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WHEN BURNOUT TIPS THE SCALES AGAINST YOU: AN EXPERIMENTAL INVESTIGATION OF EMPLOYEES' BURNOUT HISTORY IN LAYOFF DECISIONS

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By

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Abstract

Studies have shown that workers with a history of burnout are penalised in the labour market through lower hiring and promotion probabilities. The current study contributes to this body of literature by analysing how the formerly burned-out fare in the setting of a layoff. To do so, a vignette experiment is conducted among 197 managers who rated employees varying, amongst others characteristics, in their employment history at the organisation. Hence, I find that employees who have experienced burnout are more likely to be selected for a layoff than workers without an interruption in their working record, regardless of their current performance level and current health. In addition, the effect of burnout on the likeliness to be selected for layoff is more pronounced among older managers and varies by the respondents' socially desirable response tendencies.

Keywords: Burnout; Layoff; Vignette experiment; Social desirability

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1. Introduction

In the seminal work of Schaufeli and colleagues (2020), burnout is defined as a work-related state of exhaustion that occurs among employees, which is characterised by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. Burnout furthermore jeopardises workers' health through a secondary symptomatic burden of depressed mood, as well as various nonspecific psychosomatic complaints (Schaufeli et al., 2020).

In addition to its negative effects on individual health outcomes, burnout also comes with an enormous societal burden. Indeed, for North American physicians alone, Han and colleagues (2019) estimated that burnout costs due to turnover and reduced working time would amount to $4.6 billion per year. Moreover, Dutch calculations regarding the general working population reveal that the annual cost of absenteeism caused by burnout (and stress complaints) amounts to $3.21 billion (Houtman et al., 2019). Although sick-leave spells are a tangible and well-researched consequence of burnout—and source of expenses, for that matter—relatively less is known about the broader and long-term costs of burnout.

Indeed, academics have only recently begun investigating return to work processes—see the work of Kärkkäinen and colleagues (2017) for a review—and the consequent labour market outcomes of workers with a history of burnout (Beno et al., 2021; Sterkens et al. 2021a, 2021b, 2022a, mimeo). As such, prior research from Sterkens and colleagues has provided initial evidence that a history of burnout puts future careers in jeopardy by limiting workers' opportunities to find quality employment. More specifically, they have shown that, relative to other explanations for interruptions in working history (for instance, physical illness), employers systematically assign lower hiring probabilities to candidates explaining gaps as due to burnout (Sterkens et al., 2021a). In a similar vein, Sterkens and colleagues (2021b) evidenced that, regardless of a successful return to work and high-performance cues, workers burdened with a history of burnout are less likely to receive a promotion than others.

As I will argue next, burnout might not only limit opportunities to attain successful employment through (external) hiring or (internal) promotion. Additionally, burnout could present employees with challenges to maintaining employment. More concretely, in the context of a layoff, there are three potential theoretical explanations (Mitra et al., 2016) for why workers with a history of burnout would have higher displacement probabilities than other employees without interruptions in their working record at an organisation.

First, according to a job mismatch perspective (Antel, 1985), workers are hired under imperfect productivity knowledge for the match between the job and an employee. When, over

time, the employer learns that the employee's productivity does not meet the expected levels they bargained for, a permanent layoff could follow. Applied to workers' former burnout, the (potential) impact of burnout on their (future) productivity, and, hence, the job match, could incentivise a gains-maximising employer to dismiss the employee. In line with this reasoning, a meta-analysis from Taris (2006) concluded that burnout is negatively related to job performance, and, considering the remaining symptoms reintegrated workers experience (Rooman et al., 2021), residual or returning symptoms could hamper the performance of workers who experienced an episode of severe burnout. A second potential explanation for distinct displacement probabilities might be that workers who suffered from burnout are systematically different from their colleagues in terms of characteristics that (in)directly lead to higher displacement probabilities. One example of such a characteristic could be neuroticism. More concretely, there is meta-analytical evidence for a link between burnout and the neuroticism trait (Alarcon et al., 2009), as well as between neuroticism and job performance and satisfaction (Judge & Bono, 2001)—the latter two being predictors of layoffs (Chhinzer, 2007).

The third potential explanation, and the focus of the current study design, entails that employers could discriminate against the formerly burned-out when they evaluate personnel for a layoff. Interpreted strictly, when relying on workers' past health status, employers wield an illegal criterion for personnel decisions (EEOC, 2016). Economists have proposed two seminal theories of discrimination. In line with the theory of taste-based discrimination (Becker, 1957), employers harbouring negative attitudes towards burnout could (irrationally) be more inclined to displace burned-out employees because they perceive disutility in their collaborations with such employees, even when those employees outperform their colleagues without a history of burnout. Alternatively, following the theory of statistical discrimination (Arrow, 1973), employers utilise knowledge of a worker's burnout as a signal for their (future) productivity wherein they apply their (stigmatising) general beliefs concerning burned-out workers—regardless of their truthfulness—to evaluate the individual's productivity potential. In line with the signalling and statistical discrimination framework, earlier studies report evidence for substantial workplace stigma surrounding burnout (May et al., 2020), especially concerning employees' health and capacity to handle stressors (Mendel et al., 2015; Sterkens et al., 2021a, 2021b). On the one hand, a context of downsizing decisions is particularly vulnerable to discriminatory practices because there are seldom strict criteria or policies regarding layoff decisions, and there is a large variety of criteria used (Chhinzer, 2007, Dwyer & Arbelo, 2012; Lin, 2009). On the other hand, however, for an explanation in terms of discrimination to hold, employers require explicit knowledge of an employee's burnout, and workers are not obliged to disclose the exact reason for their sick leave (EEOC, 2016). Nonetheless, according to

Sterkens and colleagues (mimeo), in a sample of workers who reintegrated after a burnout, 95.4% (72.2%) have disclosed the exact reason for their absence to their current (novel) employer they returned to.

Following the discrimination perspective's approach to layoff decisions, I come to the formulation of my first hypothesis.

Hypothesis 1: Interruptions in the working record explained by burnout, ceteris paribus, lead to an increase in the likeliness to be selected for a layoff.

Next**,** following the theory of statistical discrimination (Arrow 1973), the penalties inflicted upon workers with a history of burnout would be the result of managers applying their negative group-level expectations to judge the individual worker. As explained in the work of Lippens and colleagues (2022), the logical counter-response to such treatment is then to provide the managers with employee-specific information that (dis)confirms the manager's prior negative expectations on burned-out workers as a group. Considering employers' negative group expectations, prior research from Sterkens and colleagues (2021) has identified productivity-related perceptions (i.e., the ability to perform under pressure) and troublesome (future) health as the main sources of employers' concerns when employing the formerly burned-out. Consequently, when presented with information on the employee's individual performance and health, the layoff penalty inflicted upon the formerly burned-out would be adjusted accordingly. Hence, I come to the following two hypotheses regarding the moderating potential of performance level and health.

Hypothesis 2: Low-performance-level cues strengthen the relationship between former burnout and the likeliness to be selected for a layoff.

Hypothesis 3: Poor health cues strengthen the relationship between former burnout and the likeliness to be selected for a layoff.

To test these hypotheses, a factorial survey experiment is conducted among North American managers wherein participants share the likeliness that they would select fictitious employees for a layoff. The staff profiles, among others, vary in their burnout history and performance evaluations. In doing so, this study contributes to the literature. First, while this study already offers a contribution by complementing a small body of vignette experiments capturing decision-making in layoffs (Chhinzer, 2007; Dwyer & Arbelo, 2012; Lin, 2009), it is, to my knowledge, also the first to empirically investigate the influence of (former) burnout on workers' displacement, and, hence, it also contributes to our understanding of burned-out workers' labour market position. Second, and in contrast to most observational or traditional survey approaches of labour market behaviours (Auspurg & Hinz, 2014), the experiment's multidimensionality enables a detailed analysis of employers' decision-making in conjunction

with various employee characteristics (e.g., performance) and manager-side variables (e.g., age).

2. Experimental method

In the context of this experiment, participants evaluated 26 fictitious employees, as depicted in systematically constructed vignettes, on the likeliness that they would be laid off during an organisation-wide downsizing. The main argument to employ experimental vignettes over observational data, that are exceptionally hard to come by in the case of organisational downsizing and burnout, is that vignettes achieve very high levels of internal validity (Aguinis & Bradley, 2014) and, consequently, are excellent tools to establish the causal effects of the information employers possess (e.g., a worker's history of burnout) on decision-making (Auspurg & Hinz, 2014; Van Belle et al., 2018).

Realistically, however, the practical significance of experimental vignettes' findings is strongly influenced by researchers' success at addressing the methodology's main challenges concerning external validity (Auginis & Bradley, 2014) and potentially distorted responses due to social desirability bias (Neumark, 2018). The efforts invested to maximise the quality of this study include, but are not limited to, rigorous pretesting among academic and field experts in HR management, extensive data quality and robustness checks and content-specific social desirability analyses.

2.1 Employee vignettes

In the experiment, the employee vignettes evaluated by managers varied on a total of seven dimensions which were carefully selected to mimic actual downsizing. '*Interruptions in working record at the organisation*' was the first and most crucial dimension of the design. In addition to 'stress leave due to burnout'[2], the main level of interest, the dimension entailed four additional levels: 'no interruption', 'parental leave', 'recovery from physical illness' and 'recovery from an injury (accident outside the workplace)'. It was both logical and realistic that the majority of the employees (i.e., about 50% of the vignettes presented) did not experience

[2] This manipulation of burnout history ensures that managers apply their own (lay-person) definition of job burnout. This creates the advantage that as a researcher, I do not impose any theoretical experts' definitions on them—as this would also be unrealistic in real-life decisions from practitioners.

substantial interruptions in their working history in the past 2 years. The remaining three control conditions were realistic explanations for gaps in working history and served to discourage socially desirable responses by hiding the true purpose of the experiment, that is, investigating the effect of burnout (Auspurg & Hinz, 2014). Moreover, measuring the impact of other explanations for interruptions in working history is helpful to develop an understanding of burnout's relative effect size because prior research has shown that workers taking parental leave (O'Connor & Kmec, 2020) and the physically disabled (Ameri et al., 2018) also face difficulties in the labour market.

The second dimension depicted in the vignettes was '*gender'*. As illustrated by earlier layoff vignettes, employee gender is a logical dimension to incorporate in experiments on displacement decisions (Chhinzer, 2007; Dwyer & Arbelo, 2012). Additionally, it adds a small layer of complexity to the experiment to discourage socially desirable responses because the respondent is forced to make trade-offs between different characteristics. Lastly, it enables the identification of gender-specific effects, as theorised in earlier burnout studies (Purvanova & Muros, 2010; Sterkens et al., 2021a; 2021b).

Next, managers were presented with two dimensions describing the employees' *'organisational seniority'* and '*yearly wage'*, both of which consisted of three levels. According to Dwyer and Arbelo (2012) and Antel (1985), organisational seniority is typically considered to be crucial information when making layoff decisions. Employers would then wield 'last to hire, first to fire' approaches—suggesting a negative relationship between seniority and the likelihood to be laid off. However, Dwyer and Arbelo (2012) also remark that the direction of seniority's effect on layoff decisions is inconsistent and could be confounded by wage and, consequently, severance payment (Grund, 2006). Indeed, in the long term, an approach of cost-cutting stimulates employers to dismiss employees with higher wages and, therefore, higher seniority. In the current experiment, the levels of organisational seniority were low (2 to 5 years), average (5 to 10 years) and high (more than 10 years).[3] Adding to the ecological validity of the profile sets, the concrete values of the low and average levels were randomised according to the indicated ranges. The yearly wage dimension (in dollars) was also represented in randomised values of its level ranges: $23,018–$23,518; $27,080–$27,580 and $31,142–$31,642. These three levels were generated based on the O*NET database's average wage of retail salespersons, see Subsection 2.2, in the United States of America (i.e.,

[3] The lower boundary of the low seniority level was fixed at 2 years to match with the dimension interruption in working record at the organisation. Otherwise, it could have been possible that an employee's burnout episode took place at a prior workplace. This, in turn, would have created undesirable variation within the burnout manipulation. Furthermore, it is reasonably possible that employers did not hire novel salesworkers in the years prior to a large downsizing.

$27,080), which was modified by adding or subtracting 15%. Given the productivity risks employers perceive to be associated with employing previously burned-out workers (Sterkens et al., 2021a), employers could be especially likely to lay off workers with a history of burnout when their expected substandard or inconsistent performance is more costly to the organisation—as is reflected by the experiment's higher wage levels.

To provide managers with a more realistic and comprehensive picture of employees' behaviour within the organisation, compared to earlier work (Sterkens et al., 2021b), the vignettes depicted cues on two performance-related dimensions, namely '*task performance'* and '*contextual work behaviour'*. Both featured three levels. Crucial is that by having experimentally manipulated multiple performance indicators, my ability to disentangle the effects of the burnout label from actual or presumed productivity differences between workers varying in their history of burnout is improved.

In a 'traditional' task performance dimension (below expectations, meets expectations, exceeds expectations) employees were categorised compared to the organisation's expectations of sales workers in terms of their core tasks such as preparing merchandise for purchase. The dimension of contextual work behaviour (below average, average, above average), however, was derived from Motowidlo and Van Scotter's (1994) definition of performance behaviour that is strictly not part of a job's technical core but supports the broader organisational, social and psychological environment. Examples of such behaviours are voluntarily taking on additional work, helping colleagues and endorsing organisational objectives. Consequently, this dimension could be interpreted as a behaviourally oriented expression of performance levels through employees' (organisational) commitment (Franco & Franco, 2017). Furthermore, burnout is negatively associated with contextual performance (Demerouti et al., 2014; Taris, 2007). Low levels of contextual performance could, therefore, signal an unsuccessful recovery of the formerly burned-out, corroborate with (stigmatised) productivity expectations and, hence, increase the layoff penalties inflicted.

Next, as discussed by Dwyer and Arbelo (2012), employees' high absenteeism rates could signal interruptions in employees' productivity and, more importantly, are direct sources of expenses for organisations. Expressed in the number of days, the level ranges employed in vignettes were: 0–2, 6–8 and 12–14. These ranges were centred around the North American average absenteeism rate of 3.2% of working days, which is comparable to an annual average of approximately 7 days (BLS, 2021). Absenteeism could be a particularly relevant variable in the case of workers with a history of burnout because it reflects the employee's (restored) health status, which was a substantial concern when hiring the formerly burned-out (Sterkens et al., 2021a). Similar to the two performance-level indicators, high absenteeism rates could signal an unsuccessful recovery of workers with a history of burnout and, again, increase layoff

penalties.

These dimensions, summarised in Table 1 below, resulted in a 2 (gender) × 3 (organisational seniority) × 5 (interruption in working record) × 3 (absenteeism) × 3 (task performance) × 3 (contextual work behaviour) × 3 (wage) design of 2,430 unique employee vignettes. To ensure that each manager received a realistic and feasible number of employees to evaluate, while also retaining sufficient statistical power, managers were presented with systematically selected subsets of vignettes. More concretely, a D-efficiency algorithm (Auspurg & Hinz, 2014) successfully drew 30 decks of 25 profiles (plus one duplicate)[4] from the number of possible vignettes. Its corresponding D-efficiency score of 99.327 out of 100 indicates the fractional design approaches the statistical properties of a full factorial design, in particular for my analyses regarding burnout (Section 3).

<table 1 about here>

2.2 Data collection

The vignette decks were implemented in a survey that was administered through an online Qualtrics survey in October 2021. This questionnaire was distributed via Prolific (Peer et al., 2017). More specifically, I sent the survey to managers who indicated in Prolific's pre-screening that they were experienced in making personnel decisions. The invitation did not contain any mention of burnout to hide the purpose of the study and, hence, discourage socially desirable responses.

To realise the maximum potential of data collection via online panel services (Bills et al., 2017; Walter et al., 2019), several measures were taken to validate data quality. More concretely, to qualify for further analysis, participants had to pass three criteria, namely, (i) completing the entire survey, (ii) responding correctly to an attention check (see Subsection 2.3.1) and (iii) making reasonably reliable layoff decisions. As illustrated by Chhinzer (2007), the reliability of decision-making is estimated through manager-specific R^2 values for layoff decisions. When a decision maker attaches (dis)similar weight to a characteristic across vignettes, then the value of R^2 increases (or decreases). On average, respondents achieved a 0.845 R^2 value (SD = 0.105), which is indicative of highly reliable judgments (Chhinzer, 2007). Five participants, however, were excluded after an inspection round of the data provided by respondents with extreme reliability estimates (i.e., values outside the 95%

[4] Due to a manual error in survey construction, I was unable to calculate proper retest reliability checks for multiple duplicate vignettes (Zhu et al., 2021).

interval). Having applied these three selection criteria, a total of 197 American managers (and 5,122 employee judgements) were retained. In accordance with Prolific's guidelines, the participants were compensated at a rate of £12.05 per hour, and, on average, it took participants 14.747 minutes to complete the experiment.

2.3 Survey procedure

In this section, the survey setup is described in more detail. Its different components, namely the pre-experimental questionnaire, experimental task and post-experimental questionnaire, are discussed following their chronological order.

2.3.1 Pre-experimental questionnaire

After reading through a general introduction and giving their explicit consent for data processing, the managers completed a first question battery gauging participant-side variables for descriptive purposes and further analyses.

First, as indicated in the introduction of this section, socially desirable responding is a substantial threat to the validity of (experimental) vignette surveys (Neumark, 2018). In acknowledgment of this limitation, participants completed the social desirability scale from Steenkamp and colleagues (2010), the results of which were employed to conduct multiple social desirability checks (Section 3). In contrast to alternative social desirability measures from, for instance, Reynolds (1982), this measure allows for a more thorough analysis of socially desirable responding in a survey. More concretely, the subscales from Steenkamp and colleagues (2010) distinguish between managers' egoistic ('presenting oneself as more independent, dominant and powerful in a social context') and moralistic ('presenting oneself through more communal, responsible and approved behaviour in a social context') response tendencies, whereas the work of Reynolds (1982) exclusively focus on the latter. Interestingly, however, prior experiments on personnel decisions (Neumark, 2018) seem to have focused on employers' tendencies to present themselves as more 'moral' by masking deliberate discrimination, herein disregarding the possibility that employers could present themselves as more autonomous, powerful and decisive in the face of researchers' (perceived) judgment. Exploring the possibility of different social desirability behaviours showing in personnel experiments, both subscales from Steenkamp and colleagues (2010) were administered using 5-point Likert scales (1 'strongly disagree' and 5 'strongly agree') and averaged into scores between 1 and 5. Example items are 'Once I've made up my mind, other people can seldom change my opinion' (egoistic response tendencies (ERT), $\alpha = 0.632$, 10 items) and 'I never cover up my mistakes' (moralistic response tendencies (MRT), $\alpha = 0.750$, 10 items).

Second, and in line with earlier research on downsizing decisions (Dwyer & Arbelo, 2012), the managers' experiences with layoffs were surveyed. More specifically, they reported on private layoff experiences in the past 12 months (the participant was laid off, someone close to her/him underwent a layoff, no one close to the respondent was laid-off) and their tenure in making layoff decisions (less than a year, 1 to 5 years, more than 5 years, no experience).

Third, data were collected on the demographic composition of the sample, namely gender (male, female), age (in years) and level of education (primary education, secondary education, tertiary education short-form, tertiary education long-form).

2.3.2 Experimental task

In the next phase of the survey, the managers were informed on the experimental context in which they were to make layoff decisions. More specifically, they read about their fictitious role as a manager in the retailer 'JP Inc.':

> *You are a manager in the organisation 'JP Inc.' (a large retailer). To protect the financial health of the organisation, the board of directors has decided on downsizing across all departments. Therefore, they have entrusted you and the other managers with the responsibility to select employees 'JP Inc.' is to let go in the near future.*
>
> *Each of the employees that is being laid off will receive severance payment calculated based on their seniority and wage. In total, the board estimated that over 100 employees are to be laid off. Hence, multiple managers are making downsizing decisions. However, it is up to you to select with which of 26 middle-aged retail sales workers you would, eventually, be willing to part with. Each of the employees works full-time for 'JP Inc.'.*
>
> *To assist you in the process, the HR department has compiled the 26 employee profiles 'JP Inc.' could, theoretically, let go off and remain operational.*

The experimental context was designed based on the U.S. government's documentation of mass layoffs. For instance, the fictitious organisation was situated in the retail sector because historically the sector has shown to be particularly vulnerable to permanent mass layoffs (BLS, 2013). Moreover, to provide participants with some degree of freedom in their decision-making, instead of fixing the number of employees that were to be displaced and potentially biasing their judgment, the instructions describe how the managers'

fictitious colleagues are conducting a similar exercise. Additionally, the description of the experimental context further defined the employees that were to be evaluated. More specifically, the employee characteristics age and type of contract were fixed at 'middle-aged' and 'full-time employment' to ensure a non-conflictual interpretation with vignette characteristics such as organisational seniority and wage.[5]

After reading the experimental context, the participants advanced to the subsequent screens, where they were shown three trial profiles that were accompanied by additional clarification of the vignette dimensions employed. The clarifications displayed under the trial vignettes and an example profile are presented in Appendix A. By allowing managers to become familiar with the task and materials at hand, I minimised irrelevant variance ('noise') in judgments due to unintended interpretations of vignette dimensions and laboratory-specific learning effects.[6] Similar to the actual employee vignettes that had to be evaluated, managers indicated how likely they were to select each employee for a layoff. To do so, they employed a Likert scale ranging from 1 (very unlikely) to 7 (very likely).

The managers subsequently arrived at the actual experimental task of selecting employees they would lay off in a pool of 26 workers. In this crucial stage of survey participation, the participants were randomly assigned to one of the 30 decks described in Subsection 2.1. To balance the survey's ease of use and provide managers with an overview of the employee pool, the vignettes in each deck were split across two screens. Participants were allowed to switch back and forth between screens.

2.3.3 Post-experimental questionnaire

In the third part of the survey, the managers completed a final question battery. More specifically, the burnout stigma inventory (May et al., 2020) was administrated in combination with an item gauging the managers' experiences with burnout. The burnout stigma inventory comprises eight statements for which participants indicated the degree to which they thought most people would agree with them. The items were rated on a Likert scale from 1 (strongly disagree) to 7 (strongly agree) and were averaged to a single score from 1 to 7 ($\alpha = 0.903$). An example statement is: 'People who are burnt out have some character flaw.'. Finally,

[5] Otherwise, conflicts could have arisen between employee characteristics that threatened the ecological validity of the experiment. For example, varying types of contracts and yearly wages could have led to unrealistic combinations where salesworkers working half-time earned more than their full-time-employed colleagues.

[6] It is possible that the opportunity to evaluate trial profiles contributed to the high reliability of judgments (Subsection 2.2).

managers' contact was measured with a single item: 'Do you know individuals who suffer(ed) from severe professional burnout? You can indicate multiple response options.'. Its response categories distinguished between having suffered from burnout oneself, having had contact with burnout in their private or professional lives, and having had no contact with burnout. Responses indicating contact with burnout in multiple contexts were recoded to the single category closest to the respondent. For instance, contact in both the professional and private life was recoded to private life. Under the uncertainty created by a hiring context, the burnout stigma managers expressed already were associated with the hiring penalties for job candidates with a history of burnout, while having had personal experience with burnout actually improved the hirability ratings for candidates with prior burnout (Sterkens et al., 2021a). Although there is relatively less uncertainty regarding workers' past workplace behaviour in a layoff setting, as indicated by the experiment's set of dimensions (Subsection 2.1), stigmatised attitudes and personal experiences might still influence layoff decisions.

By having presented this question battery after the core experimental section of the survey (Subsection 2.3.1), these measures did not benefit from the pre-experimental questionnaire's advantage of cancelling out the risk of post-treatment bias (Montgomery et al., 2018). However, and perhaps more importantly, by administering the burnout-specific measures post-treatment, the true purpose of the study remained hidden from participants until the very end of the survey, thus minimising the risk of socially desirable responses.

Before its launch on Prolific, the survey procedure outlined under this subsection was pretested among six academic and professional experts in the domains of HR and the labour market. After filling out the Qualtrics survey they answered a pretest-specific question battery in which they responded to questions about the vignettes (e.g., the information they provided and the ideal number of evaluations), the experimental instructions (e.g., their clarity and the value added by trial vignettes) and some general questions on the study design (e.g., whether they guessed the true purpose before completing the experimental task). The experts concluded that the survey was designed correctly, and based on their input, the descriptions of vignette dimensions were further optimised (Appendix A)

2.4 Preliminary analyses

In preliminary analyses, the success of the D-efficient design was checked (Subsection 2.1) and sample descriptive statistics were calculated. First, chi-squared (for discrete variables) and t-tests (for continuous variables) demonstrated that employee burnout was manipulated independently from other employee characteristics (Subsection 2.1). In addition, the insignificant associations between employee burnout and the surveyed manager characteristics indicated that the randomisation of decks was successful across participants.

Next, in terms of demographics, the panel services (see Subsection 2.2) returned a relatively balanced sample of analysed responses (N = 197). More specifically, 50.3% of the sample consisted of female, American managers. The sample had an average age of 36.381 years and varied in its level of education (non-tertiary: 20.3%, tertiary short: 60.4% and tertiary long: 19.3%). Moreover, about half of the participants reported that neither anyone close to them nor they themselves underwent a layoff in the past 12 months, while 68.0% indicated they had professional experience with making layoff decisions. Furthermore, numerous participants reported having had (at least, see Subsection 2.3.3) personal experience with burnout (68.0%). Most likely, the substantial share of managers expressing that they suffered from burnout can be explained by regional variation in the term's interpretation. Indeed, Schaufeli (2018) explains that, in contrast to the European tradition, burnout is not given a strict clinical interpretation in the United States of America, and therefore, symptoms could be more commonly reported. Interestingly, the statistic that only 11.7% of the sample declared that they never encountered burnout in their professional and private lives corroborates the findings from Sterkens and colleagues' (mimeo) survey, where a large majority of formerly burned-out workers disclosed their (history of) burnout to their employers.

<table 2 about here>

3. Results

To answer the research questions and test all three hypotheses, multiple linear regressions were conducted using Stata MP15. Because of the data's multilevel structure where employee evaluations (vignette observations) are nested within managers (participants), the error terms were consistently corrected in regressions. Moreover, although the D-efficiency algorithm optimised (Subsection 2.1) level balance across decks, regression estimates were nonetheless corrected for deck-specific effects.

3.1 Formerly burned-out employees' likeliness to be laid off

To test the first hypothesis, that interruptions in working record explained by burnout lead to an increase in how likely workers are to be selected for a layoff, the layoff evaluations are regressed on the (i) employee and (ii) manager characteristics featured in the survey (Section 2). Hence, as presented in Column 1 of Table 3, I find causal evidence that employees with a history of burnout are assigned higher scores on the layoff measure than workers without

interruptions in their working histories (β = 0.323, p < 0.001). This effect corresponds with an increase in the layoff item score of 0.166 standard deviations. Moreover, the burnout coefficient is comparable in size to the effects of employees having low organisational seniority (β = 0.310, p < 0.001) and having an average absenteeism record (β = 0.388, p < 0.001).

<table 3 about here>

Remarkably, burnout is the only explanation for an interruption in working record that is actually penalised by managers (physical illness: β = 0.035, p = 0.606; accident: β = 0.024, p = 0.691). Conversely, relative to employees without an interruption in working record, managers even express a subtle preference to retain employees who take parental leave (β = −0.162, p < 0.001). The particular discrepancy between burnout and parental leave could be explained by parental leave's explicit signalling function for the employee's family composition and their responsibilities to support its members (Chhinzer, 2007).

As explained in Section 2, robustness checks are conducted on subsamples of the data. The results of these checks are presented in Table 4 under 'MODEL (1)'. More concretely, I find that the main effect of burnout on layoff decisions remains significant at the 1% level when participants (i) without actual experience at making layoff decisions, as well as participants with (ii) high egoistic or (iii) moralistic response tendencies and (iv) duplicate vignettes, are excluded from the analyses.

<table 4 about here>

3.2 Moderators of formerly burned-out employees' layoff penalty

To test the second and third hypotheses and explore additional moderators of the layoff penalty employees with a history of burnout receive, different interaction terms with employee and manager characteristics are examined. Its results are presented in Columns (2) to (4) of Table 3.

Neither the models expanded with employee-side (Model 2, Table 3) nor with manager-side (Model 4, Table 3) interaction terms yield significant moderation effects between an employee's history of burnout and other employee characteristics. Indeed, contrary to Hypothesis 2, the effect of burnout on the likeliness to be selected for layoff is not moderated by the performance-level cues of task performance (below expectations; β = −0.107, p = 0.551) and contextual work behaviour (below average; β = 0.086, p = 0.641).[7] Similarly, contradicting

[7] Conducting the analyses with alternative specifications of interaction terms (e.g., burnout × task performance exceeds expectations) yields similar results.

Hypothesis 3, the effect of burnout is not moderated by employees' recent absenteeism (high absenteeism; $\beta = 0.047$, $p = 0.791$), the experiment's health cue.

A first interpretation of the insignificant two-way interactions between burnout and the other employee characteristics could be that managers indeed weighted an employee's history of burnout independently from the other characteristics. Alternatively, however, complex models could be more suitable to capture managers' decision-making. For instance, it could be that combinations of different low-performance-level cues (i.e., a higher-order interaction) affect the layoff penalty inflicted upon the formerly burned-out. To explore this alternative explanation for my findings, Models 2 and 4 from Table 4 also tested two three-way interaction terms between burnout and other employee characteristics. Hence, I find that a three-way interaction between the performance-level cues (i.e., task performance and contextual work behaviour) and burnout was not statistically significant ($\beta = -0.049$, $p = 0.889$). Similarly, a three-way interaction where burned-out employees come with the highest risk of direct organisational costs (i.e., above-average absenteeism and above-average wage) was not significant either ($\beta = 0.197$, $p = 0.494$).

Next, the models with manager-side (Model 3, Table 3) and employee-side (Model 4, Table 3) interaction terms reveal that the effect of burnout on the likeliness to be laid off varies by the manager characteristics of age and impression management tendency. Indeed, while older managers were more likely to select formerly burned-out workers for a layoff ($\beta = 0.014$, $p = 0.032$), managers expressing more egoistic response tendencies were less likely to select workers with a history of burnout for a layoff ($\beta = -0.340$ $p = 0.033$). The significant negative sign of the latter moderation is surprising given that academics typically expect participants to present themselves as more moral and lenient in fictitious personnel decisions (Neumark, 2018, Section 2). Indeed, the exact opposite finding would be a negative relationship between moralistic tendencies and laying off workers with a history of burnout, but this relationship was insignificant. However, here I find that respondents who present themselves as more autonomous, powerful and decisive in an experimental context (i.e., another response tendency) are less likely to fire workers with a history of burnout. An explanation for this finding could be that, by presenting themselves in such a way, managers with egoistic response tendencies underestimate or disregard the organisational pressures they would face in the real world to select formerly burned-out workers for layoffs. Alternatively, the participants displaying such tendencies could have wanted to convey an image of professionality.

To conclude the analyses, I once more conducted robustness checks (Subsection 3.1). The results are presented in Table 4 under 'MODEL (4)'. Examining the two-way interaction terms, I find that the first interaction between burnout and managers' age remains robust across all subsamples, albeit at the 10% significance level. The second interaction between

burnout and managers' egoistic response tendencies, however, is no longer significant when all inexperienced managers are removed from the analyses and is marginally significant (p = 0.051) when duplicate vignettes are excluded.[8]

4. Conclusion

To investigate the effect of a history of burnout on employees' labour market outcomes, and their layoff probabilities more specifically, a factorial survey experiment is conducted. Managers evaluated a series of fictitious sales workers on their likeliness to be selected for a layoff in an experimental scenario. The employee profiles varied in their working record at the organisation and, most importantly, history of burnout in addition to other characteristics that are known to affect employees' displacement probabilities (such as job performance). This study contributes to the literature by being, to my knowledge, the first to empirically investigate layoff penalties as a potential barrier to the sustainable re-employment of workers with a history of burnout. Moreover, I captured managers' decision policies by cueing employee burnout in conjunction with other sources of personnel data that were experimentally manipulated.

In line with Hypothesis 1, the experimental data provide evidence that the aftermath of employee burnout could still damage careers after a successful return to work. Indeed, the layoff penalty inflicted upon the formerly burned-out, compared to employees without interruption in their working histories, indicates that, notwithstanding legal objections and the presence of legitimate productivity-related cues, employers still perceive an employee's history of burnout as a viable criterion to nominate workers for dismissal. Conversely, prolonged absence due to physical injury or illness and parental leave were not penalised by managers. The modest effect of burnout on layoff evaluations is comparable to that of experimental manipulations of employee absenteeism and seniority levels. Furthermore, the analyses show that the size of the layoff penalty inflicted on the formerly burned-out is larger (smaller) when the evaluating manager is older (displays egoistic response tendencies when completing the survey). However, contrary to the hypotheses, employees' performance-level and health cues did not moderate the layoff evaluations of workers with a history of burnout.

Because identification of the exact theoretical drivers of former burnout patients' layoff

[8] Evidently, when conducting a robustness check on the subsample of managers scoring low to average on egoistic response tendencies, the interaction between employee burnout and managers' egoistic response tendencies is no longer significant because of the range restriction.

penalties is beyond the scope and capacities of the current design, it is advisable to exercise caution in formulating definitive theoretical claims based on the study's findings. Nonetheless, re-examining the three theoretical explanations for burnout patients' layoff probabilities introduced in Section 1 (i.e., job mismatch, characteristics associated with layoff decisions and discrimination), this study's findings could support an interpretation of the burnout penalty in terms of discrimination for the following two reasons. First, workers' actual productivity levels were manipulated independently from burnout through dimensions of both employees' current task performance and contextual work behaviour. As a result of these independent manipulations, systematic differences in workers' current productivity, as predicted by job mismatch theories (Antel, 1985), cannot explain the penalty found in the experimental set-up. Second, the experimental control over the employee characteristics beyond the dimensions that were presented implies that the profiles of the previously burned-out could not systematically differ in terms of characteristics that are associated with layoff probabilities (e.g., employment in a sector where layoffs are more common). Therefore, in the current experiment, the possibility remains that managers inferred levels of future productivity or such additional characteristics (e.g., lower emotional stability) from the employee's history of burnout. Such inferences, however, would facilitate an interpretation of the penalty in terms of unequal treatment based on employees' prior health (Arrow, 1973). Having found evidence in the direction of discrimination as an explanation for burned-out workers' layoff penalties, future research could explore complementary mechanisms underlying layoff penalties, such as changes in job mismatch after a clinical burnout.

Next, there are several practical implications of this study's findings. First, this study's findings provide yet another argument for individual workers and policymakers to invest in primary burnout prevention through person-directed (e.g., social support) and organisation-directed (e.g., work process restructuring) interventions (see Awa et al., 2010, for a review). With regard to this, further sensibilisation could already play an important role. Indeed, it appears that despite a successful return to work, the current employment of the formerly burned-out is still endangered by their past condition. Moreover, it should be noted that being laid off as a worker with a history of burnout specifically opens the doors to unequal treatment during future hiring processes when displaced workers seek re-employment (Sterkens et al. 2021a), hence initiating a vicious circle. Second, being penalised in the labour market could discourage workers with a history of burnout from disclosing their prior condition to other employers, hence compromising transparency and facilitating stress associated with concealment (Brohan et al., 2012).

To conclude this study, I discuss two of its limitations. First, a caveat to the interpretation of this study's findings is that the vignette experiment provides clear evidence of

managers' intentions to lay off workers. Intentions are a core proxy of behaviour but are not actual behaviours (Ajzen,1991). Since the external validity of vignettes is largely dependent on a careful and realistic design where participants are provided with data on employee characteristics they would utilise in a real-world setting (Treischl & Wolbring, 2021), the design was constructed based on seminal methodological works (Aguinis & Bradley, 2014; Auspurg & Hinz, 2014), and its content—that is, the employee characteristics and experimental context—was developed based on the existing layoff literature. Moreover, the design passed the inspection of both academic and professional experts. Furthermore, it is particularly challenging to estimate the degree of external validity of the study's context and findings. Indeed, there are few opportunities to study actual layoff decisions and burnout because it is exceptionally hard to come by natural observational data of employee burnout combined with layoffs. However, notwithstanding the limited availability of such combined datasets, there already is sound empirical evidence that employers often possess knowledge of employees' health (Dewa et al., 2021) and that prior (mental) health conditions are commonly used as criteria in personnel decisions (Baert et al., 2016).

Second, laboratory experiments on personnel decisions are generally sensitive to social desirability biases, which can lead employers to not act in accordance with their private beliefs and views. As argued by Neumark (2018), social desirability biases in labour market experiments typically lead to an underestimation of the real-world penalties inflicted by employers because the knowledge of being observed by researchers encourages participants to provide groups with equal opportunities. To minimise the risk of social desirability biases occurring, several measures were taken to discourage socially desirable responding (e.g., anonymised responding, only disclosing the true purpose of the study after crucial variables were measured and varying multiple employee characteristics to force trade-offs in layoff decisions). Furthermore, to correct the burnout penalty estimates for the impact of potential social desirability biases, I administered Steenkamp and colleagues' (2010) social desirability scale and conducted checks on two different response tendencies. Notably, given the associations of managers' egoistic response tendencies as the second style of socially desirable responding besides the well-researched moralistic responding, I encourage future researchers conducting lab experiments on personnel decisions to consider the impacts of different response tendencies when setting up their studies.

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Table 1. Vignette dimensions and levels

Dimensions	**Levels**
Gender	{male; female}
Organisational seniority [a]	{2 to 5 years (low); 5 to 10 years (average); More than 10 years (high)}
Interruptions in working record at 'J&P Inc.' (past 2 years)	{none; parental leave; recovery from physical illness; recovery from an injury (accident outside the workplace); recovery from burnout}
Absenteeism (past year)	{0–2 day(s); 6–8 days; 12–14 days}
Task performance	{below expectations; meets expectations; exceeds expectations}
Contextual work behaviour	{below average; average; above average}
Yearly wage [a]	{$23,018–$23,518; $27,080–$27,580; $31,142–$31,642}

Notes. [a] The levels displayed in vignettes are randomised between the boundary values indicated per level of this dimension.

Table 2. Sample descriptive statistics

Characteristic	**Number of participants (proportion of sample)**
Female	99 (50.3%)
Age	Mean = 36.381 (SD = 11.323)
Level of education	
Non-tertiary	40 (20.3%)
Tertiary short	119 (60.4%)
Tertiary long	38 (19.3%)
Recent layoff	
None	87 (44.2%)
Close	68 (34.5%)
Self	42 (21.3%)
Tenure at layoff decisions	
None	63 (32.0%)
Less than a year	32 (16.2%)
1 to 5 years	65 (33.0%)
More than 5 years	37 (18.8%)
Contact with burnout	
None	23 (11.7%)
Professional	16 (8.1%)
Private	24 (12.2%)
Self	134 (68.0%)
Burnout stigma	Mean = 2.874 (SD = 1.307)
Egoistic response tendencies	Mean = 3.093 (SD = 0.478)
Moralistic response tendencies	Mean = 3.006 (SD = 0.630)
N	197

Notes. This table presents an overview of participant characteristics of the analysed U.S. sample as discussed in Section 2. The burnout stigma scale ranges from 1 to 7. The egoistic and moralistic response scales range from 1 to 5.

Table 3. Regression results with likeliness to be selected for layoff

	Likeliness to be selected for layoff (1–7)			
	(1)	**(2)[a]**	**(3)**	**(4)**
A. EMPLOYEE CHARACTERISTICS				
Female	−0.085* (0.038)	−0.098* (0.041)	−0.086* (0.038)	−0.098* (0.041)
Seniority (ref. high)				
Average	0.091* (0.046)	0.106* (0.050)	0.094* (0.046)	0.111* (0.050)
Low	0.310*** (0.054)	0.310*** (0.057)	0.312*** (0.054)	0.311*** (0.057)
Employment record (ref. no interruptions)				
Parental leave	−0.162** (0.060)	−0.160** (0.060)	−0.162** (0.060)	−0.160** (0.060)
Sick leave following a physical illness	0.035 (0.067)	0.036 (0.067)	0.035 (0.067)	0.036 (0.067)
Sick leave following an accident	0.024 (0.061)	0.024 (0.061)	0.024 (0.061)	0.023 (0.061)
Burnout	0.323*** (0.071)	0.252 (0.253)	1.123 (0.586)	0.921 (0.641)
Absenteeism (ref. low)				
Average	0.388*** (0.052)	0.377*** (0.053)	0.390*** (0.053)	0.377*** (0.053)
High	0.647*** (0.066)	0.677*** (0.079)	0.649*** (0.066)	0.678*** (0.079)
Task performance (ref. exceeds expectations)				
Meets expectations	0.761*** (0.062)	0.749*** (0.064)	0.762*** (0.062)	0.749*** (0.064)
Below expectations	2.754*** (0.092)	2.872*** (0.100)	2.756*** (0.092)	2.872*** (0.100)
Contextual work behaviour (ref. above average)				
Average	0.493*** (0.053)	0.487*** (0.055)	0.492*** (0.054)	0.487*** (0.055)
Below average	1.503*** (0.072)	1.601*** (0.083)	1.507*** (0.072)	1.602*** (0.083)
Wage (ref. below average)				
Average	−0.051 (0.046)	−0.053 (0.047)	−0.051 (0.046)	−0.053 (0.047)

Above average	0.147** (0.054)	0.181** (0.060)	0.146** (0.054)	0.181** (0.060)
Burnout × female		0.121 (0.134)		0.117 (0.131)
Burnout × average seniority		−0.192 (0.151)		−0.166 (0.153)
Burnout × low seniority		−0.036 (0.171)		−0.014 (0.167)
Burnout × average absenteeism		0.082 (0.152)		0.095 (0.154)
Burnout × high absenteeism		0.046 (0.178)		0.047 (0.177)
Burnout × task performance meets expectations		0.099 (0.137)		0.108 (0.138)
Burnout × task performance below expectations		−0.127 (0.176)		−0.107 (0.179)
Burnout × average contextual work behaviour		0.046 (0.147)		0.040 (0.151)
Burnout × below average contextual work behaviour		0.056 (0.192)		0.086 (0.183)
Burnout × average wage		−0.006 (0.163)		−0.002 (0.163)
Burnout × above average wage		0.007 (0.195)		−0.020 (0.197)
Task performance below expectations × below average contextual work behaviour		−0.327*** (0.092)		−0.326*** (0.092)
High absenteeism × above average wage		−0.133 (0.103)		−0.132 (0.103)
Burnout × task performance below expectations × below average contextual work behaviour		−0.025 (0.341)		−0.049 (0.351)
Burnout × high absenteeism × above average wage		0.151 (0.293)		0.197 (0.287)
B. PARTICIPANT CHARACTERISTICS				
Female	−0.058 (0.083)	−0.058 (0.083)	−0.070 (0.085)	−0.069 (0.085)
Age	0.014*** (0.004)	0.014*** (0.004)	0.013** (0.004)	0.013** (0.004)
Level of education (ref. non-tertiary)				
Tertiary short	0.206 (0.161)	0.206 (0.161)	0.199 (0.160)	0.196 (0.162)
Tertiary long	−0.065 (0.104)	−0.065 (0.104)	−0.079 (0.103)	−0.080 (0.103)
Recent layoff (ref. none)				
Close to self	0.051 (0.087)	0.051 (0.087)	0.063 (0.086)	0.061 (0.087)
Self	0.049 (0.114)	0.049 (0.114)	0.042 (0.116)	0.041 (0.116)
Contact with burnout (ref. none)				

Professional life	−0.014 (0.185)	−0.014 (0.185)	0.003 (0.185)	0.002 (0.185)
Private life	0.069 (0.168)	0.069 (0.169)	0.107 (0.171)	0.106 (0.172)
Self	0.080 (0.133)	0.080 (0.133)	0.110 (0.133)	0.107 (0.133)
Burnout stigma	0.034 (0.035)	0.034 (0.035)	0.041 (0.035)	0.042 (0.035)
Egoistic response tendencies	0.060 (0.097)	0.060 (0.097)	0.100 (0.097)	0.094 (0.097)
Moralistic response tendencies	0.073 (0.078)	0.073 (0.078)	0.070 (0.074)	0.068 (0.075)
Burnout × female			0.117 (0.153)	0.113 (0.148)
Burnout × age			0.014* (0.007)	0.014* (0.006)
Burnout × tertiary education short			0.071 (0.233)	0.092 (0.239)
Burnout × tertiary education long			0.132 (0.188)	0.147 (0.185)
Burnout × recent layoff close to self			−0.136 (0.145)	−0.124 (0.148)
Burnout × recent layoff self			0.071 (0.213)	0.080 (0.205)
Burnout × burnout contact in professional life			−0.164 (0.263)	−0.155 (0.269)
Burnout × burnout contact in personal life			−0.350 (0.263)	−0.348 (0.258)
Burnout × burnout contact self			−0.279 (0.217)	−0.250 (0.211)
Burnout × burnout stigma			−0.067 (0.057)	−0.078 (0.056)
Burnout × egoistic response tendencies			−0.355* (0.161)	−0.340* (0.159)
Burnout × moralistic response tendencies			0.042 (0.120)	0.055 (0.122)
R^2	0.492	0.494	0.494	0.496
N	5,122			

Notes. Abbreviation used: ref. (reference category). The presented statistics are coefficient estimates with their standard errors in parentheses. *** (**) ((*)) indicates significance at the 0.1% (1%) ((5%)) significance level. The estimates displayed are controlled for deck-specific effects. [a] Modelling of three-way interactions did not affect the statistical significance of two-way interactions between burnout and other employee characteristics.

Table 4. Likeliness to be selected for layoff: robustness checks of earlier significant interactions with burnout.

	Coefficient estimates			
	Experienced at making layoff decisions	**Low to average egoistic response tendencies**	**Low to average moralistic response tendencies**	**Excluding duplicate vignettes**
MODEL (1)				
Burnout	0.333*** (0.090)	0.384*** (0.078)	0.302*** (0.075)	0.322*** (0.071)
MODEL (4)				
Burnout	0.153 (0.757)	0.716 (0.819)	0.995 (0.702)	0.875 (0.639)
Age	0.008 (0.007)	0.012* (0.005)	0.006 (0.004)	0.013** (0.004)
Egoistic response tendencies	0.025 (0.120)	0.227 (0.147)	0.095 (0.105)	0.103 (0.098)
Burnout × age	0.018 (0.009)	0.012 (0.007)	0.013 (0.007)	0.013* (0.006)
Burnout × egoistic response tendencies	−0.289 (0.184)	−0.287 (0.196)	−0.340* (0.163)	−0.309 (0.157)
N	3,484	4,186	4,472	4,925

Notes. The presented statistics are coefficient estimates and their standard errors in parentheses. Models (1) and (4) refer to model specifications employed in the regressions from Table 3. P-values are corrected for clustering of observations at the participant level. *** (**) ((*)) indicates significance at the 0.1% (1%) ((5%)) significance level. Participants were categorised as displaying 'Low to average egoistic and moralistic response tendencies' when they scored below the sample mean increased by one standard deviation.

Appendix A: Additional clarification of vignette dimensions

'**Organisational seniority**' indicates the number of years the employee has been working for 'JP Inc.'.

'**Interruptions in work record at 'JP Inc.''** refers to a (potential) period, somewhere in the past 2 years, where the employee was absent from their work at 'JP Inc.' for at least 2 weeks due to, e.g., major health problems.

'**Absenteeism**' is a more specific record of the employee's absences in the past year due to, e.g., a family emergency or minor illness.

'**Task performance**' reflects a categorisation of the employee's actual task performance (e.g., preparing merchandise for purchase) compared to the organisation's expectations of its sales workers.

'**Contextual work behaviours**' refers to the employee's performance beyond their strict work roles. Examples are: voluntarily taking on additional work, helping colleagues and endorsing organisational objectives. Employees displaying more contextual work behaviours are typically committed to their job.

'**Yearly Wage**' In the United States, the average yearly wage of a retail sales worker is $27,080.

Employee N°	6		
Gender	Female	**Task performance**	Meets expectations
Organisational seniority	5 to 10 years (Average)	**Contextual work behaviour**	Below average
Interruptions in work record at 'JP Inc' (past 2 years)	Recovery from burnout	**Yearly wage (dollar)**	27.279
Absenteeism (past year)	8 days		

	Very unlikely	Moderately unlikely	Slightly unlikely	Neither likely nor unlikely	Slightly likely	Moderately likely	Very likely
What is the likelihood that you would select this employee for a **layoff**?	○	○	○	○	○	○	○