

UNDERSTANDING BELONGINGNESS IN THE GIG ECONOMY:
THE UPLIFTING AND UNDERMINING EFFECTS
OF ONLINE COMMUNITIES ON
LONELY GIG WORKERS

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DISSERTATION ABSTRACT

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All humans have a need to belong and belongingness at work serves important organizational and personal purposes. However, gig workers face significant challenges to experiencing belongingness at work because their work is highly temporary, project-based, and occurs outside the relational scaffold afforded by organizations. Given these challenges, gig workers frequently engage in online communities that serve critical social and information-sharing functions. In this dissertation, I focus on gig workers' individual behaviors in online communities related to gig work and analyze how these behaviors impede or further belongingness. Integrating the evolutionary model of loneliness and regulatory focus theory, I propose that loneliness at work motivates gig workers to engage in online communities in different ways that can either impede or facilitate belongingness. Specifically, I hypothesize that gig workers feel less belongingness when engaging in lurking behaviors, more belongingness when engaging in contributing behaviors. To offer practical advice on how to increase belongingness, I develop an intervention designed to increase contributing behaviors that enhance belongingness. Ultimately, I suggest that belongingness will affect withdrawal from work. I test my theoretical model in a ten-day experience sampling study (ESM) with 95 gig workers. My dissertation contributes to an understanding of how modern workers experience belongingness outside of organizations and the impact of online communities in this process.

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CHAPTER 1: INTRODUCTION

Humans have an innate need to belong, i.e., to “form and maintain at least a minimum quantity of interpersonal relationships” (Baumeister & Leary, 1995: 499; Hagerty et al., 1992). Given that people spend about half of our waking time at work (Bureau of Labor Statistics, 2022), “Sociologists and organizational researchers have long considered the workplace as a key setting for forging social connections and a sense of belonging” (e.g., Ashforth & Mael, 1989; Glavin et al., 2021: 407; Kogut & Zander, 1996). The feeling of belonging at work benefits workers’ social and psychological functioning (Hagerty et al., 1992, 1996) as well as their organizations, increasing workers’ engagement, performance, and citizenship behaviors (Belmi & Schroeder, 2021; Cohen & Garcia, 2008; Good et al., 2012; Walton & Cohen, 2007, 2011).

However, the literature suggests that nonstandard workers, such as independent contractors, temporary workers, or on-call workers, often lack a sense of belonging at work because they have looser bonds to organizations or are not connected to organizations at all (Petriglieri et al., 2019; Petriglieri et al., 2018; Spreitzer et al., 2017). This is especially true for one subtype of nonstandard workers—gig workers—whose work is characterized as highly temporary, project-based, and outside the confines of an organization (Caza et al., 2021; Cropanzano et al., 2023). Given the characteristics of their work, gig workers frequently experience social fragmentation and isolation (Walker et al., 2021; Wells et al., 2021). Ultimately, unequal access to avenues of belongingness between gig workers and standard workers contributes to making gig workers a “new social class” that experiences decreased levels of well-being (Muntaner, 2018) and the detrimental consequences thereof. My dissertation seeks to acknowledge the challenges to belonging that gig workers face, by asking: *How do gig workers develop belongingness at work?*

In this dissertation, I investigate online communities as a possible avenue to experience belonging in the gig economy. Gig workers frequently “re-create the social side of work” by engaging in online communities such as gig-specific Facebook groups, Subreddits, or online forums (Gray & Suri, 2019: 123; Rosenblat, 2018). These online communities represent readily available communities in which gig workers can socialize and talk about their work (Gray & Suri, 2019; Maffie, 2020; Rosenblat, 2018; Walker et al., 2021; Wood et al., 2018). Scholars have applauded such “grassroots attempts” at community among nonstandard workers (Ashford et al., 2007: 82; Kellogg et al., 2020; Kost et al., 2020; Yao et al., 2021) because membership in social groups like organizations or other work-related communities provides workers with a sense of belonging through a shared identity (e.g., Ashforth et al., 2008; Ashforth & Mael; 1989; Lave & Wenger, 1991; Nicolini et al., 2022; O’Mahony & Ferraro, 2007; Schwartz, 2018; Tajfel, 1978; Van Maanen & Barley, 1984).

However, despite their potential to decrease belonging, online communities related to gig work represent much looser forms of community than those studied by organizational scholars before, making it less likely that their members develop a shared identity. As research on the non-work usage of social network sites has shown, individuals may feel even less connected to others upon visiting these sites, dependent on whether they use these sites passively—such as browsing and reading other users’ contents—or actively—such as engaging with other users directly through messaging and posting (Burke et al., 2010; Matook et al., 2015; Ryan & Xenos, 2011; Verduyn et al., 2015, 2017). Similarly, work-related online communities may leave gig workers feeling even more isolated and alone, if they use them passively versus actively. Therefore, the engagement in online communities could either hamper or facilitate gig workers’ sense of belonging.

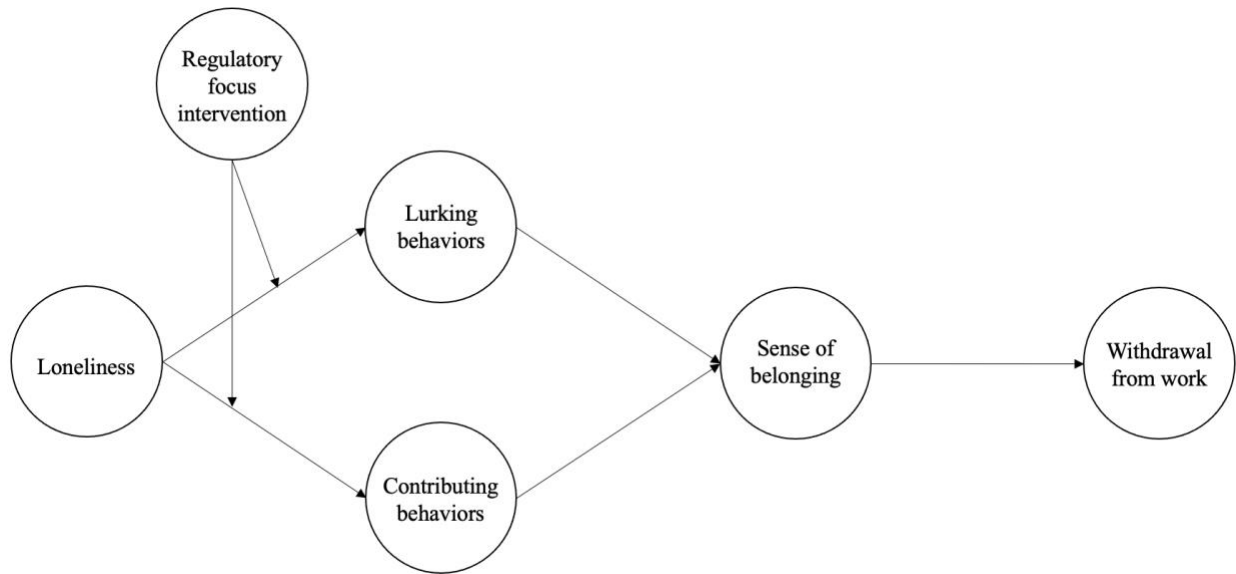
To examine the potentially countervailing effects of online communities on gig workers' sense of belonging, I argue that it is necessary to account for the motivation of gig workers to engage in online communities either passively or actively. Specifically, I argue that *loneliness* is a visceral and automatic driver of gig workers' engagement in online communities that may fuel both passive and active behaviors online. Loneliness is particularly prevalent among gig workers due to the high degree of digitalization of their work, the lack of coworkers, and the one-off nature of interactions with customers (Bucher et al., 2021; Caza et al., 2021; Glavin et al., 2021; Petriglieri et al., 2019; Walker et al., 2021; Yao et al., 2021). Drawing on the evolutionary model of loneliness (Cacioppo & Cacioppo, 2018), I hypothesize that transient feelings of loneliness motivate gig workers to visit online communities to combat their social isolation. However, loneliness motivates people to both protect the self from further social harm by employing vigilance in social interactions (the self-preservation hypothesis) and to reach out to others in an effort to overcome loneliness (the reconnection hypothesis) (Cacioppo & Cacioppo, 2018; Gabriel et al., 2021; Maner et al., 2007). Researchers have dubbed these conflicting motivations of keeping a safe distance while also wanting to be with others the “porcupine problem” of loneliness, as porcupines may repel each other with their spiky quills when trying to huddle together for warmth and company (Maner et al., 2007). Ultimately, these conflicting motivations drive different behaviors in online communities that hinder or further gig workers' sense of belonging.

Research on social network sites commonly distinguishes between passive and active usage (see Verduyn et al., 2017 for an overview). Given the significance of information sharing in online communities related to gig work (e.g., Kellogg et al., 2020; Walker et al., 2021), I go beyond this common distinction and differentiate between *lurking behaviors*—vigilance

behaviors such as withholding information from or silencing questions to others—and *contributing behaviors*—eagerness behaviors such as soliciting information from or offering information to others—in online communities (Higgins, 1997). Integrating the evolutionary model of loneliness (Cacioppo & Cacioppo, 2018) with regulatory focus theory (Higgins, 1997), I argue that loneliness has countervailing indirect effects on belongingness dependent on the specific behaviors that it motivates. More precisely, loneliness should have a negative indirect effect on belonging through lurking behaviors because these behaviors undermine connection to others. In contrast, loneliness should have a positive indirect effect on belonging via contributing behaviors because these behaviors increase attachment to others.

Furthermore, I develop an intervention to weaken the negative and boost the positive indirect impact of loneliness on belonging. Given that regulatory foci represent different goals—avoiding undesirable outcomes versus approaching desirable outcomes (Higgins, 1997)—an intervention that emphasizes desirable (undesirable) goals in the context of online communities should strengthen the positive (negative) indirect effect by increasing contributing (lurking) behaviors. Specifically, lonely gig workers should be more likely to engage in contributing behaviors when a promotion focus is primed, strengthening the positive indirect effect of loneliness on belonging. In turn, lonely gig workers should be more likely to engage in lurking behaviors when a prevention focus is primed, strengthening the negative indirect effect of loneliness on belonging. Lastly, I expect that the degree to which gig workers feel a sense of belonging will decrease their *withdrawal behaviors*. Gig workers can largely decide on each given day how much or how little they like to work, making intrinsic motivators—such as feelings of belonging—promising candidates in explaining the high turnover in the gig economy. Figure 1 summarizes my theoretical model.

Figure 1: Theoretical model



My model makes several theoretical and practically relevant contributions. First, I contribute to the literature on belonging at work. Research on how standard workers experience belonging through the social identity that organizations and occupations provide would suggest that belongingness is outside of nonstandard workers’ reach (see Ashforth et al., 2008 for an overview). Yet, we know little about if and how nonstandard workers can experience belonging without the support of strong organizational or occupational communities (Spreitzer et al., 2017). I focus on behaviors at the individual level to investigate the factors that improve or impede workers’ sense of belonging in the absence of collective pathways to belonging. This focus on individual behaviors allows me to theorize and test how workers themselves can exert influence on their sense of belonging. Importantly, the negative and positive paths to belonging that I hypothesize should operate independently of the objective characteristics of a specific community. Relatedly, my work may offer practical guidance to gig workers on how to behave in online communities—engaging in lurking and/or contributing behaviors—to leverage the potential these communities hold for experiencing belongingness. Specifically, through an

intervention that should increase contributing and decrease lurking behaviors, I aim to empower gig workers with concrete advice on how to thrive in the gig economy (Ashford et al., 2018).

Furthermore, I contribute to the literature on work-related communities. While scholars have focused on traditional communities around work such as organizations (e.g., Ashforth & Mael, 1989; Kogut & Zander, 1996) or occupations (Van Maanen & Barley, 1984), online communities have received less attention from organizational researchers and differ in many regards from the traditional communities around work. Therefore, it remains an open question how communities that lack gatekeeping mechanisms and do not provide their members with a strong social identity affect their members. Given the prevalence of work-related online communities outside the gig economy, my work may further inspire organizational scholars to study these communities and their impact on workers.

Lastly, I contribute to the literature on loneliness and the “porcupine problem” by integrating the evolutionary model of loneliness with regulatory focus theory. This integration allows me to hypothesize and test concrete behaviors that lonely people engage in as well as an intervention aimed to reduce the aversive and increase the beneficial impact of momentary loneliness. By integrating the evolutionary model of loneliness with regulatory focus theory and testing the resulting predictions in a field intervention, I hope to cast light on the mixed evidence in previous research on the countervailing effects of loneliness.

CHAPTER 2: LITERATURE REVIEW ON BELONGING AND LONELINESS

In this chapter, I review the literatures on sense of belonging and loneliness, paying particular attention to the differences between these constructs to understand how loneliness, rather than being the flipside of belonging, may be instead a motivating force for behaviors that affect belonging. This view of loneliness helps understand how a negative emotion prevalent among nonstandard workers such as gig workers can drive behaviors that impact their sense of belonging.

Sense of Belonging

Feeling like one belongs entails considering oneself a member in a certain community (Good et al., 2012), thereby satisfying the fundamental human need to belong (Baumeister & Leary, 1995; Deci & Ryan, 2000; Pickett et al., 2004; Twenge et al., 2001). Specifically, it denotes “the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment” (Anant, 1966; Hagerty et al., 1992: 173). While belonging can have physical, spiritual, or sociological meaning, I focus on sense of belonging as a psychological experience, i.e., “an internal affective or evaluative feeling, or perception” (Hagerty et al., 1992: 174).

Researchers have described several aspects that constitute belongingness. Hagerty and colleagues (1992: 173) distinguish between two dimensions of belonging: “valued involvement: the experience of feeling valued, needed, accepted; and ... fit: the person’s perception that his or her characteristics articulate with or complement the system or environment.” In contrast, Good and colleagues (2012) describe five elements of feeling like one belongs: feelings of (1) membership and (2) acceptance as well as (3) positive affect, (4) trust toward other members, and (5) willingness to engage in the group. Despite the differences in the specific components of

belonging that Hagerty and colleagues (1992) and Good and colleagues (2012) lists, their work shares a focus on the perception of being part of the social fabric of a group and the positive affect associated with this perception.

Although an individual might have a general sense of belonging through their connections to family, friends, or their local community, this general sense differs from a domain-specific sense of belonging (e.g., Brands & Fernandez-Mateo, 2017; Good et al., 2012; Mendoza-Denton et al., 2002; Tost et al., 2022). “Individuals both high and low in general belongingness needs may be equally vulnerable to the potential negative consequences of a low sense of belonging to [a specific] domain” (Good et al., 2012: 701), highlighting the importance of considering domain-specific belonging. Given that the “discussion of a person’s sense of belonging requires identification of a corresponding referent” (Hagerty et al., 1992: 174), researchers study sense of belonging most often in relation to a specific context (e.g., Brand & Fernandez-Mateo, 2017; Good et al., 2012). Hence, I focus on the situated, domain-specific sense of belonging as the perception of belonging into the gig economy.

Organizational researchers do not often study belonging. Being mainly concerned with organizations rather than collectives outside of organizations, organizational researchers tend to study organizational identification—“the perception of oneness or belongingness to some human aggregate,” in this case the organization (Ashforth & Mael, 1989: 21)—rather than sense of belonging. However, the two constructs share considerable overlap. Organizational identification describes “the perception of oneness or *belongingness* to some human aggregate” (Ashforth & Mael, 1989: 21, italics added), specifically an organization. Social identities formed through the attachment to human aggregates such as organizations satisfy the need to belong (e.g., Greenaway et al., 2016). Reflecting the close connection between the constructs of belonging

and identification, measures of belonging sometimes include items explicitly relating to identification (e.g., Trawalter et al., 2021) and vice versa (Hogg et al., 2005; Tyler & Blader, 2001).

Yet, there are differences between belonging at work and organizational identification as well. Whereas deep-seated organizational identification involves incorporating the organization into one's self-concept (e.g., Dutton et al., 1994; Sluss & Ashforth, 2008), belongingness does not contain this identity aspect (e.g., Good et al, 2012). Furthermore, having a high sense of belonging to a specific group does not necessarily mean that fitting into the respective social group is important to the individual, whereas organizational identification describes the importance of the organization for one's personal self-concept (e.g., Luhtanen & Crocker, 1992). Instead, belonging most closely corresponds to a situated—rather than deep-seated—understanding of identification with a larger collective which is triggered by situational cues, preceding a deeper identification (Rousseau, 1998; Riketta et al., 2006).

Understanding workers' sense of belonging is crucial for organizational researchers because belonging—and the deeper seated identification it precedes—benefit individuals, their work, and their organizations. Belongingness is as beneficial to well-being “as a daily dose of vitamin C or regular exercise” (Jetten et al., 2012) and negatively associated with aversive emotions (e.g., Fong et al., 2021; McNamara et al., 2021). Consequently, when employees feel that they belong at work, they engage in more cooperative and citizenship behaviors, arguably because belongingness increases the value they attach to their organization's interests (De Cremer & Van Knippenberg, 2002; Den Hartog et al., 2007). Regarding identification, identification with their organization boosts workers' personal well-being, positively affecting self-esteem, self-verification, and the satisfaction of basic human needs (e.g., Ashforth, 2001;

Bergami & Bagozzi, 2000; Pratt, 1998; Vignoles et al., 2006). Organizational identification also benefits workers' organizations—resulting in increased work effort and performance among other outcomes (for overviews, see Ashforth, 2008; Riketta, 2005; Riketta & van Dick, 2005; Haslam, 2004; Haslam & Ellemers, 2005; van Dick, 2004).

Belongingness Among Nonstandard Workers

Nonstandard work arrangements (i.e., independent contractors, temporary workers, on-call workers, or contract company workers) have been increasing in number as work is undergoing a digital transformation (Cherry, 2016; Spreitzer et al., 2017; Ashford et al., 2007). For example, growth in independent contractors accounted for 29 percent of all jobs added to the economy between 2010 and 2014 (Holtz-Eakin et al., 2017) and nonstandard workers comprised 16 percent of the workforce in 2015 (Katz & Krueger, 2016). Gig work might be the most extreme form of nonstandard work arrangements because it is highly temporary, project-based, and positioned outside organizational structures; work is split into “gigs” that may last less than a minute or stretch over hours, sometimes even weeks or months (Caza et al., 2021; Watson et al., 2021). Although traditional gigs (e.g., babysitting, performing music) have always been offline, the digital transformation of work has enabled gig work to permeate a variety of industries. For example, gig workers rideshare drive for Uber, sell artwork via Etsy, or offer transcription services through Upwork. Researchers estimate that three quarters of gigs are now digitally mediated (Watson et al., 2021), leading to a total of 16 of U.S.-American adults having experience working in the gig economy (Anderson et al., 2021).

Research on nonstandard workers and gig workers in particular suggests significant challenges to belonging in the gig economy given the lack of formal or established organizational or occupational communities in the gig economy (Spreitzer et al., 2017). Indeed,

researchers have found that many gig workers appear to resist being associated with the “average” gig worker. For example, many Uber drivers report having “never met another Uber driver face to face” and lacking “any real interest in socializing with other Uber drivers” (Wells et al., 2021: 322), thinking of themselves as more qualified/educated/intelligent than the “average Uber driver.” Instead of feeling connected to their fellow gig worker, many gig workers value self-reliance and see other gig workers as competitors (Anwar & Graham, 2019; Wood & Lehtonvirta, 2019; Yao et al., 2021; see Gray & Suri, 2019: 132 for cultural factors influencing self-reliance among gig workers). These sentiments toward fellow gig workers reflect recent work on stigmatization *within* occupations, i.e., among one’s peers (Toubiana & Ruebottom, 2022).

The low sense of belonging among gig workers expressed in feelings of superiority and placing value in self-reliance has its reasons in the nature of gig work. First, gig workers find themselves “betwixt and between’ social structures” given the ambiguity of their legal classification as independent contractors. However, gig workers differ in many regards from contractors outside the gig economy (Ashford et al., 2007: 95; Dubal, 2017; Jossierand & Kaine, 2019; Rahman, 2021). Importantly, different from independent contractors in other sectors, gig workers commonly lack the liberty to screen and reject customers (Cameron & Rahman, 2022).

Second, gig workers represent a very heterogenous population with highly different backgrounds, work identities, and motives, working in a variety of industries and varying in education and skill levels—factors that impede belongingness to a social entity. Whereas standard workers develop belongingness through their ties to organizations and/or occupations and the relatively homogenous memberships in these organizations and occupations, gig workers are a heterogenous population, even when working for the same platform. An important

dimension of gig workers' heterogeneity concerns their motivations for gig work. For 42 percent of gig workers, income through gig work is merely "nice to have," yet not essential to their overall household income (Anderson et al., 2021). This and other forms of heterogeneity in the population of gig workers have been found to impede empathy with one's fellow gig workers and emotional support extended to them (Yao et al., 2021).

The omnipresence of algorithmic management in gig work poses a third structural barrier to belonging among gig workers. Gig workers operate in "invisible cages" as their day-to-day work life is governed by opaque algorithms that determine the selection of clients, their work hours, earnings, and the all-important customer ratings (Cameron & Rahman, 2022; Rahman, 2021). Ultimately, algorithmic management objectifies gig workers as a resource serving the need of paying customers. For example, algorithmic management leaves gig workers little recourse to appeal wage theft or inappropriate ratings made by customers; "You can't pick up a phone and talk to someone" (Walker et al., 2021: 34). Given that the feeling of being valued constitutes an important part of belonging (Good et al., 2012), the experience of objectification relates to low feelings of belonging (Belmi & Schroeder, 2021; Cameron, 2022; Cameron & Rahman, 2022; Curchod et al., 2020; Rahman 2021).

These challenges to belonging call for scholarly attention to how nonstandard workers—a growing segment of the workforce (e.g., Holtz-Eakin et al., 2017)—can experience belongingness despite their loose ties to organizations or occupations. Researchers agree that nonstandard workers "must construct relationships agentially, building a constellation of social ties, including to other independent workers with similar skills, potential clients, supporters, and employers" (Ashford et al., 2018: 31). As I argue in Chapter 4, one impetus for the agentic construction of social ties among nonstandard workers may be loneliness.

CHAPTER 3: LITERATURE REVIEW ON ONLINE COMMUNITIES

In this chapter, I review the literature in organizational scholarship on various work-related communities and, subsequently, the literature on virtual communities and online communities in the gig economy in particular. As I will show, online communities related to gig work are distinct from other work-related communities that organizational scholars have studied.

Work-Related Communities in Organizational Research

Community can be broadly defined as “a voluntary collection of actors whose interests overlap and whose actions are partially influenced by this perception” (Lawrence, 1995; O’Mahony & Lakhani, 2011: 7). Traditionally, the notion of work-related community implies the physical co-location of its members that enables spontaneous, frequent, and rich interactions between members. Through these channels, organizations provide workers with shared context and palpable membership in a social entity (Cannella et al., 2008; Tajfel, 1978). However, organizational scholars have also studied “aspatial” forms of community that transcend organizations’ spatial boundaries, while still providing workers with a shared context and identity. In spatial or aspatial work-related communities, workers develop belongingness to a community by enacting the prototypical member identity provided by the shared context (Ashforth et al., 2008). At its most extreme, prototypical identities in an organizational community extend into the leisure domain, leading to a blending of work and leisure in so-called “total institutions” (e.g., Salaman, 1971, 1974; Shamir, 1981).

Van Maanen and Barley (1984) presented the first type of work-related community that transcends organizational boundaries, coining the concept of occupational communities. Occupational communities form around individuals engaged in the same work, who positively identify with their work, and share a common culture related to their work beyond specific

organizational settings (Howard-Grenville et al., 2017; Nelson & Irwin, 2014; Van Maanen & Barley, 1984). Furthermore, “members of occupational communities claim a distinctive and valued social identity” (Van Maanen & Barley, 1984: 96). Some high-skilled gig workers indeed belong to occupational communities (Schwartz, 2018).

Another noteworthy community concept in organizational science outside the confines of organizations are communities of practice. Communities of practice denote “groups of people bound together by a common activity, shared expertise, a passion for a joint enterprise, and a desire to learn or improve their practice” (Lave & Wenger, 1991; Nicolini et al., 2022: 680). Their primary function is to support members in solving immediate problems (Nicolini et al., 2022). Interestingly, communities of practice may meet virtually (e.g., Dubé et al., 2005). Virtual communities of practice are “Online social networks in which people with common interests, goals, or practices interact to share information and knowledge, and engage in social interactions” (Chiu et al., 2006: 1880).

Open-source communities have emerged as a third, alternative work-related community explicitly positioned beyond the confines—and interests—of organizations (O’Mahony & Ferraro, 2007). Both occupational communities and communities of practice may still be governed by organizational authority because “community members are engaged in managing production not for its own sake, but for the benefit of their employers” (O’Mahoney & Ferraro, 2007: 1080). In contrast, members of open-source communities collaborate on common goals and projects without serving organizational interests. For example, members in these communities gather to collaborate on complex tasks such as building software packages outside of any organizational context.

Whereas occupational communities, communities of practice, and open-source communities serve productive purposes, an alternative perspective on work-related community centers on workers' well-being (Spreitzer et al., 2020). Researchers using this perspective have highlighted the potential of coworking spaces to provide a sense of community for nonstandard workers in the absence of shared occupations or work projects (Garrett et al., 2017; Spreitzer et al., 2020). Workers who benefit from coworking spaces often share a need to inject routines and regular social interactions into their work life, resulting in the development of a collective identity and the perception of the coworking space as a "club" (Garrett et al., 2017: 827).

The work-related communities reviewed here should all facilitate belongingness because they involve a shared identity that provides a central bond between community members (Garrett et al., 2017; Lave & Wenger, 1991; Nicolini et al., 2022; Salaman, 1971, 1974; Van Maanen & Barley, 1984). Occupational communities explicitly center around the occupational identity that members share (Van Maanen & Barley, 1984) and communities of practice help members defend their interests by developing a core identity (Nicolini et al., 2022). Open-source communities exist around community-managed projects and enable "collective action toward a common goal," presuming a shared goal and corresponding identity (O'Mahoney & Ferraro, 2004: 4). Furthermore, nonstandard workers who use a coworking space may start perceiving themselves as members of a community with a collective identity to which they subscribe (Garrett et al., 2017). Therefore, similar to organizations, these work-related communities outside of organizations are likely to provide identity to their members so that members can experience a sense of belonging through these communities. In the remainder of this chapter, I first introduce online communities related to gig work and then discuss how they differ from the aforementioned communities.

Online Communities Related to Gig Work

The majority of gig workers regularly visit online communities. Wood and colleagues (2018) found that 58 percent of gig workers communicate at least weekly with other gig workers online. Similarly, Gray & Suri (2019: 131) report that 59 percent of all gig workers in their study used at least one online community. For gig workers who were connected with other gig workers in some form or another, online communities were the central channel for such connection; 86 percent of connected gig workers communicated exclusively through online communities with other gig workers (Gray & Suri, 2019). The high usage of online communities among gig workers is in part due to these communities' open membership; in most communities, simply registering an account is enough to actively participate. For passive participation—i.e., browsing—it often is not even necessary to register an account.

Online communities related to gig work are virtual communities. A virtual community describes “an aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms” (Porter, 2004: n.p.). This definition of virtual communities acknowledges that some community members may have bonds outside the virtual sphere. Indeed, some gig workers use groups on messaging services to both connect virtually and initiate in-person meetings (Gray & Suri, 2019). Furthermore, this definition acknowledges that not all virtual communities are computer-based, such as groups on messaging services. In addition, the definition stresses norms and rules and thereby relates to traditional definitions of organizational communities (Lawrence, 1995). Indeed, virtual communities sometimes rely on guidance from site administrators (Hagel & Armstrong, 1997). “Active site management facilitates intermediation and comprises the ‘rules of the game’ put in place by the community owner”

(Rothaermel & Sugiyama, 2001: 304). Lacking such guidance, some virtual communities govern themselves (O'Mahoney & Ferraro, 2004, 2007); for example, private online groups of local gig workers might do so because coordination costs are low. However, in large and publicly accessible online communities such as subreddits, administrative guidance through assigned community moderators is likely to be necessary. Lastly, online communities can be member-initiated—such as WhatsApp groups of local rideshare drivers—or organization-sponsored such as when the labor platform also hosts an online forum, as is the case with Upwork (Porter, 2004).

Irrespective of their specific forms, existing studies on online communities of gig workers have described two functions these communities have for gig workers: information sharing and social connection (Hagel & Armstrong, 1997, Panteli et al., 2020). These two functions mirror descriptions of virtual communities in other contexts. Specifically, Yeow and colleagues (2006; see also Burnett, 2000) distinguish between directed information exchange and social interactions as the main functions of virtual communities. “Directed information exchange involves information seeking, information provision, and information contributing behavior” (Yeow et al., 2006: 973). In contrast, the function of facilitating social interactions “involves relationship building behavior, e.g. exchanging gossip and pleasantries, providing emotional support, and engaging in language games and play” (Yeow et al., 2006: 973). Yeow and colleagues (2006) argue that all virtual communities provide both functions to some extent, yet differ in whether they emphasize one function over the other.

In the context of gig work, the first function—information sharing—appears dominant because it is instrumentally important for performing the work itself; as one Uber driver noted, “You get more answers on the Uber forum than from Uber itself” (Walker et al., 2021: 34). Indeed, the information sharing purpose of online communities has become so important for

performing gig work that one gig worker who administers two work-related online communities noted, “Without the forums, people would be completely lost, they wouldn’t know what to do, where to start” (Greenhouse, 2016: n.p.). A review of the literature on online communities among nonstandard workers concludes that the functions of these communities “are somewhat in line with managerial goals, such as on-boarding, sharing information on customers, and discussing tricks of the trade” (Kellogg et al., 2020: 392).

In their second function as a “watercooler 2.0” (Gray & Suri, 2019: 137) online communities may provide “a feeling of belongingness and social connection, independent of any functional purpose” (Hagel & Armstrong, 1997; Spreitzer et al., 2020: 81). This purpose might directly help gig workers experience belonging by providing opportunities to connect with other gig workers. For some gig workers, this social aspect does dominate the information sharing purpose of online communities related to gig work. As one rideshare driver who administrates an online community said, “I didn’t create the group to learn something from somebody, but to get together with some people” (Rosenblat, 2018: 198). Yet even when craving social interactions does not present the primary motivation to turn to online communities, gig workers may experience a “rare sense of camaraderie” upon visiting online communities, similar to the traditional workplace that does not primarily serve social goals and yet undeniably fulfills social functions for many workers (Rosenblat, 2018: 198). The “many unpaid hours [gig workers put] into rebuilding social and professional connections” in online communities suggest that their social function figures prominently for many gig workers (Gray & Suri, 2019: 178). One gig worker commented on the social aspect of online communities, “the fun we have when things are slow: priceless” (Gray & Suri, 2019: 239n8).

Summarizing the information-sharing and social functions of virtual communities, Rothaermel and Sugiyama (2001: 299) note that a “virtual community allows people to engage in the exchange of information, and learn from each other and about each other. In the end, communities are not solely about aggregating information or resources, but about bringing people together to meet some of their social ... needs.” In short, online communities related to gig work are both “communities of interests” and “communities of relationships” (Hagel & Armstrong, 1997). However, their status as platforms of information exchange may be most important to the average gig worker given the managerial functions these communities fulfill (Kellogg et al., 2020).

Importantly, while online communities of gig workers share some characteristics with occupational communities, communities of practice, open-source communities, and coworking spaces, they differ from all four. First, in distinction to occupational communities or open-source communities, online communities of gig workers bring together people from a large variety of backgrounds, with many gig workers not belonging to a specific profession or occupation and performing gig work only temporarily (Anderson et al., 2021), making it unlikely that they positively identify with their work or labor platform. Second, although the information-sharing function of work-related online communities compares to the focus on sharing knowledge and solutions in communities of practice, qualitative research on work-related online communities also finds a distinctly social element in these communities that distinguishes them from communities of practice (e.g., Gray & Suri, 2019; Rosenblat, 2018). Third, like online communities related to gig work, open-source communities are virtual. However, unlike online communities related to gig work, open-source communities have several gatekeeping mechanisms in place that restrict membership (O’Mahoney & Ferraro, 2004). Fourth and last,

coworking is not an option for many gig workers whose work requires high mobility or who cannot afford to rent a desk or office at a coworking space. Thereby, coworking spaces pose entry barriers that online communities do not.

In summary, online communities related to gig work pose minimal entry barriers to new members, resulting in more casual and heterogenous memberships than in the other types of work-related communities. Consequently, the shared context in online communities related to gig work is “looser;” these communities are unlikely to provide clear roles and identities to their members, which should negatively affect members’ belonging to these communities and the gig economy as a whole. At the same time, these communities should be attractive to lonely gig workers precisely because of their unique accessibility.

CHAPTER 4: THEORY DEVELOPMENT AND HYPOTHESES

In this chapter, I first define loneliness to then integrate the evolutionary model of loneliness and regulatory focus theory. This integration allows me to build a framework of the lurking and contributing behaviors in which gig workers engage, motivated by transient feelings of loneliness. Given the significance of information-sharing purpose of online communities related to gig work, I specifically focus on behaviors around the exchange of information. I then argue that loneliness is negatively associated with belonging via lurking behaviors and positively associated with belonging via contributing behaviors. I also suggest an intervention that manipulates regulatory foci, thereby increasing the suggested indirect effects. Lastly, I propose that belonging decreases withdrawal behaviors, an outcome important to understand the high collective turnover in the gig economy.

The Nature of Loneliness

I argue that loneliness is the driving force behind behaviors that impede or enhance gig workers' sense of belonging. Therefore, it is worth elaborating on the nature of loneliness and loneliness in the gig economy in particular. Loneliness denotes “(1) an unpleasant and aversive feeling, (2) generated from a subjective negative assessment of one’s overall relationships in a particular social domain, and (3) a belief that these social relationships are deficient” (Ozcelik & Barsade, 2018: 2344). In short, loneliness is the perceived social isolation from others and “some individuals live in the devastating clutches of loneliness even though they are not physically and socially isolated” (Cacioppo et al., 2000: 145). Therefore, loneliness is different from the objective state of being socially isolated (Diekema, 1992; Peplau & Perlman, 1982).

Loneliness is a wide-spread experience; even before the pandemic-induced lockdowns and social distance measures, the former U.S. surgeon general described loneliness as a national

epidemic (Murthy, 2017). Even before the pandemic, loneliness has been increasing throughout the US, particularly affecting younger generations (Cigna, 2020). These are concerning trends given the deleterious effects of loneliness on individuals' physical health and psychological well-being (see Cacioppo & Cacioppo, 2018 for an overview). For example, loneliness is associated with an increase in mortality comparable to heavy smoking or alcohol consumption, exceeding the mortality risk of a lack of physical activity or obesity (Holt-Lunstad et al., 2010). Concerning mental health in particular, increases in loneliness in the last decades have been linked to increases in suicide among adults, adolescents, and even children (Richtel, 2022; Solomon, 2022).

Importantly, these deleterious consequences of loneliness concern chronic feelings of loneliness which differ from momentary experiences of loneliness. In this dissertation, I focus on momentary feelings rather than the chronic experience of loneliness. Momentary feelings of loneliness are “gripping states ... that everyone experiences transiently in specific circumstances or interactions” (Cacioppo et al., 2000: 145). Therefore, momentary feelings of loneliness are more likely to reflect individuals' external situation and are supposed to contain stronger motivational force. In contrast, chronic feelings of loneliness are more likely to correlate with stable individual differences and are highest in clinical samples (e.g., Ernst & Cacioppo, 1999; Gross et al., 2002; Hojat, 1983; Landmann & Rohmann, 2022; Saklofske et al., 1986; Vanhalst et al., 2013). In other words, whereas momentary loneliness drives individual efforts to respond effectively to external circumstances, chronic loneliness indicates stable individual differences and may even be pathological. Furthermore, chronic loneliness has been linked to decreases in social engagement (McHugh Power et al., 2019). Given my interest in loneliness as a motivating force, I focus on momentary feelings of loneliness. Furthermore, transient feelings of loneliness

are much more common than chronic loneliness. Qualter and colleagues, referring to the evolutionary model of loneliness, state that “loneliness is usually transient in nature because the aversive feelings associated with loneliness motivate individuals to reconnect with other people” (2015: 250). Therefore, my focus on loneliness as a transient feeling applies to a larger range of employees.

Loneliness Among Gig Workers

Loneliness at work is common and has negative consequences for workers and organizations. Specifically, loneliness at work negatively impacts workers’ organizational commitment, job performance, and work engagement (e.g., Gabriel et al., 2021; Golden et al., 2008; Ozcelik & Barsade, 2018). Moreover, certain groups of workers are more likely to be lonely than others, making the problem of the negative impact of loneliness on work outcomes a structural one. Nonstandard workers in particular have fewer occasions for in-person interactions and/or do not have lasting work-related relationships, making them one of the groups of workers most affected by workplace loneliness.

Gig work is particularly likely to leave workers “individually isolated from each other and the company itself” due to the lack of social interactions (Walker et al., 2021: 34). Gig workers usually do not have any coworkers given that the nature of their work does not require coordination with other workers. Hence, connections with fellow gig workers are volitional and infrequent. Accordingly, Caza and colleagues (2021) describe loneliness (“relational challenges”) at work as a core challenge among gig workers. For example, 45 percent of Uber drivers do not know any current or former drivers and another 43 percent of drivers know only one current or former driver, patterns that change little even as drivers gain tenure (e.g., Walker et al. 2021; Wells et al., 2021; Wood et al., 2018). Furthermore, interactions with customers

hardly reduce gig workers' isolation because these interactions are one-off, short-term, and frequently digitally mediated (Cameron, 2022).

Glavin and colleagues (2021) explicitly compare chronic loneliness in samples of standard employees (i.e., permanent wage work) and gig workers and find that the latter feel significantly lonelier (means of 2.07 versus 2.53 on a 5-point scale). Bucher and colleagues (2021) find means of 2.21 and 2.29 for perceived social isolation on a 5-point scale in a sample of workers on Amazon's Mechanical Turk platform. Caza and colleagues (2021) conceptualize and document work-related loneliness as a prevalent challenge among gig workers (means in their samples range from 2.81 to 2.99 on a 5-point scale). In summary, the portrayal of gig workers in the literature culminates in the image of "lonely warriors" (Nemkova et al., 2019: 237) in an "atomized labor force" (Yao et al., 2021: 390).

Sense of Belonging and Loneliness

It is worth elaborating on the differences between belonging and loneliness since scholars have frequently portrayed these constructs as two sides of the same coin, arguing that individuals feel lonely when their need for belonging is unmet (e.g., Mellor et al., 2008). Indeed, gig workers' sense of belonging to the gig economy is significantly and negatively related to their (chronic) feelings of isolation ($r = -.57$; Caza et al., 2021). However, even though belonging and loneliness "are sometimes used interchangeably and the research on their shared and distinct aspects is limited," these constructs are conceptually distinct (Lim et al., 2021: 81). Lim and colleagues (2021: 84) state that loneliness and belonging are "independent but related constructs that coexist with each other to predict overall psychological functioning" because the absence of psychological ill-being is necessary but is not synonymous with the presence of psychological well-being. More precisely, optimal psychological functioning is given when an individual does

not feel lonely—the absence of psychological ill-being—and simultaneously experiences a high sense of belonging—the presence of psychological well-being. In contrast, individuals exhibit minimum psychological functioning when they feel lonely and also lack a sense of belonging. Importantly, because loneliness and sense of belonging are independent, it is possible to be lonely but experience belonging and to neither feel lonely nor experience belongingness. These scenarios combining simultaneously high or low levels of both constructs help understand how loneliness and sense of belonging differ from each other.

First, an individual might not feel lonely yet lack a sense of belonging. For example, a rideshare driver who does not feel lonely because they regularly enjoy social interactions with customers might perceive themselves to be disconnected from other rideshare drivers and therefore experience a low sense of belonging (e.g., Wells et al., 2021). Second, people can be lonely and have a high sense of belonging at the same time. For example, an Upworker might feel intensely lonely in their daily work life due to the lack of in-person interactions but also perceive themselves to be a typical Upworker and therefore experience a high sense of belonging to the gig economy. Crisp (2010) gives several examples for similar scenarios outside of the gig context.

The difference between loneliness and sense of belonging becomes particularly evident when the communities to which people feel a sense of belonging prove unsupportive. While the literature on community as a “social cure” of loneliness portrays social identity (i.e., when belongingness becomes incorporated into one’s self-concept) and the interactions it can spark between community members as an antidote to loneliness (e.g., Haslam et al., 2022; Jetten et al., 2012), community and belonging can also prove a “curse.” This happens when the community to which an individual belongs does not support the individual in the needed ways (e.g., Dingle et

al., 2015; Jetten et al., 2017; Kellezi & Reicher, 2012). For example, illegal immigrants might experience rejection from the communities they belong to when these communities blame them for being placed into detention (Kellezi et al., 2018). In the context of gig work and its “hustle culture,” sense of belonging could similarly turn out to be a curse as this culture might worsen loneliness. Specifically, the ultimate individualism and independence that digital labor platforms tout (e.g., Rosenblat, 2018) and that characterize hustle culture (Burgess et al., 2022) might perpetuate the loneliness from which gig workers suffer. Indeed, comparing cultures across different countries, prior research has found that people in cultures that score high on individualism exhibit higher frequencies of loneliness (Barreto et al., 2021). Therefore, loneliness could be amplified the more a gig worker feels a strong sense of belonging to the gig economy and its highly individualistic “hustle culture.”

The scenarios of simultaneously high or low loneliness and belonging further help understand loneliness among gig workers as a function of poor social connections with customers or peers, whereas sense of belonging relates to “fitting in” with one’s social cohort and its culture (Crisp, 2010). The experience of fitting in is central to belonging. Specifically, it denotes “congruence with other people, groups, objects, organizations, environments, or spiritual dimensions through shared or complementary characteristics” (Hagerty et al., 1992: 174). This meaning of belonging as fitting in also surfaces in research on populations that are atypical members of a certain community and might therefore experience discrimination in these communities, such as women in math (Good et al., 2012) or in executive leadership positions (Brands & Fernandez-Mateo, 2017). While the experience of not fitting in may contribute to loneliness—indeed, loneliness is frequently higher among populations that experience

discrimination (e.g., Ramirez-Valles et al., 2005)—this is a qualitatively different experience from loneliness that may arise from the perceived lack of high-quality social interaction.

The Evolutionary Model of Loneliness

The evolutionary model of loneliness (Cacioppo & Cacioppo, 2018; Cacioppo et al., 2006) posits that loneliness—though unpleasant—is adaptive because it signals that an important need is unmet. More precisely, similar to physical pain, hunger, or thirst, loneliness represents an aversive yet evolutionary adaptive signal alerting an individual of the need to take action to secure their survival (Cacioppo et al., 2014); “just as physical pain is an aversive signal that evolved to motivate one to take action that minimises damage to one’s physical body, loneliness is an aversive state that motivates us to take action that minimises damage to one’s social body” (Cacioppo et al., 2014: 7). Children in particular depend on social connection for their immediate survival, making loneliness a potentially life-saving signal that motivates seeking closeness to others. For adults, loneliness rarely poses an immediate threat for survival but has deleterious effects on health and well-being when it becomes a chronic condition (see Cacioppo & Cacioppo, 2018; Cacioppo et al., 2006 for overviews). Therefore, even when not posing an immediate threat, the experience of loneliness is aversive and signals to the individual that an important need is unmet.

As an evolutionary adaptive yet aversive signal, the evolutionary model of loneliness states that loneliness motivates self-preservation and reconnection. First, the self-preservation hypothesis states that lonely people become hypervigilant of social threats in order to avoid further harm to their social body (Cacioppo & Cacioppo, 2018; Cacioppo & Hawley, 2009). Knowing that only some social connections are nurturing and safe while others may be toxic and harmful, lonely individuals start scrutinizing their social interactions to protect the self against

future loneliness-inducing or -exacerbating social threats. Lonely individuals have to be vigilant precisely because they are lonely; “a member of a large herd does not need to be constantly on the lookout for predators and other dangers, whereas a solitary animal lacks such a social warning system and must maintain its own constant vigilance” (Park & Baumeister, 2015: 154). Unfortunately, the motivation to self-preserve might impede lonely individuals’ ability to reconnect and thereby exacerbate loneliness. Trying to protect themselves, lonely people become hypervigilant of social threats so that—due to confirmatory, attentional, and memory biases—they ultimately perceive social threats to be everywhere, which consequently stifles their social interactions and impedes social connection (Cacioppo & Hawkley, 2009).

Correlational and experimental evidence supports the self-preservation hypothesis. Researchers frequently use fear of negative evaluation—a core component of social anxiety (Leary, 1983)—to operationalize the hypervigilance stated in the self-preservation hypothesis. Indeed, self-reported loneliness correlates with fear of negative evaluation (e.g., Geukens et al., 2022). Furthermore, neuroimaging reveals that social threats are detected more quickly in the brains of lonely people than in the brains of nonlonely people (Cacioppo et al., 2016). Experimental evidence further supports the self-preservation hypothesis. Following an experimental induction of loneliness through hypnosis, participants report higher fear of negative evaluation and shyness (Cacioppo et al., 2006).

Second, in contrast to the aversive motivation that the self-preservation hypothesis suggests, the reconnection hypothesis proposes that feelings of loneliness should spur efforts toward connection with others because “loneliness increases the motivation to attend to and approach social stimuli to repair/replace the salutary social relationships that promote long-term evolutionary fitness” (Cacioppo & Cacioppo, 2018: 11; DeWall et al., 2009; Gardner et al.,

2000; Kanterman et al., 2021; Maner et al., 2007; Qualter et al., 2015; Sheldon & Gunz, 2009). Put differently, just as hungry people crave food, lonely people crave connection. Maner and colleagues (2007; see also Sheldon & Gunz, 2009) argue that the momentary experience of loneliness represents a thwarted goal—the goal to establish connection with others—and lonely individuals will therefore seek alternative ways to satisfy this goal. Dependent on the availability of interaction partners and an individual’s confidence that they can experience connection with such partners, individuals will try establishing connection with them. In short, “the lonely are driven to find others” (Weiss, 1973: 15).

Experimental evidence seems to offer support for the social reconnection hypothesis. For example, individuals facing social exclusion are faster at recognizing smiling faces as cues of social acceptance, yet there is no such effect for the recognition of non-smiling faces, illustrating the cognitive effort paid to identifying possible sources of connection when feeling lonely (DeWall et al., 2009). Similarly, experimentally induced rejection increases subsequent recall of information regarding social events (Gardner et al., 2000). Researchers interpret such cognitive effects as readiness to action in order to overcome loneliness. Indeed, when given an opportunity to overcome loneliness, the lonelier an individual is the more eager they appear to interact with others; however, this might only be only true when social interactions do not take much effort (Kanterman et al., 2021). Furthermore, experimentally induced exclusion leads participants to seek affiliation with others by showing greater interest in making new friends and an increased desire to work with others; participants are also more likely to form positive impressions of and assign rewards to new interaction partners (Maner et al., 2007). Lastly, social exclusion leads participants to make consumer choices in the service of social connection, such as buying a

product that symbolizes group membership, further illustrating the motive to reconnect when excluded (Mead et al., 2011).

Therefore, the self-preservation hypothesis and the social reconnection hypothesis state two very different motivations inherent in feelings of loneliness, representing an “approach–avoidance conflict” of lonely people (Cacioppo & Cacioppo, 2018: 17). This conflict has also been dubbed the “porcupine problem” of lonely people (Maner et al., 2007). A parable by Schopenhauer (1851/1964: 226) depicts humans as porcupines who, trying to huddle together for warmth, are forced to disperse as they inadvertently prick each other with their sharp quills. With regards to loneliness, the porcupine problem describes the ambivalence of lonely people who want to protect themselves against social threats and connect with others at the same time (Maner et al., 2007).

The porcupine problem illustrates the ambivalence of lonely people. Indeed, correlational and experimental results—which can be ambiguous as Maner et al. (2007) admit—are frequently interpreted as evidence that lonely people are ambivalent regarding the extent of social connection they prefer. For example, lonely people indicate a preference for larger interpersonal distance, which researchers interpret as a desire to protect the self while trying to reconnect (Layden et al., 2018). In addition, lonely people’s heightened attention to others may show both their increased sensitivity to social rejection as well as their motivation to reconnect. For example, lonely research participants outperform non-lonely participants in attending to and memorizing social information, emotional vocal expressions, and facial expressions (e.g., Gardner et al., 2000; Gardner et al., 2005; Pickett et al., 2004); social information that is both necessary to recognize threats as well as opportunities for connection. Even lonely monkeys seem ambivalent regarding social connection. Rhesus monkeys categorized as lonely through

observation tend to approach other monkeys, walk within arm's length of them, and yet avoid any direct interaction (Capitanio et al., 2014). In practice, it is unclear which effects such ambivalence has on efforts to protect the self or reconnect.

Adding to the ambiguity of findings regarding the reconnection hypothesis, most of the research I summarize above has been concerned with experimentally induced social rejection—the assumed equivalent of momentarily experienced loneliness in the lab. However, social rejection as experienced in lab settings is unlikely to represent ecologically valid day-to-day experiences of loneliness.¹ Specifically, experimentally induced rejection can be either explicit and direct (e.g., being actively excluded) or implicit and indirect (e.g., being ignored), leading to different results regarding self-preservation and reconnection (Molden et al., 2009). Yet, it is unclear whether a gig worker's heightened loneliness on one day reflects explicit or implicit rejection. Given such uncertainty regarding the ecological validity of experimental work on social rejection, Arpin and Mohr (2019) argue that transient feelings of loneliness are functionally distinct from social rejection because social rejection induced in lab experiments is an objective state, whereas state loneliness describes an individual's perceptions of social rejection. Therefore, the experimentally derived findings on the countervailing motivations of momentary loneliness may not apply to the lived experience of nonstandard workers.

In addition to concerns regarding the external validity of previous findings as well as lonely people's ambivalence about reconnecting, other experimental findings on the effects of state loneliness appear to outright contradict the reconnection hypothesis. For example,

¹ For example, regarding nostalgia—a feeling similarly complex as loneliness—Newman and colleagues (2020) argue that laboratory studies are not reflective of daily-life experiences of nostalgia. Indeed, using experience sampling methodology that allows them to capture “life as it is lived” (Bolger et al., 2003), the researchers find that daily experiences of nostalgia are predominantly negative whereas experimentally induced nostalgia represents a mostly pleasant experience.

participants who underwent hypnosis that induced momentary loneliness subsequently reported increases in shyness and anxiety as well as decreases in social skills (Cacioppo et al., 2006)—all of which may be interpreted as evidence refuting the reconnection hypothesis. Furthermore, there exists a growing literature on the association between social rejection in the lab—using the same experimental procedures used to test the reconnection hypothesis—and increases in aggression towards others. For example, participants who received feedback that no other participant had chosen them for a task (i.e., social rejection), were more likely to use a subsequent opportunity to aggress against someone else by blasting them with white noise (Twenge et al., 2001). Using case study methods, Leary and colleagues (2003) conclude that most school shootings are conducted by perpetrators who suffered from chronic or acute social rejection. Summarizing the literature on social rejection and aggression, DeWall and Twenge (2013: 116) state that “socially excluded people begin to see the world through ‘blood-colored glasses,’ and this hostile cognitive bias has implications for greater aggression.” In effect, the heightened vigilance induced by social rejection increases perceptions of threat that, in turn, lead to aggression towards others—an effect of social rejection/loneliness that would run contrary to efforts to reconnect yet resembles the “paradoxically self-defeating” behaviors and social cognitions that the self-preservation hypothesis states (Cacioppo et al., 2014: 6). In short, the literature on social rejection and aggression appears to support the self-preservation hypothesis, but not the reconnection hypothesis.

Evidence of the self-preservation and reconnection hypotheses outside of the lab is rare. Supporting the reconnection hypothesis, Gabriel et al. (2021) find that on days in which managers feel lonely they engage in problem-focused rumination which increases next-day helping behavior. Given that Gabriel et al.’s (2021) study—to the best of my knowledge—is the

only study that concerns natural fluctuations in state loneliness, our understanding of how much the reconnection hypothesis plays out “in the wild” is rather limited. By formulating and testing hypotheses derived from the evolutionary model of loneliness in a field setting, I aim to add to the evidence about the negative and positive effects of state loneliness in the field.

Regulatory Focus Theory

I integrate the evolutionary model of loneliness with regulatory focus theory because regulatory focus theory lends itself to explaining the countervailing behavioral tendencies of lonely people. The distinction between avoidance and approach motivation in the evolutionary model of loneliness (Cacioppo & Cacioppo, 2018) relates to a family of theories and concepts around self-regulation and the hedonic principle, i.e., the motivation to avoid pain and approach pleasure (Kahneman et al., 1999). Carver (2006; see also Higgins, 2012a), offering an overview of the terms and theories used in this space, lists avoidance and approach action tendencies, aversive and appetitive motivation, behavioral inhibition system (BIS) and behavioral approach system (BAS) (Carver & White, 1981, 1990; Gray, 1982), and, lastly, prevention and promotion focus (Higgins, 1997, 1998). While some of these terms can be used synonymously, others relate to specific theories.

Prevention and promotion focus are the core terms used in regulatory focus theory (Higgins, 1997, 1998). The theory states that two regulatory foci represent two independent systems of motivation and goal pursuit that are associated with different behavioral strategies. A prevention focus describes attentional, emotional, and behavioral sensitivity to the presence or absence of negative, undesirable outcomes and information regarding such outcomes; therefore, people applying a prevention focus differentiate between losses versus non-losses. In contrast, a promotion focus signifies attentional, emotional, and behavioral sensitivity to the presence or

absence of positive, desirable outcomes and information regarding such outcomes; therefore, people applying a promotion focus differentiate between gains and non-gains.

Regulatory foci are frequently treated as stable individual differences, a view that relates back to the origins of regulatory focus theory in self-discrepancy theory, a theory of stable individual differences “in strictly personality terms” (Higgins, 1987, 2012: 487). However, regulatory focus theory emerged out of a realization that situationally primed concerns may trump stable individual differences (Bargh et al., 1988; Higgins, 2012a). In other words, regulatory foci can change temporarily in response to contextual factors that prime one focus over the other (e.g., Freitas & Higgins, 2002; Higgins et al., 2003). For example, situations involving danger may elicit a prevention focus (Friedman & Förster, 2001; Molden et al., 2008). Consequently, regulatory foci are dynamic: “At any moment, people could be in a state of regulating in relation to hopes or wishes (ideals) or they could be in a state of regulating in relation to duties or responsibilities (oughts)” (Higgins, 2012a: 488).

I draw on regulatory focus theory for several reasons. First, regulatory focus theory lends itself to the study of daily loneliness because it explicitly conceptualizes regulatory foci as varying across situations (Higgins, 1997, 2012). Second, due to regulatory focus theory’s emphasis on behavioral strategies, other researchers have explicitly drawn on regulatory focus theory to distinguish between promotion- and prevention-oriented behaviors at work (e.g., Bindl et al., 2019). Furthermore, regulatory focus theory offers a framework for distinguishing between qualitatively different strategies (vigilance versus eagerness; Scholer & Higgins, 2013) of advancing toward one’s goals. Lastly, promotion and prevention focus mirror the countervailing attentional and behavioral tendencies that the self-preservation and reconnection hypothesis of loneliness describe.

Although Cacioppo and Cacioppo (2018: 17) summarize the tension between the reconnection hypothesis the self-preservation hypothesis and as an “approach–avoidance conflict,” they do not explicitly draw on regulatory focus theory, BIS/BAS, or the hedonic principle. While loneliness researchers have investigated the negative impact of loneliness on self-regulation such as choosing unhealthy snacks when feeling lonely (Baumeister et al., 2005; Baumeister & DeWall, 2005; for reviews, see Cacioppo & Cacioppo, 2018: 39f and Cacioppo & Hawkley, 2009: 450), this evidence reflects a narrow understanding of self-regulation that equates self-regulation with executive control.

In contrast, regulatory focus theory expands our understanding of the interplay of self-regulation and loneliness beyond executive functioning because regulatory focus theory emphasizes the strategies employed in goal pursuit. In other words, while the evolutionary model of loneliness suggests that self-regulation regarding goals other than the reduction of loneliness may be overall diminished, it does not distinguish between different behavioral strategies involving the reduction of loneliness. In other words, although previous research has investigated what lonely people are concerned with, we know little about what they actually do (see Molden et al., 2009 and Gabriel et al., 2021 for exceptions). Yet, “It is not enough to know that people approach pleasure and avoid pain. It is critical to know how they do so” (Higgins, 2012a: 7). An integration of the evolutionary model of loneliness and regulatory focus theory offers to shed light on this issue.

In sum, integrating the two theories expands our understanding of loneliness as a multifaceted experience. Regulatory focus theory distinguishes between avoidance goals—non-losses—and approach goals—gains (Higgins, 1997, 1998, 2012). Specifically, I suggest that the self-preservation hypothesis implies a prevention focus, whereas the reconnection hypothesis

implies a promotion focus. This view expands a first integration of the two theories by Park and Baumeister (2015) who showed that experimental manipulations of loneliness can invoke a prevention or promotion focus.

Lurking Behaviors and Contributing Behaviors

In general, lonely gig workers should be more likely to turn to online communities. Communication researchers have long argued that lonely people use social network sites more than non-lonely people do in order to experience connection with others online. Reviews of the social network sites literature conclude that loneliness indeed predicts social network sites usage (O'Day & Heimberg, 2021; Verduyn et al., 2017). Given that online communities pose minimal entry barriers and are often hosted on social networking sites (Porter, 2017), loneliness likely increases the frequency with which gig workers would visit them.

When gig workers seek out work-related online communities in moments of loneliness, their loneliness should color how they behave in these communities. “Because loneliness is a relational construct ... it influences not only how lonelier people feel about themselves but also how they feel about and behave toward others” (Ozcelik & Barsade, 2018: 2343). Specifically, given the significance of online communities related to gig work for information sharing between gig workers, I focus on behaviors around the exchange of information. I distinguish between information-sharing behavior that can be either prevention- or promotion-focused. Beyond the context of gig work, the focus on information-sharing behavior in online communities also promises to be relevant to other work-related communities within and outside of organizational boundaries. For example, communities of practice explicitly revolve around sharing of knowledge and solutions (Lave & Wenger, 1991; Nicolini et al., 2022).

According to the self-preservation hypothesis, lonely individuals may be concerned about avoiding further harm to their social body. Therefore, lonely workers should approach social interactions in online communities with caution and vigilance, reflecting a prevention focus aimed at detecting and avoiding social threats (Higgins, 1997, 1998). When a prevention focus dominates, lonely gig workers will employ vigilance strategies (Scholer & Higgins, 2013). Specifically, when they visit online communities, lonely gig workers should exhibit caution and vigilance, so that they are more likely to deliberately not or not fully participate in interactions that they deem potentially exposing (Cacioppo et al., 2006).

I label the prevention-focused behaviors in which lonely gig workers engage in online communities “lurking” behaviors, a term that is frequently used in the literature on online communities (for a review, see Sun et al., 2014). Lurkers are “participants who persistently demure from engaging in the core activities that sustain a virtual community” (Yeow et al., 2006: 968). Whereas people may lurk in online communities for a variety of reasons (Sun et al., 2014), previous research confirms that lurking may reflect a prevention focus: “Some people are afraid that what they post may not be important, may not be completely accurate or may not be relevant to a specific discussion” (Sun et al., 2014: 114). As one lurker reports: “I definitely do not feel half as smart as most of the people engaged in the groups where I am lurking. This definitely leads me to lurk more, speak less for fear of saying something stupid” (Bozkurt et al., 2020: 6). Importantly, lurking entails visiting the online community and monitoring others’ posts and messages, yet intentionally refraining from actively engaging in communication. Accordingly, I define lurking behaviors as the conscious withholding of one’s knowledge, experiences, questions, or opinions from others in the online community despite actively reading others’ posts and comments in the online community.

In contrast to lurking behaviors, I draw on the reconnection hypothesis to argue that lonely individuals may also be eager to reconnect with others (Cacioppo & Cacioppo, 2018; Maner et al., 2007). The relatively low effort needed to participate in online communities, the lack of entry barriers, and the constant provision of new interaction partners should be particularly valuable to lonely individuals (Kanterman et al., 2021; Maner et al., 2007). Researchers have noted about online communities of gig workers that “The casualness of deciding when we opt in or opt out is what makes these communities work” (Gray & Suri, 2019: 102). Given the low hurdles of connecting with others in these communities, the reconnection hypothesis suggests that lonely gig workers should be eager to reach out to others and engage in social interactions, reflecting a promotion focus (Higgins, 1997, 1998). Therefore, I hypothesize that lonely gig workers will engage in eagerness behaviors in online communities, which I label “contributing” behaviors due to the significance of information exchange in online communities related to gig work. Specifically, lonely gig workers may offer information or input they have to others, thereby increasing their chances of experiencing reconnection. Offering information and sharing one’s input point to the ideal of online communities as true communities in which members support each other through the free flow of information, illustrating a promotion focus (Higgins, 1997). Accordingly, I define contributing behaviors actively posting or commenting in an online community, thereby sharing one’s knowledge, experiences, questions, or opinions with others in the online community.

In general, communication researchers distinguish between passive and active usage of social network sites (see Verduyn et al., 2017 for a review). Passive usage signifies browsing and scrolling, whereas active usage entails public posting and commenting as well as direct messaging. Importantly, contributing behaviors correspond to active usage because both describe

a user's actual behavior (they either have posted or commented or they have not). However, lurking behaviors do not necessarily correspond to passive usage of online communities. Passive usage can have a variety of reasons (Sun et al., 2014). In contrast, by defining lurking behaviors as the conscious withholding of input, I focus on a specific form of passive usage.

The distinction between lurking behaviors and contributing behaviors in online communities therefore resembles the distinction between employee silence and voice (Sherf et al., 2021; Van Dyne et al., 2003). Silence is not the mere absence of voice but the conscious and deliberate withholding of relevant ideas and input (Pinder & Harlos, 2001; Sherf et al.; Van Dyne et al., 2003). Silence as the withholding of information is motivated by fear and presents a self-protective behavior (Morrison & Milliken, 2000; Pinder & Harlos, 2001). Although silence and the absence of voice look similar to the observer—like lurking and not contributing would look similar as well—they feel different to the actor because, like voice, silence is an intentional behavior (Van Dyne et al., 2003). Indeed, silence and voice are associated with different chronic regulatory foci (Madrid et al., 2015; Sherf et al., 2021).

The Indirect Effects of Loneliness on Sense of Belonging

I hypothesize that momentary loneliness affects sense of belonging via different behavioral paths because the different regulatory foci inherent in loneliness and their associated behavioral strategies will differently affect sense of belonging. I first turn to the negative indirect effect of loneliness on belonging.

Generally, when a prevention focus dominates, individuals are preoccupied with what they aim to avoid (Higgins, 1997). In the context of loneliness and belonging, this preoccupation with negative end states should crowd out sensitivity to positive end states such as belonging. Specifically, loneliness involves an attentional focus on social exclusion and isolation as

undesired end states (Molden et al., 2009). Indeed, both chronically and transiently lonely people report a higher fear of being negatively evaluated by others (Cacioppo et al., 2006; Geukens et al., 2022), indicating a fixation with exclusion as a negative outcome that needs to be prevented. The subsequent vigilance in behaviors associated with a prevention focus taxes and strains the individual and, “even when effective, can take a toll on enjoyment and, eventually, well-being” (Elliot, 2006: 115). Given that energy and desire for involvement with a social group are central determinants of belonging (Bailey & McLaren, 2005; Hagerty et al., 1992, 1996), the taxing effect of the vigilance behaviors associated with a prevention focus should decrease sense of belonging. Ultimately, their fixation on negative evaluation and the possibility of further exclusion should stifle lonely gig workers’ efforts to reconnect when having the opportunity to do so (Cacioppo & Cacioppo, 2018; Cacioppo & Hawkley, 2009; Maner et al., 2007) and should therefore lead to a lower sense of belonging.

Lurking behaviors should mediate the negative indirect relationship between loneliness and sense of belonging because loneliness may initiate behavioral confirmation processes that reinforce feelings of social exclusion (Cacioppo & Cacioppo, 2018; Cacioppo & Hawkley, 2009). These behavioral confirmation processes are likely to manifest in lurking behaviors, the equivalent of being “an outsider looking in.” Gig workers who are lonely should be more likely to log into their online communities because online communities offer lonely gig workers a readily available opportunity to experience “ambient sociability” (Ducheneaut & Yee, 2013) without having to risk direct engagement with others (Cacioppo et al., 2006). Indeed, loneliness has been found to increase passive usage of social network sites (e.g., Matook et al., 2015), i.e., lonely users are more likely to log in.

In particular, loneliness should increase lurking behaviors because it is associated with vigilance behaviors. Indeed, as predicted by the self-preservation hypothesis, experimentally induced feelings of loneliness are associated with increases in shyness and fear of negative social evaluation (Cacioppo et al., 2006). Therefore, as gig workers visit their online communities when feeling lonely, they should exhibit higher vigilance in their interactions with others, making it likely that they withhold input—in other words, lurk.

However, by deliberately withholding information that might be relevant to others out of fear others might view it as pretentious, irrelevant, or lacking in some other way (Sun et al., 2014), gig workers forgo the opportunity to contribute to online communities, weakening their sense of being valued and respected by other community members (Good et al., 2012). Furthermore, being hypervigilant of social threats, lonely gig workers may silence their own questions to the community because they fear being ridiculed, derogated, or ignored, thereby decreasing their chances of experiencing support and help through the community (Good et al., 2012). Therefore, lonely gig workers' lurking behaviors should lead to lower feelings of belonging—despite their effort to experience belonging by turning to the community. Indeed, lurkers are less likely to regard themselves as members of the online community (Nonnecke, 2000). Ultimately, I expect that the sense of belonging that gig workers experience in online communities translates into belonging in the larger gig economy because belonging to one referent may converge with or extend to another referent in the same domain (Sluss & Ashforth, 2008).

Hypothesis 1: Loneliness has a negative indirect effect on sense of belonging via lurking behaviors.

In contrast, the promotion-oriented behaviors that loneliness inspires should indicate a focus on positive end states. Specifically, the promotion focus that the reconnection hypothesis suggests means that a momentarily lonely gig workers should be positively excited about the possibility of experiencing relationship with others, involving a focus on connection and belongingness as desired end states (Molden et al., 2009). Indeed, transiently lonely people are eager to meet new interaction partners and develop affiliation (Maner et al., 2007). In the context of belonging, the focus on a positive end state is tantamount to the energy and desire for involvement that precede sense of belonging (e.g., “wanting to be part of things going on around oneself;” Bailey & McLaren, 2005; Hagerty et al., 1992, 1996).

Contributing behaviors should mediate the positive indirect relationship between loneliness and sense of belonging. Gig workers should be particularly likely to actively engage in online communities when feeling lonely given the role that these communities play for their work and social life (e.g., Gray & Suri, 2019). These communities offer gig workers an ever-present opportunity to connect and engage with others and therefore a likely outlet for the reconnection motivation when feeling lonely. When the promotion focus of the motivation to reconnect manifests in contributing behaviors in online communities, these behaviors should further amplify the promise of belonging to a community of gig workers. Supporting others through providing information should make lonely gig workers feel that they have something to offer to the community, facilitating connection to others (Detert & Mehl, 2013; Gabriel et al., 2021). Similarly, soliciting information should increase the likelihood of receiving support through other members of the community, helping lonely gig workers learn and making them feel valued, increasing their sense of belonging (Good et al., 2012). Importantly, given the social isolation largely inherent in gig work, only when actively reaching out to others through

contributing behaviors can gig workers experience the feeling of being valued, respected, and accepted by their peers—indicators of a sense of belonging (Good et al., 2012; Hagerty et al., 1992). Indeed, a review of social network sites finds that active usage of such sites—i.e., contributing behaviors such as posting or commenting—increases social capital (Verduyn et al., 2017).

Hypothesis 2: Loneliness has a positive indirect effect on sense of belonging via contributing behaviors.

Intervention

I suggest that an intervention manipulating regulatory foci will strengthen the proposed indirect effects of loneliness on sense of belonging. Regulatory foci may change in reaction to external stimuli that stress one goal over another, leading temporary foci to trump chronic foci (e.g., Freitas & Higgins, 2002; Higgins, et al., 2003). Ultimately, such a manipulation of regulatory foci can change behavior and researchers therefore frequently draw on regulatory focus theory to increase the effectiveness of persuasive messages (for reviews, see Cesario et al., 2008; Lee & Higgins, 2009). For example, Gino and colleagues (2020) ask participants to imagine the benefits of professional networking to manipulate promotion focus. In contrast, they ask participants to consider networking as an obligation in their job to manipulate prevention focus. After six weeks of receiving weekly messages consistently priming a promotion or prevention focus, participants in the promotion condition reported significantly more networking efforts than participants in the prevention condition did. Similar interventions can impact participants' behavior for several months after the initial manipulation (Latimer et al., 2008; Spiegel et al., 2004).

Given such evidence, I suggest that messages that manipulate prevention focus can increase lurking behaviors and thereby strengthen the negative indirect effect of loneliness on belonging. When being asked to imagine the further potential of social exclusion in online communities, lonely gig workers should be more likely to adopt a prevention focus, which will ultimately strengthen their lurking behaviors and thereby depress felt belonging. In contrast, messages that prime a promotion focus should increase contributing behaviors and thereby strengthen the positive indirect effect of loneliness on belonging. When being asked to imagine the support and community they might experience when actively engaging in the exchange of information, lonely gig workers should be more likely to adopt a promotion focus, which will ultimately strengthen their contributing behaviors and thereby heighten their sense of belonging. Therefore, manipulating regulatory foci should strengthen both hypothesized indirect effects. Importantly, such a manipulation offers a further test of my arguments that transient loneliness entails different regulatory foci that drive different behavioral strategies.

Hypothesis 3a: The negative indirect effect of loneliness on sense of belonging will be stronger when gig workers participate in a prevention focus intervention (versus when they participate in a promotion focus intervention).

Hypothesis 3b: The positive indirect effect of loneliness on sense of belonging will be stronger when gig workers participate in a promotion focus intervention (versus when they participate in a prevention focus intervention).

Withdrawal Behaviors

Lastly, I argue that sense of belonging will negatively affect withdrawal at work. Withdrawal denotes “unfavorable job behaviors, lateness, and absenteeism, suggesting employees’ desire to withdraw from their work and their desire to do so in such a way that they

maintain their work and work-role memberships” (Hanisch & Hulin, 1990: 69). As such, withdrawal behaviors describe a certain ambivalence: on the one hand, the worker’s behavior suggests that they do not want to work in their job, on the other hand, they do not necessarily think about changing jobs either. Therefore, withdrawal differs from “avoidance” job crafting such as a systematic reduction of one’s work role (Bruning & Campion, 2018) or turnover intentions.

The ambivalence inherent in withdrawal behaviors makes withdrawal behaviors a particularly relevant outcome to study in the gig context because gig workers frequently experience ambivalence: “Independent workers must deal with constant situational change as they move across gigs and clients, and update their work to meet new needs. Together, these conditions make it likely that ambivalence will be a common experience” (Ashford et al, 2018: 35). Therefore, by focusing on withdrawal behaviors I account for the gradual and somewhat ambivalent nature of turnover in the gig economy where workers can work as much or as little as they want—making it unlikely that gig workers decidedly “quit” gig work from one day to the next.

Even though turnover may be a gradual development rather than an explicit decision for an individual gig worker, collective turnover is high in the gig economy. For example, a quarter of Uber drivers is said to turn over every three months (Isaac, 2017). The high collective turnover may have several structural reasons. First, an oversupply of gig workers in some industries may lead to a shortage of gigs, making gig work unsustainable for some gig workers (Rahman, 2021). Furthermore, the platforms that mediate gig work might willingly accept high turnover rates or even intentionally design work to increase turnover. As one driver notes on the rate cuts in the rideshare industry, “They [the labor platform] don’t care how much drivers make

as long as they can sign up another schmuck. And they promise the world; and after two or three weeks, they [the new drivers] see it doesn't work, and they drop out" (Rosenblat, 2018: 91). Therefore, understanding withdrawal behaviors as a precursor to turnover (e.g., Hom et al., 2012) may shed light on the individual antecedents of turnover as a collective phenomenon in the gig economy.

Furthermore, withdrawal is a natural outcome of sense of belonging; Hagerty and colleagues (1992) conclude that "psychological, social, spiritual, or physical involvement" in the respective domain are consequences of sense of belonging. Indeed, domain-specific effort has been shown to result from higher sense of belonging in that domain (e.g., Good et al., 2012). Withdrawal behavior signifies decreased behavioral involvement in the gig economy and should therefore flow from a felt sense of belonging to the gig economy. Therefore, I expect that sense of belonging will be negatively related to withdrawal behaviors.

Hypothesis 4: Sense of belonging will be negatively related to withdrawal behaviors.

CHAPTER 5: METHODS

Sampling and Procedures

I tested my theoretical model using a 10-day experience sampling study with 95 gig workers. I recruited participants by directly messaging gig workers who use gig-related online communities, e.g., rideshare-specific subreddits, and by publicly posting about my study in these communities. I web scraped names from active users (“active” meaning that users had posted or commented at least once in the last year) of twelve different subreddits that relate to gig work. I contacted users from these subreddits in equal measures to obtain a balanced sample of different gig workers. Having scraped the dates for users’ posts and comments, I sorted the lists of users by date and contacted users who had recently been active before users whose engagement had been less recent. In total, I contacted 3,818 users.

To reduce the risk of participants signing up multiple times for the study, I only shared the study link in direct messages (versus sharing it publicly). Participants first completed a registration survey that measured demographics as well as various control variables. To identify whether participants signed up multiple times, I compared IP addresses, survey response times, and browser meta data recorded in the registration survey (e.g., Wo et al., 2015). To qualify for the study, participants needed to perform gig work for at least five hours and three days per week (Sessions et al., 2020), be 18 years of age or older, reside in the United States or Canada, regularly visit work-related online communities, and pass an attention check in the registration survey (“I have never brushed my teeth”; Meade & Craig, 2012).

Two-hundred fifty three participants signed up and received two surveys each day for the duration of the study. I used temporal separation of construct measures to mitigate concerns around common method biases (Gabriel et al. 2019; Podsakoff et al., 2003). To do so, I

measured loneliness in the midday survey (administered at 12 PM; response rate of 57 percent, resulting in 539 data points out of a possible maximum of 950), lurking behaviors, contributing behaviors, and belonging in the evening survey (administered at 8 PM; response rate of 57 percent, resulting in 539 data points out of a possible maximum of 950), and withdrawal behaviors in the next-day midday survey (response rate of 47 percent, resulting in 446 data points out of a possible maximum of 950). The intervention was administered in the midday survey. All surveys remained open for four hours. From Monday to Friday, participants received both a midday and an evening survey. On Saturdays, participants only received one midday survey, measuring withdrawal behaviors as the outcome of prior-day belongingness. Participants received up to \$45 in gift cards in exchange for their participation.

All participants who had registered for the study and deemed eligible were invited to all daily surveys. In total, 171 participants completed at least one full set of surveys. I retained responses from participants for whom I had at least three sets of usable surveys in order to achieve sufficient within-person variance in effect estimates (e.g., Gabriel et al., 2021; Rosen et al., 2016). A set of surveys consisted of loneliness measured in the midday survey as well as lurking behaviors, contributing behaviors, and belonging measured in the evening survey. To ensure high-quality data, I only retained participants' ratings of loneliness at gig work if they indicated that they had already engaged in gig work by the time they rated feelings of loneliness in the midday survey. Similarly, I only retained participants' ratings of lurking behaviors and contributing behaviors in online communities if they indicated that they had indeed visited online communities in the hours since completing the midday survey. In order to incentivize participants responding truthfully, participants received payments for all surveys they completed, even if they had not engaged in gig work by the time they completed the midday survey or had

not engaged in online communities by the time they completed the evening survey. I instructed participants to select a “Does not apply” option when rating loneliness at gig work in the midday survey if they had not engaged in gig work. Similarly, I instructed participants to select a “Does not apply” option when rating lurking behaviors and contributing behaviors in the evening survey if they had not engaged in online communities. Using these cut-offs—participants (1) had to have completed at least three sets of surveys, (2) had to have engaged in gig work by the time they completed the midday survey, and (3) had to have engaged in online communities by the time they completed the evening survey—resulted in a final sample of 95 participants and 539 observations (*Mean observations* = 5.67).

On average, participants were 33 years old ($SD = 9.66$) and 56 percent of participants identified as women. Sixty-five percent of participants either had a college degree or had completed “some college.” Sixty percent of participants identified as White, twelve percent identified as Hispanic or Latino, eleven percent identified as Black or African American, 14 percent identified as biracial or multiracial, and three percent identified as Asian or Pacific Islander. Participants had work on average for 3.50 years in the gig economy ($SD = 3.35$). Table 1 lists the gigs participants had at the time of participating in the study. On average, participants engaged in 1.46 different gigs ($SD = .63$), with no participant engaging in more than three gigs. In an average week, participants engaged in gig work for 28.81 hours ($SD = 16.77$) and earned \$608.33 ($SD = 412.98$) across their various gigs. Thirty-eight percent of participants worked in the gig economy alongside a traditional job.² By the time participants completed the midday survey, they had engaged in gig work on average for 1.95 hours ($SD = .92$). Between completing

² In the registration survey, a traditional job was defined as “work [that] is performed (a) on a fixed schedule, (b) at the firm’s place of business, (c) under the firm’s control, and (d) with mutual expectation of continued employment” (c.f., Kalleberg et al., 2000: 257).

the midday survey and the evening survey, participants spent on average 1.13 hours in online communities ($SD = 1.10$).

Table 1: Gigs listed by study participants

Gig platform/Type of gig	Frequency	Gig platform/Type of gig	Frequency
Amazon Flex	5	Rover	22
Attorneys and law firms	1	Shipt	11
Casting Call Club	1	Sitter For Your Critters	1
Cignition	1	Spark	2
DoorDash	18	TaskRabbit	4
Favor	1	Tutor.com	6
Grubhub	4	Uber	9
House/dog/baby sitting	1	Uber Eats	7
Instacart	15	Upwork	6
Lyft	5	Wag!	7
Numerade	1	Wyzant	1
Point Pickup	1		

Measures

All items were measured on 7-point scales (1 = *Strongly disagree* to 7 = *Strongly agree*) unless stated otherwise. For daily variables, I averaged coefficient alpha across days of the study (Geldhof et al., 2014), whereas reliabilities for Level-2 variables are reported at the between-person level.

Loneliness. I used the 3-item scale from Gabriel and colleagues (2021; Russell et al., 1980) to measure loneliness. The lead-in to the items was “Doing gig work today,” The items were “I have lacked companionship from others,” “I have left felt out,” and “I have felt isolated from others” ($\alpha = 1.00$).³

³ This maximally high reliability coefficient points to participants straightlining their answers to this measure. Straightlining is associated with “speeding” through online surveys (Zhang & Conrad, 2014). Given that the timed

Lurking behavior and contributing behaviors. Although researchers have long studied passive and active participation in online communities (for reviews, see Sun et al., 2014 and Verduyn et al., 2017), no survey measures exist of lurking and contributing behaviors. Therefore, I developed three items each to measure lurking behaviors and contributing behaviors. In a first step, two subject-matter experts and I independently wrote 27 items for a survey measure of lurking behaviors based on the following definition: “Lurking behaviors entail reading posts and comments in an online community, yet consciously withholding one’s knowledge, experiences, questions, or opinions from others in the online community.” For a survey measure of contributing behaviors we wrote 25 items based on the following definition: “Contributing behaviors entail actively posting and commenting in an online community, thereby sharing one’s knowledge, experiences, questions, or opinions with others in the online community.” In this first step, I aimed to generate over-representative items lists for each concept to ensure that scales would adequately tap into the content domain of the corresponding concept (Hinkin, 1998).

After generating items for these three concepts, I narrowed the pool of items to reduce redundancies, selecting seven items for lurking behaviors and seven items for contributing behaviors. To assess content validity of the selected items, I asked eleven subject-matter experts who had not been involved in the generation of items to sort the items. Subject-matter experts saw the definitions of lurking behaviors and contributing and were asked to drag each item to the box representing the corresponding concept; items were randomly mixed. I then assessed the

writing prompt for the intervention appeared at the end of the midday survey, i.e., in the middle of participants’ work day, participants may have felt rushed to rate measures at the beginning of the survey to proceed to the more laborious part that they knew came at the survey at the end. It is likely that participants in my study completed the midday survey between work tasks as they were waiting for gig requests to come in, possibly adding a sense of urgency in rating the measures of loneliness and withdrawal behaviors at the beginning of the midday survey. On average, participants took 14.26 minutes to complete the midday survey yet only 8.74 minutes to complete the evening survey.

content validity of the selected items using the analysis developed by Anderson and Gerbing (1991) which produces a substantive validity coefficient for each item that can be tested for statistical significance. This coefficient represents the share of experts who correctly sort an item to its corresponding concept. Given the need for short survey measures in ESM research (Beal, 2015; Fisher & To, 2012), I selected the three items for each construct with the highest substantive validity coefficients, with coefficients ranging from .82 to 1.0. The coefficients for the selected items were significantly different from coefficients derived from randomly assigning items to concepts. The final items for lurking behavior were “I have deliberately held off on sharing my point of view when following a discussion,” “I have intentionally refrained from sharing my thoughts on something I read,” and “I have kept quiet with input I had considered in response to a post or comment” ($\alpha = .93$). The final items for contributing behaviors were “I have actively posted or commented about my experiences,” “I have shared my opinions or thoughts with others,” and “I have contributed by sharing content” ($\alpha = .92$). All items were preceded by “In the last hours”

Sense of belonging. I used the 3-item scale by Veldman and colleagues (2021) to measure sense of belonging. The lead-in to the items is “Thinking about my gig work right now, I feel” The items are “Like I definitely fit in,” “Like I belong,” “Completely at home” ($\alpha = .92$).

Withdrawal. I selected three items from the 6-item measure from Dalal and colleagues (2009) to measure withdrawal behaviors, leaving out three items that do not apply to the context of gig work.⁴ The lead-in to the items is “Today, at my gig work,” The items are “I have

⁴ Two items from Dalal et al.’s (2009) original scale do not apply to the context of gig work because they explicitly refer to an organization (i.e., “I have spoken poorly about my organization to others” and “I have criticized organizational policies”); however, gig workers would be (Spreitzer et al., 2017). The third item I left out from the original scale (“I have spent time on tasks unrelated to work”) does not apply to the context of gig work because gig

not worked to the best of my ability,” “I have taken an unnecessary break,” and “I have worked slower than necessary” ($\alpha = .99$).⁵

Control variables. I controlled for several theoretically and procedurally important variables. At the daily level, I controlled for factors beyond loneliness that may bias participants’ responses. First, person-mean centering does not control for biases due to momentary affect (Podsakoff et al., 2003). I therefore controlled for global negative and positive affect to ensure that the effects of loneliness go above and beyond the effects of global affect (Gabriel et al., 2021; Ozcelik & Barsade, 2018). I used the 10-item measure of positive and negative affect from Thompson (2007; $\alpha = .91$ for positive affect and $\alpha = .88$ for negative affect). Second, I controlled for passive usage of online communities which, in distinction to how I define lurking, is not necessarily deliberate. Indeed, non-participation in online communities can have many reasons (Sun et al., 2014), not all of which are related to the conscious withholding of information, i.e., lurking. For example, environmental factors such as low response rates or response delays may deter users from actively participating in online communities (Sun et al., 2014). To distinguish lurking behaviors as the deliberate withholding of information from passive usage of online communities, I created a 3-item measure of passive usage, using the same process I employed for creating measures of lurking behaviors and contributing behaviors. The definition used in the process of generating items was: “Passive usage of online communities entails consumption of content without communicating with others in the community. This could entail scrolling through comments and looking at content without contributing, posting, or asking questions.” The final items were “I have just looked at other

workers frequently experience downtime between gigs that they spent on activities unrelated to gig work which would not represent withdrawal behaviors.

⁵ As with the reliability for loneliness, the reliability for withdrawal behaviors at work may be unusually high because participants felt pressured to rush through the survey questions in the midday survey.

people’s content,” “I have been more involved in reading what others have been discussing rather than joining the discussion myself,” and “I have checked out various discussions but not participated myself.” All items were preceded by “In the last hours ... ” ($\alpha = .99$).

Third, although I do not hypothesize day-to-day changes in my endogenous variable—i.e., lurking behaviors, contributing behaviors, sense of belonging, and withdrawal—I controlled for prior-day levels of these variables for exploratory reasons (Gabriel et al., 2019). Furthermore, cyclical patterns, when not being modeled, may increase the Type 1 error rate and bias effect estimates (Gabriel et al., 2019). Therefore, I controlled for the day of the week, the sine and cosine of this variable, and the day of the study to account for the possibility of cyclical or longitudinal response patterns biasing my results (Gabriel et al., 2019; West & Hepworth, 1991).

Following recommendations for when to retain control variables, I tested the hypothesized effects with and without daily control variables. If control variables do not change the pattern of results, it is recommended to drop them from the final model for more parsimonious modeling (e.g., Becker, 2005; Carlson & Wu, 2012). Neither prior-day levels of endogenous variables nor day of the week, the sine and cosine of this variable, or the day of the study affected the pattern of my results; they were therefore left out of the final model reported below.

Intervention

I followed Gino and colleagues’ (2020) approach to manipulate regulatory foci. In each midday survey, participants saw a message that described either costs (i.e., prevention focus) or benefits (i.e., promotion focus) of engaging in online communities with other gig workers. I then prompted participants, “With these potential costs/benefits in mind, please write 3-5 sentences to plan your next visit to online communities related to gig work.” Table 2 shows the messages I

employed during the 10-day study period. Each participant saw each message once. Participants were randomly assigned to see prevention-focused (promotion-focused) messages during Week 1 of the study and see promotion-focused (prevention-focused) messages during Week 2 of the study. I did not employ a neutral control condition. As Kanze and colleagues (2021, footnote 14), note, “Regulatory (focus, mode) experiments typically do not employ control conditions as a ‘blank slate may only reflect participants’ chronic measure.”

Table 2: Messages used in regulatory focus intervention

Prevention-focused messages	Promotion focused messages
<p><i>I am interested in how people stay up-to-date about developments at work. Many gig workers consider visiting online communities related to their work a necessary part of their job to stay informed about important developments. They focus on opportunities they will miss if they don't stay up-to-date about work.</i></p>	<p><i>I am interested in how people stay up-to-date about developments at work. Many gig workers consider how online communities related to their work can help them learn about current opportunities and developments. They focus on achieving their professional goals through the information they gather in online communities.</i></p>
<p><i>I am interested in how people cope with stress at work. Many gig workers consider visiting online communities related to gig work an additional obligation and source of stress. They focus on avoiding getting involved in others' personal drama that frequently crops up in these communities.</i></p>	<p><i>I am interested in how people cope with stress at work. Many gig workers consider visiting online communities related to gig work an opportunity to support one another in coping with stress. They focus on giving and soliciting advice for work-related problems in such communities.</i></p>
<p><i>I am interested in how people share their thoughts and ideas at work. Many gig workers consider the possibility that others may steal their ideas or creative hacks in online communities related to gig work. They focus on lost earning potential, viewing other gig workers as competitors.</i></p>	<p><i>I am interested in how people share their thoughts and ideas at work. Many gig workers consider online communities related to gig work as an opportunity to run their ideas by others in the same field. They focus on the positive feelings when others endorse their ideas.</i></p>

Table 2 (continued)

*I am interested in how people **share successes at work with others**. Many gig workers consider keeping their professional accomplishments to themselves instead of sharing them in online communities related to gig work. They focus on the overly negative tone in such communities and try avoiding others' criticism or envy.*

*I am interested in how people **share successes at work with others**. Many gig workers consider online communities an avenue for sharing professional accomplishments with other gig workers who can appreciate the specifics of their work. They focus on opportunities to celebrate each other's success.*

*I am interested in how people **experience their work in comparison to others**. Many gig workers consider how much worse they feel when comparing their professional successes and failures to other gig workers in online communities. They focus on missed opportunities when engaging in such comparisons.*

*I am interested in how people **experience their work in comparison to others**. Many gig workers consider how much worse they feel when comparing their professional successes and failures to other gig workers in online communities. They focus on missed opportunities when engaging in such comparisons.*

Analytical Approach

Given the structure of my data, I used multilevel path analysis in *Mplus* 8.4 (Muthén & Muthén, 2017) to account for daily variables being nested within participants. I specified all study variables as within-person (i.e., Level-1) variables. I group-mean centered exogenous, Level-1 variables (i.e., loneliness) to identify within-person fluctuations of Level-1 variables and remove variance based on between-person differences (Ohly et al., 2010; Petrou et al. 2012). Because *Mplus* requires complete data for models involving random slopes (Muthén & Muthén, 2017), I excluded observations with missing data on predictor variables, i.e., loneliness, lurking and contributing behaviors, and sense of belonging. I used Full Information Maximum Likelihood (FIML) to account for all remaining missing data (i.e., missing data on the outcome variable, withdrawal behaviors) because it produces more robust estimates than alternative approaches to dealing with missing data (e.g., Enders, 2001; Graham, 2009; Newman, 2014;

Peugh & Enders, 2004). Using FIML, the final data set consisted of 539 observations from 95 participants (*Mean observations = 5.67*).

To test the hypothesized indirect effects of loneliness on sense of belonging (Hypotheses 1 and 2), I used the product of coefficients approach. To support an indirect effect, this approach stipulates that researchers should multiply the coefficient for the first stage (e.g., loneliness → lurking behaviors) by the coefficient for the second stage of the model (e.g., lurking behaviors → sense of belonging), while controlling for the direct effect of the independent variable (e.g., loneliness → sense of belonging) (MacKinnon et al., 2002). However, the products of coefficients might be distributed non-normally and I used a resampling technique—RMediation (Tofighi & MacKinnon, 2016)—to produce bias-corrected confidence intervals (CI) of the product estimates (MacKinnon et al., 2004). If a bias-corrected confidence interval for an indirect effect does not contain zero, the corresponding hypothesis will be supported.

To test the moderated mediation hypotheses (Hypotheses 3a and 3b), I specified the intervention variable as a Level-1 moderator. I computed an interaction variable by multiplying the group-mean centered loneliness variable with the moderation variable. Although it is common to mean-center both variables involved in computing an interaction term to reduce multicollinearity (Cohen et al., 2013), I did not mean-center the moderation variable. Participants' values of the moderation variable were randomly determined because participants were randomly assigned to receive either the prevention intervention or the promotion intervention on any given day during the study period, making multicollinearity concerns obsolete. The variable for the prevention focus and promotion focus interventions was dummy coded ($0 = \textit{promotion focus intervention}$, $1 = \textit{prevention focus intervention}$).

I tested whether the indirect effects of loneliness on sense of belonging at high or low levels of the moderator (corresponding to promotion and prevention focus) differ from each other (Bauer et al., 2006). In similar manner, I tested the effects of Level-2 control variables. I grand-mean centered Level-2 control variables. If an indirect effect at high levels of a control variable differs significantly from an indirect effect at low levels of the same control variable, this would indicate that the hypothesized indirect effects differ for gig workers high versus low in identity challenge. Lastly, I tested the effect of belonging on withdrawal behaviors (Hypothesis 4) by performing an omnibus test of the model using *Mplus*.

To test these hypothesized effects, I used random slopes to account for variation in the proposed within-person effects that cannot be explained by the hypothesized predictors, thereby modeling random error at all levels of my model. Nezlek (2012) argues that a strong case needs to be made when *not* including a random slope because the data at hand may not be sufficient to test the assumption that no between-person differences in the effect of interest exist: Regardless of the variances in effects between people in the larger population, the given data may not reveal a significant random error term, for example when the sample is homogenous in relation to relevant, yet uncaptured characteristics. Therefore, many ESM researchers have advocated for including random effects by default. Consequently, “most structural equation approaches to modeling multilevel data ... include random effects by default, relying on the researcher to specify otherwise” (Beal, 2015: 396). See the Appendix for my modeling approach.

Results

I conducted a multilevel confirmatory factor analysis (MCFA) to assess the fit of the measurement model to the data. I specified six factors at the within-person level: loneliness at gig work, the intervention variable, lurking behaviors, contributing behaviors, belongingness,

and next-day withdrawal behaviors at gig work. This 6-factor model fit the data well: $\chi^2(120) = 4194.85, p < .001$; CFI = .99; RMSEA = .03; SRMR_{within} = .03, SRMR_{between} = .0.

Furthermore, to determine the appropriateness of using a within-person approach, I calculated the amount of variance for each study variable that can be attributed to within-person differences, compared to the variance that can be attributed to between-person differences. As Table 3 showed, all study variables exhibited significant variance at the within-person level, justifying using a within-person approach to my data analysis.

Table 3: Variance components of null models for study variables

Variable	Within-Individual Variance (ρ^2)	Between-Individual Variance (τ_{00})	Percentage of Variability Within-Individual
Loneliness at gig work	1.05*	1.40*	42.8%
Lurking behaviors in online communities	1.47*	1.10*	57.0%
Contributing behaviors in online communities	1.90*	1.79*	51.6%
Belongingness	.49*	1.73*	22.2%
Withdrawal behaviors at gig work	.67*	.88*	43.2%

Note. Percentage of variability within-individual was computed as $\rho^2 / (\rho^2 + \tau_{00})$. * $p < .05$; two-tailed.

Table 4 shows the means, standard deviations, and correlations of my study variables. Table 5 and Figure 2 show the results from my multilevel path analysis.

Table 4: Descriptive statistics, correlations, and reliabilities of study variables

	Mean	SD	1	2	3	4	5	6	7
Level 1 Variables									
1 Loneliness	2.68	1.46	(1.0)						
2 Lurking	3.43	1.57	.00	(.93)					
3 Contributing	4.43	1.89	-.01	-.27*	(.92)				
4 Belonging	5.04	1.43	-.11*	-.05	.14 [†]	(.92)			
5 Intervention	0.48	0.50	.01	-.04	.02	-.01	–		
6 Loneliness × Intervention	1.32	1.72	.75*	.00	.09 [†]	-.13*	.01	–	
7 Withdrawal	2.47	1.22	.18*	-.03	-.05	-.12*	-.10	.07*	(.99)
8 Positive affect	4.97	1.28	-.06	-.06	.16*	.16*	.05	-.07	-.04
9 Negative affect	2.04	1.06	.09*	.12*	-.10	-.33*	.02	.10 [†]	.08*
10 Passive usage	4.44	1.70	.01	.50*	-.63*	-.01	-.05	-.04	.11*
11 Sine of weekday	0.18	0.73	.17*	-.01	-.01	-.08 [†]	-.02	.11*	.20*
12 Cosine of weekday	-.033	0.57	.02	.07	-.05	-.10 [†]	.00	.01	.16*
13 Weekday	2.96	1.39	-.17*	-.01	.03	.09 [†]	.03	-.10*	-.21*
14 Study day	5.48	2.82	-.23*	.07	.06	.14*	-.10	-.15*	-.24*
Level 2 Variables									
15 Age	33.15	9.66	-.11	-.13	-.31 [†]	.06	-.36	-.28	-.22 [†]
16 Gender	0.57	0.49	-.09	.10	-.18 [†]	.03	.04	-.12	.09
17 Ethnicity	0.60	0.49	.09	-.01	-.33*	-.03	.18	.13	.24*
18 Education	0.57	0.75	-.06	-.18	.07	.03	-.52	-.19	-.25 [†]

Note. Level 1: $N = 539$. Level 2: $N = 95$. Average coefficient alphas across days are provided on the diagonal. Level-1 variables were aggregated to Level 2 to analyze correlations with between-person variables, using non-group-mean centered variables. Gender was coded 1 = *woman*, 0 = *man*; non-binary and self-description were excluded for these correlations. Race was coded 1 = *White*, 0 = *non-White*. Education was coded 1 = *Bachelor degree or higher*, 0 = *less than Bachelor degree*. [†] $p < .10$; * $p < .05$; two-tailed.

Hypothesis 1 predicted that loneliness at gig work has a negative indirect effect on belongingness via lurking behaviors in online communities. Loneliness at work was unrelated to lurking behaviors in online communities ($\gamma = -.05$, $SE = .12$, $p = .705$) and lurking behaviors were unrelated to belongingness ($\gamma = .00$, $SE = .03$, $p = .922$). Consequently, loneliness at gig work did not have an indirect effect on belongingness via lurking behaviors (*indirect effect* = .00, 95% CI = $-.0132$, $.0044$), failing to support Hypothesis 1.

Table 4 (continued)

	8	9	10	11	12	13	14	15	16	17	18
1											
2											
3											
4											
5											
6											
7											
8	(.91)										
9	-.22*	(.88)									
10	-.16*	.07	(.99)								
11	-.01	-.03	.02	–							
12	.01	-.13*	.13*	.37*	–						
13	-.01	.05 [†]	-.07*	-.93*	-.62*	–					
14	.05	-.02	-.05	-.45*	-.22*	.46*	–				
15	-.04	-.15	.17	-.07	.44	-.28	.04	–			
16	-.18	.00	.29 [†]	-.54	-.25	.51	.21	.08	–		
17	-.29*	.12	.44*	-.32	.11	.09	-.14	.19*	.17	–	
18	-.03	-.01	-.06	.27	.20	-.37	-.26	.04	.09	.11	–

Hypothesis 2 predicted that loneliness at gig work has a positive indirect effect on belongingness via contributing behaviors in online communities. Loneliness was indeed related to contributing behaviors, but the effect was negative ($\gamma = -.22$, $SE = .12$, $p = .056$). As expected, belongingness had a positive effect on belongingness ($\gamma = .07$, $SE = .03$, $p = .045$). The indirect effect of loneliness on belonging via contributing behaviors was not significant (*indirect effect* = $-.01$, 95% CI = $-.0367$, $.0027$), failing to support Hypothesis 2.

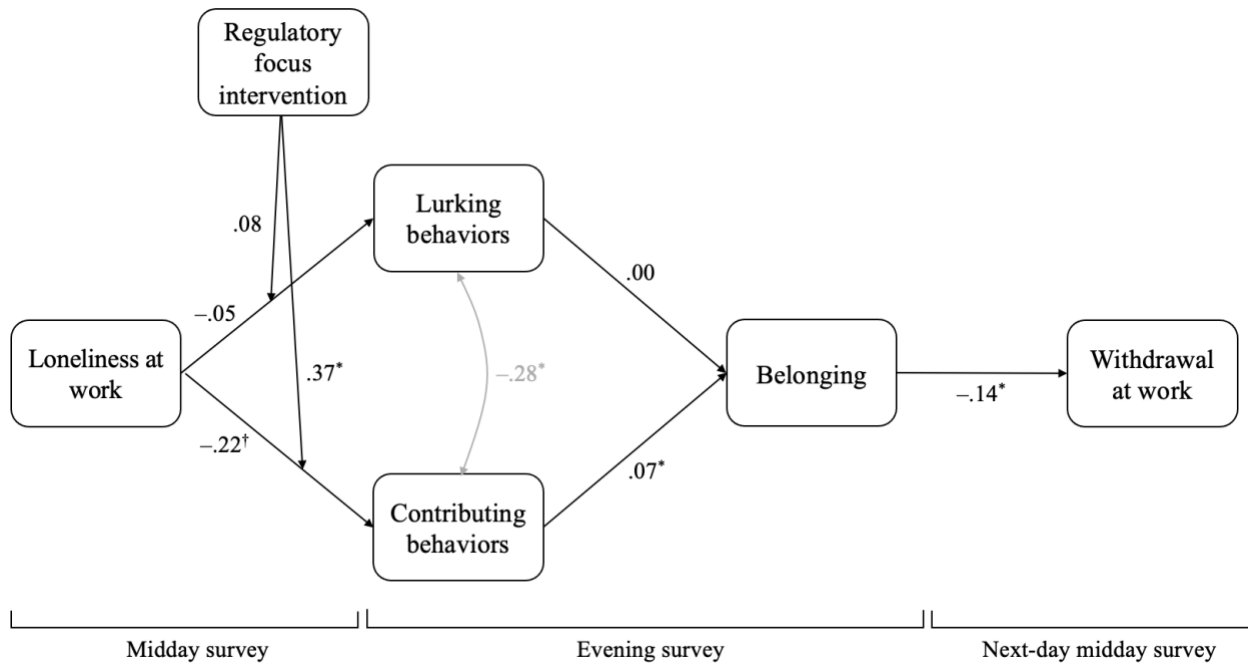
Table 5: Results of multilevel path analysis

Predictors	Lurking behaviors		Contributing behaviors		Belongingness		Next-day withdrawal	
	γ	SE	γ	SE	γ	SE	γ	SE
Intercept	3.46*	.14	4.12*	.17	4.66*	.25	3.14*	.31
Level-1 predictors								
Loneliness at work	-.05	.12	-.22[†]	.12	-.08*	.04	.15*	.06
Regulatory focus intervention	-.11	.14	.05	.13				
Loneliness × Regulatory focus intervention	.08	.14	.37*	.17				
Lurking behaviors					.00	.03		
Contributing behaviors					.07*	.03		
Belongingness							-.14*	.05

Note. Level-1 $N = 539$, Level-2 $N = 95$. Regulatory focus intervention was coded 0 = *promotion focus intervention*, 1 = *prevention focus intervention*. With the exception of effects of the interaction variable, hypothesized effects (bolded) were modeled using random slopes. * $p < .05$; two-tailed.

Hypothesis 3a predicted that the indirect negative effect of loneliness on belongingness via lurking behaviors would be stronger when gig workers participated in a prevention focus intervention, compared to when they participated in a promotion focus intervention. The effect of the interaction term for the intervention variable was not significant ($\gamma = .08$, $SE = .14$, $p = .540$), failing to support Hypothesis 3a. Neither the effect of loneliness on lurking behaviors for participants who participated in the promotion focus intervention ($\gamma = .04$, $SE = .07$, $p = .590$), nor the effect of loneliness on lurking behaviors for people who participated in the prevention focus intervention ($\gamma = -.05$, $SE = .12$, $p = .705$) were significant.

Figure 2: Results of multilevel path analysis

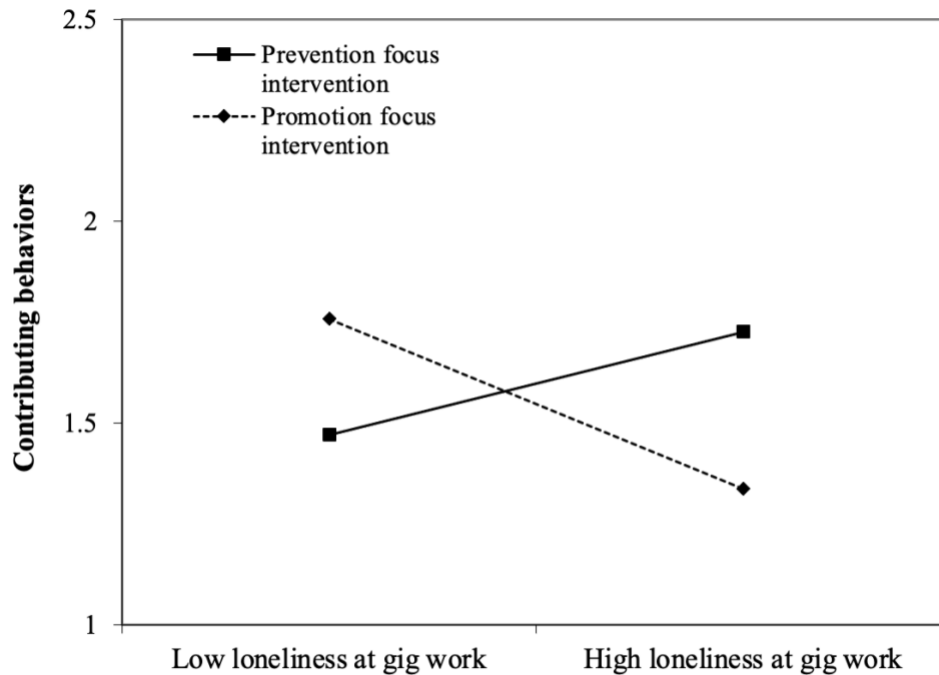


Note. Level-1 $N = 539$, Level-2 $N = 95$. Regulatory focus intervention was coded 0 = promotion focus intervention, 1 = prevention focus intervention. [†] $p < .10$, * $p < .05$; two-tailed.

Hypothesis 3b predicted that the indirect positive effect of loneliness on belongingness via contributing behaviors would be stronger when gig workers participated in a promotion focus intervention, compared to when they participated in a prevention focus intervention. The effect of the interaction term for the intervention variable was significant ($\gamma = .37$, $SE = .16$, $p = .025$) yet in the opposite prediction: The effect of loneliness on contributing behaviors for participants who participated in the promotion focus intervention was negative ($\gamma = -.22$, $SE = .12$, $p = .056$), whereas the effect was nonsignificant for people who participated in the prevention focus intervention ($\gamma = .15$, $SE = .10$, $p = .164$). The difference between the prevention focus and the promotion focus intervention for the indirect effects of loneliness on belongingness via contributing behaviors was not significant (Δ indirect effects = .03, 95% CI = -.0552, .0948). Thus, Hypothesis 3b was not supported. Figure 3 shows the interaction of my intervention for the impact of loneliness on contributing behaviors.

Lastly, Hypothesis 4 stated that belongingness would have a negative effect on next-day withdrawal behaviors at gig work. Indeed, the effect was negative and significant ($\gamma = -.14$, $SE = .05$, $p = .011$), supporting Hypothesis 4.

Figure 3: Interaction between loneliness and regulatory focus intervention on contributing behaviors



Supplemental Analyses

Manipulation checks

To test the efficacy of my manipulations, I analyzed participants' responses to the writing prompts designed to manipulate regulatory foci using the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker et al., 2015). This software applies various dictionaries to analyze linguistic data. I conducted an analysis using a custom LIWC dictionary, designed to measure regulatory foci in letters of top executives to shareholders (Gamache et al., 2015). Table 6 shows the list of words that the dictionary uses to compute scores for prevention focus and promotion focus. An ANOVA revealed that the score for promotion focus was not significantly higher

among participants who responded to the promotion focus prompt than participants who responded to the prevention focus prompt ($F(626) = .185$, $Mean = .67$ versus $.62$, $p = .67$). In contrast, the difference in scores measuring prevention focus was significant, indicating that participants who responded to the prevention focus prompt exhibited a higher prevention focus than participants who responded to the promotion focus prompt ($F(626) = 9.69$, $Mean = .43$ versus $.18$, $p = .002$).

Table 6: Words indicating regulatory foci in Gamache et al.’s (2015) dictionary

Promotion focus		Prevention focus	
Accomplish*	Improv*	Accura*	Los*
Achiev*	Increas*	Afraid*	Obligat*
Advanc*	Momentum	Careful*	Ought
Aspir*	Obtain*	Anxi*	Pain*
Attain*	Optimis*	Avoid*	Prevent*
Desir*	Progress*	Conservative	Protect*
Earn*	Promot*	Defend*	Responsib*
Expand*	Speed*	Duty	Risk*
Gain*	Swift*	Escap*	Safe*
Grow*	Toward*	Evad*	Secur*
Hop*	Velocity	Fail*	Threat*
Ideal*	Wish*	Fear*	Vigil*
		Loss	

Given that the Gamache et al. dictionary has not been validated as a measure of regulatory foci and was specifically designed to analyze executive letters to shareholders (rather than analyze peer-to-peer communication such as I online communities), I conducted an additional analysis using a validated dictionary of regulatory modes. There are slight differences between regulatory modes and regulatory foci: Regulatory modes describe the process of goal pursuit (Kruglanski et al., 2000), whereas regulatory foci describe an individual’s value motivation (Higgins, 2012b). Using a dictionary that has been designed and validated to measure regulatory modes (Kanze et al., 2021), I calculated values for the *locomotion* score and an

assessment score of participants’ written responses. Similar to promotion focus, the locomotion score indicates a need for urgent action in order to achieve one’s goals (e.g., “Just do it”; Kruglanski et al., 2000). In contrast, similar to prevention focus, the assessment score measures the degree of careful consideration in the pursuit of a goal (e.g., “Do the right thing”; Kruglanski et al., 2000). Table 7 shows the words used to measure locomotion and assessment. Conducting an ANOVA, the difference between responses of participants who saw the promotion-oriented writing prompt and participants who saw the prevention-oriented writing prompt regarding the locomotion score was marginally significant ($F(626) = 3.69$, $Mean = 1.92$ versus 1.56 , $p = .055$), indicating that the manipulation of promotion focus was somewhat effective. Yet, the difference between responses of participants who saw the promotion-oriented writing prompt and participants who saw the prevention-oriented writing prompt regarding the assessment score was not significant ($F(626) = 1.87$, $Mean = .76$ versus $.93$, $p = .172$). Using both the dictionaries by Gamache et al. (2015) and Kanze et al. (2021), the evidence for efficacy of my intervention is mixed.

Table 7: Words indicating regulatory modes in Kanze et al.’s (2021) dictionary

Locomotion		Assessment	
Act*	Launch*	Accura*	Observe*
Can’t wait	Lead*	Alternat*	Perfect*
Chang*	Make*	Assess*	Ponder*
Dare*	Mobil*	Calculat*	Procrastinat*
Do it	Momentum	Careful*	Question*
Doer*	Motion	Compar*	Reconsider*
Done	Mov*	Consider*	Reflect*
Drive*	Obstacle*	Consult*	Regret*
Dynami*	Proceed*	Correct*	Review*
Elimin*	Quick*	Criti*	Right
Fast*	Reduc*	Detail*	Ruminat*
Flow*	Reject*	Evaluat*	Think*
Get*	Remov*	Examin*	Thorough*

Table 7 (continued)

Go	Smooth*	Exhaustive	Thought*
Going	Speed*	Judg*	True*
Hurr*	Start*	Methodical	Truth*
Initiat*	Urg*	Meticulous*	Unsure

Explaining unexpected findings

I conducted several supplemental analyses to better understand the results of testing my theoretical model. First, drawing on the reconnection hypothesis, I predicted a positive effect of loneliness on contributing behaviors. Given how I coded the moderation variable (0 = promotion focus condition, 1 = prevention focus condition), the negative coefficient reported above concerns the effect of loneliness on contributing behaviors only for people who underwent the promotion condition. To compute the main effect of loneliness across all conditions, I reran my model, removing the intervention variable and the hypothesized interaction effects. The results indicated a negative, yet insignificant main effect of loneliness on contributing behaviors (see Figure 4). These findings still do not support my expectation that loneliness should lead to more contributing behaviors in online communities, behaviors that would indicate the desire to reconnect with others in a safe and easily accessible way.

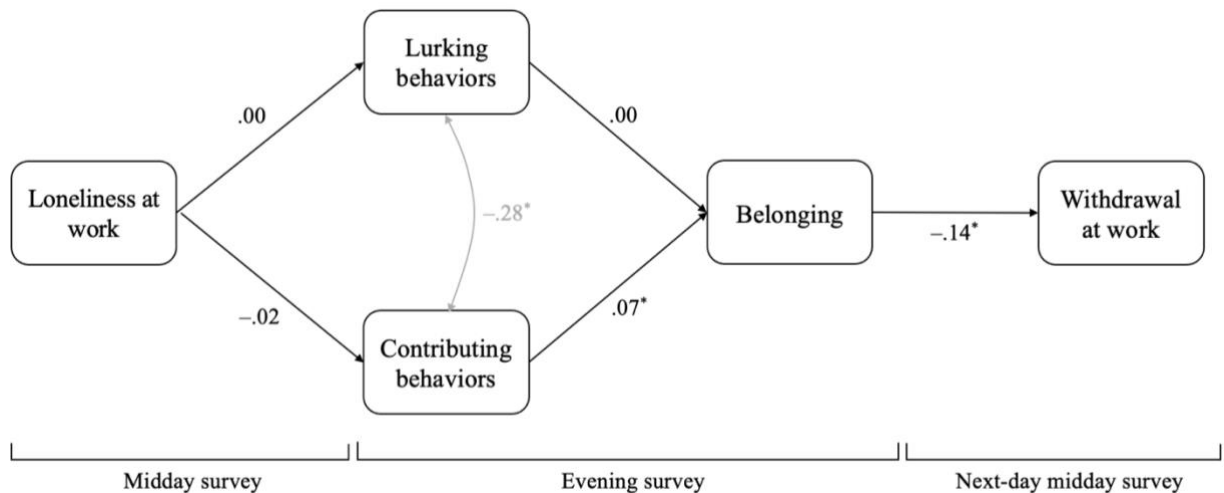


Figure 4: Hypothesized model without 1st-stage moderator

Note. Level-1 $N = 539$, Level-2 $N = 95$. * $p < .05$; two-tailed.

Second, to understand why the interventions did not work in the expected way, I conducted further analyses using the standard LIWC dictionary (Pennebaker et al., 2015). Specifically, I was interested in comparing answers across the writing prompts for promotion focus and prevention focus regarding loneliness. If one intervention yielded answers that point to experiences resembling loneliness, this intervention would likely increase the effects of loneliness. Unfortunately, the standard LIWC dictionary does not perform a count of words that directly relate to loneliness. However, it counts words indicating negative and positive emotions as well as words concerning affiliation motivation (what Pennebaker et al. call “drive”). Loneliness being a negative emotion, answers indicating negative emotions would point to this intervention possibly strengthening the effects of loneliness, whereas answers pointing to positive emotions could point to the intervention weakening the effects of loneliness. Conversely, answers indicating the drive to affiliate with others would indicate a motivation to reconnect, which should strengthen the hypothesized positive effects of loneliness.

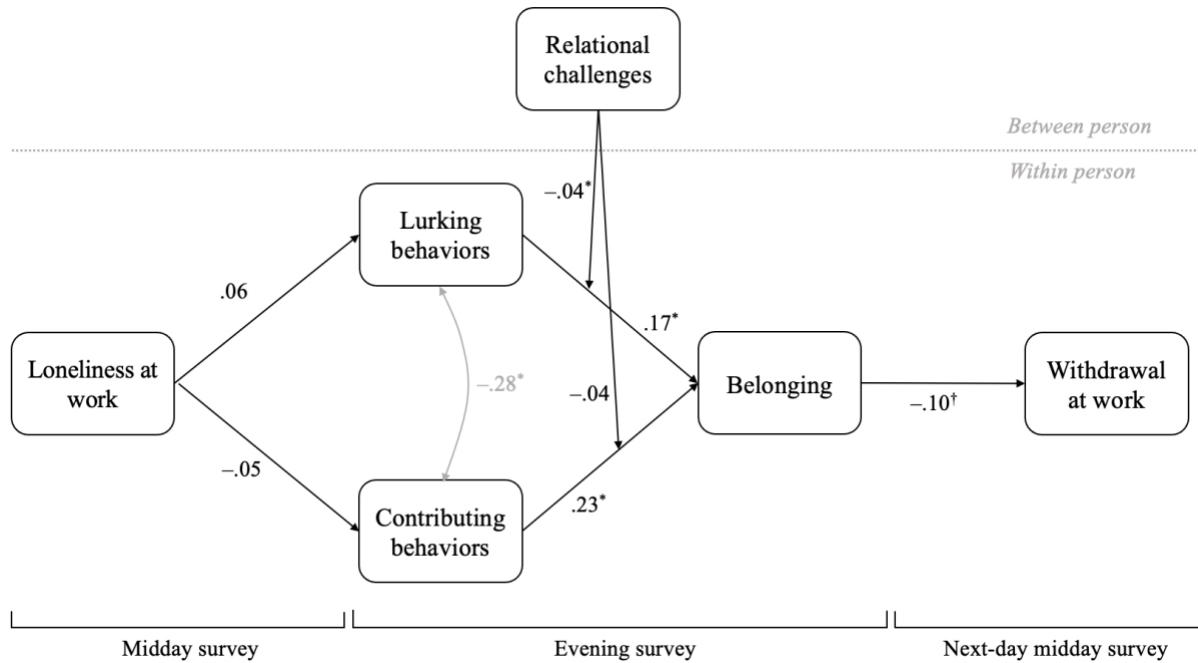
The promotion focus intervention yielded answers that contained fewer negative words than the prevention focus intervention did ($F(626) = 13.63$, $Mean = 1.20$ versus 1.87 , $p < .001$). In addition, the promotion focus intervention yielded answers that contained marginally more positive words than the prevention focus intervention ($F(626) = 3.21$, $Mean = 5.04$ versus 4.42 ., $p = .074$). Therefore, given that loneliness is a negative emotion, participants who responded to the promotion focus intervention when feeling above-average loneliness may not have seen their lived experience reflected in the promotion focus intervention. Specifically, the promotion focus intervention stressed the benefits of online communities for “many” gig workers, possibly giving

lonely participants the impression that they were missing out on opportunities that fellow gig workers widely use and take advantage of. Similarly, the count of words that relate to affiliation (e.g., friend, social, ally) was significantly higher in answers written by participants who underwent the promotion focus intervention than answers written by participants who underwent the prevention focus intervention ($F(626) = 7.87$, $Mean = 4.18$ versus 3.37 , $p = .005$), further pointing to a contrast between lonely participants' own experience and their reflection on online communities. Notice that the grand mean of affiliation-related words across samples from various settings analyzed when developing the LIWC 2015 dictionary was 2.05 ($SD = 1.28$) (Pennebaker et al., 2015), i.e., less than half the mean of participants in my study who received the promotion focus intervention, indicating that this intervention successfully heightened a drive to affiliate with others.

Another unexpected finding concerns the effect of lurking behaviors. Although I had expected lurking behaviors to have a negative effect on belonging, lurking behaviors had no impact on belongingness at work. This non-finding was surprising so I explored moderators of the relationship between lurking behaviors and belongingness. Relational challenges of working in the gig economy emerged as a significant moderator; the results of my hypothesized model with relational challenges as a second-stage moderator are shown in Figure 5. I measured relational challenges of gig work in the registration survey using Caza et al.'s (2021) 3-item measure. A sample item is "Sometimes I miss being part of a team when doing my gig work" ($\alpha = .78$). When controlling for the influence of participants' overall perception of relational challenges in gig work on belonging, lurking behaviors had a positive and significant effect on belonging. This effect was heightened for participants who perceived relational challenges in

their gig work to be generally low. These findings suggest that lurking behaviors may constitute a positive form of engagement in online communities.

Figure 5: Relational challenges of gig Work as 2nd-stage moderator



Note. Level-1 $N = 539$, Level-2 $N = 95$. † $p < .10$, * $p < .05$; two-tailed.

Moderating effects of Level-2 variables

In further supplemental analyses, I explored the moderating effects of several Level-2 variables. For this purpose, I measured characteristics of participants’ gig work (side-hustle status, in-person contact at gig work, and chronic loneliness at gig work), individual differences (fear of negative evaluation, core self-evaluations, and non-work loneliness), and characteristics of online communities (psychological safety). Characteristics of gig work, individual differences and characteristics of online communities may influence the degree to which feelings of loneliness manifest in lurking behaviors and contributing behaviors. I modelled these variables as Level-2 moderators of the effects of loneliness on lurking behaviors and contributing

behaviors. All Level-2 variables were measured in the registration survey and grand-mean centered to explore their moderating effects (e.g., Dimotakis et al., 2013; Hoffmann et al., 2000).

The first set of potential moderators concerns characteristics of participants' gig work. Given that gig workers for whom gig work is only a side-hustle may feel less belonging to the gig economy, I explored the moderating effect of *side-hustle status*. When gig work is only a side hustle, participants may be less likely to turn to online communities when experiencing loneliness. In the registration survey, I asked participants whether participants held a traditional job (defined as "jobs where work is performed on a fixed schedule, at the firm's place of business under the firm's control and with mutual expectation of continued employment"; Kalleberg et al., 2000: 257) in addition to their gig work, coded as a dummy variable. The interaction between loneliness and side-hustle status on lurking behaviors was not significant ($\gamma = -.09$, $SE = .13$, $p = .483$); neither was the interaction between loneliness and side-hustle status on contributing behaviors ($\gamma = -.05$, $SE = .12$, $p = .653$). In other words, participants' side-hustle status did not change the effect of loneliness on behaviors in online communities.

Furthermore, *in-person contact at gig work* may weaken the effects of loneliness on behaviors in online communities because gig workers may prefer richer in-person interactions at work over anonymous online interactions if in-person interactions are possible. Importantly, gig workers experience varying degrees of social interactions in their work. For example, rideshare drivers may have more opportunities at their gig work to connect with others than professional survey takers (Caza et al., 2021; Watson et al., 2021). Given such differences, I asked participants to "estimate the share of your gig work time in which you have in-person contact with others" on a sliding scale from 0 percent to 100 percent.⁶ Participants were asked to

⁶ When modeling in-person contact as a between-person moderator, I divided the score of in-person contact (originally on a scale from 0 to 100 percent) by 10, in order to calculate more readily interpretable effect estimates.

“average the in-person contact you have across all these gigs” if they worked several gigs. In-person contact did not moderate the effect of loneliness on lurking behaviors ($\gamma = -.02$, $SE = .00$, $p = .145$), nor did it moderate the effect of loneliness on contributing behaviors ($\gamma = .01$, $SE = .00$, $p = .401$). The degree of in-person contact in participants’ work lives did not affect the impact of loneliness on behaviors in online communities.

Furthermore, research on loneliness suggests that chronic loneliness and momentary feelings of loneliness function differently. Chronic loneliness has been found to have stifling effects, effectively “locking” individuals into a state of inaction (Cacioppo & Cacioppo, 2018). Hence, it could be that participants who experience higher than usual loneliness on one day may not feel the same desire to reconnect to others when they are chronically high in loneliness, compared to participants for whom loneliness is an unusual state. Indeed, prior research has found that chronic loneliness moderates the adaptive effects of transient loneliness, so that individuals who are chronically lonely are less likely to engage in prosocial behavior when experiencing transient feelings of loneliness (Archer Lee et al., 2022). To explore the moderating effect of chronic loneliness, I measured *chronic loneliness at gig work* in the registration survey, using the same measure by Gabriel et al., (2021) that I used in the daily surveys. Different from the daily surveys, the lead-in to the measure in the registration survey was “In general, when doing gig work, ... ” ($\alpha = .88$). Participants who were chronically lonely in their gig work were more inclined to engage in lurking behaviors when they get momentarily lonely, yet the effect was not significant ($\gamma = .07$, $SE = .05$, $p = .197$). As expected, participants who were chronically lonely were less inclined to engage in contributing behaviors when they were momentarily lonely, yet the effect was not significant ($\gamma = -.05$, $SE = .05$, $p = .297$). Consequently, chronic

loneliness did not moderate the effects of momentary loneliness on behaviors in online communities.

I was also interested in the moderating effect of individual differences that may affect participants' behaviors following momentary feelings of loneliness. I therefore measured fear of negative evaluation, core self-evaluations, and non-work loneliness in the registration survey. Previous research has found that social rejection only leads to efforts to reconnect with others when the individual views others as realistic sources of social connection. In contrast, people who generally believe that others are unwilling to connect with them should be less likely to try reconnecting when experiencing momentary feelings of loneliness (Maner et al., 2007). I measured participants' *fear of negative evaluation* as the general belief that efforts to reconnect will be futile, using the 12-item scale by Leary (1983). A sample item is "I am afraid that people will find fault with me" ($\alpha = .95$). Fear of negative evaluation did not moderate the effect of loneliness on lurking behaviors ($\gamma = .01$, $SE = .04$, $p = .814$), nor did it moderate the effect of loneliness on contributing behaviors ($\gamma = -.06$, $SE = .05$, $p = .187$).

Similarly, people who generally believe in their ability to execute goals and cope with problems should be more likely to try reconnecting with others following moments of loneliness (Gabriel et al., 2021). I therefore measured *core self-evaluations*, using the 12-items scale by Judge and colleagues (2003). A sample item is "When I try, I generally succeed" ($\alpha = .87$). Core self-evaluations did not moderate the effect of loneliness on lurking behaviors ($\gamma = .04$, $SE = .06$, $p = .503$), nor did they moderate the effect of loneliness on contributing behaviors ($\gamma = -.03$, $SE = .06$, $p = .701$).

Furthermore, loneliness may vary between different domains of life (Oczelik & Barsade, 2018) and there may be compensatory or spillover effects between loneliness in different

domains. Specifically, gig workers who are lonely in their life outside of work may be more likely to turn to online communities when experiencing momentary feelings of loneliness than gig workers who feel close to others outside of gig work. To account for this possibility, I measured *non-work loneliness* using six items from DiTommaso and Spinner (1993); the measure distinguishes between loneliness in the domain of romantic relationships (e.g., “I wish I had a (more) satisfying romantic relationship”), loneliness in the family domain (e.g., “I don’t feel close to my family”), and loneliness in the domain of friendship (e.g., “I don’t feel like I can depend upon my friends for help”). To create a shorter measure than DiTommaso and Spinner’s (1993) original 23-item scale, I measured each domain with two items and averaged all items to compute an overall score of non-work loneliness ($\alpha = .82$). Non-work loneliness did not moderate the effects of loneliness on lurking behaviors ($\gamma = .00$, $SE = .04$, $p = .979$), nor did it moderate the effect of loneliness on contributing behaviors ($\gamma = .01$, $SE = .05$, $p = .876$). In short, individual differences that I measured did not appear to moderate my hypothesized effects.

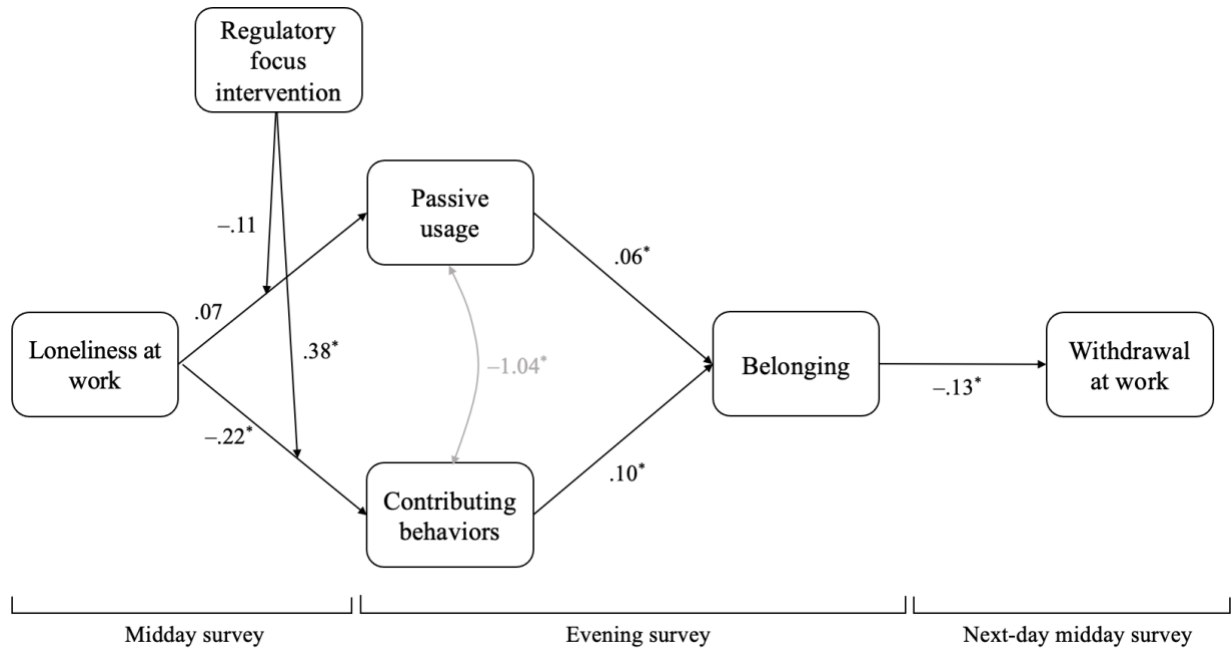
Lastly, characteristics of the online communities in which participants typically engage may influence behaviors in these communities following feelings of loneliness. Specifically, the perception that these communities are psychologically safe may strengthen reconnection efforts through contributing behavior because people are more likely to try reconnecting when anticipating positive social evaluation (Maner et al., 2007). Therefore, I measured *psychological safety in online communities* using the 7-item measure from Edmondson (1999), adapted to the context of online communities. A sample item is “People in these communities would never reject others for being different” ($\alpha = .86$). Psychological safety in online communities did significantly affect the behaviors that participants displayed in online communities, negatively affecting lurking behaviors ($\gamma = -.29$, $SE = .11$, $p = .011$) and positively affecting contributing

behaviors ($\gamma = .40, SE = .12, p = .001$). However, psychological safety did not moderate the effects of loneliness on lurking behaviors ($\gamma = .02, SE = .04, p = .698$) or contributing behaviors ($\gamma = -.04, SE = .06, p = .519$).

The usage of online communities beyond lurking behaviors and contributing behaviors

I was also interested to test whether loneliness decreases belonging via passive usage, instead of lurking behaviors. Research has found that loneliness increases passive usage (Aalbers et al., 2019; Zhang et al., 2020). To test whether online communities related to gig work behave similarly, I tested a model in which passive usage and contributing behavior mediate the indirect effects of loneliness of belonging. As Figure 6 shows, although loneliness did not affect passive usage, passive usage had a positive influence on belonging ($\gamma = .06, SE = .03, p = .027$), suggesting that passive behaviors online communities are beneficial.

Figure 6: Results of multilevel path analysis with passive usage as 1st-stage mediator



Note. Level-1 $N = 539$, Level-2 $N = 95$. Regulatory focus intervention was coded 0 = promotion focus intervention, 1 = prevention focus intervention. * $p < .05$; two-tailed.

I also explored whether loneliness affected the mere act of logging into online communities. In the evening survey, I asked participants, “In the last hours (i.e., since receiving the first survey today), have you visited your online communities related to gig work?”, and coded their answer as a dummy variable. Midday loneliness had no effect on the mere act of visiting online communities as reported in the midday survey ($\gamma = -.01$, $SE = .02$, $p = .417$).

A last possibility is that loneliness may affect the amount of time lonely gig workers spent in online communities related to gig work. In the evening survey, participants indicated how much time they had spent in online communities related to gig work since taking the midday survey. Although loneliness had no effect on the amount of time spent in online communities ($\gamma = -.01$, $SE = .06$, $p = .880$), the amount of time participants spent in online communities was positively associated with belongingness ($\gamma = .04$, $SE = .01$, $p < .001$). Importantly, time spent in online communities related to gig work had a negative indirect effect on next-day withdrawal at gig work (*indirect effect* = $-.01$, 95% CI = $-.0107$, $-.0003$). Together with the positive effect of passive usage on belongingness, these findings suggest a close link between engaging in online communities and experiencing a sense of belonging.

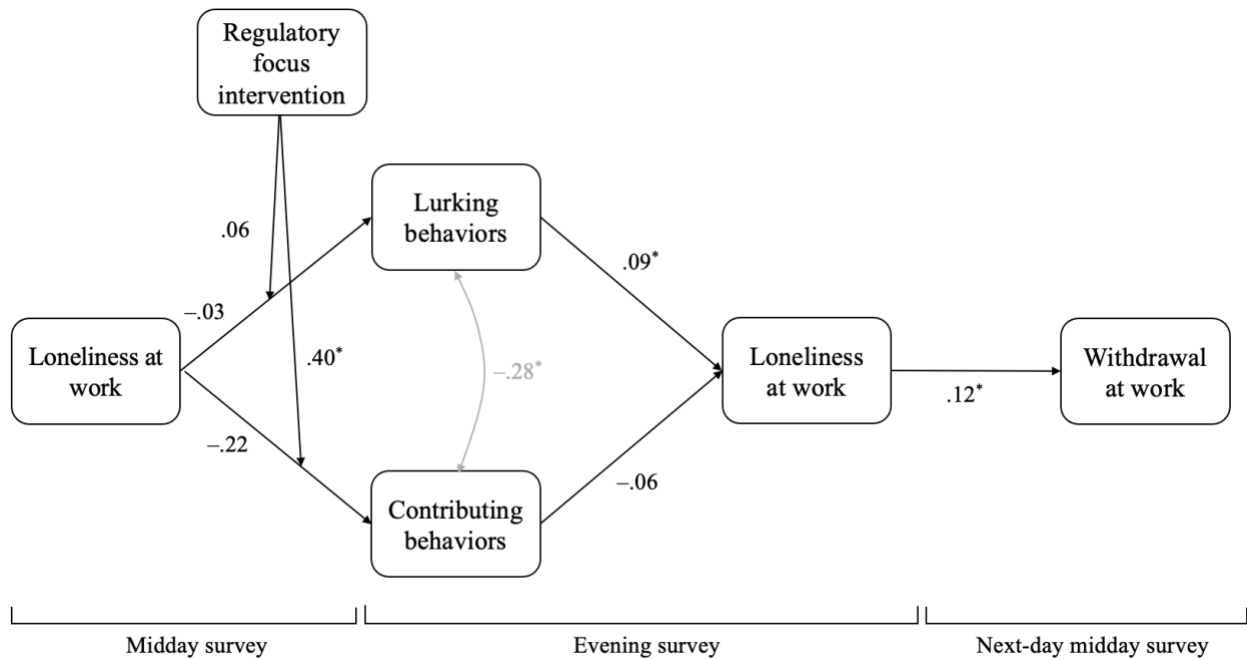
Loneliness as an outcome

I explored whether behaviors in online communities affect subsequent loneliness because loneliness has “self-reinforcing and pattern-breaking cycles” (Gabriel et al., 2021: 1518), i.e., behaviors triggered by loneliness either increase (self-preservation hypothesis) or decrease (reconnection hypothesis) subsequent loneliness. First, I explored the self-enforcing and self-correcting cycles of loneliness (Gabriel et al., 2021) by testing the effect of belongingness on next-day feelings of loneliness. Indeed, belongingness predicted next-day loneliness measured in the midday survey ($\gamma = -.14$, $SE = .07$, $p = .047$). Given that contributing behaviors had a

positive effect on belongingness, I also explored whether contributing behaviors had a negative indirect effect on next-day loneliness at work. However, the indirect effect of contributing behaviors on next-day loneliness via belonging was not significant (*indirect effect* = $-.01$, 95% CI = $-.0277, .0009$).

Second, I tested the self-reinforcing and self-correcting cycles of loneliness over the course of the same day. For this purpose, I measured loneliness at gig work in the evening survey. Figure 7 shows the results. As reported above, loneliness did not predict behaviors in online communities. Yet, as shown, lurking behaviors were positively related to loneliness measured in the evening survey which, in turn, increased next-day withdrawal at work. However, the indirect effect of lurking behaviors on next-day withdrawal at work was not significant (*indirect effect* = $.01$, 95% CI = $-.00001, .0256$).

Figure 7: Results of multilevel path analysis with loneliness as 2nd-stage mediator



Note. Level-1 $N = 539$, Level-2 $N = 95$. Regulatory focus intervention was coded 0 = promotion focus intervention, 1 = prevention focus intervention. * $p < .05$; two-tailed.

Reverse causation

Lastly, the character of my data allowed me to investigate the possibility of reverse causation, i.e., whether an elevated sense of belonging led to fewer lurking behaviors and more contributing behaviors on the next day, thereby reinforcing future belonging. This is a possibility because the relationship between behaviors associated with belonging (e.g., sharing in online communities) and sense of belonging may be reciprocal, so that belonging fosters associated behaviors and these behaviors in turn increase belonging (Trawalter et al., 2021). However, the data did not support a reciprocal relationship between behaviors in online communities and belonging. Belonging did not have a significant effect on next-day lurking behaviors ($\gamma = .05$, $SE = .09$, $p = .599$) or contributing behaviors ($\gamma = .13$, $SE = .11$, $p = .222$).

CHAPTER 6: DISCUSSION

My research question has been how nonstandard workers, such as gig workers, develop a sense of belonging given the absence of organizational or occupational structures that standard workers rely on for their sense of belonging. To answer that question, I turned to online communities related to gig work and the behaviors in which gig workers engage in these communities. I argued that gig workers' behaviors in these communities would be motivated by state loneliness, a wide-spread feeling that, as the evolutionary theory of loneliness argues, motivates individuals to overcome perceived social isolation. However, the theory specifies two somewhat countervailing motivations of loneliness, the desire to protect the self from further social harm (the self-preservation hypothesis) and the desire to reconnect (the reconnection hypothesis). Accordingly, I first argued that transient feelings of loneliness would lead gig workers to engage in lurking behaviors because lurking signifies the vigilance lonely individuals display in social interactions. Second, I argued that transient feelings of loneliness would lead gig workers to engage in contributing behaviors because sharing their thoughts and experiences with others in online communities provides lonely individuals with an easily available opportunity to reconnect with others. I hypothesized that loneliness would decrease belongingness via lurking behaviors given that lonely gig workers, by lurking, would feel like the "outsider looking in" but forgo the social interactions that relate to belongingness. In contrast, I hypothesized that loneliness would increase belongingness via contributing behaviors because interactions with fellow gig workers should help lonely gig workers build social capital. Furthermore, to enhance the positive effects of loneliness, I proposed an intervention manipulating regulatory foci. Lastly, to illustrate the practical relevance of belongingness among

gig workers, I hypothesized that belongingness would decrease withdrawal behaviors at gig work.

Findings from a 10-day ESM study offer little support for my hypothesized model. While belongingness does decrease next-day withdrawal at work, all other hypotheses were not supported. Interestingly, loneliness had no effect on lurking behaviors but significantly reduced contributing behaviors. However, my results overall support the significance of online communities for gig workers. Below, I discuss the findings on loneliness and online communities before describing the practical implications as well as limitations of my dissertation and directions for future research.

Discussion of Findings

The impact of loneliness on lurking behaviors and contributing behaviors

Several findings about the impact of loneliness are noteworthy because the effects, when significant, went in the opposite direction as hypothesized. First, I hypothesized a positive main effect of loneliness on contributing behaviors yet found that the effect was negative. Second, I hypothesized that the promotion focus intervention would strengthen the positive effect of loneliness on contributing behaviors, yet found that participants who underwent the promotion focus intervention were less likely to engage in contributing behaviors. Third, despite strong empirical support for the self-preservation hypothesis, I did not find an effect of loneliness on lurking behaviors. Below, I discuss these findings in more detail.

First, the failure to see the reconnection hypothesis be supported in my findings may indicate that actively contributing in online communities is too much of an undertaking for lonely gig workers. Kanterman et al. (2021) found that loneliness only increased the motivation to reach out to others to be included when the effort to do so was minimal, which Kanterman et

al. operationalized as a low number of keystrokes needed to express the desire to be included in a virtual ball-tossing game. In other words, the desire to reconnect with others does not appear to be strong enough to overcome hurdles to social interaction. It could be that actively reaching out to others by posting or commenting in online communities exceeded the effort that lonely gig workers were willing to invest into reconnecting. I shed more light on this in my below discussion regarding the effects of my intervention.

The second issue concerns my interventions, specifically why the promotion focus intervention decreased contributing behaviors. Given the apparent contrast between participants' lived experience of loneliness and the benefits of online communities stressed in the promotion focus intervention—which heightened the motivation to affiliate with others—the promotion focus intervention may have increased social anxiety in lonely participants, rather than stimulating them to overcome it. In other words, the promotion focus intervention may have heightened lonely participants' fear of missing out (FoMO), i.e., the “pervasive apprehension that others might be having rewarding experiences from which one is absent” (Przybylski et al., 2013: 1841). As a reminder, the effect of loneliness on contributing behaviors was marginally significant and negative for participants who underwent the promotion focus intervention, yet it was positive and insignificant for participants who underwent the prevention focus intervention. FoMO is a likely explanation of the unexpected negative effect of the promotion focus intervention because FoMO has been previously shown to be heightened in social media users experiencing loneliness (e.g., Reer et al., 2019). Although the relationship between loneliness and FoMO has been only sparsely studied, the evolutionary model of loneliness would suggest that FoMO is a facet of loneliness as a signal alerting the individual to the need to correct the intensity or direction of their social engagement because others seem to be more connected.

The unexpected negative effect of loneliness on contributing behaviors for participants who underwent the promotion focus intervention may further point to a lower motivation to reconnect with others when feeling lonely than I assumed. The higher count of words relating to an affiliation drive speaks to the efficacy of the promotion focus intervention in creating a reconnection motivation. Yet, given that the promotion focus intervention did not increase actual efforts to reconnect (i.e., contributing behaviors), it casts doubts on such a reconnection motivation being present in lonely people. If such a reconnection motivation would have been present in above-average lonely participants, the promotion focus intervention should have increased this motivation. However, the prompt had the opposite effect: it decreased contributing behaviors among lonely participants. In combination with research that links state loneliness to shyness and decreased social skills (Cacioppo et al., 2006), my findings suggests that state loneliness might be predominantly characterized by vigilance and caution regarding social interactions, rather than proactive efforts to engage in social interactions.

However, notice that if that would have been the case and state loneliness is predominantly characterized by vigilance, the prevention focus intervention should have strengthened the hypothesized positive effect of loneliness on lurking behaviors—which it did not (the effect was positive, as expected, but it was not significant). This could be a power issue given my comparatively small number of observations (Gabriel et al., 2019). Ultimately, the inconsistency in effects of my interventions does not allow a clear conclusion regarding the presence of a motivation to reconnect when experiencing transient feelings of loneliness.

Another supplemental finding worth mentioning in this context is the positive effect of loneliness on passive usage for participants who underwent the promotion focus intervention and a negative effect for participants who underwent the prevention focus intervention. Although

insignificant, these findings may point to the presence of a much more qualified motivation to reconnect when feeling lonely. Given the ambiguity of what researchers in lab experiments have interpreted as indicators of the motivation to reconnect, passive usage could similarly be interpreted as wanting to be among others. However, I do not find actual engagement with others in online communities following loneliness, only (statistically insignificant) support for an ambivalent desire to be in others' company: lonely gig workers may seek out others' company, yet refrain from interaction. Indeed, previous research has linked loneliness to problematic usage of social network sites (i.e., excessive and uncontrollable usage of these sites) (e.g., Reed, 2023). In this way, one could say that lonely people are like the lonely rhesus monkeys who walk within arm's length of other monkeys but avoid any direct interaction with them (Capitanio et al., 2014). Rather than an untethered wish to reconnect when feeling lonely, the reality may be a much more ambivalent desire to be and engage with others, a desire characterized by caution and vigilance rather than proactive sociability. A qualified restatement of the reconnection hypothesis would further allow integrating the findings about the connection between social rejection and aggression (DeWall & Twenge, 2013).

Lastly, my study did not support a link between loneliness and lurking behaviors. This non-finding is surprising given the strength of the empirical support for the self-preservation hypothesis. One possibility to interpret this absence of a link between loneliness and lurking behaviors is the perception of online communities related to gig work as incohesive accumulations of a diversity of gig workers—rather than entative and cohesive groups. In an experiment that investigated aggressive behavior following social rejection, Gaertner and colleagues (2008) found that socially rejected participants only retaliated against the research confederates who had rejected them if they perceived this group of confederates to be a cohesive

unit. Indeed, the entativity or “groupness” of online communities may affect cognitions and behaviors of lonely gig workers because to the degree that a group of people is perceived to be a cohesive entity, “its members are expected to behave in a more consistent manner, ... thought to be more similar to one another ... [and] categorized in a more undifferentiated way at the group level” (Yzerbyt et al., 1998: 1092). However, gig workers represent a diverse group of people from various backgrounds and with different motivations. Furthermore, online communities related to gig work are rather “loose” communities with low or absent gatekeeping mechanisms. The heterogeneity of gig workers and the looseness of online communities in which they gather likely lead to low perceptions of entativity or “groupness.” Therefore, lonely gig workers may not be concerned about further social rejection through others when moving in online communities: these communities are not perceived as a collective so that gig workers do not have to fear social rejection by a collective—which would be much more threatening than social rejection by a few, unconnected others. However, an interpretation of the non-effect of loneliness on lurking behaviors in this way somewhat contradict the overall positive effect of engaging in online communities on belongingness, as discussed below.

The impact of online communities related to gig work

Given the significance of these communities for nonstandard workers (e.g., Kellogg et al., 2020) as well as the wide research on the role of social media and networking sites for mental health and well-being, I want to discuss the findings in my study regarding the impact online communities had on the well-being and functioning of gig workers. As expected, contributing behaviors significantly increased belongingness at work. Contributing behaviors and belongingness were measured in the same survey, although lead-ins to the measures referred to different time horizons. Therefore, relationships between contributing behaviors and next-day

feelings and behaviors appear a better test of the impact of contributing behaviors in online communities. As reported, the indirect effect of lurking behaviors on next-day withdrawal at work via belonging was insignificant using a 95% CI, yet significant when using a 90% CI. Similarly, the indirect effect of contributing behaviors on next-day loneliness via belonging was not significant using a 95% CI, yet significant using a 90% CI. Researchers recommend using 90% CIs when testing indirect effects whose direction is clearly hypothesized (Cho & Abe, 2013). Importantly, time spent in online communities related to gig work also increased belongingness and even had an indirect negative effect on next-day withdrawal that was significant using a 95% CI.

Furthermore, as shown in Figure 5, even when accounting for base levels of relational challenges in gig work, lurking behaviors significantly increased participants' sense of belonging, pointing to the importance of connecting on a day-to-day level with other gig workers. The finding that lurking behaviors strengthen belongingness when accounting for base levels of relational challenges highlights the importance of online communities for gig workers, even when gig workers deliberately refrain from participating actively. It appears that lurking behaviors constitute a positive form of engagement in online communities. Gig workers may lurk not because they fear social rejection when sharing input, but because they take these communities seriously and want to "get it right" when sharing input. Therefore, they may put greater thought into what and when to share input. Thereby, these findings mirror research on lurking in online communities as a form of "legitimate peripheral participation" that facilitates learning and knowledge dispersal, thereby increasing belongingness (Lave & Wenger, 1991; Yeow et al., 2006). A supplemental analysis reported earlier about the positive effect of passive usage of online communities on belongingness echoes the benefits of browsing and scrolling

through online communities. Therefore, the pattern of findings offers support for the importance of connecting with fellow gig workers in online communities—connecting actively, passively, while deliberately withholding input, or simply spending time in these communities—in order to facilitate belongingness and reduce loneliness and withdrawal at work.

Notably, by pointing toward an overall usefulness of online communities among gig workers, these findings differ from research on social network sites that has generally found lurking and passive usage of social network sites to be detrimental for users' well-being (e.g., Matook et al., 2015; Verduyn et al., 2015, 2017). The significance of online communities related to gig work for instrumental reasons explains these differences (e.g., Kellogg et al., 2020): gig workers need to extensively browse through other users' content if they want to learn from them, making passive usage a necessity. Thereby, it may be that online communities related to gig work—even when they are used passively and despite being “loose” forms of communities with basically no gatekeeping mechanism—assume a prominent role in the lives of nonstandard workers who are otherwise professionally isolated.

Practical Implications

My results carry practical implications for nonstandard workers as well as for the organizations employing them. For people working in nonstandard work arrangements—such as gig workers, independent contractors, contract workers, temporary help agency workers, or on-call workers—achieving a sense of belonging is more difficult than for standard workers (Spreitzer et al., 2017). Standard workers can rely on their organizations or occupations in granting them an identity that binds them to others who do similar work (Ashforth et al., 2008), yet nonstandard workers lack these “holding environments” (Patriglieri et al., 2019). The results of my study suggest that nonstandard workers should engage in online communities related to

work to increase their sense of belonging. Even lurking behaviors and passive usage of these communities may facilitate a sense of belonging. In short, it appears that the mere spending time in online communities appears beneficial.

These results also have implications for the organizations employing nonstandard worker. Decision-makers in these organizations need to understand the significance of feeling like one belongs, even in the absence of strong organizational structures. Workers who feel like they belong are less likely to withdraw from work the next day—an important finding in industries relying largely on workers' own initiative. Furthermore, my results suggest that organizations may be well advised to invest in online communities for their workers. Some organizations, such as Upwork, have already done so.

Limitations and Directions for Future Research

There are several limitations to my dissertation as well as opportunities for future research. As with all survey research, my results are correlational in nature. This is particularly of concern when constructs are measured in the same survey which may inflate effect estimates (Podsakoff et al., 2003). My results indicate a positive effect of contributing behaviors on belonging yet both constructs were measured in the same survey. Given the practical significance of this finding, future research should focus on testing whether contributing behaviors indeed have a causal effect on sense of belonging. Studies in which participants' behavior in online communities is manipulated provide valuable guidance as to how to test causality in this context (e.g., Verduyn et al., 2015).

Furthermore, I recruited people from various subreddits related to different types of gig work. As shown in Table 1, participants listed 23 different labor platforms that they used or types of gig work that they engaged in. On the one hand, this heterogeneity among participants in my

study should increase the generalizability of my results. On the other hand, I cannot rule out that effects differ between gig workers using different labor platforms or working in different types of gig work. In supplemental analyses, I explored the moderating role of variables that may point to relevant differences between different types of gig work. Specifically, I tested the moderating role of in-person contact at gig work and chronic loneliness at gig work. I did not find that either variable moderated the effects of loneliness on lurking behaviors or contributing behaviors.

Although these supplemental analyses support the generalizability of my findings across different types of gig work, other differences between types of gig work that I did not account for may still affect the impact of loneliness on lurking behaviors and contributing behaviors. Future research may explicitly recruit and compare gig workers engaging in different types of gig work—e.g., comparing dog walkers and website designer—to explore how different types of gig work affect the influence of gig workers' loneliness on their behaviors in online communities.

Using random assignment, my intervention introduced a valuable element of internal validity. However, the intervention worked in unexpected ways. My theoretical integration of the evolutionary theory of loneliness and regulatory foci theory suggested that prompting a promotion focus would strengthen the reconnection motivation in lonely gig workers. Linguistic analyses of participants' answers to the promotion focus writing prompt suggest that my manipulation was successful in heightening an affiliation drive. However, given that this intervention did not increase but even reduced contributing behaviors in lonely participants, my results suggest a more qualified motivation to reconnect in lonely people than stated in previous research (e.g., Maner et al., 2007). This possibility indicates the need for future research to rigorously test the extent of the motivation to reconnect in transiently lonely people that the evolutionary theory of loneliness claims. Several questions remain unanswered: When and how

does the interest that they show in other people (e.g., improved recall of socially relevant information) translate into concrete action to reconnect? How much effort are transiently lonely people willing to exert in order to reconnect? And, given that the “groupness” of others may change social cognitions, who do transiently lonely people try to reconnect with when working in a highly individualized context, such as gig work?

These questions are further highlighted by my supplemental analyses. None of the between-person constructs I tested in supplemental analyses emerged as a moderator of the proposed relationships between state loneliness and lurking behaviors or contributing behaviors. Previous research has stated that the degree to which other people are perceived as realistic sources of reconnection moderates the link between loneliness and efforts to reconnect when feeling lonely (Maner et al., 2007). Yet, the moderators I tested in this regard—participants’ fear of negative evaluation and psychological safety in online communities—did not have significant effects on the paths from loneliness to behaviors in online communities. This failure to replicate findings from previous research highlights the need to rigorously test the reconnection hypothesis in the field.

Furthermore, given that the intervention did not increase the kinds of behavior—contributing behaviors—that facilitate gig workers’ sense of belonging, future research should explore other interventions that may increase contributing behaviors. For example, interventions that target self-esteem could increase contributing behaviors: the sociometer theory of self-esteem states that an individual’s self-esteem serves as a visceral measure of their social inclusion (Leary & Baumeister, 2000). By increasing state self-esteem, individuals may feel more confident about their chances to be included, possibly increasing their active engagement in online communities.

A possible limitation of my study goes back to my recruiting approach. Although participants in my study indicated using a variety of different online communities, I recruited participants through only one online community. Therefore, it is possible that my results do not apply to gig workers who use other online communities. Future research may investigate if and how the communities participants use impact the role of contributing behaviors in these communities for daily feelings of belonging.

A further limitation to my study concerns the comparatively small sample size. Although a considerable number of participants started the study and completed at least one set of daily surveys, I discarded a lot of responses, for example when participants had not participated in gig work by the time they completed the midday survey. On average, ESM studies in top-tier journals have a Level-1 N of 835 and a Level-2 N of 83, which Gabriel et al. (2019) recommend as benchmarks. Whereas the number of participants (i.e., Level-2 N) in my study exceeds this benchmark, the number of observations at Level 1 (539) remains well below the benchmark. Some effects—such as the moderating effect of the prevention focus intervention on the relationship between loneliness and lurking behaviors—are insignificant yet the effect sizes suggest that a larger number of observations could reveal that they are statistically significant. Therefore, several interpretations of my results have to remain speculative. Future research should continue to explore these relationships with larger samples—while keeping sensible cutoffs.

To some degree, my research question how nonstandard workers develop belongingness at work is answered: gig workers experience a heightened sense of belonging on days when they actively contribute in online communities. However, given that I did not find support for loneliness as a predictor, it remains unclear what precedes their engagement in these

communities. Considering the practical relevance of online communities for gig workers, this question highlights the need for further research on the engagement of gig workers in online communities.

Lastly, the lack of research in organizational science on online communities points to the urgency of studying online communities and the consequences of engaging in them. For example, against my predictions, lurking behavior appeared to have a positive impact on belongingness, at least when accounting for the influence of the overall level of relational challenges at gig work. This casts the question if and how online communities affect gig workers negatively. For example, it could be that engagement in online communities, similar to office chitchat, elevates the mood but distracts from work (Methot et al., 2021). In short, there is more organizational researchers need to know about these communities that carry significance for an increasing share of the workforce.

REFERENCES

- Aalbers, G., McNally, R. J., Heeren, A., De Wit, S., & Fried, E. I. (2019). Social media and depression symptoms: A network perspective. *Journal of Experimental Psychology: General, 148*(8), 1454–1462.
- Anant, S.S. (1966). The need to belong. *Canada's Mental Health, 14*, 21–21.
- Anderson, J. C., & Gerbing, D. W. (1991). Predicting the performance of measures in a confirmatory factor analysis with a pretest assessment of their substantive validities. *Journal of Applied Psychology, 76*(5), 732–740.
- Anderson, M., McClain, C., Faverio, M., & Gelles-Watnick, R. (2021). *The state of gig work in 2021*. Pew Research Center.
- Anwar, M. A., & Graham, M. (2021). Between a rock and a hard place: Freedom, flexibility, precarity and vulnerability in the gig economy in Africa. *Competition & Change, 25*(2), 237–258.
- Archer Lee, Y., Lay, J. C., Pauly, T., Graf, P., & Hoppmann, C. A. (2022). The differential roles of chronic and transient loneliness in daily prosocial behavior. *Psychology and Aging, 37*(5), 614–625.
- Arpin, S. N., & Mohr, C. D. (2019). Transient loneliness and the perceived provision and receipt of capitalization support within event-disclosure interactions. *Personality and Social Psychology Bulletin, 45*(2), 240–253.
- Ashford, S. J., Caza, B. B., & Reid, E. M. (2018). From surviving to thriving in the gig economy: A research agenda for individuals in the new world of work. *Research in Organizational Behavior, 38*, 23–41.
- Ashford, S. J., George, E., & Blatt, R. (2007). Old assumptions, new work: The opportunities and challenges of research on nonstandard employment. *Academy of Management Annals, 1*(1), 65–117.
- Ashforth, B. E. 2001. *Role transitions in organizational life: An identity-based perspective*. Erlbaum.
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*(1), 20–39.
- Ashforth, B. E., Harrison, S. H., & Corley, K. G. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management, 34*(3), 325–374.
- Bailey, M., & McLaren, S. (2005). Physical activity alone and with others as predictors of sense of belonging and mental health in retirees. *Aging & Mental Health, 9*(1), 82–90.
- Bargh, J. A., Lombardi, W. J., & Higgins, E. T. (1988). Automaticity of chronically accessible constructs in person \times situation effects on person perception: It's just a matter of time. *Journal of Personality and Social Psychology, 55*(4), 599.
- Barreto, M., Victor, C., Hammond, C., Eccles, A., Richins, M. T., & Qualter, P. (2021). Loneliness around the world: Age, gender, and cultural differences in loneliness. *Personality and Individual Differences, 169*, 110066.

- Bauer, D. J., Preacher, K. J., & Gil, K. M. (2006). Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods, 11*(2), 142–163.
- Baumeister, R. E., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529.
- Baumeister, R. F., & DeWall, C. N. (2005). The inner dimension of social exclusion: Intelligent thought and self-regulation among rejected persons. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 53–73). Psychology Press.
- Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology, 88*(4), 589–604.
- Beal, D. J. (2015). ESM 2.0: State of the art and future potential of experience sampling methods in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior, 2*(1), 383–407.
- Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods, 8*(3), 274–289.
- Belmi, P., & Schroeder, J. (2021). Human “resources”? Objectification at work. *Journal of Personality and Social Psychology, 120*(2), 384–417.
- Bergami, M., & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology, 39*(4), 555–577.
- Bindl, U. K., Unsworth, K. L., Gibson, C. B., & Stride, C. B. (2019). Job crafting revisited: Implications of an extended framework for active changes at work. *Journal of Applied Psychology, 104*(5), 605–628.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*(1), 579–616.
- Bozkurt, A., Koutropoulos, A., Singh, L., & Honeychurch, S. (2020). On lurking: Multiple perspectives on lurking within an educational community. *The Internet and Higher Education, 44*, 100709.
- Brands, R. A., & Fernandez-Mateo, I. (2017). Leaning out: How negative recruitment experiences shape women’s decisions to compete for executive roles. *Administrative Science Quarterly, 62*(3), 405–442.
- Bruning, P. F., & Campion, M. A. (2018). A role–resource approach–avoidance model of job crafting: A multimethod integration and extension of job crafting theory. *Academy of Management Journal, 61*(2), 499–522.
- Bucher, E., Fieseler, C., Lutz, C., & Buhmann, A. (2021). Professionals, purpose-seekers, and passers-through: How microworkers reconcile alienation and platform commitment through identity work. *new media & society, 14614448211056863*.
- Bureau of Labor Statistics (2022). American Time Use Survey – 2021 results. <https://www.bls.gov/charts/american-time-use/emp-by-ftpt-job-edu-h.htm>

- Burgess, A., Yeomans, H., & Fenton, L. (2022). ‘More options... less time’ in the ‘hustle culture’ of ‘generation sensible’: Individualization and drinking decline among twenty-first century young adults. *The British Journal of Sociology*, 73(4), 903–918.
- Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. *Proceedings of the SIGCHI conference on human factors in computing systems*, 1909–1912.
- Burnett, G. (2000). Information exchange in virtual communities: A typology. *Information Research*, 5(4).
- Cacioppo, S., Bangee, M., Balogh, S., Cardenas-Iniguez, C., Qualter, P., & Cacioppo, J. T. (2016). Loneliness and implicit attention to social threat: A high-performance electrical neuroimaging study. *Cognitive Neuroscience*, 7(1–4), 138–159.
- Cacioppo, J. T., & Cacioppo, S. (2018). Loneliness in the modern age: An evolutionary theory of loneliness (ETL). *Advances in Experimental Social Psychology*, 58, 127–197.
- Cacioppo, J. T., & Hawkley, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences*, 13(10), 447–454.
- Cacioppo, J. T., Cacioppo, S., & Boomsma, D. I. (2014). Evolutionary mechanisms for loneliness. *Cognition & Emotion*, 28(1), 3–21.
- Cacioppo, J. T., Ernst, J. M., Burleson, M. H., McClintock, M. K., Malarkey, W. B., Hawkley, L. C., Kowalewski, R., Paulsen, A., Hobson, A., Hugdahl, K., Spiegel, D. & Berntson, G. G. (2000). Lonely traits and concomitant physiological processes: The MacArthur social neuroscience studies. *International Journal of Psychophysiology*, 35(2–3), 143–154.
- Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M., Berntson, G. G., Nouriani, B., & Spiegel, D. (2006). Loneliness within a nomological net: An evolutionary perspective. *Journal of Research in Personality*, 40(6), 1054–1085.
- Cameron, L. D. (2022). “Making out” while driving: Relational and efficiency games in the gig economy. *Organization Science*, 33(1), 231–252.
- Cameron, L. D., & Rahman, H. (2022). Expanding the locus of resistance: Understanding the co-constitution of control and resistance in the gig economy. *Organization Science*, 33(1), 38–58.
- Cannella Jr, A. A., Park, J. H., & Lee, H. U. (2008). Top management team functional background diversity and firm performance: Examining the roles of team member colocation and environmental uncertainty. *Academy of Management Journal*, 51(4), 768–784.
- Capitiano, J. P., Hawkley, L. C., Cole, S. W., & Cacioppo, J. T. (2014). A behavioral taxonomy of loneliness in humans and rhesus monkeys (*Macaca mulatta*). *PLoS One*, 9(10), e110307.
- Carlson, K. D., & Wu, J. (2012). The illusion of statistical control: Control variable practice in management research. *Organizational Research Methods*, 15(3), 413–435.
- Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and Emotion*, 30(2), 105–111.

- Carver, C.S. & Scheier, M.F. (1981) *Attention and Self-regulation: A Control-theory Approach to Human Behavior*. Springer-Verlag.
- Carver, C.S. & Scheier, M.F. (1990). Origins and functions of positive and negative affect: A control process view. *Psychological Review*, 97, 19–35.
- Caza, B. B., Reid, E. M., Ashford, S. J., & Granger, S. (2021). Working on my own: Measuring the challenges of gig work. *Human Relations*, 00187267211030098.
- Cesario, J., Higgins, E. T., & Scholer, A. A. (2008). Regulatory fit and persuasion: Basic principles and remaining questions. *Social and Personality Psychology Compass*, 2(1), 444–463.
- Cherry, M. A. (2016). Beyond misclassification: The digital transformation of work. *Comparative Labor Law & Policy Journal*, 37, 577–602.
- Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems*, 42(3), 1872–1888.
- Cho, H. C., & Abe, S. (2013). Is two-tailed testing for directional research hypotheses tests legitimate? *Journal of Business Research*, 66(9), 1261–1266.
- Cigna (2020). *Loneliness and the workplace*. <https://www.cigna.com/static/www-cigna-com/docs/about-us/newsroom/studies-and-reports/combating-loneliness/cigna-2020-loneliness-report.pdf>
- Cohen, G. L., & Garcia, J. (2008). Identity, belonging, and achievement: A model, interventions, implications. *Current Directions in Psychological Science*, 17(6), 365–369.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2013. *Applied multiple regression/correlation analysis for the behavioral sciences*. Routledge.
- Cooper, D., & Thatcher, S. M. (2010). Identification in organizations: The role of self-concept orientations and identification motives. *Academy of Management Review*, 35(4), 516–538.
- Crisp, B. (2010): *Belonging, connectedness and social exclusion*. *Journal of Social Inclusion*, 1(2), 123–132
- Cropanzano, R., Keplinger, K., Lambert, B. K., Caza, B., & Ashford, S. J. (2023). The organizational psychology of gig work: An integrative conceptual review. *Journal of Applied Psychology*, 108(3), 492–519.
- Curchod, C., Patriotta, G., Cohen, L., & Neysen, N. (2020). Working for an algorithm: Power asymmetries and agency in online work settings. *Administrative Science Quarterly*, 65(3), 644–676.
- Dalal, R. S., Lam, H., Weiss, H. M., Welch, E. R., & Hulin, C. L. (2009). A within-person approach to work behavior and performance: Concurrent and lagged citizenship-counterproductivity associations, and dynamic relationships with affect and overall job performance. *Academy of Management Journal*, 52(5), 1051–1066.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.

- De Cremer, D., & Van Knippenberg, D. (2002). How do leaders promote cooperation? The effects of charisma and procedural fairness. *Journal of Applied Psychology, 87*(5), 858–866.
- Den Hartog, D. N., De Hoogh, A. H., & Keegan, A. E. (2007). The interactive effects of belongingness and charisma on helping and compliance. *Journal of Applied Psychology, 92*(4), 1131–1139.
- Deters, F. G., & Mehl, M. R. (2013). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychological and Personality Science, 4*(5), 579–586.
- DeWall, C. N., Maner, J. K., & Rouby, D. A. (2009). Social exclusion and early-stage interpersonal perception: Selective attention to signs of acceptance. *Journal of Personality and Social Psychology, 96*(4), 729–741.
- DeWall, C.N., & Twenge, J.M. (2013). Rejection and aggression: Explaining the paradox. In C. N. DeWall (Ed.), *The Oxford handbook of social exclusion* (pp. 113–120). Oxford University Press.
- Diekema, D. A. (1992). Aloneness and social form. *Symbolic Interaction, 15*(4), 481–50.
- Dimotakis, N., Ilies, R., & Judge, T. A. (2013). Experience sampling methodology. In J. M. Cortina & R. S. Landis (Eds.), *Modern research methods for the study of behavior in organizations* (pp. 319-348). Taylor & Francis Group.
- Dingle, G. A., Stark, C., Cruwys, T., & Best, D. (2015). Breaking good: Breaking ties with social groups may be good for recovery from substance misuse. *British Journal of Social Psychology, 54*(2), 236–254.
- DiTommaso, E., & Spinner, B. (1993). The development and initial validation of the Social and Emotional Loneliness Scale for Adults (SELSA). *Personality and Individual Differences, 14*(1), 127–134.
- Dubal, V. B. (2017). Wage slave or entrepreneur? Contesting the dualism of legal worker identities. *California Law Review, 65*–123.
- Dubé, L., Bourhis, A., & Jacob, R. (2005). The impact of structuring characteristics on the launching of virtual communities of practice. *Journal of Organizational Change Management, 18*(2), 145–166.
- Ducheneaut, N., & Yee, N. (2013). A View from Computer Science: From Solitude to Ambient Sociability—Redefining the Social and Psychological Aspects of Isolation in Online Games. In R.J. Coplan & J.C. Bowker (Eds.), *The Handbook of solitude: Psychological perspectives on social isolation, social withdrawal, and being alone* (pp. 517–538). Wiley.
- Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly, 239*–263.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350–383.
- Efrati, A. (2017). *How Uber will combat rising driver churn*. The Information. <https://www.theinformation.com/articles/how-uber-will-combat-rising-driver-churn>

- Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion, 30*, 111–116.
- Enders, C. K. (2001). The impact of nonnormality on full information maximum-likelihood estimation for structural equation models with missing data. *Psychological Methods, 6*(4), 352–37.
- Ernst, J. M., & Cacioppo, J. T. (1999). Lonely hearts: Psychological perspectives on loneliness. *Applied and Preventive Psychology, 8*(1), 1–22.
- Fisher, C. D., & To, M. L. (2012). Using experience sampling methodology in organizational behavior. *Journal of Organizational Behavior, 33*(7), 865–877.
- Fong, P., Cruwys, T., Robinson, S. L., Haslam, S. A., Haslam, C., Mance, P. L., & Fisher, C. L. (2021). Evidence that loneliness can be reduced by a whole-of-community intervention to increase neighbourhood identification. *Social Science & Medicine, 277*, 113909.
- Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science, 13*(1), 1–6.
- Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology, 81*(6), 1001–1013.
- Gabriel, A. S., Lanaj, K., & Jennings, R. E. (2021). Is one the loneliest number? A within-person examination of the adaptive and maladaptive consequences of leader loneliness at work. *Journal of Applied Psychology, 106*(10), 1517–1538.
- Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2019). Experience sampling methods: A discussion of critical trends and considerations for scholarly advancement. *Organizational Research Methods, 22*(4), 969–1006.
- Gaertner L., Iuzzini J., O’Mara E. M. (2008). When rejection by one fosters aggression against many: Multiple-victim aggression as a consequence of social rejection and perceived groupness. *Journal of Experimental Social Psychology, 44*(4), 958–970.
- Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. (2015). Motivated to acquire? The impact of CEO regulatory focus on firm acquisitions. *Academy of Management Journal, 58*(4), 1261–1282.
- Gardner, W. L., Pickett, C. L., & Brewer, M. B. (2000). Social exclusion and selective memory: How the need to belong influences memory for social events. *Personality and Social Psychology Bulletin, 26*(4), 486–496.
- Gardner, W. L., Pickett, C. L., Jefferis, V., & Knowles, M. (2005). On the outside looking in: Loneliness and social monitoring. *Personality and Social Psychology Bulletin, 31*(11), 1549–156.
- Garrett, L. E., Spreitzer, G. M., & Bacevice, P. A. (2017). Co-constructing a sense of community at work: The emergence of community in coworking spaces. *Organization Studies, 38*(6), 821–842.
- Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods, 19*(1), 72–91.

- Geukens, F., Maes, M., Spithoven, A., Pouwels, J. L., Danneel, S., Cillessen, A. H., van den Berg, Y. H. M., & Goossens, L. (2022). Changes in adolescent loneliness and concomitant changes in fear of negative evaluation and self-esteem. *International Journal of Behavioral Development, 46*(1), 10–17.
- Gino, F., Kouchaki, M., & Casciaro, T. (2020). Why connect? Moral consequences of networking with a promotion or prevention focus. *Journal of Personality and Social Psychology, 119*(6), 1221–1238.
- Glavin, P., Bierman, A., & Schieman, S. (2021). Über-alienated: Powerless and alone in the gig economy. *Work and Occupations, 48*(4), 399–431.
- Golden, T. D., Veiga, J. F., & Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: Does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter? *Journal of Applied Psychology, 93*(6), 1412–1421.
- Good, C., Rattan, A., & Dweck, C. S. (2012). Why do women opt out? Sense of belonging and women's representation in mathematics. *Journal of Personality and Social Psychology, 102*(4), 700–717.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549–576.
- Gray, J.A. (1982) *The Neuropsychology of Anxiety: An Enquiry into the Functions of the Septo-hippocampal System*. Oxford University Press.
- Gray, M. L., & Suri, S. (2019). *Ghost work: How to stop Silicon Valley from building a new global underclass*. Eamon Dolan Books.
- Greenaway, K. H., Cruwys, T., Haslam, S. A., & Jetten, J. (2016). Social identities promote well-being because they satisfy global psychological needs. *European Journal of Social Psychology, 46*(3), 294–307.
- Greenhouse, S. (2016). *On Demand, and Demanding Their Rights. Gig workers in the Uber economy are organizing to win more say over their jobs—and writing a new chapter in American labor history*. The American Prospect. <https://prospect.org/labor/demand-demanding-rights/>
- Gross, E. F., Juvonen, J., & Gable, S. L. (2002). Internet use and well-being in adolescence. *Journal of Social Issues, 58*(1), 75–90.
- Hagel, H., & Armstrong, A. (1997). *Net gain: Expanding markets through virtual communities*. Boston: Harvard Business School Press.
- Hagerty, B. M., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6*(3), 172–177.
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing, 10*(4), 235–244.
- Hanisch, K. A., & Hulin, C. L. (1990). Job attitudes and organizational withdrawal: An examination of retirement and other voluntary withdrawal behaviors. *Journal of Vocational Behavior, 37*(1), 60–78.

- Haslam, S. A. 2004. *Psychology in organizations: The social identity approach*, 2nd ed. London: Sage.
- Haslam, S. A., & Ellemers, N. (2005). Social identity in industrial and organizational psychology: Concepts, controversies and contributions. *International Review of Industrial and Organizational Psychology*, 20(1), 39–118.
- Haslam, S. A., Haslam, C., Cruwys, T., Jetten, J., Bentley, S. V., Fong, P., & Steffens, N. K. (2022). Social identity makes group-based social connection possible: Implications for loneliness and mental health. *Current Opinion in Psychology*, 43, 161–165.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319–340.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52(12), 1280–130.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. *Advances in Experimental Social Psychology*, 30, 1–46.
- Higgins, E. T. (2012a). Regulatory focus theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 483–504). Sage Publications Ltd.
- Higgins, E. T. (2012b). *Beyond pleasure and pain: How motivation works*. New York, NY: Oxford University Press.
- Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality and Social Psychology*, 84(6), 1140–1153.
- Hofmann, D. A., Griffin, M. A., & Gavin, M. B. (2000). The application of hierarchical linear modeling to organizational research. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 467–511). Jossey-Bass.
- Hogg, M. A., Martin, R., Epitropaki, O., Mankad, A., Svensson, A., & Weeden, K. (2005). Effective leadership in salient groups: Revisiting leader-member exchange theory from the perspective of the social identity theory of leadership. *Personality and Social Psychology Bulletin*, 31(7), 991–1004.
- Hojat, M. (1983). Comparison of transitory and chronic loners on selected personality variables. *British Journal of Psychology*, 74(2), 199–202.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: a meta-analytic review. *PLoS medicine*, 7(7), e1000316.
- Holtz-Eakin, D., Gitis, B., & Rinehart, W. (2017). *The gig economy. Research and policy implications of regional, economic, and demographic trends*. The Aspen Institute. <https://www.aspeninstitute.org/wp-content/uploads/2017/02/Regional-and-Industry-Gig-Trends-2017.pdf>
- Hom, P. W., Mitchell, T. R., Lee, T. W., & Griffeth, R. W. (2012). Reviewing employee turnover: Focusing on proximal withdrawal states and an expanded criterion. *Psychological Bulletin*, 138(5), 831–858.

- Howard-Grenville, J., Nelson, A. J., Earle, A. G., Haack, J. A., & Young, D. M. (2017). “If chemists don’t do it, who is going to?” Peer-driven occupational change and the emergence of green chemistry. *Administrative Science Quarterly*, 62(3), 524–56.
- Isaac, M. (2017). Uber’s C.E.O. plays with fire. *The New York Times*.
<https://www.nytimes.com/2017/04/23/technology/travis-kalanick-pushes-uber-and-himself-to-the-precipice.html>
- Jetten, J., Haslam, C., & Alexander, S. H. (2012). *The social cure: Identity, health and well-being*. Psychology Press.
- Josserand, E., & Kaine, S. (2019). Different directions or the same route? The varied identities of ride-share drivers. *Journal of Industrial Relations*, 61(4), 549–573.
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The core self-evaluations scale: Development of a measure. *Personnel Psychology*, 56(2), 303–331.
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: Foundations of hedonic psychology*. Russell Sage Foundation.
- Kalleberg, A. L., Reskin, B. F., & Hudson, K. (2000). Bad jobs in America: Standard and nonstandard employment relations and job quality in the United States. *American Sociological Review*, 65(2), 256–278.
- Kanterman, A., Nevat, M., & Shamay-Tsoory, S. (2021). Inclusion motivation: Measuring the drive to be included in real time and how it is affected by loneliness. *Emotion*, 22(7), 1572–1582.
- Kanze, D., Conley, M. A., & Higgins, E. T. (2021). The motivation of mission statements: How regulatory mode influences workplace discrimination. *Organizational Behavior and Human Decision Processes*, 166, 84–103.
- Katz, L. F., & Krueger, A. B. (2019). The rise and nature of alternative work arrangements in the United States, 1995–2015. *ILR Review*, 72(2), 382–416.
- Kellezi, B., Bowe, M., Wakefield, J. R., McNamara, N., & Bosworth, M. (2019). Understanding and coping with immigration detention: Social identity as cure and curse. *European Journal of Social Psychology*, 49(2), 333–351.
- Kellezi, B., & Reicher, S. (2012). Social cure or social curse? The psychological impact of extreme events during the Kosovo conflict. In J. Jetten, C. Haslam, & S. A. Haslam (Eds.), *The social cure: Identity, health and well-being* (pp. 217–234). Psychology Press.
- Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, 14(1), 366–41.
- Kogut, B., & Zander, U. (1996). What firms do? Coordination, identity, and learning. *Organization Science*, 7(5), 502–518.
- Kost, D., Fieseler, C., & Wong, S. I. (2020). Boundaryless careers in the gig economy: An oxymoron? *Human Resource Management Journal*, 30(1), 100–113.
- Kruglanski, A. W., Thompson, E. P., Higgins, E. T., Atash, M. N., Pierro, A., Shah, J. Y., & Spiegel, S. (2000). To “do the right thing” or to “just do it”: Locomotion and assessment as distinct self-regulatory imperatives. *Journal of Personality and Social Psychology*, 79(5), 793–815.

- Landmann, H., & Rohmann, A. (2022). When loneliness dimensions drift apart: Emotional, social and physical loneliness during the COVID-19 lockdown and its associations with age, personality, stress and well-being. *International Journal of Psychology*, *57*(1), 63–72.
- Latimer, A. E., Rivers, S. E., Rench, T. A., Katulak, N. A., Hicks, A., Hodorowski, J. K., Higgins, E.T., & Salovey, P. (2008). A field experiment testing the utility of regulatory fit messages for promoting physical activity. *Journal of Experimental Social Psychology*, *44*(3), 826–832.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Lawrence, T. B. (1995). Power and resources in an organizational community. *Academy of Management Best Papers Proceedings*, 251–255.
- Layden, E. A., Cacioppo, J. T., & Cacioppo, S. (2018). Loneliness predicts a preference for larger interpersonal distance within intimate space. *PloS one*, *13*(9), e0203491.
- Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale. *Personality and Social Psychology Bulletin*, *9*(3), 371–375.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In *Advances in experimental social psychology* (Vol. 32, pp. 1–62). Academic Press.
- Leary M. R., Kowalski R. M., Smith L., & Phillips S. (2003). Teasing, rejection, and violence: Case studies of the school shootings. *Aggressive Behavior*, *29*, 202–214.
- Lee, A.Y. & Higgins, E.T. (2009). The persuasive power of regulatory fit. In M. Wänke (Ed.), *Social Psychology of Consumer Behavior* (pp. 319–333). Psychology Press.
- Lim, M. H., Allen, K. A., Furlong, M. J., Craig, H., & Smith, D. C. (2021). Introducing a dual continuum model of belonging and loneliness. *Australian Journal of Psychology*, *73*(1), 81–86.
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin*, *18*(3), 302–318.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, *39*(1), 99–128.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, *7*(1), 83–104.
- Madrid, H. P., Patterson, M. G., & Leiva, P. I. (2015). Negative core affect and employee silence: How differences in activation, cognitive rumination, and problem-solving demands matter. *Journal of Applied Psychology*, *100*(6), 1887–1898.
- Maffie, M. D. (2020). The role of digital communities in organizing gig workers. *Industrial Relations: A Journal of Economy and Society*, *59*(1), 123–149.

- Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the “porcupine problem.” *Journal of Personality and Social Psychology*, *92*(1), 42–55.
- Matook, S., Cummings, J., & Bala, H. (2015). Are you feeling lonely? The impact of relationship characteristics and online social network features on loneliness. *Journal of Management Information Systems*, *31*(4), 278–31.
- McHugh Power, J. E., Steptoe, A., Kee, F., & Lawlor, B. A. (2019). Loneliness and social engagement in older adults: A bivariate dual change score analysis. *Psychology and Aging*, *34*(1), 152–162.
- McNamara, N., Stevenson, C., Costa, S., Bowe, M., Wakefield, J., Kellezi, B., Wilson, I., Halder, Moon, & Mair, E. (2021). Community identification, social support, and loneliness: The benefits of social identification for personal well-being. *British Journal of Social Psychology*, *60*(4), 1379–1402.
- Mead, N. L., Baumeister, R. F., Stillman, T. F., Rawn, C. D., & Vohs, K. D. (2011). Social exclusion causes people to spend and consume strategically in the service of affiliation. *Journal of Consumer Research*, *37*(5), 902–919.
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological methods*, *17*(3), 437–455.
- Mellor, D., Stokes, M., Firth, L., Hayashi, Y., & Cummins, R. (2008). Need for belonging, relationship satisfaction, loneliness, and life satisfaction. *Personality and Individual Differences*, *45*(3), 213–218.
- Mendoza-Denton, R., Downey, G., Purdie, V. J., Davis, A., & Pietrzak, J. (2002). Sensitivity to status-based rejection: Implications for African American students’ college experience. *Journal of Personality and Social Psychology*, *83*(4), 896–918.
- Methot, J. R., Rosado-Solomon, E. H., Downes, P. E., & Gabriel, A. S. (2021). Office chitchat as a social ritual: The uplifting yet distracting effects of daily small talk at work. *Academy of Management Journal*, *64*(5), 1445–1471.
- Molden, D. C., Lucas, G. M., Gardner, W. L., Dean, K., & Knowles, M. L. (2009). Motivations for prevention or promotion following social exclusion: being rejected versus being ignored. *Journal of Personality and Social Psychology*, *96*(2), 415–431.
- Molden, D.C., Lee, A.Y., & Higgins, E.T. (2008). Motivations for promotion and prevention. In J. Shah, & W. Gardner (Eds.), *Handbook of motivation science* (pp. 169–187). Guilford Press.
- Morrison, E. W., & Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *Academy of Management Review*, *25*(4), 706–725.
- Muntaner, C. (2018). Digital platforms, gig economy, precarious employment, and the invisible hand of social class. *International Journal of Health Services*, *48*(4), 597–600.
- Murthy, V. (2017). Work and the loneliness epidemic. *Harvard Business Review*, *9*, 3–7.
- Muthén, L. K., & Muthén, B. O. (2017). *Mplus user’s guide* (8th edition). Muthén & Muthén.

- Nelson, A. J., & Irwin, J. (2014). "Defining what we do—all over again:" Occupational identity, technological change, and the librarian/Internet-search relationship. *Academy of Management Journal*, 57(3), 892–928.
- Nemkova, E., Demirel, P., & Baines, L. (2019). In search of meaningful work on digital freelancing platforms: The case of design professionals. *New Technology, Work and Employment*, 34(3), 226–243.
- Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods*, 17(4), 372–411.
- Newman, D. B., Sachs, M. E., Stone, A. A., & Schwarz, N. (2020). Nostalgia and well-being in daily life: An ecological validity perspective. *Journal of Personality and Social Psychology*, 118(2), 325–347.
- Nezlek, J. B. (2012). Multilevel modeling analyses of diary-style data. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 357–383). The Guilford Press.
- Nicolini, D., Pyrko, I., Omidvar, O., & Spanellis, A. (2022). Understanding communities of practice: Taking stock and moving forward. *Academy of Management Annals*, 16(2), 680–718.
- Nonnecke, R. B. (2000). *Lurking in email-based discussion lists* (Doctoral dissertation, South Bank University).
- O'Day, E. B., & Heimberg, R. G. (2021). Social media use, social anxiety, and loneliness: A systematic review. *Computers in Human Behavior Reports*, 3, 10007.
- O'Mahony, S., & Ferraro, F. (2007). The emergence of governance in an open source community. *Academy of Management Journal*, 50(5), 1079–1106.
- O'Mahony, S., & Lakhani, K.R. (2011). Organizations in the shadow of communities. In C. Marquis, M. Lounsbury, & R. Greenwood (Eds.), *Communities and organizations* (Research in the Sociology of Organizations, Vol. 33; pp. 3–36). Emerald Group Publishing Limited.
- O'Mahony, S. C., & Ferraro, F. (2004), Managing the Boundary of an 'Open' Project. Harvard NOM Working Paper No. 03-6. <http://dx.doi.org/1.2139/ssrn.474782>
- Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology*, 9, 79–93.
- Ozcelik, H., & Barsade, S. G. (2018). No employee an island: Workplace loneliness and job performance. *Academy of Management Journal*, 61(6), 2343–2366.
- Panteli, N., Rapti, A., & Scholarios, D. (2020). 'If He Just Knew Who We Were': Microworkers' emerging bonds of attachment in a fragmented employment relationship. *Work, Employment and Society*, 34(3), 476–494.
- Park, J., & Baumeister, R. F. (2015). Social exclusion causes a shift toward prevention motivation. *Journal of Experimental Social Psychology*, 56, 153–159.
- Pennebaker, J.W., Boyd, R.L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC2015*. Austin, TX: University of Texas at Austin.

- Peplau, L. A., & Perlman, D. (1982). Loneliness research: A survey of empirical findings. *Loneliness: A sourcebook of current theory, research and therapy*. Wiley
- Petriglieri, G., Ashford, S. J., & Wrzesniewski, A. (2019). Agony and ecstasy in the gig economy: Cultivating holding environments for precarious and personalized work identities. *Administrative Science Quarterly*, *64*(1), 124–17.
- Petriglieri, G., Petriglieri, J. L., & Wood, J. D. (2018). Fast tracks and inner journeys: Crafting portable selves for contemporary careers. *Administrative Science Quarterly*, *63*(3), 479–525.
- Petrou, P., Demerouti, E., Peeters, M. C.W., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, *33*, 1120–1141.
- Peugh, J. L., & Enders, C. K. (2004). Missing data in educational research: A review of reporting practices and suggestions for improvement. *Review of Educational Research*, *74*(4), 525–556.
- Pickett, C. L., Gardner, W. L., & Knowles, M. (2004). Getting a cue: The need to belong and enhanced sensitivity to social cues. *Personality and Social Psychology Bulletin*, *30*(9), 1095–1107.
- Pinder, C. C., & Harlos, K. P. (2001). Employee silence: Quiescence and acquiescence as responses to perceived injustice. *Research in Personnel and Human Resources Management*, *20*, 331–369.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.
- Porter, C. E. (2004). A typology of virtual communities: A multi-disciplinary foundation for future research. *Journal of Computer-Mediated Communication*, *10*(1), JCMC1011.
- Pratt, M. G. 1998. To be or not to be? Central questions in organizational identification. In D. A. Whetten & P. C. Godfrey (Eds.), *Identity in organizations: Building theory through conversations* (pp. 171–207). Sage.
- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, *29*(4), 1841–1848.
- Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., Maes, M., & Verhagen, M. (2015). Loneliness across the life span. *Perspectives on Psychological Science*, *10*(2), 250–264.
- Rahman, H. A. (2021). The invisible cage: Workers' reactivity to opaque algorithmic evaluations. *Administrative Science Quarterly*, *66*(4), 945–988.
- Ramirez-Valles, J., Fergus, S., Reisen, C. A., Poppen, P. J., & Zea, M. C. (2005). Confronting stigma: Community involvement and psychological well-being among HIV-positive Latino gay men. *Hispanic Journal of Behavioral Sciences*, *27*(1), 101–119.
- Reed, P., Davies, A., Evans, K., & Osborne, L. A. (2023). Longitudinal relationship between problematic internet use with loneliness during and after COVID-19 social restrictions. *Psychiatry Research*, *323*, 115148.

- Reer, F., Tang, W. Y., & Quandt, T. (2019). Psychosocial well-being and social media engagement: The mediating roles of social comparison orientation and fear of missing out. *New Media & Society*, 21(7), 1486–1505.
- Richtel, M. (2022). 'It's Life or Death': The Mental Health Crisis Among U.S. Teens. *New York Times*. <https://www.nytimes.com/2022/04/23/health/mental-health-crisis-teens.html?searchResultPosition=1>
- Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior*, 66(2), 358-384.
- Riketta, M., & Van Dick, R. (2005). Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behavior*, 67(3), 490–51.
- Riketta, M., Van Dick, R., & Rousseau, D. M. (2006). Employee attachment in the short and long run: Antecedents and consequences of situated and deep-structure identification. *Zeitschrift für Personalpsychologie*, 5(3), 85–93.
- Rosen, C. C., Koopman, J., Gabriel, A. S., & Johnson, R. E. (2016). Who strikes back? A daily investigation of when and why incivility begets incivility. *Journal of Applied Psychology*, 101(11), 1620–1634.
- Rosenblat, A. (2018). *Uberland*. University of California Press.
- Rothaermel, F. T., & Sugiyama, S. (2001). Virtual internet communities and commercial success: individual and community-level theory grounded in the atypical case of TimeZone. com. *Journal of Management*, 27(3), 297–312.
- Rousseau, D. M. 1998. Why workers still identify with organizations. *Journal of Organizational Behavior*, 19(3), 217–233.
- Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39(3), 472–48.
- Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior*, 27(5), 1658–1664.
- Saklofske, D. H., Yackulic, R. A., & Kelly, I. W. (1986). Personality and loneliness. *Personality and Individual Differences*, 7(6), 899–901.
- Salaman, G. (1971). Some sociological determinants of occupational communities. *The Sociological Review*, 19(1), 53–77.
- Salaman, G. (1974). *Community and occupations: An exploration of work/leisure relationships*. Cambridge, MA: Cambridge University Press.
- Scholer, A. A., & Higgins, E. T. (2013). Dodging monsters and dancing with dreams: Success and failure at different levels of approach and avoidance. *Emotion Review*, 5(3), 254–258.
- Schopenhauer, A. (1851/1964). (T. B. Saunders, Trans.). *The pessimist's handbook*. Lincoln: University of Nebraska Press.
- Schwartz, D. (2018). Embedded in the crowd: Creative freelancers, crowdsourced work, and occupational community. *Work and Occupations*, 45(3), 247-282.

- Sessions, H., Nahrgang, J. D., Vaultont, M. J., Williams, R., & Bartels, A. L. (2021). Do the hustle! Empowerment from side-hustles and its effects on full-time work performance. *Academy of Management Journal*, 64(1), 235–264.
- Shamir, B. (1981). The workplace as a community: The case of British hotels. *Industrial Relations Journal*, 12(6), 45–56.
- Sheldon, K. M., & Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality*, 77(5), 1467–1492.
- Sherf, E. N., Parke, M. R., & Isaakyan, S. (2021). Distinguishing voice and silence at work: Unique relationships with perceived impact, psychological safety, and burnout. *Academy of Management Journal*, 64(1), 114–148.
- Sluss, D. M., & Ashforth, B. E. (2008). How relational and organizational identification converge: Processes and conditions. *Organization Science*, 19(6), 807–823.
- Solomon, A. (2022). The mystifying rise of child suicide. *The New Yorker*.
<https://www.newyorker.com/magazine/2022/04/11/the-mystifying-rise-of-child-suicide>
- Spiegel, S., Grant-Pillow, H., & Higgins, E. T. (2004). How regulatory fit enhances motivational strength during goal pursuit. *European Journal of Social Psychology*, 34(1), 39–54.
- Spreitzer, G. M., Cameron, L., & Garrett, L. (2017). Alternative work arrangements: Two images of the new world of work. *Annual Review of Organizational Psychology and Organizational Behavior*, 4, 473–499.
- Spreitzer, G., Bacevice, P., Hendricks, H. and Garrett, L. (2020). Community in the New World of Work: Implications for Organizational Development and Thriving. In D. A. Noumair and A. B. (Rami) Shani (Eds.), *Research in Organizational Change and Development* (Vol. 28, pp. 77–101). Emerald Publishing Limited.
- Sun, N., Rau, P. P. L., & Ma, L. (2014). Understanding lurkers in online communities: A literature review. *Computers in Human Behavior*, 38, 110–117.
- Tajfel, H. E. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. Academic Press.
- Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). *Journal of Cross-Cultural Psychology*, 38(2), 227–242.
- Tofighi, D., & MacKinnon, D. P. (2016). Monte Carlo confidence intervals for complex functions of indirect effects. *Structural Equation Modeling*, 23(2), 194–205.
- Tost, L. P., Hardin, A. E., Roberson, J. W., & Gino, F. (2022). Different roots, different fruits: Gender-based differences in cultural narratives about perceived discrimination produce divergent psychological consequences. *Academy of Management Journal*, 65(6), 1804–1834.
- Toubiana, M., & Ruebottom, T. (2022). Stigma hierarchies: The internal dynamics of stigmatization in the sex work occupation. *Administrative Science Quarterly*, 67(2), 515–552.

- Trawalter, S., Hoffman, K., & Palmer, L. (2021). Out of place: Socioeconomic status, use of public space, and belonging in higher education. *Journal of Personality and Social Psychology, 120*(1), 131–144.
- Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology, 81*(6), 1058–1069.
- Tyler, T. R., & Blader, S. L. (2001). Identity and cooperative behavior in groups. *Group Processes & Intergroup Relations, 4*(3), 207–226.
- van Dick, R. 2004. My job is my castle: Identification in organizational contexts. *International Review of Industrial and Organizational Psychology, 19*, 171–203.
- Van Dyne, L., Ang, S., & Botero, I. C. (2003). Conceptualizing employee silence and employee voice as multidimensional constructs. *Journal of Management Studies, 40*(6), 1359–1392.
- Van Maanen, J., & Barley, S. R. (1984). Occupational communities: Culture and control in organizations. In B. M. Staw & L. L. Cummins (Eds.). *Research in organization behaviour* (Volume 6, pp. 287–365). JAI Press.
- Vanhalst, J., Goossens, L., Luyckx, K., Scholte, R. H., & Engels, R. C. (2013). The development of loneliness from mid-to late adolescence: Trajectory classes, personality traits, and psychosocial functioning. *Journal of Adolescence, 36*(6), 1305–1312.
- Veldman, J., Van Laar, C., Meeussen, L., & Lo Bue, S. (2021). Daily coping with social identity threat in outgroup-dominated contexts: Self-group distancing among female soldiers. *Personality and Social Psychology Bulletin, 47*(1), 118–130.
- Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J., Ybarra, O., Jonides, J., & Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General, 144*(2), 480–488.
- Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues & Policies Review, 11*(1), 274–302.
- Vignoles, V. L., Regalia, C., Manzi, C., Gollidge, J., & Scabini, E. (2006). Beyond self-esteem: influence of multiple motives on identity construction. *Journal of Personality and Social Psychology, 90*(2), 308–333.
- Walker, M., Fleming, P., & Berti, M. (2021). ‘You can’t pick up a phone and talk to someone:’ How algorithms function as biopower in the gig economy. *Organization, 28*(1), 26–43.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology, 92*(1), 82–96.
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science, 331*(6023), 1447–1451.
- Watson, G. P., Kistler, L. D., Graham, B. A., & Sinclair, R. R. (2021). Looking at the gig picture: Defining gig work and explaining profile differences in gig workers’ job demands and resources. *Group & Organization Management, 46*(2), 327–361.

- Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. The MIT Press.
- Wells, K. J., Attoh, K., & Cullen, D. (2021). “Just-in-Place” labor: Driver organizing in the Uber workplace. *Environment and Planning A: Economy and Space*, 53(2), 315–331.
- West, S. G., & Hepworth, J. T. (1991). Statistical issues in the study of temporal data: Daily experiences. *Journal of Personality*, 59(3), 609–662.
- Wo, D. X., Ambrose, M. L., & Schminke, M. (2015). What drives trickle-down effects? A test of multiple mediation processes. *Academy of Management Journal*, 58(6), 1848–1868.
- Wood, A., & Lehdonvirta, V. (2019). Platform labour and structured antagonism: Understanding the origins of protest in the gig economy. *Available at SSRN 3357804*.
- Wood, A. J., Lehdonvirta, V., & Graham, M. (2018). Workers of the Internet unite? Online freelancer organisation among remote gig economy workers in six Asian and African countries. *New Technology, Work and Employment*, 33(2), 95–112.
- Yao, Z., Weden, S., Emerlyn, L., Zhu, H., & Kraut, R. E. (2021). Together but alone: Atomization and peer support among gig workers. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW2), 1–29.
- Yeow, A., Johnson, S., & Faraj, S. (2006). Lurking: legitimate or illegitimate peripheral participation? *ICIS 2006 Proceedings*, 62. <https://aisel.aisnet.org/icis2006/62>
- Yzerbyt, V. Y., Rogier, A., & Fiske, S. T. (1998). Group entitativity and social attribution: On translating situational constraints into stereotypes. *Personality and Social Psychology Bulletin*, 24(10), 1089–1103.
- Zhang, C., & Conrad, F. (2014). Speeding in web surveys: The tendency to answer very fast and its association with straightlining. *Survey Research Methods*, 8(2), 127–135.
- Zhang, X. X., Rost, D. H., Wang, J. L., & Reynolds, K. J. (2020). Active and passive social networking sites usage and negative emotions: A reciprocal relationship? *Journal of Social and Clinical Psychology*, 39(3), 195–213.

APPENDIX: MODELING APPROACH

At Level 1, I estimated the relationship between independent and dependent variable in the following way:

$$y_{ij} = \beta_{0j} + \beta_{1j}(\text{Loneliness}) + r_{ij}$$

In this equation, i denotes the number of observations for j individuals of the continuous variable y (e.g., lurking behaviors) with y being an outcome of the intercept for each person (β_{0j} , which is the mean of y) and the error (r_{ij}). In the above equation, $\beta_{1j}(\text{Loneliness})$ denotes the coefficient representing the relationship between lurking behaviors (y) and loneliness.

At Level 2, I modeled functions for each coefficient (i.e., the intercept/mean β_{0j} and the slope β_{1j}) at Level 1.

$$\text{Intercept: } \beta_{0j} = \gamma_{00} + u_{0j}$$

$$\text{Slope: } \beta_{1j} = \gamma_{10} + u_{1j}$$

At Level 2, a person j 's intercept/mean of y is determined by γ_{00} which denotes the grand mean (i.e., the mean of y in the larger population) and u_{0j} which denotes the random error for the intercept (i.e., the random error for person j 's mean of y). A person j 's slope of y (i.e., the coefficient for the relationship between loneliness and lurking behaviors) is determined by γ_{10} which denotes the mean slope (i.e., the slope of y in the larger population) and u_{1j} which denotes the random error for the slope (i.e., the random error for person j 's slope of y). In my model, β_{1j} is not modeled as a function of another variable at Level 2 (i.e., a Level-2 moderator). Instead, by including the error term for the slope (u_{1j}), β_{1j} is allowed to randomly vary between people. If I did not include u_{1j} , I would have specified a fixed effect, which would have assumed that the relationship between loneliness and lurking behaviors is the same for all persons.