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Designing Work for Change and Its Unintended Side Effects

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Abstract

Change is omnipresent in contemporary organizations. Employees' change support (i.e., the provision of time, energy, and contributions to a change process) is a crucial reaction for change to be successful, while employees' frustration (i.e., an intense negative feeling of deprivation) is a counterproductive reaction. Yet, research only recently began to consider work design as an environmental characteristic that can foster the development of new perspectives and thus be beneficial for employees' change support. We expand this research and draw from the work design growth model to argue that job autonomy and job complexity have more nuanced roles in predicting change support than accounted for in the traditional work design literature. Specifically, we propose that job complexity can be a facilitator of change support through its positive effect on employees' active exploration of new ideas (engaging pathway). However, it can also cause cognitive overload in employees, which leads to frustration (straining pathway). This ambivalent nature stands in contrast to job autonomy, which we expect to positively impact change support both via the engaging and straining pathways. Further considering the embeddedness of change in the social context, we explore the moderating role of high-quality contact with colleagues. Data from a 3-wave study with 643 employees supported the beneficial role of job autonomy and pointed to job complexity as a double-edged sword that facilitates change support but also leads to more frustration. High-quality contact strengthened the positive effect of job autonomy on active exploration, with positive downstream consequences for change support.

Keywords: *change support, work design, autonomy, complexity, contact quality, change reactions, frustration*

Designing Work for Change and Its Unintended Side Effects

In contemporary organizations, people are constantly confronted with change – occasionally with large organization-wide transformations and more frequently with micro-level changes that concern only some employees or teams (Khaw et al., 2022; Mills et al., 2009). To provide a recent example, during the COVID-19 pandemic, many employees had to adopt new communication technology to conduct their work tasks remotely and adjust to new organizational procedures (Gagné et al., 2022; Mishna et al., 2021). In fact, organizational change is often imposed by external factors to which organizations and their employees are ought to respond fast and flexibly in order to survive (Alnoor et al., 2020; Gubbi et al., 2015; Kellogg, 2019; Reay et al., 2006; Seeger et al., 2005). Evidently, organizations hope that micro-level changes such as the introduction of a new technology will be positively received by employees embodied by their change support. *Change support* refers to employees' reaction to change by providing time, energy, and contributions to a change process (Seo et al., 2012). However, much research cautions against employees' negative emotional reactions accompanying change, which in turn have been associated with higher turnover and lower loyalty (Khaw et al., 2022). Frustration is an often occurring negative emotion during change, in particular when change is attributed as external and uncontrollable (Perrewé & Zellars, 1999). *Frustration* refers to an intense negative feeling of deprivation (Jeronimus & Laceulle, 2017); it arises when employees' ability to perform their job effectively is hindered (Ford et al., 2008; Fugate et al., 2008; Y. Liu & Perrewé, 2005). Overall, organizations are thus highly interested in finding out how they can encourage employees' change support and prevent that individuals end up frustrated over change.

Against the backdrop of the importance of employees' micro-level reactions to change, a plethora of research studied individual antecedents (for overviews, see Fuller & Marler, 2009; Gonzalez et al., 2022), such as employees' attitudes (e.g., change cynicism, Thundiyil et al., 2015), their demographic characteristics (e.g., age, Kunze et al., 2013) or

their experiences with previous change processes (Stensaker & Meyer, 2012). Yet, beyond this focus on individual antecedents, the work environment in terms of task-related and social aspects—which are traditionally covered in the literature on work design—can also play a crucial role in (de)motivating employees to put energy into change processes. *Work design* refers to the nature of people's tasks, activities, relationships, and responsibilities at work, and how these are structured and organized (Parker et al., 2021). Traditional work design models narrowly view employee motivation as in 'working harder' for maximum performance in their current job. An emerging research stream suggests expanding this view by including change support as a motivating factor in employee performance (Fuller et al., 2006; Parker, 2014; Parker et al., 2017, 2021). In the spirit of this emerging research stream, we consider how employees can be motivated through work design to engage in change support, thus 'working smarter'. Specifically, we argue that the time is ripe for updating existing research on work design as a vehicle to design work in a way that it increases employees' change support and decreases their frustration. We do so by introducing a dual pathway model (see Figure 1) that builds on the work design growth model (Parker, 2017) and cognitive load theory (Sweller, 2010) to delineate the mechanisms representing both the up- and downsides of work characteristics that ultimately predict employees' change support and frustration accompanying change.

Although different models of work design exist, they share the assumption that a range of positive work characteristics (i.e., job resources) and low or moderate levels of negative work characteristics (i.e., job demands) characterize high quality work design that motivates employees to fulfill the current tasks at hand satisfactorily (Parker, 2017). However, such work design models need to be refined to adequately speak to the future-oriented need for flexibility and change in today's organizations (e.g., Fuller et al., 2006; Parker et al., 2001, 2021). The work design growth model (Parker, 2017) offers such an attempt to update work design models; it emphasizes job autonomy and job complexity as

work design characteristics that facilitate employees' development and personal growth at work. *Job autonomy* refers to the extent to which a job provides freedom, independence, and discretion to the employee in scheduling work and in determining the procedures to be used in carrying out tasks (Hackman & Oldham, 1975). *Job complexity* refers to the extent to which a job puts information processing demands on an employee (Schaubroeck et al., 1994). We adapt the ideas of the work design growth model and integrate it with cognitive load theory (Sweller, 2010) to also consider the challenging side that employees are confronted with when dealing with change in complex work environments. Specifically, we aim to offer a more realistic view on work design in determining micro-level reactions to change by acknowledging that work characteristics intended to foster change support (such as job complexity) can be stimulating and draining at the same time. It is thus important to understand how (i.e., through which mechanisms) job design characteristics link to employees' change support.

To delineate the mechanisms of our dual pathway model, we propose in line with the work design growth model that job complexity is beneficial for employees' change support through an *engaging pathway* that comprises active exploration. *Active exploration* refers to intended, systematic behaviors related to trying work-related activities and skills (Stumpf et al., 1983). Specifically, the engaging pathway describes positive links between job complexity, employees' active exploration, and their change support. However, building on cognitive load theory (Sweller, 2010), we suggest that at the same time, job complexity can also promote frustration through a *straining pathway* that comprises cognitive overload. *Cognitive overload* refers to a state in which an employee's cognitive capacity is exceeded by momentary information processing demands (Burmeister et al., 2022). The double-edged nature of job complexity stands in contrast to the role of job autonomy, which we expect in line with meta-analytic research (Marinova et al., 2015) to positively impact change support via the engaging

pathway (i.e., more active exploration), and at the same time prevent employees from experiencing frustration during a change process through the straining pathway (i.e., less cognitive overload). We further consider the embeddedness of change in the social context by exploring the moderating role of employees' high-quality contact at work. *High-quality contact at work* refers to positive, natural, and cooperative coworker interactions (Fasbender et al., 2020). We thus take stock of the notion that work design concerns not only task-related aspects but also the social work context.

Our work aims to make three contributions to the literature. First, we expand the change management literature by incorporating the idea of "designing work for change" (i.e., shaping work design to foster employees' change support and reduce frustration) based on insights from work design research. Connecting these previously largely disconnected fields, we add to the predominant focus on improving the 'supply' of skills (i.e., selecting and developing employees who will engage in change support) by emphasizing the insufficient attention that has been paid to the 'demand' side (i.e., designing work appropriately; Parker, 2017). Specifically, drawing from the work design growth model, we introduce job complexity as a beneficial and yet ambivalent work design characteristic in the context of employees' reaction to a specific change, namely the introduction of a new technology. This is because job complexity can, on the one hand, increase employees' change support, but, on the other hand, also enhance their frustration. Moreover, we reflect on job autonomy as a distinct work design characteristic that increases employees' change support and decreases their frustration in the context of the introduction of a new technology.

Second, we respond to Marinova et al.'s (2015) call to examine the psychological processes that link certain work design characteristics to employees' reaction to change. Specifically, we decode the mechanisms through which job complexity and job autonomy impact employees' visible behavior (i.e., change support) and inner states (i.e., frustration). In

that regard, we dissect the link between work design characteristics and consequences for the employee into an engaging pathway to explain why job complexity and job autonomy can positively shape employees' change support via active exploration, and a straining pathway to explain why job complexity and job autonomy can foster employees' frustration via cognitive overload. By adding the straining pathway, we acknowledge the unwanted side effects of certain work characteristics and thus contribute to a more sophisticated view on work design and micro-level reactions to change.

Lastly, by investigating the moderating role of employees' perceived contact quality, we acknowledge that work design characteristics are embedded in a wider social context that can modify how these work design characteristics unfold their effects during change processes. Specifically, drawing on previous research (Chiaburu et al., 2013, 2022), we introduce contact quality as an accelerating factor to the benefits of work design characteristics (facilitating employees' active exploration) and a potential buffer (protecting employees against cognitive overload). Understanding how work design characteristics interact with contact quality as a social context factor is relevant for organizations that aim at increasing employees' change support and decreasing their experienced frustration.

Theoretical Background and Hypotheses Development

Scholars examining micro-level change (i.e., the introduction of new professional practices brought about, for example, through new technology or regulatory requirements, Kellogg, 2019) have often focused on employees' negative reactions. While we agree that change – and particularly the introduction of new technology (Khaw et al., 2022) – is an emotional process that can trigger negative feelings in those who are supposed to implement the change, we build here on the work design literature to offer a more balanced account that also considers that employees may actually explore and support change as a behavioral reaction to change. To do so, we must go beyond traditional work design models based on established

theories such as the job characteristics model (Hackman & Oldham, 1976) that have been criticized as being too narrowly cast to provide adequate implications for employees' need for learning, flexibility and change in today's organizations (e.g., Fuller et al., 2006; Parker et al., 2001, 2021). Specifically, there have been some attempts to reconsider work design as a source of development and growth for the future instead of only focusing on how work design can make employees satisfied and efficient today (e.g., Marinova et al., 2015). Conceptually, a promising approach is the work design growth model (Parker, 2017), which aims to integrate insights from the training and learning literature with work design models. Its goal is to delineate motivational aspects such as being willing to learn, behavioral processes such as the exploration of new knowledge, and cognitive constraints such as information processing requirements to explain how work characteristics link to short-term as well as long-term learning outcomes.

While several work design characteristics can be considered in the context of learning and development, the work design growth model particularly emphasizes job autonomy and job complexity (see the independent variables on the left-hand side in Figure 1). Job autonomy allows people to choose adequate strategies to deal with new situations (Frese & Zapf, 1994). Moreover, job autonomy promotes accountability and ownership (Parker et al., 1997), which can benefit employees' buy-in to change processes. Job complexity goes hand in hand with higher task challenges and thus requires much cognitive engagement that should also be beneficial for employees' learning and adaptation to new situations. However, although the work design growth model acknowledges that job complexity requires cognitive effort, it does not fully take into account that such cognitive demands can also foster negative emotional experiences. To understand this potential "dark side", it is helpful to consider evidence from the broader change literature and accompanying insights from information processing research.

Specifically, it is well established that change is often perceived as harmful and frustrating by employees because it brings about increasing job complexity that is cognitively

more demanding than simply carrying out routine work tasks, which (at least in the short term) inhibits employees' immediate individual goal attainment (Stouten et al., 2018). In line with this notion, cognitive load theory (Sweller, 2010) suggests that high demands (e.g., high job complexity) are positively associated with employees reaching a depleted state in which their cognitive capacity is exceeded by momentary information processing demands. This state of cognitive overload has been linked to negative emotional experiences such as higher frustration (Kruger et al., 2013). Interestingly, such critical views on job complexity revive earlier perspectives on job characteristics that conceptualized job complexity as a demand and not as a resource (De Jonge et al., 1999). Accordingly, we develop here a balanced argument that considers both a demand-focused view (De Jonge et al., 1999) and a resource-focused view (Parker, 2017) on job complexity in the context of employees' reaction to change.

In sum, based on extant theorizing, we conclude that job autonomy should be unequivocally positive for employees' change support (see its effect on the engaging pathway depicted in Figure 1) and reducing employees' frustration (see its effect on the straining pathway depicted in Figure 1). However, the role of job complexity is likely ambivalent as can be seen in Figure 1 in terms of the positive effects on change support (engaging pathway) but also the proposed detrimental consequences that challenge employees' capacity to engage in change (straining pathway). To deepen our understanding of how both work design factors unfold their downstream consequences on the bright side (i.e., employees' change support) and the dark side (i.e., employees' frustration) of change endeavors, we next devote our attention to delineating underlying psychological mechanisms. Specifically, we first focus on an engaging pathway related to active exploration and then turn to a straining pathway via cognitive overload.

An Engaging Pathway

The engaging pathway (see the upper pathway in Figure 1) reflects the notion that employees' change support is facilitated when people realize that there are different ways of exhibiting work-related activities, and that it could be valuable to explore new procedures

(Parker, 2017). Accordingly, the *active exploration* of unknown work-related procedures, behaviors, and skills constitutes a crucial engaging mechanism that can explain why job design characteristics foster employees' investment of energy into a change process.

First, we argue that both job complexity and job autonomy are beneficial for employees' active exploration. In terms of job complexity, an employee who must think deeply to solve complex problems and/or take care of many (unknown) things simultaneously may be challenged to explore new ways of dealing with the tasks at hand (Parker et al., 2021). This is because high complexity demands stimulate the employee to explore effective strategies that help them to get their work done. Such exploratory search behaviors are further facilitated by the arousal and interest that complex jobs can trigger (Chung-Yan, 2010; Noefer et al., 2009). Moreover, employees are stimulated to explore ways of regulating their behavior that can be habituated and therewith free up cognitive space for future demands (Frese & Zapf, 1994).

Hypothesis 1a. Job complexity is positively related to active exploration.

In terms of job autonomy, employees who can control how they do their tasks have decision control, which offers them the freedom to explore different ways of fulfilling work tasks. In line with this notion, the innovation literature has long conceptually argued and empirically supported the idea that the exploration and implementation of new ideas require situational latitude (i.e., job autonomy) for employees to break out of routines (e.g., De Spiegelaere et al., 2014; Hammond et al., 2011; Orth & Volmer, 2017). A similar argument has also been made and demonstrated by research that is grounded in the work design literature (Parker et al., 2021; Parker, 2017) and that has, for example linked employees' perceived job autonomy with supervisors' ratings of how often their employees explore new ideas (W. Zhang et al., 2017). Lastly, experimental work offered causal evidence that autonomy can increase people's motivation to learn and stimulates them to engage in more exploration (Wielenga-Meijer et al., 2010).

Hypothesis 1b. Job autonomy is positively related to active exploration.

Second, we expect that employees' active exploration is positively associated with their change support. Active exploration is concerned with opportunity-seeking that can initiate intraindividual change processes in the employees' knowledge base and abilities, which in turn may spillover to the support of change processes more generally (J. A. Zhang et al., 2022). The continuous learning experiences accompanying active exploration make individuals cognitively more flexible (Parker et al., 2021), and they thus can become more open to behaviorally support change because their brain is already familiar with continuously learning something new – i.e., for them, the uncertainty became part of what to expect with certainty (Lee, 2001). Moreover, being repeatedly confronted with certain stimuli, such as change and growth opportunities, alters people's attitude toward it in a positive direction (Zajonc, 1968). In sum, we propose that through active exploration, employees get to experience that new activities can be positive, and that they are thus more willing to support change processes in the organization.

Hypothesis 2. Active exploration is positively related to change support.

Third, combining our arguments from above, we propose that (a) job complexity and (b) job autonomy are positively linked to employees' change support via active exploration:

Hypothesis 3a. There is a positive, indirect relationship between job complexity and change support via active exploration.

Hypothesis 3b. There is a positive, indirect relationship between job autonomy and change support via active exploration.

A Straining Pathway

The straining pathway (see the lower pathway in Figure 1) reflects the often overseen notion that dealing with complex job tasks is not just enriching but can also be cognitively exhausting (Sung et al., 2017), which paves the way for negative emotional experiences while trying to fulfill one's tasks because one is overwhelmed with information processing

demands. Such a negative effect is not expected for job autonomy because it allows employees to pick strategies and activities that match their current energetic resources level, thus reducing the likelihood of experiencing cognitive overload. We position *cognitive overload* as a straining mechanism that can explain why job complexity (but not job autonomy) enhances employees' frustration when carrying out their work tasks.

To develop our theorizing regarding job complexity, we first need to clarify the conceptual understanding utilized here that refers to complex task demands in terms of the extent to which job tasks put information processing demands on an employee (Schaubroeck et al., 1994). In that regard, complexity can be captured with four attributes, namely the number of potential paths to arrive at an end-state, the potential number of desired end-states to be reached, the degree of conflicting interdependence among paths to multiple desired end-states, and the degree of uncertainty regarding the relationships between paths and end-states (Campbell, 1988). All these attributes contribute to the accumulation of information processing demands when working in complex jobs (Sung et al., 2017). However, as explained by cognitive overload theory (Sweller, 2010), employees cannot unlimitedly process complex information but instead – when the information processing demands of complex tasks exceed their momentary working memory capacity – experience a "working-memory overload" (Sweller et al., 1998, p. 275) or "cognitive overload" (Sweller et al., 1998, p. 289).

Hypothesis 4a. Job complexity is positively related to cognitive overload.

In terms of job autonomy, scholars have repeatedly demonstrated that it can protect employees from high work demands (e.g., Alarcon, 2011; Lanaj et al., 2014; Prem et al., 2016) because job autonomy allows employees to adapt work-related activities to their currently available cognitive capacities and thus reduces mental strain (Muecke & Iseke, 2019). In line with this extant research, we expect that job autonomy can decrease employees reported cognitive overload. We hypothesize:

Hypothesis 4b. Job autonomy is negatively related to cognitive overload.

We further propose that employees' cognitive overload is linked to frustration at work. Out of the variety of negative emotions that employees can generally experience, frustration is a key negative emotion that has its roots in limitations and unresolved problems (Jeronimus & Laceulle, 2017; Spector, 1978). Frustration arises if employees' goals are blocked or interrupted and it is linked to employees' expectation that obstacles are unlikely to be overcome (Y. Liu & Perrewé, 2005; Perrewé & Zellars, 1999; Roseman et al., 1994). This means that frustration is triggered when there is a discrepancy between expectation and reality that can occur for example during change processes when employees experience cognitive overload. To illustrate, although an employee may want to concentrate on a work task, the experienced cognitive overload becomes an obstacle and can make it difficult for them to actually do so, thus creating a gap between their expectation of what they want to achieve at work and the reality. This negative expectancy violation triggers frustration while working. In line with this notion, scholars reported that demanding work-related circumstances that hinder immediate goal attainment and require additional cognitive processing predict intense negative feelings of frustration (O'Connor et al., 1982; Peters & O'Connor, 1980).

Hypothesis 5. Cognitive overload is positively related to frustration.

Third, and combining our arguments from above, we propose that (a) job complexity positively, while (b) job autonomy negatively relate to frustration via cognitive overload:

Hypothesis 6a. There is a positive, indirect relationship between job complexity and frustration via cognitive overload.

Hypothesis 6b. There is a negative, indirect relationship between job autonomy and frustration via cognitive overload.

The Moderating Role of Contact Quality

Employees are not confronted with change in a vacuum, but they are embedded in a social context (Chiaburu et al., 2013, 2022). Social bonds with others shape how we interpret

our work environment and help to make the most out of it in times of change. We illustrate this interplay on the left-hand side of Figure 1 that shows how work design characteristics and coworker contact quality interact in determining the downstream effect of employees' reaction to change. With regard to the engaging pathway, we argue that high-quality contact with colleagues can strengthen the positive links between job complexity and job autonomy with active exploration. High-quality contact reflects a pleasant socio-emotional experience that generates energy that employees can use to fully commit themselves to work (Fasbender et al., 2020; Owens et al., 2016), which could benefit the motivational effects of work design during change processes. Research has shown that high-quality contact encourages employees' positive affective motivational states and behavioral efforts due to providing a benevolent work environment in which employees not only feel attached to others, but also committed to the organization (Ehrhardt & Ragins, 2019), and want to contribute to the organizational functioning in one way or the other (e.g., by being engaged and productive, Owens et al., 2016; Tran et al., 2018; Warshawsky et al., 2012). Accordingly, we expect that job complexity can unfold its positive effect on active exploration best if employees get on well with their colleagues because the positive energy gained helps to translate the motivational efforts arising from job complexity to higher levels of active exploration. In contrast, a low-quality contact carries the risk that employees are put off their motivational efforts to actively explore new ways of dealing with work tasks in times of change due to the little energy gained from low-quality contact. Similarly, job autonomy can unfold its effect on active exploration best if employees experience positive and cooperative interactions with their colleagues, as high-quality contact generates energy that encourages them in their endeavor to utilize their flexibility to break out of routines and actively search for effective strategies to get their work done. In contrast, if contact quality with their colleagues is poor, employees lack the necessary energy that it takes to translate their job autonomy into active exploration. Taken together, we hypothesize:

Hypothesis 7a. Contact quality moderates the relation between job complexity and active exploration in a way that the positive relation is stronger for higher (vs. lower) contact quality.

Hypothesis 7b. Contact quality moderates the relation between job autonomy and active exploration in a way that the positive relation is stronger for higher (vs. lower) contact quality.

With regard to the straining pathway, we argue that high-contact quality with colleagues attenuates the positive link between job complexity and cognitive overload, while it strengthens the negative link between job autonomy and cognitive overload. In its core, high-quality contact enables more cooperative, pleasant and productive interactions between employees (Carmeli et al., 2009; Fasbender, 2020), which can limit cognitive resources that employees need to invest in managing the social interactions with others (Burmeister et al., 2022), and therefore reduces cognitive overload in times of change. In contrast, negative social interactions that indicate low-quality contact can lead employees to continue thinking about their unpleasant encounters (M. Wang et al., 2013), which drains their energy and thus distracts them from attaining their work goals (Perko et al., 2017). Accordingly, when contact quality is lower, the link between job complexity and cognitive overload should be more pronounced but when contact quality increases, the link between job complexity and cognitive overload should be buffered. In line with this assumption, a recent study has demonstrated that contact quality can buffer cognitive overload for employees engaging in complex behaviors, such as knowledge seeking at work (Burmeister et al., 2022).

Hypothesis 8a. Contact quality moderates the relation between job complexity and cognitive overload in a way that the positive relation is weaker for higher (vs. lower) contact quality.

Furthermore, when contact quality is lower, the negative relation between job autonomy and cognitive overload should be less pronounced, but when contact quality increases, the link

between job autonomy and cognitive overload should be strengthened. Job autonomy allows employees to adapt their work tasks to their currently available cognitive resources (Muecke & Iseke, 2019), which are likely higher with increasing contact quality due to its supportive function that frees up cognitive resources. Contact quality can be seen as a form of interpersonal support that has been linked to learning and other cognitive outcomes (Han & Williams, 2008; K. H. Ng & Ahmad, 2018; Sadeghi, 2020). Specifically, through high-contact quality, employees receive emotional and informational support from their coworkers (Madjar, 2008), which creates a "pool of resources" (Chiaburu et al., 2013, p.297) that can free-up cognitive space and therewith reduce cognitive overload in times of change. We thus expect that the protective effects of job autonomy on reducing employees' cognitive overload during change processes should be facilitated with increasing contact quality.

> ***Hypothesis 8b.*** Contact quality moderates the relation between job autonomy and cognitive overload in a way that the negative relation is stronger for higher (vs. lower) contact quality.

Method

Sample and Procedure

We collected 3-wave data in 2021 as part of a larger project on the introduction of a new technology in Germany. The same participants were invited to each of the three waves. We used a time lag of two weeks between each wave to reduce common-method-variance. An ISO 26362-certified panel provider was commissioned to collect the data among their German employee panel. Meta-analytic findings revealed that commercial online panel data are no different from conventional sources and are therefore well suitable for research in applied psychology (Walter et al., 2019). To ensure that participants pay attention to the items presented, we included some quality checks (e.g., "Please select 'agree' here if you pay attention"), and participants were automatically screened out if they were inattentive to these

quality checks. Considering the research project's focus on employees' change support, we invited participants if they have been experiencing change at work. We specified change by the introduction of a new technology, such as an information and communication technology (e.g., Zoom), customer relationship management systems, product management software, finance or project management software, virtual reality etc. To ensure the quality of the data, we asked participants at Time 1 to provide details about the new technology that was introduced to them. Fourteen participants provided data that did not make sense; we excluded them and did not invite them to take part in the follow-up-surveys at Time 2 and Time 3.

At Time 1, 643 participants completed our survey. Of these, 559 also completed the survey at Time 2 (dropout = 13.1%), and 470 also completed the survey at Time 3 (dropout to Time 2 = 15.9%). Of all participants, 40.1% were female, and 47.9% held a university degree. The age of participants ranged from 19 to 66 years (M = 44.87, SD = 11.38). Participants worked on average about 38 hours per week (SD = 7.55). About one fifth of the participants (18.2%) worked in the public sector. Participants worked mainly on the computer, with an average percentage of IT use at work of about 86.5 (*SD* = 13.8 %, range = 50 – 100 %). Participants further reported different types of technologies that were newly introduced at their workplaces. Communication technology (67.3%) was the most represented type of technology by far, followed by database management (4.8%), development platforms (3.9%), data analysis software (3.7%), and customer relations software (2.8%). Participants were informed about the new technology through different channels, including their supervisor (33.9%), colleagues (28.0%), training/workshop (15.9%), company newsletter (8.2%), or further channels (14.0%). With regard to the temporal process of the introduction of the new technology, 13.7% reported that the technology was introduced 0 to 6 months, 20.3% reported 7 to 12 months, 27.3% reported 13 to 18 months, 17.2% reported 19 to 24 months, and 21.5% reported that the technology was introduced more than 24 months ago.

Measures

Job complexity, job autonomy, and contact quality were assessed at Time 1, active exploration and cognitive overload at Time 2, and change support and frustration at Time 3. In order to minimize respondent fatigue (Ben-Nun, 2008), we used short but established measures whose reliability and validity had been tested and verified in previous research. If items were not available in German, we translated them following Brislin's (1970) back-to-back translation procedure.

The focal outcome variable, change support, captured the change process itself. We did however not explicitly refer to the change event in the work design characteristics because these are not seen as change-specific but rather define the workplace in general (Parker, 2017) and therewith determine the context in which change processes take place. We also did not explicitly refer to the change event in the mechanisms (i.e., active exploration and cognitive overload) nor frustration measure as we did not want to prime participants to have preconceived ideas or implicit theories about the study's content, which could potentially lead to common-method bias (Podsakoff et al., 2003).

Job complexity. We used the 4-item scale from the German version of Morgeson and Humphrey's (2006) Work Design Questionnaire (Stegmann et al., 2010) to capture job complexity. Example items were "The job requires that I engage in a large amount of thinking." Items were assessed on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) to capture participants' responses ($\alpha = .85$).

Job autonomy. We used the 3-item scale from the German version of Morgeson and Humphrey's (2006) Work Design Questionnaire (Stegmann et al., 2010) to measure job autonomy; an example item was "The job allows me to decide on my own how to go about doing my work." Items were assessed on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) to capture participants' responses ($\alpha = .88$).

Active exploration. We measured this variable with the 3-item scale by Stumpf et al. (1983). We adapted the scale by replacing the term "career" with "work" for each item. The items were introduced by the following time frame: "In the last two weeks at work…", an example item was "I experimented with different work activities." We used a 5-point scale ranging from 1 (not at all) to 5 (very often) to capture participants' responses (α = .87).

Cognitive overload. We captured this variable with the 3-item scale by Karr-Wisniewski and Lu (2010). The items were introduced by the following time frame: "In the last two weeks at work…", an example item was "I was overwhelmed by the amount of information I had to process." We used a 5-point scale ranging from 1 (not at all) to 5 (very often) to capture participants' responses (α = .92).

Change support. We measured this variable using the 3-item scale by Bouckenooghe et al. (2009). We adapted the scale by capturing actual change behavior rather than readiness for change. Accordingly, the items were introduced by the following time frame: "In the last two weeks at work…", an example item was "I have made a significant contribution to the change." We used a 5-point scale ranging from 1 (not at all) to 5 (very often) to capture participants' responses (α = .94).

Frustration. We measured this variable using the 3-item scale from Peters et al. (1980; see also Harold et al., 2016). The items were introduced by the following time frame: "In the last two weeks at work…", an example item was "Trying to get my job done was a very frustrating experience." We used a 5-point scale ranging from 1 (not at all) to 5 (very often) to capture participants' responses (α = .94).

Contact quality. We captured contact quality with the 3-item scale by Fasbender et al. (2020). The items were introduced by the following sentence: "The interactions with my colleagues are...", followed by the items: "positive", "natural", and "cooperative" Items were assessed on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) to capture

participants' responses (α = .89).

Control variables. We controlled for employees' age because meta-analytical findings indicated that with increasing age, employees are more likely to engage in change support (T. W. H. Ng & Feldman, 2012), contrary to common stereotypes, which postulate that older workers are more resistant to change (Posthuma & Campion, 2009). We also controlled for employees' working hours because employees who work longer hours tend to be more tired from work (Wong et al., 2019) and as a consequence have fewer resources to invest in change. Furthermore, we controlled for sector (1 = public sector, 0 = private sector) as the public sector is known for its red tape (Steijn & van der Voet, 2019), which may reduce employees' engagement and cognitive capacity to invest in the change process. Furthermore, we controlled for participants' average percentage of IT use at work, the type of technologies that were newly introduced at their workplace (1 = communication technology, 0 = other technology), the channel through with participants were informed about the new technology (1 = supervisor, 0 = other channels), and the time when the technology was introduced (ranging from 1 = 0 to 6 months age to 5 = more than 24 months ago) to account for the specific context of the change process.

Analytical Strategy

Following recommendations by Kline (2016), we carefully screened the data prior to hypotheses testing to confirm that assumptions for structural equation modeling (e.g., normality, linearity, homoscedasticity) were met. We used Mplus 8.4 to analyze the data via structural equation modelling with latent variables (Muthén & Muthén, 2019). We tested our hypotheses using all data available to ensure respectable statistical power (cf. Newman, 2014; Wang et al., 2017). Furthermore, we worked with the XWITH command in conjunction with MLR estimation in Mplus to test the moderating role of contact quality. The XWITH command allows testing interaction effects on the latent level. When using the XWITH command,

bootstrapping is not available, which is why we conducted Monte Carlo-simulation of confidence intervals for the indirect and conditional indirect effects in R (R Core Team, 2017; see also Preacher & Selig, 2012). To make sure that the indirect effects are not overestimated, we controlled for the direct effects of job complexity, job autonomy, and contact quality on the endogenous variables (Preacher & Hayes, 2008). In addition, we regressed the control variables (age, working hours, sector, percentage of IT use, type of technology, information channel, introduction time) on the endogenous variables. We then conducted the analyses with and without control variables. The results were stable regardless of including or excluding the control variables. Following Spector and Brannick's (2011) recommendation, we, therefore, report the results without control variables.

Results

Preliminary Findings

Table 1 shows the means, standard deviations, and correlations of the study variables. We applied confirmatory factor analyses to gauge the construct validity of our latent variables, which are job complexity, job autonomy, contact quality, active exploration, cognitive load, change support, and frustration. The hypothesized 7-factor structure showed an excellent model fit (χ^2 (188) = 303.98, $p < .001$, *CFI* = .99, *RMSEA* = .03, *SRMR* = .03) with all standardized factor loadings being significant and larger than .70. Furthermore, the hypothesized 7-factor structure yielded a better model fit than any other alternative model that we tested, such as the 6-factor structure with items of job complexity and job autonomy loading on one common work design factor (χ^2 (194) = 1,321.04, $p < .001$, *CFI* = .87, *RMSEA* = .10, *SRMR* = .09), the 3-factor model, with items of variables assessed at Time 1 (job complexity, job autonomy, contact quality), items of variables assessed at Time 2 (active exploration, cognitive overload), and items of variables assessed at Time 3 (change support, frustration) on one common factor each (χ^2 (206) = 4,848.12, $p < .001$, *CFI* = .45, *RMSEA* = .19, *SRMR* = .20), and the 1-factor

model, where all items load on a single factor (χ^2 (209) = 6,656.19, $p < .001$, *CFI* = .24, *RMSEA* = .22, *SRMR* = .21). These results underpin the construct validity of the seven latent variables used and lower possible concerns regarding common-method variance.

Testing the Hypotheses

In Table 2, we display the direct effects and in Table 3, we display the indirect effects of the structural equation modelling. Hypotheses 1 to 3 concerned the engaging pathway that links job complexity and job autonomy to change support via active exploration. The structural coefficients showed that both, job complexity ($\gamma = .21$, *SE* = .09, $p = .023$) and job autonomy ($\gamma = .19$, *SE* = .07, $p = .005$) had a positive effect on active exploration, supporting Hypotheses 1a and 1b. In turn, active exploration had a positive effect on change support ($\gamma = .56$, *SE* = .04, $p < .001$), supporting Hypothesis 2. With regard to the indirect effects, we found that both, job complexity (*indirect effect* = .118, 95% CI [.015, .224]) and job autonomy (*indirect effect* = .106, 95% CI [.031, .188]) had a positive indirect effect on change support via active exploration, supporting Hypothesis 3a and 3b.

Hypotheses 4 to 6 concern the cognitive pathway that links job complexity and job autonomy to frustration via cognitive overload. In support of Hypotheses 4a and 4b, we found that job complexity ($\gamma = .28$, *SE* = .10, $p = .004$) had a positive effect, while job autonomy ($\gamma = -.18$, *SE* = .07, $p = .013$) had a negative effect on cognitive overload. In turn, cognitive overload had a positive effect on frustration ($\gamma = .33$, *SE* = .06, $p < .001$), supporting Hypothesis 5. With regard to the indirect effects, we found that job complexity (*indirect effect* = .092, 95% CI [.029, .172]) had a positive indirect effect, while job autonomy (*indirect effect* = −.059, 95% CI [−.115, −.012]) had a negative indirect effect on frustration via cognitive overload, supporting Hypotheses 6a and 6b.

Hypotheses 7 and 8 concern the moderating role of contact quality on the relations between job complexity and job autonomy with active exploration and cognitive overload.

The estimated coefficients showed that contact quality did not significantly moderate the effect of job complexity on active exploration ($\gamma = .06$, $SE = .11$, $p = .587$). Hypothesis 7a was therefore not supported. Similarly, the estimated coefficients showed that contact quality did not significantly moderate the effect of job complexity ($\gamma = -.17$, $SE = .13$, $p = .178$) and job autonomy ($\gamma = .09$, $SE = .09$, $p = .280$) on cognitive overload. Hypotheses 8a and 8b were thus not supported.

We found, however, that contact quality strengthened the positive effect of job autonomy on active exploration ($\gamma = .22$, $SE = .08$, $p = .006$). In Figure 2, we plotted this significant moderation effect. A simple slope test showed that the effect of job autonomy on active exploration was significantly stronger for higher (+1*SD*) contact quality (*simple slope* = .361, $SE = .10$, $p < .001$) as compared to average contact quality (*simple slope* = .19, $SE = .07$, $p = .005$, *slope difference* =.17, $SE = .06$, $p = .006$), and no longer significant lower (−1*SD*) contact quality (*simple slope* = .03, $SE = .08$, $p < .001$, *slope difference* =.33, $SE = .12$, $p = .006$). Although not explicitly hypothesized, we also tested whether contact quality moderated the indirect effect of job autonomy on change support via active exploration. The indirect effect via active exploration was significantly stronger at higher levels of contact quality (*indirect effect* = .200, 95% CI [.087, .320]) as compared to lower levels of contact quality, where it was no longer significant (*indirect effect* = .013, 95% CI [−.080, .107]; *difference* = .187, 95% CI [.053, .327]). The moderated mediation index was also significant (*compound effect* = .123, 95% CI [.034, .215]). Together, these results support Hypothesis 7b.

Robustness Check

We conducted a sensitivity analysis to test whether the results differ when using listwise deletion ($N = 470$) as compared to using all available data ($N = 643$). We found that the estimated coefficients remained stable and significant in the same direction even if we used listwise deletion, which supports the robustness of our findings.

Discussion

With this research, we aimed to predict employees' micro-level reactions to a change (i.e., the introduction of a new technology) with work design characteristics, thereby also considering the role of the social context (i.e., coworker contact quality). Based on the work design growth model (Parker, 2017) and cognitive load theory (Sweller, 2010), we showed that work design characteristics link to employees' change support through an engaging pathway (see upper pathway in Figure 1) and to their experienced frustration as an unintended outcome through a straining pathway (see lower pathway in Figure 1). Specifically, we found that job autonomy was positively associated with employees' active exploration and less cognitive overload, which indirectly led to more change support, and less frustration. Our findings also showed that job complexity was linked to more active exploration of new ideas but also to more cognitive overload, which indirectly led to more change support, but also to more frustration as an unintended side effect of job complexity during change processes. With regard to the social context (see the left-hand side of Figure 1), we found that high-quality contact with colleagues strengthened the link between job autonomy (but not job complexity) and active exploration, with positive downstream consequences for employees' change support. However, high-quality contact with colleagues did not moderate the links of job autonomy and job complexity with cognitive overload, and could, therefore, also not buffer the detrimental effects that job complexity had on frustration. Importantly, the study findings hold across different sectors, types of work (e.g., working hours, percentage of IT use), and change characteristics (e.g., introduction time, type of technology, information channel), which demonstrates the robustness and generalizability of the identified relationships at hand.

Theoretical Implications

Our findings provide at least three relevant theoretical implications. First, we extend the nomological net of change reactions by adding job complexity and job autonomy as significant

work design characteristics to previous research that has predominantly studied individual antecedents (Fuller & Marler, 2009; Gonzalez et al., 2022). With our focus on work design characteristics, we thus pay attention to the 'demand' side to understand how work needs to be designed to support change rather than the 'supply' side, which is focused on selecting and developing employees to foster change (Parker, 2017). Our research demonstrates that designing jobs such that they are complex and offer a certain degree of autonomy to employees can support change. At the same time, we also point to the unintended side effects of some work design characteristics by focusing on employees' experience of frustration. In this regard, we show that providing employees with job autonomy can lower their frustration in the context of the introduction of a new technology. However, we also challenge the predominantly positive view of job complexity by demonstrating its cognitive costs for employees leading to frustration. By adding change support and frustration to the outcomes of job complexity and job autonomy, we also contribute to the nomological net of work design, which has mainly focused on motivation and health outcomes such as job satisfaction and well-being (Parker, 2014; Parker et al., 2017).

Second, our findings can explain why job complexity and job autonomy are linked to change support and frustration. In response to previous calls to examine the psychological processes that link work design to change support (Marinova et al., 2015) and the consideration of frustration in change processes (Schein, 1996), we provide a dual-pathway model that distinguishes an engaging pathway (via active exploration) and a straining pathway (via cognitive overload). On the one hand, based on the work design growth model (Parker, 2017), we showed that job complexity and job autonomy both lead to active exploration, which facilitates employees' change support. On the other hand, based on cognitive load theory (Sweller, 2010), we demonstrated that job complexity leads to cognitive overload in employees, while job autonomy can reduce it, which comes with further consequences for employees feeling frustrated

when dealing with change. In this regard, our research contributes to the debate of whether frustration is a necessary element of change processes. While previous research has conceptualized frustration as a starting point for change processes at the organizational level (Schein, 1996; see also Bartunek & Woodman, 2015), our findings demonstrate that frustration is an unwanted side effect that accompanies change processes at the micro-level. Our findings further contribute to the understanding of work design characteristics as indirect antecedents of frustration, which adds to previous studies focusing on individual characteristics and work attitudes (e.g., psychological entitlement, Harvey & Harris, 2010; role overload, Eissa & Lester, 2017, sleep disorders, P. H. Wang et al., 2016), or relational aspects, such as abusive supervision (Peng et al., 2019; Y. Zhang et al., 2020). Moreover, our findings connect to previous research from Sung et al. (2017) who found that job complexity can lead to cognitive overload, which in turn reduces employee proactive and responsive behaviors at work. By disentangling the engaging pathway via active exploration from the straining pathway via cognitive overload, we point to a more sophisticated view of work design and employees' change support as well as experienced frustration.

Third, our findings highlight the importance of high-contact quality to support optimal work design in times of change. In line with past research (Chiaburu et al., 2013, 2022), we emphasized that it is important to consider that individuals, who are confronted with change are embedded in the wider social context. In that regard, we showed that high-contact quality strengthens the positive relationship between job autonomy and change support via more active exploration. Specifically, we demonstrated that job autonomy unfolds its effect on change support via active exploration best if employees experience positive and cooperative interactions with their colleagues because high-quality contact support employees in their endeavor to utilize their flexibility to break out of routines and actively search effective strategies to get their work done, which results in stronger change support. In line with previous

research (Ehrhardt & Ragins, 2019; Fasbender et al., 2020; Owens et al., 2016; Tran et al., 2018; Warshawsky et al., 2012), we interpret this finding such that high-quality contact generates energy that supports employees' motivational efforts arising from job autonomy to engage in active exploration, which in turn leads to more change support. These findings underpin that contact quality can function as an accelerating factor on the benefits of work design characteristics during times of change.

However, we did not find support for the moderating effect of high-quality contact on the other link between job complexity and active exploration. Furthermore, we could not show the protective effects of high-quality contact when it came to cognitive overload. The latter finding may seem somewhat surprising as previous research found that contact quality buffered cognitive overload for employees engaging in complex behaviors, such as knowledge seeking at work (Burmeister et al., 2022). These deviating research findings demonstrate the importance of paying attention to the study context. While the study from Burmeister et al. (2022) was focused on routine behaviors that take place on a day-to-day basis, we focused on work design characteristics and employees' experiences (i.e., active exploration and cognitive overload) when reacting to change. While we continue to think that the social environment matters for employees' micro-level reactions to change, it may also be the role of critical HR practices (Maheshwari & Vohra, 2015) and the top management (Clark & Soulsby, 2007) that further play into account here, as coworker contact quality may be constrained to higher-level support factors in times of institutional turbulence. Future research should thus pay attention to the wider institutional constraints when investigating how coworker contact quality impacts the relations between work design characteristics with change support and frustration during change processes.

Practical Implications

Our research provides some useful hands-on implications for practice. First, organizations are well advised to support and create job autonomy among their employees. This is because autonomy was not only shown to facilitate employees' change support (via more active exploration) but also to lower frustration (via reduced cognitive overload). To foster autonomy, organizations can, for example, allow their employees to plan and schedule their work tasks in their own way (i.e., when to do what; Morgeson & Humphrey, 2006). Also, organizations may put the decision-making power to employees (i.e., allow personal initiative or individual judgments of employees) and let them complete tasks in their own way (i.e., how to do it; Morgeson & Humphrey, 2006). As our study shows, providing employees with the right level of job autonomy is hugely advantageous in terms of how people react to change when new technology is introduced, as employees are more motivated and less cognitively taxed to get on with their work albeit being confronted with change.

Second and relatedly, the beneficial impact of job autonomy on employees' motivation to actively explore (e.g., to experiment with different work activities), and therewith support change, can be strengthened in a social environment that is characterized by positive, natural and cooperative interactions between colleagues. To foster such high-quality contact among coworkers, organizations may provide decent interaction opportunities that allow visits and informal conversations, helping employees to get to know each other and perhaps even form friendships (Fasbender et al., 2023; Fasbender & Drury, 2022). In this regard, organizations can, for example, build social spaces (e.g., informal seating in common areas) where coworkers are permitted and feel comfortable socializing during the working day.

In times of remote and hybrid work, however, it is of utmost importance to also think about ways to improve coworker contact quality if employees collaborate virtually and are

thus not in the office. In fact, research has demonstrated that working remotely can be a threat to one's contact quality as people feel more isolated and less supported at work (Bareket-Bojmel et al., 2023; see also Gagné et al., 2022). Social rituals, such as greetings and social gatherings can help to improve the bond between employees (Baumeister & Leary, 1995; Collins, 2004). Social rituals can also be implemented in virtual contexts in the form of social virtual or hybrid meeting rituals as a routinized practice of reserving time for informal exchange between employees (DiMaggio et al., 2018). Another way of implementing social rituals could be the introduction of virtual or hybrid social breaks, such as lunch or coffee breaks, which allow employees to communicate informally and thereby strengthen their social bonds (Methot et al., 2021).

Third, organizations need to be aware of the double-edged nature of job complexity, which is beneficial for change support (via more active exploration), but also leads to frustration (via more cognitive overload) when employees are confronted with a change. While job complexity cannot and perhaps also should not be reduced given its beneficial effects, awareness of the downsides is important, and organizations may find ways to help employees better deal with arising frustration during the change process. Organizations may support coping strategies and coping efficacy (Massey et al., 2009) as well as platforms through which employees can channel their frustration, for example, by raising their voice about complaints to prevent more damaging outcomes (Fox & Spector, 1999; González-Gómez et al., 2021).

Limitations and Future Research Directions

Our time-lagged design covers only a limited timeframe and does not allow us to draw causal conclusions from the findings. In particular, because our study has been conducted during the COVID-19 pandemic, many other changes cooccurred with the introduction of a new technology, such as business shutdowns, lockdowns, or social distancing measures (Spurk & Straub, 2020). The wider societal challenges linked to the COVID-19 pandemic

caused profound disruptions in people's careers (Akkermans et al., 2020) and working lives (Mockaitis et al., 2022), including for example a reduced job performance (X. Liu et al., 2023). Therefore, it is difficult to disentangle the influences of work design and the social context from the wider societal challenges linked to the COVID-19 pandemic in their impact on the reactions to change caused by the introduction of a new technology. While in hindsight it is virtually impossible to disentangle such effects, we call for future research to replicate the findings in non-pandemic contexts and demonstrate the causality of the effects of different work design characteristics on reactions to change.

Future research may thus apply more sophisticated designs, including either field experiments or experience sampling. For demonstrating causality, scholars may utilize a Solomon-four-group design (groups with and without pre-test measure and with and without intervention) to capture the impact of work design on change support while overcoming the problem of pre-test sensitization (Navarro & Siegel, 2018). Such a design may also allow to test the different work design characteristics (i.e., job complexity and job autonomy) in combination and vary or control for the social context (i.e., coworker contact quality). While such complex field experiments are not always feasible, experience sampling may help to capture the dynamics of change support over time (including its underlying, engaging and straining pathways), especially if the entire change process is captured. In this regard, it matters to pay attention to the introduction time of a new technology and ensure that such experience sampling approach may commence before the introduction of a new technology or (if that is not possible) soon after to allow real-time monitoring and to estimate the role of time in how people react to the introduction of a new technology (cf. Gabriel et al., 2019).

Further, our findings may be biased due to using self-report for measuring all our study variables. However, we applied some procedural remedies to reduce these concerns: that is, we separated the measurement of the predictor, mediators, and outcome variables (Podsakoff

et al., 2012). Furthermore, we considered coworker contact quality as a moderator variable, which makes it harder for study participants to speculate about the research aims (Chang et al., 2010). Nevertheless, future research may collect data via more objective measures to rule out common-method bias, for example, by using data on actual change behavior (e.g., video-tape and objectively code workplace meetings, Gerpott et al., 2020), or other-report data, such as supervisor ratings of change support.

To ensure a comparable change context, we focused our questions concerning employees' experience of a recent change on the introduction of a new technology. However, as mentioned in the practical implications section, change can obviously also concern other work procedures beyond working with new technology. For example, other work design characteristics may be the target of change, such as the skill variety that employees need to work on tasks or the feedback they receive from their job. We thus consider the consequences of changing several work design characteristics at once in its infancy with many fruitful avenues for future research.

Finally, the current study also leaves some questions open. One of these questions is when too much of a good thing—here job autonomy—becomes too much. Recent research has discussed the autonomy paradox, suggesting that job autonomy is only good to a certain degree and too much of it can also be harmful to employees (Mazmanian et al., 2013; Zhou, 2020), in particular in demanding work contexts (Dettmers & Bredehöft, 2020). Scholars may therefore take a critical look at the role of job autonomy in the context of change. Furthermore, future research may also study the conjunction of individual antecedents – such as self-efficacy with work design characteristics – to gain a more nuanced understanding of the dynamic interplay between the person and the environment during the change process. Past research has shown that self-efficacy can help employees to effectively respond to challenges in their work environment and mitigate the negative effects of different work-related demands (Brown et al., 2001; Jex & Bliese, 1999). In the context of change, self-efficacious employees may

benefit from their significant mastery experiences (Bandura, 1977), which could help them to better navigate the various challenges they encounter during the change process. Applied to the straining path in our model (see lower pathway in Figure 1), it is thus plausible that self-efficacy could buffer the detrimental effects of job complexity on frustration as an unintended side effect during change processes. Furthermore, self-efficacy has been found to alter the negative link between change readiness and frustration (Alnoor et al., 2020). Accordingly, self-efficacy could also moderate the link between job autonomy and frustration via lower cognitive overload. In terms of the engaging pathway (see upper pathway in Figure 1), self-efficacy could strengthen the beneficial effects of job autonomy on change support because self-efficacious employees more readily respond to job autonomy (van Mierlo et al., 2006). This suggests that highly self-efficacious employees may use their autonomy to engage in a lot of active exploration, which in turn positively impacts their change support.

Conclusion

Change is ubiquitous in contemporary organizations and employees play a crucial role in supporting it. Our research expands the change reactions literature with a work design perspective that puts the individual centerstage by emphasizing the engaging and straining pathways of work design characteristics for employees. As a result, we provide first-hand insights on how work can be (re-)designed to facilitate employees' support of change while avoiding frustration when being confronted with change.

References

Akkermans, J., Richardson, J., & Kraimer, M. L. (2020). The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *Journal of Vocational Behavior*, *119*(103434), 1–5. https://doi.org/10.1016/j.jvb.2020.103434

Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior*, *79*(2), 549–562. https://doi.org/10.1016/j.jvb.2011.03.007

Alnoor, A. M. R., Al-Abrrow, H., Abdullah, H., & Abbas, S. (2020). The impact of self-efficacy on employees' ability to accept new technology in an Iraqi university. *Global Business and Organizational Excellence*, *39*(2), 41–50. https://doi.org/10.1002/joe.21984

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215.

Bareket-Bojmel, L., Chernyak-Hai, L., & Margalit, M. (2023). Out of sight but not out of mind: The role of loneliness and hope in remote work and in job engagement. *Personality and Individual Differences*, *202*(2), 111955. https://doi.org/10.1016/j.paid.2022.111955

Bartunek, J. M., & Woodman, R. W. (2015). Beyond Lewin: Toward a temporal approximation of organization development and change. *Annual Review of Organizational Psychology and Organizational Behavior*, *2*(1985), 157–182. https://doi.org/10.1146/annurev-orgpsych-032414-111353

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Ben-Nun, P. (2008). Respondent fatigue. In P. Lavrakas (Ed.), *Encyclopedia of Survey Research Methods*. Sage Publications, Inc. https://doi.org/10.4135/9781412963947

Bouckenooghe, D., Devos, G., & Van Den Broeck, H. (2009). Organizational change questionnaire-climate of change, processes, and readiness: Development of a new instrument. In *Journal of Psychology: Interdisciplinary and Applied* (Vol. 143, Issue 6). https://doi.org/10.1080/00223980903218216

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, *1*(3), 185–216. https://doi.org/10.1177/135910457000100301

Brown, S. P., Ganesan, S., & Challagalla, G. (2001). Self-efficacy as a moderator of information-seeking effectiveness. *Journal of Applied Psychology*, *86*, 1043–1051. https://doi.org/10.1037/0021-9010.86.5.1043

Burmeister, A., Alterman, V., Fasbender, U., & Wang, M. (2022). Too much to know? The cognitive demands of daily knowledge seeking and the buffering role of coworker contact quality. *Journal of Applied Psychology*, *107*(8), 1303–1322. https://doi.org/10.1037/apl0000925

Campbell, D. J. (1988). Task complexity: A review and analysis. *Academy of Management Review*, *13*(1), 40–52. https://doi.org/10.5465/amr.1988.4306775

Carmeli, A., Brueller, D., & Dutton, J. E. (2009). Learning behaviours in the workplace: The role of high-quality interpersonal relationships and psychological safety. *Systems Research and Behavioral Science*, *98*, 81–98. https://doi.org/10.1002/sres.932

Chang, S.-J., van Witteloostuijn, A., Eden, L., & Eden, L. (2010). From the editors: Common method variance in international business research. *Journal of International Business Studies*, *41*, 178–184. https://doi.org/10.1057/jibs.2009.88

Chiaburu, D. S., Lorinkova, N. M., & Van Dyne, L. (2013). Employees' social context and change-oriented citizenship: A meta-analysis of leader, coworker, and organizational

influences. *Group and Organization Management*, *38*(3), 291–333. https://doi.org/10.1177/1059601113476736

Chiaburu, D. S., Oh, I. S., Stoverink, A. C., Park, H. (Hailey), Bradley, C., & Barros-Rivera, B. A. (2022). Happy to help, happy to change? A meta-analysis of major predictors of affiliative and change-oriented organizational citizenship behaviors. *Journal of Vocational Behavior*, *132*, 103664. https://doi.org/10.1016/j.jvb.2021.103664

Chung-Yan, G. A. (2010). The nonlinear effects of job complexity and autonomy on job satisfaction, turnover, and psychological well-being. *Journal of Occupational Health Psychology*, *15*(3), 237–251. https://doi.org/10.1037/a0019823

Clark, E., & Soulsby, A. (2007). Understanding top management and organizational change through demographic and processual analysis. *Journal of Management Studies*, *44*(6), 932–954. https://doi.org/10.1111/j.1467-6486.2007.00692.x

Collins, R. (2004). *Interaction ritual chains*. Princeton University Press.

De Jonge, J., Mulder, M. J. G. P., & Nijhuis, F. J. N. (1999). The incorporation of different demand concepts in the job demand- control model: Effects on health care professionals. *Social Science and Medicine*, *48*(9), 1149–1160. https://doi.org/10.1016/S0277-9536(98)00429-8

De Spiegelaere, S., Van Gyes, G., De Witte, H., Niesen, W., & Van Hootegem, G. (2014). On the relation of job insecurity, job autonomy, innovative work behaviour and the mediating effect of work engagement. *Creativity and Innovation Management*, *23*(3), 318–330. https://doi.org/10.1111/caim.12079

Dettmers, J., & Bredehöft, F. (2020). The ambivalence of job autonomy and the role of job design demands. *Scandinavian Journal of Work and Organizational Psychology*, *5*(1), 1–13. https://doi.org/10.16993/SJWOP.81

DiMaggio, P., Bernier, C., Heckscher, C., & Mimno, D. (2018). Interaction ritual threads: Does IRC theory apply online? In E. B. Weininger, A. Lareau, & O. Lizardo (Eds.), *Ritual, emotion, violence: Studies on the micro-sociology of Randall Collins* (pp. 81–124). Routledge.

Ehrhardt, K., & Ragins, B. R. (2019). Relational attachment at work: A complementary fit perspective on the role of relationships in organizational life. *Academy of Management Journal*, *62*(1), 248–282. https://doi.org/10.5465/amj.2016.0245

Eissa, G., & Lester, S. W. (2017). Supervisor role overload and frustration as antecedents of abusive supervision: The moderating role of supervisor personality. *Journal of Organizational Behavior*, *38*(3), 307–326. https://doi.org/10.1002/job.2123

Fasbender, U. (2020). Age discrimination as a bone of contention in the EU: A psychological perspective. In T. Giegerich (Ed.), *The European Union as Protector and Promoter of Equality* (pp. 417–425). Springer. https://doi.org/10.1007/978-3-030-43764-0_21

Fasbender, U., Burmeister, A., & Wang, M. (2020). Motivated to be socially mindful: Explaining age differences in the effect of employees' contact quality with coworkers on their coworker support. *Personnel Psychology*, *73*(3), 407–430. https://doi.org/10.1111/peps.12359

Fasbender, U., Burmeister, A., & Wang, M. (2023). Managing the risks and side effects of workplace friendships: The moderating role of workplace friendship self-efficacy. *Journal of Vocational Behavior*, *143*(103875), 1–19. https://doi.org/10.1016/j.jvb.2023.103875

Fasbender, U., & Drury, L. (2022). One plus one equals one: age-diverse friendship and its complex relation to employees' job satisfaction and turnover intentions. *European Journal of Work and Organizational Psychology*, *31*(4), 510–523. https://doi.org/10.1080/1359432X.2021.2006637

Ford, J. D., Ford, L. W., & D'Amelio, A. (2008). Resistance to Change: The Rest of the

Story. *Academy of Management Review*, *33*(2), 362–377. https://doi.org/10.5465/amr.2008.31193235

Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. *Journal of Organizational Behavior*, *20*(6), 915–931. https://doi.org/10.1002/(SICI)1099-1379(199911)20:6<915::AID-JOB918>3.0.CO;2-6

Frese, M., & Zapf, D. (1994). Action as the core of work psychology: A German approach. In H. Triandis, M. Dunnette, & J. Hough (Eds.), *Handbook of Ind. Org. Psych, 2nd Ed.* (pp. 271–340). Consulting Psychologists Press.

Fugate, M., Kinicki, A. J., & Prussia, G. E. (2008). Employee coping with organizational change: An examination of alternative theoretical perspectives and models. *Personnel Psychology*, *61*(1), 1–36. https://doi.org/10.1111/j.1744-6570.2008.00104.x

Fuller, J. B., & Marler, L. E. (2009). Change driven by nature: A meta-analytic review of the proactive personality literature. *Journal of Vocational Behavior*, *75*, 329–345. https://doi.org/10.1016/j.jvb.2009.05.008

Fuller, J. B., Marler, L. E., & Hester, K. (2006). Promoting felt responsibility for constructive change and proactive behavior: exploring aspects of an elaborated model of work design. *Journal of Organizational Behavior*, *27*(8), i–ii. https://doi.org/10.1002/job.425

Gagné, M., Parker, S. K., Griffin, M. A., Dunlop, P. D., Knight, C., Klonek, F. E., & Parent-Rocheleau, X. (2022). Understanding and shaping the future of work with self-determination theory. *Nature Reviews Psychology*, *0123456789*. https://doi.org/10.1038/s44159-022-00056-w

Gerpott, F. H., Lehmann-Willenbrock, N., & Scheibe, S. (2020). Is work and aging research a science of questionnaires? Moving the field forward by considering perceived versus actual behaviors. *Work, Aging and Retirement*, *6*(2), 65–70. https://doi.org/10.1093/workar/waaa002

González-Gómez, H. V., Hudson, S., & Rychalski, A. (2021). The psychology of frustration: Appraisals, outcomes, and service recovery. *Psychology and Marketing*, *38*(9), 1550–1575. https://doi.org/10.1002/mar.21528

Gonzalez, K., Portocarrero, F. F., & Ekema, M. L. (2022). Disposition activation during organizational change: A meta-analysis. *Personnel Psychology*, 1–55. https://doi.org/10.1111/peps.12513

Gubbi, S. R., Aulakh, P. S., & Ray, S. (2015). International search behavior of business group affiliated firms: Scope of institutional changes and intragroup heterogeneity. *Organization Science*, *26*(5), 1485–1501. https://doi.org/10.1287/orsc.2015.0990

Hackman, R., & Oldham, G. R. (1976). Motivation through the Design of work: Test of a theory. *Human Performance*, *170*.

Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, *5*(1), 90–105. https://doi.org/10.1037/a0018556

Han, T. Y., & Williams, K. J. (2008). Multilevel investigation of adaptive performance: Individual- and team-level relationships. *Group and Organization Management*, *33*(6), 657–684. https://doi.org/10.1177/1059601108326799

Harold, C. M., Oh, I. S., Holtz, B. C., Han, S., & Giacalone, R. A. (2016). Fit and frustration as drivers of targeted counterproductive work behaviors: A multifoci perspective. *Journal of Applied Psychology*, *101*(11), 1513–1535. https://doi.org/10.1037/apl0000150

Harvey, P., & Harris, K. J. (2010). Frustration-based outcomes of entitlement and the influence of supervisor communication. *Human Relations*, *63*(11), 1639–1660. https://doi.org/10.1177/0018726710362923

Jeronimus, B. F., & Laceulle, O. M. (2017). Frustration. In V. Zeigler-Hill & T. K.

Shackelford (Eds.), *Encyclopedia of Personality and Individual Differences*. https://doi.org/10.1007/978-3-319-28099-8

Jex, S. M., & Bliese, P. D. (1999). Efficacy beliefs as a moderator of the impact of work-related stressors: A multilevel study. *Journal of Applied Psychology*, *84*(3), 349–361. https://doi.org/10.1037/0021-9010.84.3.349

Karr-Wisniewski, P., & Lu, Y. (2010). When more is too much: Operationalizing technology overload and exploring its impact on knowledge worker productivity. *Computers in Human Behavior*, *26*, 1061–1072. https://doi.org/10.1016/j.chb.2010.03.008

Kellogg, K. C. (2019). Subordinate Activation Tactics: Semi-professionals and Micro-level Institutional Change in Professional Organizations. *Administrative Science Quarterly*, *64*(4), 928–975. https://doi.org/10.1177/0001839218804527

Khaw, K. W., Alnoor, A., AL-Abrrow, H., Tiberius, V., Ganesan, Y., & Atshan, N. A. (2022). Reactions towards organizational change: a systematic literature review. *Current Psychology*, *0123456789*. https://doi.org/10.1007/s12144-022-03070-6

Kline, R. B. (2016). *Principles and practice of structural equation modeling (4th ed.)*. Guilford.

Kruger, J.-L., Hefer, E., & Matthew, G. (2013). Measuring the impact of subtitles on cognitive load. *Proceedings of the 2013 Conference on Eye Tracking South Africa - ETSA '13*, 62–66. https://doi.org/10.1145/2509315.2509331

Kunze, F., Boehm, S., & Bruch, H. (2013). Organizational performance consequences of age diversity: Inspecting the role of diversity-friendly HR policies and top managers' negative age stereotypes. *Journal of Management Studies*, *50*, 413–442. https://doi.org/10.1111/joms.12016

Lanaj, K., Johnson, R. E., & Barnes, C. M. (2014). Beginning the workday yet already depleted? Consequences of late-night smartphone use and sleep. *Organizational Behavior and Human Decision Processes*, *124*, 11–23. https://doi.org/10.1016/j.obhdp.2014.01.001

Lee, A. Y. (2001). The mere exposure effect: An uncertainty reduction explanation revisited. *Personality and Social Psychology Bulletin*, *27*(10), 1255–1266. https://doi.org/10.1177/01461672012710002

Liu, X., Zheng, X., Lee, B. Y., Yu, Y., & Zhang, M. (2023). COVID-19 and employee job performance trajectories: The moderating effect of different sources of status. *Journal of Vocational Behavior*, *142*(103862), 1–17. https://doi.org/10.1016/j.jvb.2023.103862

Liu, Y., & Perrewé, P. L. (2005). Another look at the role of emotion in the organizational change: A process model. *Human Resource Management Review*, *15*(4), 263–280. https://doi.org/10.1016/j.hrmr.2005.12.001

Madjar, N. (2008). Emotional and informational support from different sources and employee creativity. *Journal of Occupational and Organizational Psychology*, *81*(1), 83–100. https://doi.org/10.1348/096317907X202464

Maheshwari, S., & Vohra, V. (2015). Identifying critical HR practices impacting employee perception and commitment during organizational change. *Journal of Organizational Change Management*, *28*(5), 872–894. https://doi.org/10.1108/JOCM-03-2014-0066

Marinova, S. V., Peng, C., Lorinkova, N., Van Dyne, L., & Chiaburu, D. (2015). Change-oriented behavior: A meta-analysis of individual and job design predictors. *Journal of Vocational Behavior*, *88*, 104–120. https://doi.org/10.1016/j.jvb.2015.02.006

Massey, E. K., Garnefski, N., Gebhardt, W. A., & Van Der Leeden, R. (2009). Daily frustration, cognitive coping and coping efficacy in adolescent headache. *Headache*, *49*(8), 1198–1205. https://doi.org/10.1111/j.1526-4610.2009.01492.x

Mazmanian, M., Orlikowski, W. J., & Yates, J. A. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization*

Science, *24*(5), 1337–1357. https://doi.org/10.1287/orsc.1120.0806
Methot, J. R., Gabriel, A. S., Downes, P., & Rosado-Solomon, E. (2021). Remote Workers Need Small Talk, Too. *Harvard Business Review Digital Articles*, 1–6. https://hbr.org/2021/03/remote-workers-need-small-talk-too
Mills, J. H., Dye, K., & Mills, A. J. (2009). *Understanding Organizational Change*. Routledge.
Mishna, F., Milne, E., Bogo, M., & Pereira, L. F. (2021). Responding to COVID-19: New trends in social workers' use of information and communication technology. *Clinical Social Work Journal*, *49*(4), 484–494. https://doi.org/10.1007/s10615-020-00780-x
Mockaitis, A. I., Butler, C. L., & Ojo, A. (2022). COVID-19 pandemic disruptions to working lives: A multilevel examination of impacts across career stages. *Journal of Vocational Behavior*, *138*(103768), 1–16. https://doi.org/10.1016/j.jvb.2022.103768
Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*, 1321–1339. https://doi.org/10.1037/0021-9010.91.6.1321
Muecke, S., & Iseke, A. (2019). How does job autonomy influence job performance? A meta-analytic test of theoretical mechanisms. *Academy of Management Proceedings*, *1*(1), 14632. https://doi.org/10.5465/AMBPP.2019.145
Muthén, L. K., & Muthén, B. O. (2019). *Mplus user's guide (8th ed.)*. Muthén & Muthén.
Navarro, M. A., & Siegel, J. T. (2018). Solomon Four-Group Design. In B. B. Frey (Ed.), *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (pp. 1553–1554). SAGE Publications, Inc. https://doi.org/10.4135/9781506326139.n645
Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods*, *17*, 372–411. https://doi.org/10.1177/1094428114548590
Ng, K. H., & Ahmad, R. (2018). Personality traits, social support, and training transfer: The mediating mechanism of motivation to improve work through learning. *Personnel Review*, *47*(1), 39–59. https://doi.org/10.1108/PR-08-2016-0210
Ng, T. W. H., & Feldman, D. C. (2012). Evaluating six common stereotypes about older workers with meta-analytical data. *Personnel Psychology*, *65*, 821–858. https://doi.org/10.1111/peps.12003
Noefer, K., Stegmaier, R., Molter, B., & Sonntag, K. (2009). A great many things to do and not a minute to spare: Can feedback from supervisors moderate the relationship between skill variety, time pressure, and employees' innovative behavior? *Creativity Research Journal*, *21*(4), 384–393. https://doi.org/10.1080/10400410903297964
O'Connor, E. J., Peters, L. H., Rudolf, C. J., & Pooyan, A. (1982). Situational constraints and employee affective reactions: A partial field replication. *Group & Organization Studies*, *7*(4), 418–428. https://doi.org/10.1177/105960118200700405
Orth, M., & Volmer, J. (2017). Daily within-person effects of job autonomy and work engagement on innovative behaviour: The cross-level moderating role of creative self-efficacy. *European Journal of Work and Organizational Psychology*, *26*(4), 601–612. https://doi.org/10.1080/1359432X.2017.1332042
Owens, B. P., Baker, W. E., Sumpter, D. M. D., & Cameron, K. S. (2016). Relational energy at work: Implications for job engagement and job performance. *Journal of Applied Psychology*, *101*(1), 35–49. https://doi.org/10.1037/apl0000032
Parker, S. K. (2014). Beyond motivation: Job and work design for development, health, ambidexterity, and more. *Annual Review of Psychology*, *65*, 661–691. https://doi.org/10.1146/annurev-psych-010213-115208
Parker, S. K. (2017). Work design growth model: How work characteristics promote learning and development. In R. A. Noe & J. E. Ellingson (Eds.), *Autonomous Learning in the*

Workplace (pp. 137–161). SIOP Frontiers Book Series. Taylor Francis. https://doi.org/10.4324/9781315674131

Parker, S. K., Morgeson, F. P., & Johns, G. (2017). One hundred years of work design research: Looking back and looking forward. *Journal of Applied Psychology*, *102*, 403–420. https://doi.org/10.1037/apl0000106

Parker, S. K., Wall, T. D., & Cordery, J. L. (2001). Future work design research and practice: Towards an elaborated model of work design. *Journal of Occupational and Organizational Psychology*, *74*(4), 413–440. https://doi.org/10.1348/096317901167460

Parker, S. K., Wall, T. D., & Jackson, P. R. (1997). "That's not my job": Developing flexible employee work orientations. *Academy of Management Journal*, *40*(4), 899–929. https://doi.org/10.2307/256952

Parker, S. K., Ward, M. K., & Fisher, G. G. (2021). Can high-quality jobs help workers learn new tricks? A multidisciplinary review of work design for cognition. *Academy of Management Annals*, *15*(2), 406–454. https://doi.org/10.5465/annals.2019.0057

Peng, A. C., M. Schaubroeck, J., Chong, S., & Li, Y. (2019). Discrete emotions linking abusive supervision to employee intention and behavior. *Personnel Psychology*, *72*(3), 393–419. https://doi.org/10.1111/peps.12310

Perko, K., Kinnunen, U., & Feldt, T. (2017). Long-term profiles of work-related rumination associated with leadership, job demands, and exhaustion: A three-wave study. *Work and Stress*, *31*(4), 395–420. https://doi.org/10.1080/02678373.2017.1330835

Perrewé, P. L., & Zellars, K. L. (1999). An examination of attributions and emotions in the transactional approach to the organizational stress process. *Journal of Organizational Behavior*, *20*(5), 739–752. https://doi.org/10.1002/(SICI)1099-1379(199909)20:5<739::AID-JOB1949>3.0.CO;2-C

Peters, L. H., & O'Connor, E. J. (1980). Situational constraints and work outcomes: The influences of a frequently overlooked construct. *Academy of Management Review*, *5*(3), 391–397. https://doi.org/10.5465/amr.1980.4288856

Peters, L. H., O'Connor, E. J., & Rudolf, C. J. (1980). The behavioral and affective consequences of performance-relevant situational variables. *Organizational Behavior and Human Performance*, *25*(1), 79–96. https://doi.org/10.1016/0030-5073(80)90026-4

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. https://doi.org/10.1037/0021-9010.88.5.879

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Posthuma, R. A., & Campion, M. A. (2009). Age stereotypes in the workplace: Common stereotypes, moderators, and future research directions. *Journal of Management*, *35*, 158–188. https://doi.org/10.1177/0149206308318617

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. https://doi.org/10.3758/BRM.40.3.879

Preacher, K. J., & Selig, J. P. (2012). Advantages of Monte Carlo confidence intervals for indirect effects. *Communication Methods and Measures*, *6*, 77–98. https://doi.org/10.1080/19312458.2012.679848

Prem, R., Kubicek, B., Diestel, S., & Korunka, C. (2016). Regulatory job stressors and their within-person relationships with ego depletion: The roles of state anxiety, self-control effort, and job autonomy. *Journal of Vocational Behavior*, *92*, 22–32. https://doi.org/10.1016/j.jvb.2015.11.004

R Core Team. (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.r-project.org/

Reay, T., Golden-Biddle, K., & Germann, K. (2006). Legitimizing a new role: Small wins and microprocesses of change. *Academy of Management Journal*, *49*(5), 977–998. https://doi.org/10.5465/AMJ.2006.22798178

Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology*, *67*(2), 206–221. https://doi.org/10.1037/0022-3514.67.2.206

Sadeghi, T. (2020). Associations between workplace learning patterns, social support and perceived competency. *Human Resource Development International*, *23*(1), 5–24. https://doi.org/10.1080/13678868.2019.1627512

Schaubroeck, J., Ganster, D. C., & Kemmerer, B. E. (1994). Job complexity, "Type A" behavior, and cardiovascular disorder: A prospective study. *Academy of Management Journal*, *37*(2), 426–439. https://doi.org/10.5465/256837

Schein, E. H. (1996). Kurt Lewin's change theory in the field and in the classroom: Notes toward a model of managed learning. *Systems Practice*, *9*(1), 27–47.

Seeger, M. W., Ulmer, R. R., Novak, J. M., & Sellnow, T. (2005). Post-crisis discourse and organizational change, failure and renewal. *Journal of Organizational Change Management*, *18*(1), 78–95. https://doi.org/10.1108/09534810510579869

Seo, M. G., Taylor, M. S., Hill, N. S., Zhang, X., Tesluk, P. E., & Lorinkova, N. M. (2012). The role of affect and leadership during organizational change. *Personnel Psychology*, *65*(1), 121–165. https://doi.org/10.1111/j.1744-6570.2011.01240.x

Spector, P. E. (1978). Organizational frustration: A model and review of the literature. *Personnel Psychology*, *31*(4), 815–829. https://doi.org/10.1111/j.1744-6570.1978.tb02125.x

Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods*, *14*(2), 287–305. https://doi.org/10.1177/1094428110369842

Spurk, D., & Straub, C. (2020). Flexible employment relationships and careers in times of the COVID-19 pandemic. *Journal of Vocational Behavior*, *119*(May), 1–4. https://doi.org/10.1016/j.jvb.2020.103435

Stegmann, S., Dick, R. Van, Ullrich, J., Charalambous, J., Menzel, B., & Egold, N. (2010). Der Work Design Questionnaire: Vorstellung und erste Validierung einer deutschen Version. *Zeitschrift Für Arbeits- u. Organisationspsychologie*, *54*, 1–28. https://doi.org/10.1026/0942-4089/a000002

Steijn, B., & van der Voet, J. (2019). Relational job characteristics and job satisfaction of public sector employees: When prosocial motivation and red tape collide. *Public Administration*, *97*, 64–80. https://doi.org/10.1111/padm.12352

Stensaker, I. G., & Meyer, C. B. (2012). Change experience and employee reactions: Developing capabilities for change. *Personnel Review*, *41*(1), 106–124. https://doi.org/10.1108/00483481211189974

Stumpf, S. A., Colarelli, S. M., & Hartman, K. (1983). Development of the career exploration survey (CES). *Journal of Vocational Behavior*, *22*, 191–226.

Sung, S. Y., Antefelt, A., & Choi, J. N. (2017). Dual effects of job complexity on proactive and responsive creativity: Moderating role of employee ambiguity tolerance. *Group and Organization Management*, *42*(3), 388–418. https://doi.org/10.1177/1059601115619081

Sweller, J. (2010). Cognitive load theory: Recent theoretical advances. In *Cognitive Load Theory* (pp. 29–47). https://doi.org/10.1017/CBO9780511844744.004

Sweller, J., Van Merrienboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive architecture and instructional design. *Educational Psychology Review*, *10*(3), 251–296.

https://doi.org/10.1023/A:1022193728205
Thundiyil, T. G., Chiaburu, D. S., Oh, I. S., Banks, G. C., & Peng, A. C. (2015). Cynical about change? A preliminary meta-analysis and future research agenda. *Journal of Applied Behavioral Science*, *51*(4), 429–450. https://doi.org/10.1177/0021886315603122
Tran, K., Nguyen, P., Dang, T., & Ton, T. (2018). The impacts of the high-quality workplace relationships on job performance: A perspective on staff nurses in Vietnam. *Behavioral Sciences*, *8*(109), 1–21. https://doi.org/10.3390/bs8120109
van Mierlo, H., Rutte, C., Vermunt, J., Kompier, M., & Doorewaard, J. (2006). Individual autonomy in work teams: The role of team autonomy, self-efficacy, and social support. *European Journal of Work and Organizational Psychology*, *15*(3), 281–299. https://doi.org/10.1080/13594320500412249
Walter, S. L., Seibert, S. E., Goering, D., & O'Boyle, E. H. (2019). A tale of two sample sources: Do results from online panel data and conventional data converge? *Journal of Business and Psychology*, *34*(4), 425–452. https://doi.org/10.1007/s10869-018-9552-y
Wang, M., Beal, D. J., Chan, D., Newman, D. A., Vancouver, J. B., & Vandenberg, R. J. (2017). Longitudinal research: A panel discussion on conceptual issues, research design, and statistical techniques. *Work, Aging and Retirement*, *3*(1), 1–24. https://doi.org/10.1093/workar/waw033
Wang, M., Liu, S., Liao, H., Gong, Y., Kammeyer-Mueller, J., & Shi, J. (2013). Can't get it out of my mind: Employee rumination after customer mistreatment and negative mood in the next morning. *Journal of Applied Psychology*, *98*(6), 989–1004. https://doi.org/10.1037/a0033656
Wang, P. H., Ku, Y. C., Chen, C. C., Jeang, S. R., & Chou, F. H. C. (2016). Work-related frustration among senior nurses at a medical centre. *Molecular Ecology*, *25*(13–14), 2040–2051. https://doi.org/10.1111/jocn.13241
Warshawsky, N. E., Havens, D. S., & Knafl, G. (2012). The influence of interpersonal relationships on nurse managers' work engagement and proactive work behavior. *Journal of Nursing Administration*, *42*(9), 418–425. https://doi.org/10.1097/NNA.0b013e3182668129
Wielenga-Meijer, E. G. A., Taris, T. W., Kompier, M. A. J., & Wigboldus, D. H. J. (2010). From task characteristics to learning: A systematic review. *Scandinavian Journal of Psychology*, *51*(5), 363–375. https://doi.org/10.1111/j.1467-9450.2009.00768.x
Wong, K., Chan, A. H. S., & Ngan, S. C. (2019). The effect of long working hours and overtime on occupational health: A meta-analysis of evidence from 1998 to 2018. *International Journal of Environmental Research and Public Health*, *16*(12), 2102. https://doi.org/10.3390/ijerph16122102
Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, *9*(2 PART 2), 1–27. https://doi.org/10.1037/h0025848
Zhang, J. A., Chen, G., O'Kane, C., Xiang, S., & Wang, J. (2022). How employee exploration and exploitation affect task performance: The influence of organizational competitive orientation. *International Journal of Human Resource Management*, *33*(5), 930–964. https://doi.org/10.1080/09585192.2020.1745866
Zhang, W., Jex, S. M., Peng, Y., & Wang, D. (2017). Exploring the effects of job autonomy on engagement and creativity: The moderating role of performance pressure and learning goal orientation. *Journal of Business and Psychology*, *32*(3), 235–251. https://doi.org/10.1007/s10869-016-9453-x
Zhang, Y., Liu, X., & Chen, W. (2020). Fight and flight: A contingency model of third parties' approach-avoidance reactions to Peer abusive supervision. *Journal of Business and Psychology*, *35*(6), 767–782. https://doi.org/10.1007/s10869-019-09650-x

Zhou, E. (2020). The “Too-Much-of-a-Good-Thing” effect of job autonomy and its explanation mechanism. *Psychology*, *11*(02), 299–313. https://doi.org/10.4236/psych.2020.112019

Table 1

Means, Standard Deviations, and Correlations of Study Variables

Variable	*M*	*SD*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Age	44.87	11.38	-													
2. Working hours	37.97	7.55	.01	-												
3. Sector[a]	0.18	0.39	−.00	.03	-											
4. Percentage of IT use	86.46	13.8	−.07	−.05	.04	-										
5. Type of technology[b]	0.67	0.47	−.01	.10**	.09*	.11**	-									
6. Information channel[c]	0.34	0.47	−.10**	−.03	.02	.04	.09*	-								
7. Introduction time[d]	0.14	0.34	−.03	−.003	−.03	.04	−.16**	.02	-							
8. Job complexity	4.18	0.68	.03	.14**	−.05	.06	.02	−.01	.04	(.85)						
9. Job autonomy	3.62	0.93	.08	.09*	−.09*	−.14**	.03	−.10**	−.13**	.22**	(.88)					
10. Contact quality	4.06	0.79	.02	.02	−.01	.01	.02	−.02	−.05	.11**	.27**	(.87)				
11. Active exploration	2.74	1.14	−.17**	.09*	−.07	−.13**	−.17**	−.06	.05	.15**	.15**	.08	(.92)			
12. Cognitive overload	2.22	1.11	−.11*	−.04	.03	−.05	−.05	−.01	.07	.10*	−.16**	−.23**	.11*	(.89)		
13. Change support	2.90	1.18	−.03	.17**	−.03	−.12**	−.13**	−.11*	−.04	.16**	.21**	.12**	.55**	.04	(.94)	
14. Frustration	2.33	1.27	−.18**	.06	.04	.09*	−.01	.01	.08	.04	−.22**	−.25**	.01	.34**	.01	(.94)

Note. $N = 643$ at Time 1, $N = 559$ at Time 2, $N = 470$ at Time 3. Reliabilities (Cronbach's alpha) are shown in parentheses on the diagonal. [a] Sector is coded with 1 = public sector and 0 = private sector. [b] Type of technology is coded with 1 = communication technology and 0 = other technology. [c] Information channel is coded with 1 = supervisor and 0 = other channel. [d] Introduction time is coded with 1 = 0 to 6 months ago and 0 = more than 6 months ago.

*$p < .05$, **$p < .01$.

Table 2

Results of Structural Equation Modeling (Direct Effects)

	Active exploration			Cognitive overload		
	Coeff	SE	*p*-value	Coeff	SE	*p*-value
Job complexity	**.21***	.09	.023	**.28****	.10	.004
Job autonomy	**.19****	.07	.005	**−.18***	.07	.013
Contact quality	.07	.11	.253	**−.32****	.07	<.001
Job complexity × contact quality	.06	.11	.587	−.17	.13	.178
Job autonomy × contact quality	**.22****	.08	.006	.09	.09	.280
R^2 (standardized)	**.07****	.03	.004	**.10****	.03	.001
	Change support			Frustration		
	Coeff	SE	*p*-value	Coeff	SE	*p*-value
Job complexity	.09	.09	.281	.15	.11	.157
Job autonomy	.12	.07	.097	**−.23****	.09	.009
Contact quality	.07	.08	.333	**−.26****	.10	.007
Active exploration	**.56****	.05	<.001	.01	.07	.860
Cognitive overload	−.01	.04	.894	**.33****	.06	<.001
R^2 (standardized)	**.34****	.04	<.001	**.18****	.04	<.001

Note. $N = 643$. Coeff = unstandardized coefficient, *SE* = standard error of unstandardized coefficient.
*$p < .05$, **$p < .01$. Significant coefficients are highlighted in bold.

Table 3

Indirect Effects of Job Complexity and Job Autonomy on Change Support and Frustration

	Coeff	CI LL	CI UL
Job complexity → active exploration → change support	**.118**	.015	.224
Job autonomy → active exploration → change support	**.106**	.031	.188
Job complexity → cognitive overload → frustration	**.092**	.029	.172
Job autonomy → cognitive overload → frustration	**−.059**	−.115	−.012

Note. $N = 643$. Coeff = unstandardized coefficient, CI LL = lower level of bias-corrected 95% confidence interval, CI UL = upper level of bias-corrected 95% confidence interval. Significant coefficients are highlighted in bold.

Figure 1

Conceptual Model on Work Design and Change

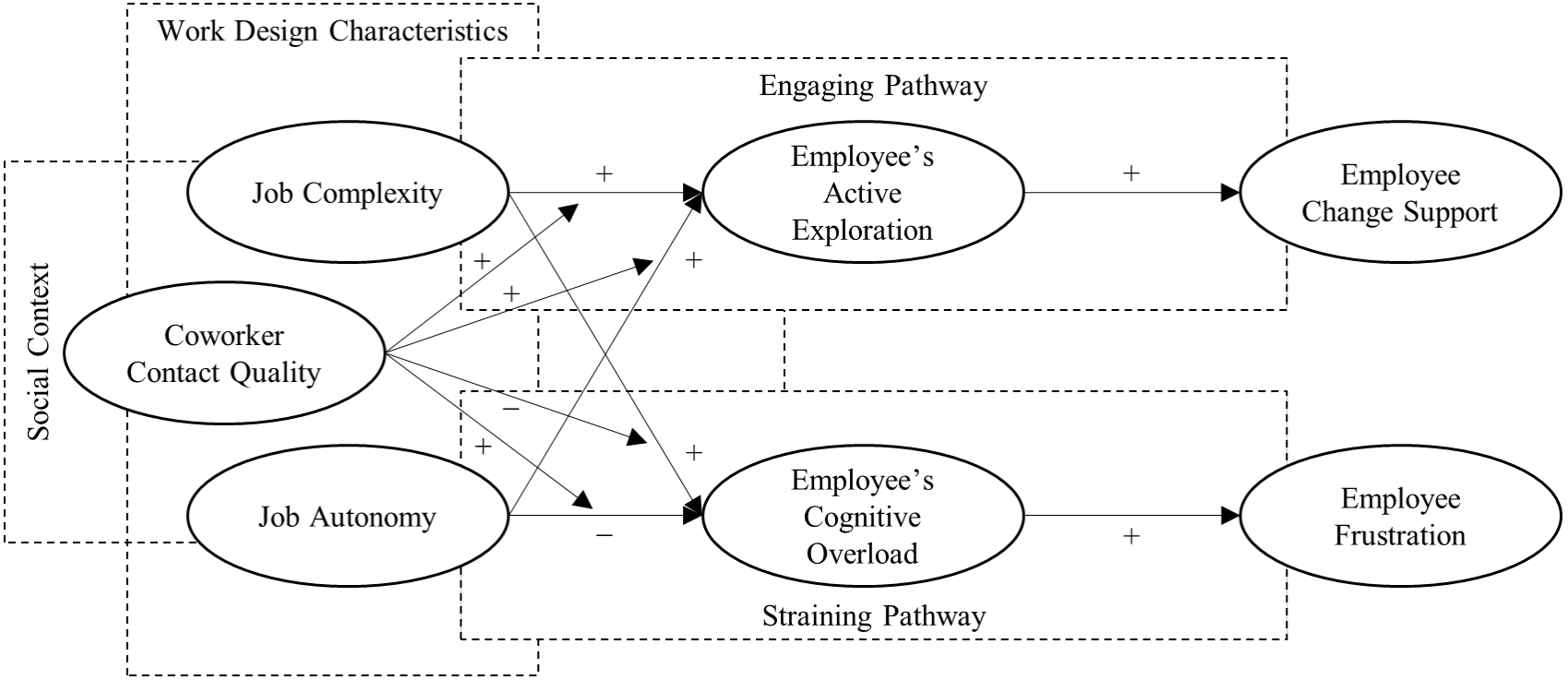

Figure 2

Contact Quality Strengthens the Relation between Job Autonomy and Active Exploration