able, I would not

stop working.", and 4. "It is work that makes life worth living, not leisure." The internal reliability of these items was below .5 (α = .39) and we will thus treat them as individual items.

We also asked participants to indicate their agreement with five statements capturing leisure beliefs (α = .68; Tonietto, Malkoc, Reczek, & Norton, 2019) on a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*): 1. "People should strive to make time spent on leisure more productive," 2. "People who engage in leisure tasks a lot have too much free time on their hands," 3. "Time spent on leisure is often wasted time," 4. "Most leisure activities are a way to burn time Leisure activities are not a productive use of time," and 5. "The work and leisure beliefs scales were presented in random order."

Additional Results

We found a significant main effect of condition on felt compliance, F [2, 245] = 4.72, p = .010. Planned contrast tests indicate that participants in the receiver condition reported feeling more compelled to reply right away (M = 4.11, SD = 2.20), compared to what participants in the sender condition thought senders felt (M = 3.34, SD = 1.62), t(243) = 2.78, p = .006, d = .40, but not compared to what participants in the observer condition thought senders felt (M = 4.05, SD = 1.32), t(243) = .21, p = .834 d = .03. The difference between participants in the sender condition and those in the observer condition was significant, t(243) = 2.55, p = .011, d = .48.

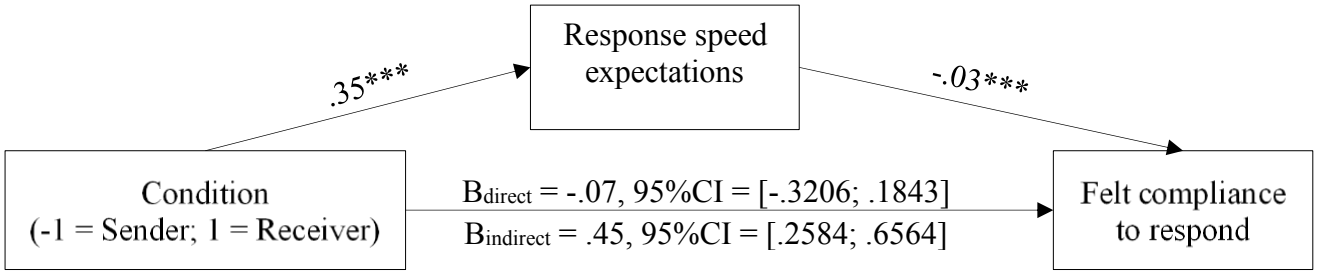
Next, we examined whether the difference between receivers' and senders' felt compliance to respond was at least partially mediated by differences in response speed expectations. In line with our preregistered analytic plan, we ran a regression analysis using the Bootstrapping PROCESS Macro Model 4 with 10,000 bootstraps (95% CI) and entered condition as the predictor variable, response speed expectations as the mediator, and felt compliance to respond as the outcome variable. We excluded participants in the observer

condition for these analyses. As predicted and replicating our results from Study 2, response speed expectations mediated the effect of condition on felt compliance to respond (Figure S3).

Then, we examined whether the effect of condition on response speed expectations held when controlling for the other exploratory variables. Results indicated that the effect of condition remained significant when entering self-rated conscientiousness, other-rated conscientiousness, leisure beliefs, and the work beliefs items (Table S11).

We also examined whether there were differences between conditions on these exploratory measures. We found a significant main effect of condition on other-rated conscientiousness, F [2, 243] = 4.04, p = .019. Planned contrast tests indicate that participants in the sender condition thought their colleagues were more conscientious compared to what participants in the observer condition thought about their colleagues, $t(243) = -2.81$, p = .005, d = -.42 (Table S12).

Figure S3. Mediation with the Felt Compliance to Respond Composite Scale (Study 2A)



Note. Participants in the observer condition were not included since we did not make any a-prior predictions for this condition. Values are standardized coefficients. ***p < .001.

Table S11. Response Speed Expectations Controlling for Other Exploratory Measures (Study 2A)

Variables	β	*B*	*SE*	*p-value* for predictor	*F-value for model*	*p-value for model*	R^2
Condition	.29	.58	.13	< .001			
Self-rated conscientiousness	.07	.10	.09	.275			
Other-rated conscientiousness	-.01	-.02	.10	.844			
Leisure beliefs	.05	.05	.10	.418			
Work should come first even if it means less spare time	.01	.01	.06	.849			
I live in a place where people tend to value work over leisure	.09	.06	.04	.177			
Even if I were financially able, I would not stop working	.09	.07	.05	.163			
It is work that makes life worth living, not leisure	-.01	-.01	.04	.845			
					3.93	< .001	.12

Note. $N = 246$. Condition was coded as: -1 = sender condition, 0 = neutral condition, 1 = receiver condition.

Table S12. Mean Differences by Condition on the Exploratory Variables (Study 2A)

	Senders	Observers	Receivers
Self-rated conscientiousness	5.73 (1.07)	5.60 (1.23)	5.62 (1.27)
Other-rated conscientiousness	5.53 (1.01) **	5.04 (1.28) **	5.35 (1.04)
Leisure beliefs	4.46 (1.93)	4.23 (1.82)	4.33 (1.87)
Work should come first even if it means less spare time	4.91 (1.84)	5.28 (1.77)	4.68 (1.71)
I live in a place where people tend to value work over leisure	4.15 (2.51)	4.41 (2.61)	4.18 (2.35)
Even if I were financially able, I would not stop working	4.29 (2.40)	4.48 (2.34)	5.05 (2.18)
It is work that makes life worth living, not leisure	4.16 (2.90)	4.12 (2.90)	3.69 (2.77)

** The two conditions significantly differed at $p = .005$.

Study 3: Moderation by Email Urgency

Study 3: Email Habits

We measured habits around sending/receiving work emails over the weekend with 2 items: 1. "How often do you send or respond to work emails during the weekend?" and 2. "How often do your colleagues or people in your field send or respond to work emails during the weekend?" (1 = *always*; 5 = *never).*

Table S13 presents the distribution of participants' frequency to send or respond to work emails during the weekend and, respectively, of the frequency of sending and responding to work emails during the weekend of their colleagues. Exploratory analyses among those in the non-urgent email condition only (n = 307), given that this aligns with our focus in the present research, suggested that neither participants' email habits (F[4,307] = 2.51, p = .444), nor others' email habits moderate these effects (F[4,307] = 1.85, p = .575).

Table S13. Email Habits for Self and Colleagues (Study 3)

	Frequency of sending/responding to work emails in the weekend	Frequency of colleagues sending/responding to work emails in the weekend
Always	11.4%	7.5%
Most of the time	17.7%	19.1%
About half the time	10%	14.9%
Sometimes	40.5%	46.9%
Never	20.4%	11.6%

Note. N = 603.

Study 3: Results Following Pre-Registered Exclusions

We conducted the main analyses following our pre-registration plan to exclude participants who failed our manipulation checks (n = 154). This left us with a sample of 449 participants (35.2% female; M_{Age} = 33.61, SD_{Age} = 9.02).

As per our preregistration plan, we first ran two separate t-test analyses to examine the effects of the perspective and urgency condition on response speed expectations. Similar to our results from the manuscript, we found that participants in the receiver condition thought senders expected a response more quickly (M = 4.69, SD = 1.67), compared to what participants in the sender condition said they expected (M = 4.17, SD = 1.84), $t(447) = 3.10$, $p = .002$, $d = .30$.

Regarding the urgency condition, we found that participants in the low urgency condition reported lower response speed expectations (M = 3.54, SD = 1.71), compared to participants in the high urgency condition (M = 5.49, SD = 1.16), $t(447) = -13.92$, $p < .001$, $d = -1.32$. However, similar to our results on the full sample, there was no significant interaction between the two conditions, $F[1,449] = 2.89$ $p = .090$, $\eta^2 = .01$.

Study 3: Main Results Controlling for Preregistered Covariates

We preregistered that we would run our main analyses controlling for email habits during the weekend. The effect of the perspective, and respectively urgency, condition on response speed expectations remained significant when controlling for these items (Table S14a-b). Finally, similarly to the results reported in the manuscript, there was no significant interaction between the perspective and the urgency condition predicting response speed expectations $F[1,603] = .65$, $p = .421$, $\eta^2 = .00$.

Table S14a. Perspective Effects Controlling for Email Habits (Study 3)

Variables	β	*B*	*SE*	*p-value* for predictor	*F-value for model*	*p-value for model*	R^2
Perspective condition (1 = *Receiver*)	.18	.32	.07	<.001			
Email habits (self)	-.22	-.30	.08	<.001			
Email habits (colleagues)	-.16	-.25	.09	.005			
					37.50	< .001	.16

Note. N = 603.

Table S14b. Urgency Effects Controlling for Email Habits (Study 3)

Variables	β	*B*	*SE*	*p-value* for predictor	*F-value for model*	*p-value for model*	R^2
Urgency condition (1 = *High urgency*)	.47	.82	.06	<.001			
Email habits (self)	-.16	-.21	.07	.002			
Email habits (colleagues)	-.18	-27	.08	.001			
					103.67	< .001	.34

Note. $N = 603$.

Study 3: Additional Preregistered Measures and Analyses

Additional Measures

Independent of condition, in Study 3, we captured general self and other perceptions of response speed for urgent and non-urgent work emails. To capture self-perceptions of response speed, we asked: "How quickly do you expect your colleagues to respond to your non-urgent (urgent) emails sent over the weekend?" To capture other-perceptions of response speed, we asked: "How quickly do your colleagues expect you to respond to their non-urgent (urgent) emails sent over the weekend?" (1 = *within minutes*, 2 = *within hours*, 3 = *within a day*, 4 = *on Monday*, 5 = *Sometime during the following work week)*.

Additional Results

Given that we had no specific hypotheses for these questions, we analyzed the distribution of response speed perceptions. Figure S4 suggests people expect a less quick response to their non-urgent emails compared to what they think others' expectations are. We see the opposite pattern for self (vs. other) response speed perceptions for urgent work questions. Next, we unpacked these differences by specific response option and found that non-urgent vs. urgent work emails sent over the weekend presented different patterns, with the strongest discrepancies between senders and receivers emerging for urgent work email (Figure S5a and

5b). While the current paper investigates the email urgency bias in the moment, these exploratory results suggest that our perceptions of urgency might differ depending on what urgency means to us. We note that these results are intriguing and warrant further research.

Figure S4. Self vs. Other Urgency for Urgent and Non-urgent Work Emails (Study 3)

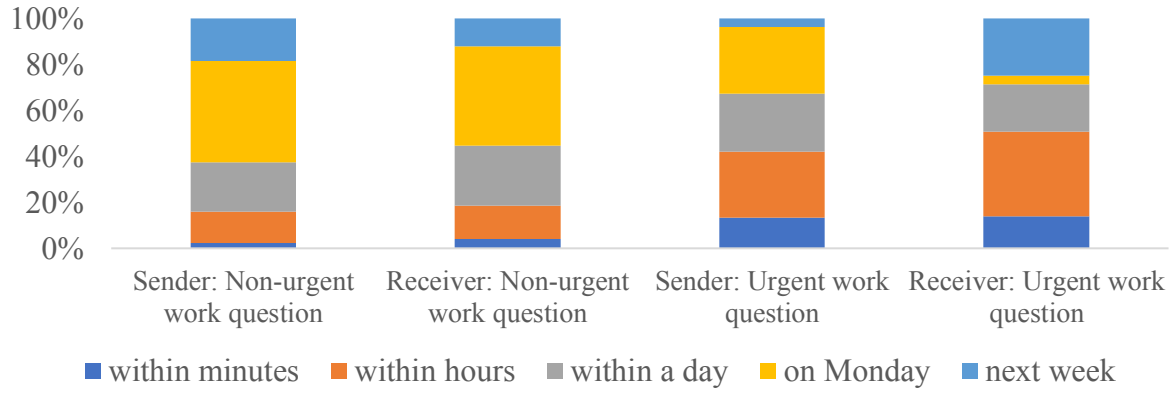


Figure S5a. Self vs. Other Perceptions for Urgent Work Emails (Study 3)

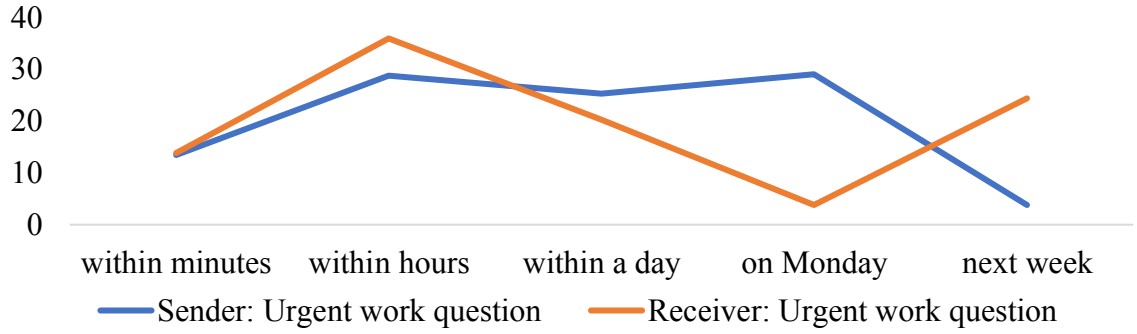
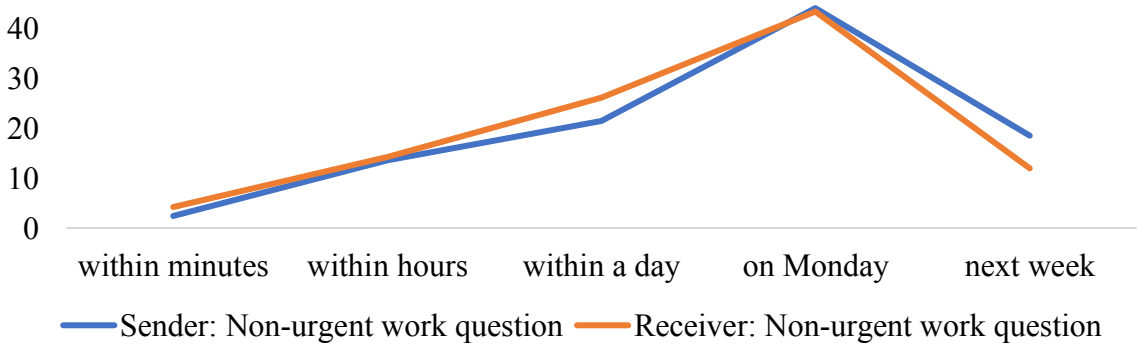


Figure S5b. Self vs. Other Perceptions for Non-Urgent Work Emails (Study 3)



Study 4: Moderation by Work Time

Study 4: Email Habits

Similar to our prior studies, we used 2 items to capture participants and their colleagues' habits around sending/receiving non-urgent work emails outside normative work hours.

Table S15a presents the distribution of participants' frequency to send or respond to work emails outside normative work hours and, respectively, of the frequency of sending and responding to work emails outside normative work hours of their colleagues. Exploratory analyses suggested that neither participants' email habits (F[4,411] = .79, p = .533), nor others' email habits moderate these effects (F[4,411] = .29, p = .884).

Table S15a. Email Habits Outside Work Hours for Self and Colleagues (Study 4)

	Frequency of sending/responding to work emails during off-hours	Frequency of colleagues sending/responding to work emails during off-hours
Always	2.2%	1.9%
Most of the time	9.5%	10.5%
About half the time	11.2%	17.3%
Sometimes	54%	59.6%
Never	23.1%	10.7%

Note. N = 411.

We also included two additional items that captured email habits within normative work hours. Table S15b presents the frequency distribution of these email habits. Exploratory analyses suggested that participants own habits within work hours did not moderate the email urgency bias (F[4,411] = 1.11, p = .351, η^2 = .01). However, their colleagues' habits within work hours did moderate the email urgency bias (F[4,411] = 3.29, p = .011, η^2 = .03). Pairwise comparisons suggested that the greatest divergence between receivers and senders emerged among employees whose colleagues send or respond to non-urgent work emails within work hours most of the time (F[1,401] = 17.32, p < .001) or sometimes (F[1,401] = 5.44, p = .020).

Table S15b. Email Habits Within Work Hours for Self and Colleagues (Study 4)

	Frequency of sending/responding to work emails during off-hours	Frequency of colleagues sending/responding to work emails during off-hours
Always	2.2%	1.9%
Most of the time	9.5%	10.5%
About half the time	11.2%	17.3%
Sometimes	54%	59.6%
Never	23.1%	10.7%

Note. $N = 411$.

Study 4: Additional Exploratory Pre-Registered Analyses

We pre-registered that we would conduct t-test to independently examine the main effect of the perspective and the work time condition on response speed expectation. These analyses revealed similar results as those presented in the manuscript. Specifically, we found a main effect of perspective on response speed expectations with receivers overestimating senders' response speed expectations, $t(409) = 3.44$, $p = .001$. Similarly, we found a main effect of work time on response speed expectations, with emails sent within normative work hours being perceived as having greater expectations of a faster response than emails sent outside normative work hours, $t(409) = 8.21$, $p < .001$.

In this study we also captured expected speed of response adapted per condition in terms of magnitude on a scale from 1 (*not at all quickly*) to 7 (*very quickly*) and in terms of numeric evaluations on a categorical scale (1= *within many seconds*; 2 = *within minutes*; 3 = *within hours*; 4 = *within a day*; 5 = *within more than a day*; 6 = *whenever they get around to it*). We found no significant interaction between perspective and work time on either the magnitude measure of expected speed of response, ($F[1,411] = .09$, $p = .762$, $\eta^2 = .00$) or on the categorical measure of expected speed of response, ($F[1,411] = .57$, $p = .452$, $\eta^2 = .00$).

Study 5: Discrepancy in Perceived Stress

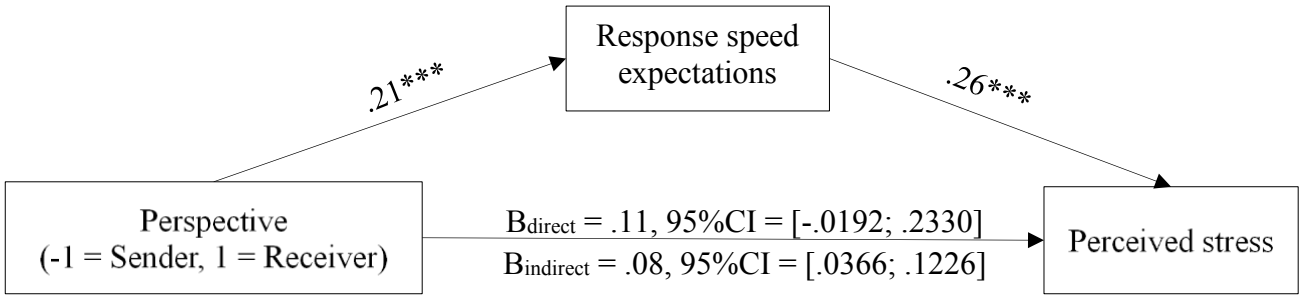
Study 5: Additional Pre-registered Analyses

We pre-registered that we would conduct t-test to independently examine the main effect of the perspective and the work time condition on response speed expectation and perceived stress. These analyses revealed similar results as those presented in the manuscript. Specifically, we found a main effect of perspective on response speed expectations with receivers overestimating senders' response speed expectations, $t(447) = 4.46$, $p < .001$; and a main effect on perceived stress, with senders predicting that receivers would experience emails as less stressful, $t(447) = -2.81$, $p = .005$. We found a main effect of work time on response speed expectations, with emails sent within normative work hours being perceived as having greater expectations of a faster response than emails sent outside normative work hours, $t(447) = 3.71$, $p < .001$; and a main effect on perceived stress, with emails sent outside normative work hours feeling more stressful than those sent within normative work hours, $t(447) = 3.19$, $p = .002$.

Study 5: Full Mediation and Moderated-Mediation Models

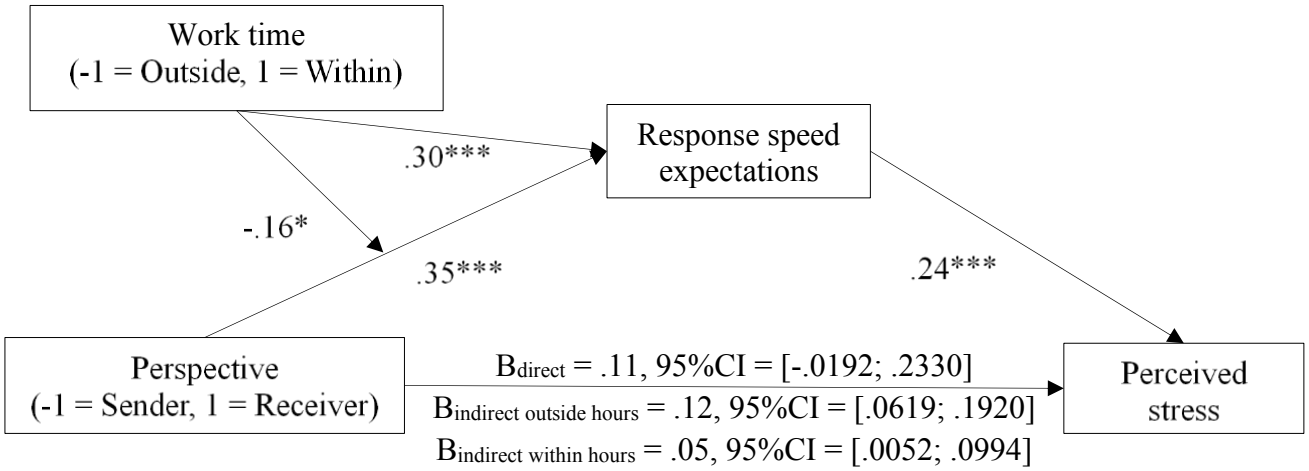
Figures S6a-c present the full results of the mediation and the moderated-mediation models presented in the manuscript.

Figure S6a. Mediation via Response Speed Expectations (Study 5)



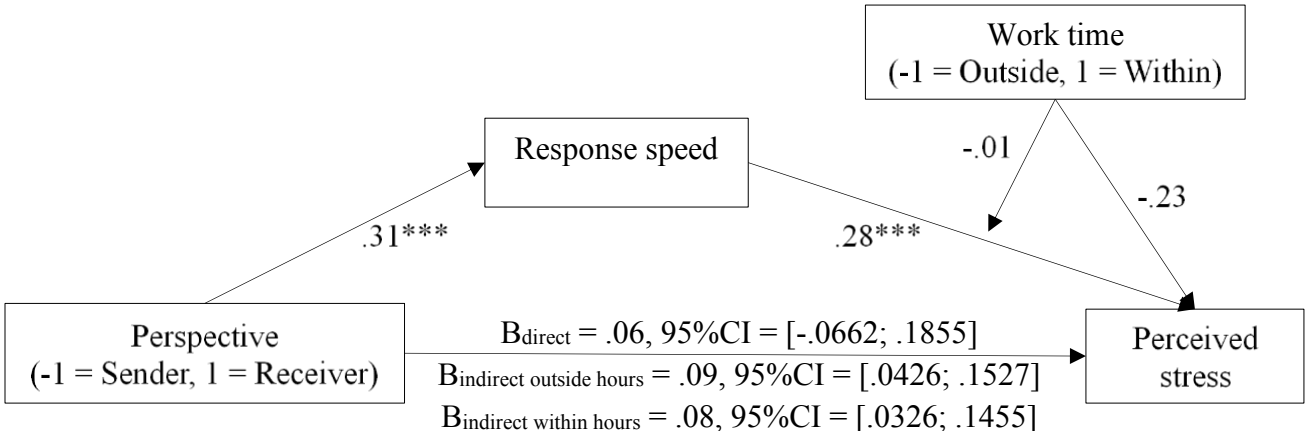
Note. Values are standardized coefficients. ***$p < .001$.

Figure S6b. Moderated-Mediation (Path 1) via Response Speed Expectations (Study 5)



Note. Values are standardized coefficients. ***$p < .001$.

Figure S6c. Moderated-Mediation (Path 2) via Response Speed Expectations (Study 5)



Note. Values are standardized coefficients. ***$p < .001$.

Study 6: Small Adjustment on the Sender's Side

Study 6: Additional Pre-Registered Analyses

Following our preregistered analytic plan, we conducted two separate ANOVAs of perspective X adjustment on response speed expectations and perceived stress. Collapsing across the work time conditions, we found a marginally significant interaction on response speed expectations $F[1,852] = 3.33$, $p = .068$, $\eta^2 = .00$, and two significant main effects. In line with H1, we again found that participants in the receiver condition thought senders expected a response more quickly ($M = 3.49$, $SD = 1.58$), compared to what participants in the sender condition expected ($M = 3.25$, $SD = 1.63$), $F[1,848] = 5.72$, $p = .017$, $\eta^2 = .01$. We also found a main effect of the adjustment condition, such that participants in the email note condition indicated lower response speed expectations ($M = 3.04$, $SD = 1.55$), compared to participants in the control condition ($M = 3.70$, $SD = 1.60$), $F[1,848] = 38.65$, $p < .001$, $\eta^2 = .04$.

In contrast, when collapsing across the work time conditions, we found no significant interaction between the perspective and adjustment conditions on perceived stress ($F[1,852] = .63$, $p = .428$, $\eta^2 = .00$) and no main effect of the perspective condition on perceived stress ($F[1,852] = 1.07$, $p = .302$, $\eta^2 = .00$). However, we did find that participants in the email note condition reported lower perceived stress caused by the non-urgent email ($M = 2.40$, $SD = 1.43$), compared to participants in the control condition ($M = 2.65$, $SD = 1.52$), $F[1,852] = 6.04$, $p = .014$, $\eta^2 = .01$.

Study 6: Main Results Within the Control Condition

We conducted two separate ANOVAs of perspective X work time on response speed expectations and perceived stress. In line with our findings from Study 5, we found a significant interaction between perspective and work time on response speed expectations, $F[1,425] = 9.84$,

$p = .002$, $\eta^2 = .02$. Deconstructing this interaction, the discrepancy between senders' and receivers' response speed expectations was significant for participants in the outside normative work hours condition ($M_{Receiver} = 3.82$, $SD_{Receiver} = 1.53$ vs. $M_{Sender} = 2.89$, $SD_{Sender} = 1.75$) $F(1,421) = 19.54$, $p < .001$, $\eta^2 = .04$, but non-significant for participants in the within normative work hours condition ($M_{Receiver} = 4.04$, $SD_{Receiver} = 1.46$ vs. $M_{Sender} = 4.05$, $SD_{Sender} = 1.39$) $F(1,421) = .00$, $p = .983$, $\eta^2 = .00$. Contrary to our findings from Study 5, we found no significant interaction ($F[1,425] = .08$, $p = .776$, $\eta^2 = .00$) or main effects of perspective ($F[1,425] = 1.60$, $p = .206$, $\eta^2 = .00$) or work time ($F[1,425] = .94$, $p = .332$, $\eta^2 = .00$) on perceived stress.

We did find a significant indirect effect of perspective on perceived stress through response speed expectations ($B_{indirect} = .06$, 95%CI = [.0185, .1124]). This finding aligns with our results from Study 5 and provides additional support for H2. This indirect effect was significant outside normative work hours ($B_{indirect} = .12$, 95%CI = [.0554, .2153]) but *not* within normative work hours ($B_{indirect} = -.00$, 95%CI = [-.0552, .0523]); note that in this case work time interacted with perspective to predict response speed expectations (B = -.23, 95%CI = [-.3809, -.0875]). The difference between the two conditional indirect effects was significant ($B_{index\ of\ moderation} = -.13$, 95%CI = [-.2385, -.0407].

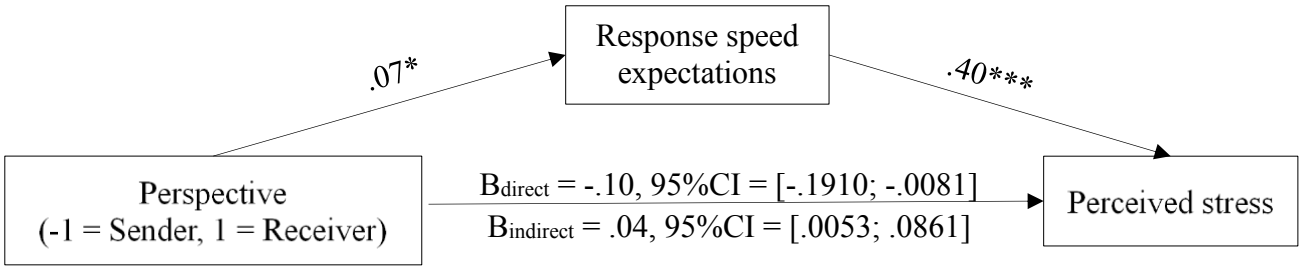
We further found that work time moderated the link between response speed expectations and perceived stress, such that the indirect effect of perspective on perceived stress through response speed expectations was significant both outside normative work hours ($B_{indirect} = .04$, 95%CI = [.0052, .0920]) and within normative work hours ($B_{indirect} = .10$, 95%CI = [.0316, .1853]); note that unlike Study 5, work time interacted with response speed expectations to

predict perceived stress (B = .14, 95%CI = [.0462, .2256]) and the difference between the two conditional indirect effects was significant ($B_{index\ of\ moderation}$ = .06, 95%CI = [.0088, .1352].

Study 6: Mediation and Moderated-Mediation Models on Perspective x Work Time

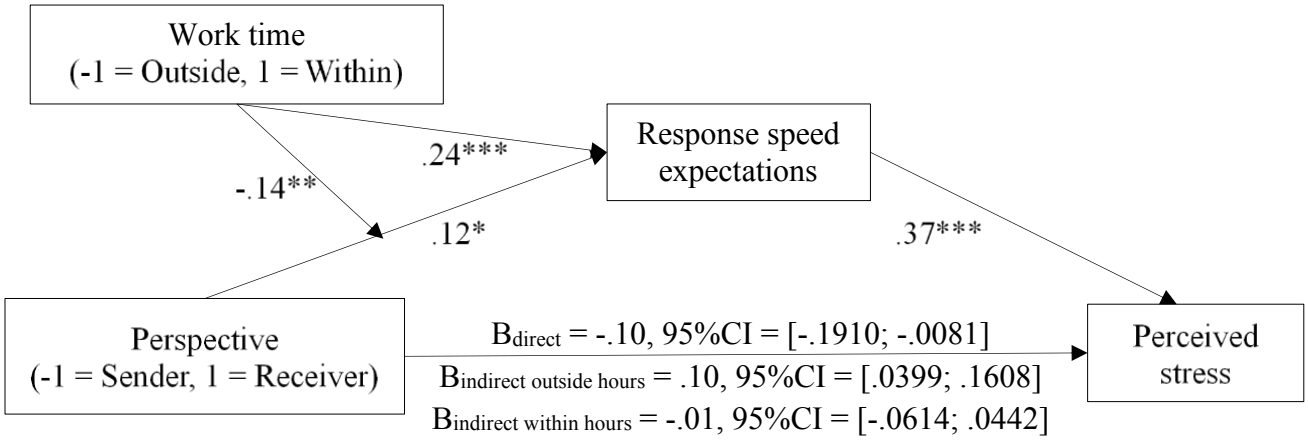
Figures S7a-c present the full results of the mediation and the moderated-mediation models presented in the manuscript.

Figure S7a. Mediation via Response Speed Expectations (Study 6)



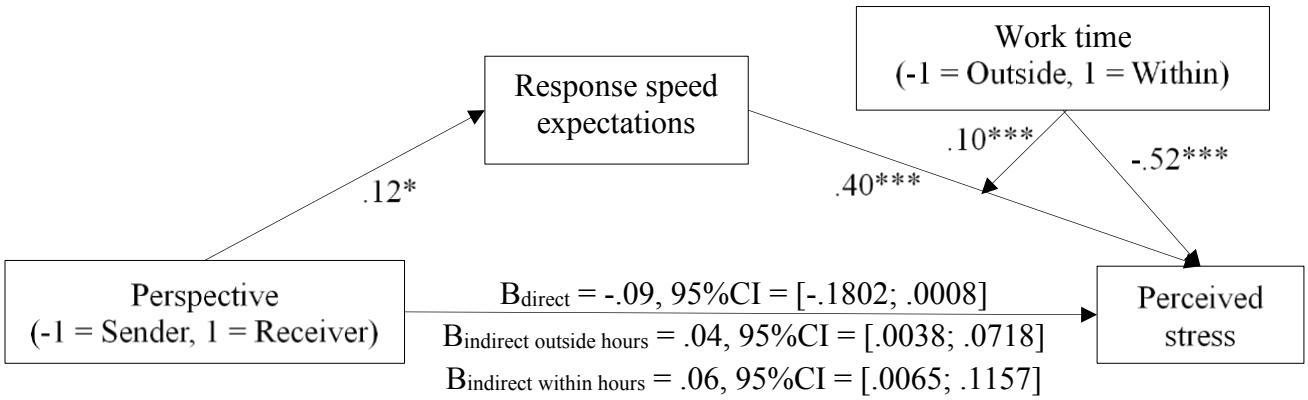
Note. Values are standardized coefficients. *p < .05, ***p < .001.

Figure S7b. Moderated-Mediation (Path 1) via Response Speed Expectations (Study 6)



Note. Values are standardized coefficients. **p < .01; ***p < .001.

Figure S7c. Moderated-Mediation (Path 2) via Response Speed Expectations (Study 6)

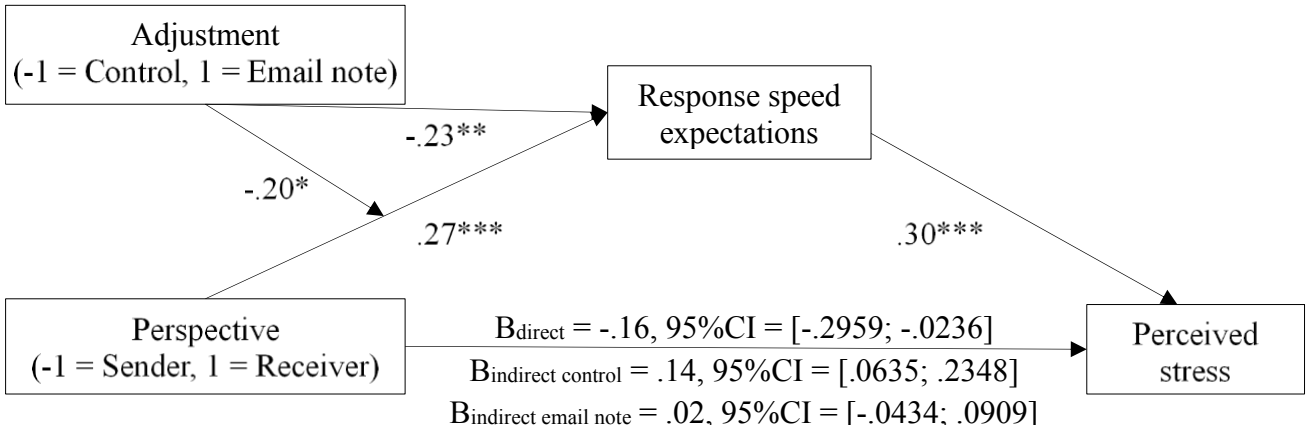


Note. Values are standardized coefficients. *$p < .05$; ***$p < .001$.

Study 6: Mediation and Moderated-Mediation Models Outside Work Hours Condition

Figures S8 present the full results of the mediation and the moderated-mediation models presented in the manuscript.

Figure S8. Moderated-Mediation (Path 1) via Response Speed Expectations (Study 6)



Note. Values are standardized coefficients. *$p < .05$; **$p < .01$; ***$p < .001$.

References in this document

Tonietto, G., Malkoc, S. A., Reczek, R., & Norton, M. (2019). *"Leisure = Wasteful" Intuition: Believing leisure is unproductive undermines enjoyment and well-being*. Working Paper.