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A third indeterminacy of labour power: Worker health investment and the indeterminacy of labour health

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Abstract

This article identifies the health of the worker as a third source of labour power indeterminacy to be added to the indeterminacy of labour effort and the indeterminacy of labour mobility. The paper clearly differentiates worker health from effort as a distinct source of labour power indeterminacy—something that cannot be guaranteed and that varies for an individual over time. It considers the relationship between worker health as a new source of indeterminacy and the two extant sources of labour power indeterminacy, focussing on the way in which health moderates the relationship between effort and output. The paper also considers the way in which worker health investment moderates the indeterminacy of labour effort and labour mobility, independently of its impact on the health of the worker. The paper documents the potential value of worker health investment to the organisation and also considers the boundary conditions for investment in worker health.

KEYWORDS
indeterminacy of labour power, labour effort, labour mobility, labour process theory, worker health

INTRODUCTION

Arguably, one of the most significant branches of industrial sociology is labour process theory, a theory implicitly linked to worker health (Cohen, 2011). The purpose of this paper is to provide a robust labour process critique of investment in worker health by organisations, thereby contributing to the sociology of health. It is understood that labour power is indeterminate because workers are able to restrict their labour power or else withdraw their labour power altogether by exiting the organisation—this is commonly known as the double indeterminacy of labour power (see Smith, 2006). The indeterminacy of labour power is then a consequence of worker choice (albeit choice that is constrained, as we discuss below) and so management mechanisms are introduced in order to 'ensure the realization of labour power' (Heiland, 2022, p. 1829). The purpose of this paper is to challenge labour process theory orthodoxy with regards to the double indeterminacy of labour power by exploring a third source of labour power indeterminacy and in so doing make three contributions to scholarship in this area. First, we establish worker health as a distinctive source of labour power indeterminacy. Political economists since Adam Smith (1776/1998) have identified the importance of the health of labour, with Smith observing that 'plentiful subsistence increases the bodily strength of the labourer' and when such conditions exist then workers are 'more active, diligent and expeditious' (Smith, 1998, p. 82). However, the distinctiveness of worker health as a source of labour indeterminacy and its relationship with the extant sources of labour indeterminacy have not hitherto been explored. Worker health is a component of labour capacity that is distinct from effort. While effort is chosen (increased or decreased) in the moment (see Behrend, 1957; Bowles & Gintis, 1990), there is a temporal lag in the impact of choices made to improve health (or decisions taken that reduce health). To be sure, one can choose to increase effort and this choice will have an immediate effect. A decision to improve one's health does not lead to an immediate increase in one's health, but requires time to take effect (e.g., for lifestyle choices such as exercise or diet to have an impact). The distinction is elaborated through a discussion of the way in which worker health moderates the impact of effort on output. Rejoining the point made by Adam Smith (above), worker health moderates the product of worker effort as a worker who is in ill health will be capable of less than when they are in good health, irrespective of the worker's desire to provide effort. The second contribution of the paper is its explanation of the impact of managerial initiatives designed to enhance worker health (referred to as worker health investment hereafter) on labour effort and labour mobility, independently of any impact on worker health. The third contribution of the paper is the discussion of the boundary conditions for worker health investment. In this regard, the paper establishes that the health of the worker is an important consideration for organisations and yet some labour-intensive organisations avoid investment in worker health.

The double indeterminacy of labour power

The indeterminacy of labour power remains a core focus of industrial sociology (Alberti et al., 2018; Edwards & Hodder, 2022; Heiland, 2022; Moore & Newsome, 2018; Smith & McBride, 2023; Theunissen et al., 2023; Veen et al., 2020; Weststar & Dubois, 2023). It is the defining characteristic of labour as a commodity (Thompson & Vincent, 2010) with

Smith (2006, 2015) identifying *effort* and *mobility* as two sources of labour power indeterminacy. It has been argued that the employee has 'mobility power' over 'where to sell their labour services' (Smith, 2006, p. 391), possessing the 'power to move between organisations' (Smith, 2006, p. 392). Labour mobility creates uncertainty for the employer as the employer cannot be assured of employee retention and so the organisation attempts to reduce the indeterminacy of labour mobility by changing 'work organization and human resource management practices with the aim of improving retention rates' (Smith, 2006, p. 391). Consequently, the organisation endeavours to maximise labour effort and minimise unwanted attrition and dysfunctional outcomes of labour mobility (ibid; see also Veen et al., 2020, p. 391).

Whilst Smith (2006) has drawn attention to labour mobility, scholarship has mainly focused on the indeterminacy of labour effort, a source of labour power indeterminacy that arises because the employment relationship is 'necessarily open-ended [and] uncertain' (Edwards, 2003, p. 4; see also Bélanger & Edwards, 2013, p. 437). The employment contract is invariably deficient because 'while the worker's time can be contracted for, the amount and quality of actual work cannot' (Bowles & Gintis, 1990, p. 177). Ultimately then, the level of worker effort is not fixed and must be continually negotiated. Labour effort indeterminacy creates uncertainty for the employer because of its implications for productivity and performance and 'the precise amount of effort to be extracted cannot be 'fixed' before the engagement of workers' (Smith, 2006, p. 390) so that there is worker choice over the intensity of effort offered. The intensity of effort is variable within 'certain limits', whereby workers will have an upper threshold to 'the amount of exertion they will put out', while employers will have 'a lower limit to the level of exertion that they will tolerate without firing a worker' (Behrend, 1957, pp. 505-6). Effort then involves a choice, albeit one that is motivated by the effectiveness of coercive mechanisms or in harnessing consent (Burawoy & Wright, 1990). As Bowles and Gintis (1990, p. 178) put it, the 'level of work intensity is chosen in a proximate sense by the worker' who in choosing 'must consider both short- and long-term costs and benefits; working less hard now, for example, means more on-the-job leisure now and a probability of no job and hence less income later'.

WORKER HEALTH

One's health is a dynamic combination of physical, mental and social components (WHO, 2014). A positive state of health can be understood as describing a situation where an individual possesses sufficient physical, mental and social resources to meet the demands of life 'commensurate with age, culture and personal responsibility' (Bircher, 2005, p. 336). In this regard, health is variable both among workers and will fluctuate for an individual worker over time. When an individual experiences a temporary or permanent erosion of physical, mental or social resources such that they are unable to meet the demands of life then they are in ill health.

The health of an individual worker will vary due to seasonal factors and ultimately deteriorate over the course of one's working life (Ng & Feldman, 2013). Encountering ill health is a fact of life and workers will be more susceptible [or resilient] at various times with the amount of time and effort at work consequently reduced [or increased] by ill health [health] so that there is temporal variability in the health of an individual worker over the course of a single year and over the course of one's working life (as health deteriorates with age). Each individual

is susceptible or resilient to illness as a result of factors including socioeconomic conditions and lifestyle choices (Bircher, 2005, p. 337).

The socioeconomic factors that impact health (see Das, 2023) connect directly with the nature and demand of one's work whereby the physical and psychological toll of work differs according to the job undertaken and its physical and psychological demands. Worker health is affected by the nature of work, which is contingent upon the specific job (e.g., the duties assigned to the worker and both how and where the worker is expected to carry out the tasks) that places a varying degree of physical and/or mental strain on the worker. The nature of work invariably impacts on the health of the worker as does the remuneration—the latter being a point that has been made many times since Adam Smith's account, 'Of the Wages of Labour' (1776/1998). For example, one's wage is contingent upon a variety of factors, such as the nature of the job and the labour market for the job, the structural and associational power of the occupational group that the worker joins (Wright, 2000, p. 166), legal and political context of the organisation, management style and so on. One's wage determines the affordability of private healthcare, gym membership and healthy food, thereby opening up (or closing down) various lifestyle options. Such inequalities in health speak to what Dale and Burrell have referred to as 'unequal geographies of unwellness' (2014, p. 166). Conversely, one's health also determines the experience of work: dictating the time an individual spends on the job, the quality of that time (e.g., relevant in instances of presenteeism (Johns, 2010; Karanika-Murray & Biron, 2020; Ruhle et al., 2020), where an employee is *at the workplace* but not necessarily *at work*) and the quantity of time (for instance ill health may require time off on sick leave and limits one's potential to work to retirement age and so on, see Grossman, 1972, p. 234; Blaxter, 2010). In short, 'each person's health determines his or her future' (Bircher, 2005, p. 335).

Therefore, while it is true that the health of an individual exists independently of the labour process, worker health is also influenced by, and influences, the labour process because of the inevitable consequences both of work on the health of the worker and of the health of the worker on their ability to work (see e.g., Marchand et al., 2005; Bloor, 2011). The health of the worker is also then a concern for management. Capital may be indifferent to worker (ill)health (see Das, 2023; Yuill, 2005), but worker health is crucial to the survival of capitalism. The prolongation of the working day, for instance, increases labour power in that it increases the time at which a worker may be productive in the interests of capital, but it also runs against the long-term interests of capital because of the adverse effect of longer hours on worker health that precipitates premature exhaustion and death. After all, a 'dead or a sickly labourer cannot produce value, and is of little use to the capitalist or to the capitalist system' so 'the value of labour-power itself is the value of the means that are necessary to ensure the survival and healthy maintenance of the labourer' (Rikowski, 2003, p. 170). Das (2023, p. 7) sums up the importance of worker health to capital in this way, 'if due to illness, there is a reduction in the number of workers available to work at a wage capital is willing to pay, this will adversely impact production and profit-making' and so 'more value... needs to be spent to reproduce a healthy working class—to replenish the used-up forces—to be made available for work' (ibid, p. 6). Stated bluntly, organisations require of workers that they are 'fit for work' (Wallace, 2022).

The impact of worker health is important for capital for two reasons that are discussed in detail in the following section and summarised briefly here. First, health moderates the potency of labour effort whereby the product of one's effort will be greater in most circumstances if one is in good health rather than in ill health. Second, worker health impacts capital through incapacity where the worker is unable to attend work at all due to ill health.

Health as distinct from effort

In order to fully develop the distinction between health and effort it is necessary to restate several important features of effort, the defining characteristic of which is that it is 'not a substance that can be measured', but rather: 'Effort is a subjective experience, like utility. An individual can say whether the effort he [sic] expends in performing a particular operation in a fixed time is equal to, greater or smaller than, the effort he expends on another operation in the same amount of time, but he cannot quantitatively define the amount of the difference' (Behrend, 1957, p. 505). Only output or 'the effect of the application of effort... can be measured' (ibid), with productivity as the 'outward expression' of, but flawed proxy for, effort (ibid, p. 507). One's effort might be assessed according to the quantity of units produced with a high output taken as indicative of a high degree of effort and low output is understood to be an indication of a low degree of effort. However, output may have more to do with improved methods of production while worker effort remains the same or decreases (ibid, p. 512). The implication is that two workers with the same output might perceive what was for each very different degrees of effort (ibid, p. 509) just as two workers with very different output might perceive the same degree of effort.

Health is distinct from effort because health has a moderating effect on the outcome of effort[1] (see e.g., Ford et al., 2011), but crucially good health does not guarantee increased effort. If one is in ill health, then greater effort is needed to perform a task that would otherwise require less effort. The effort of rising from one's bed at the start of the day may vary from one day to the next for an individual, but rising from one's bed when one has the flu, for example, requires significantly greater effort than is required even if one is very tired. Conversely, when one is feeling 'well' then tasks will seem to require less effort than they might otherwise. It is useful to consider the analogy of the athlete whose performance when injured ensures that they are not as competitive as they would be if in full health irrespective of the effort they commit and their desire to win. In the same way, a worker who is in ill health will be less productive than when they are in good health irrespective either of their desire to be productive or else their fear of not being so. To be clear, a worker may believe that they have expended a high degree of effort, but health plays a significant role in moderating the results of effort. Ceteris paribus, high levels of effort by a worker who is in good health will produce a higher degree of output than high levels of effort by the same worker who is in ill health. Moreover, the worker who is incapacitated due to illness is unable to contribute at all irrespective of desire to give effort (Qureshi et al., 2014). This relationship is represented in Figure 1.

Choice and time are critical factors in differentiating the indeterminacy of labour health from the indeterminacy of labour effort. While there is a well-established (see Peccei et al., 2013; Van De Voorde et al., 2012) and intuitive link between worker health and worker performance, good health does not necessarily lead to higher levels of effort because the latter is chosen. One can be in good health and nonetheless choose not to make an effort, as demonstrated by the increased incidence of what has become known as 'quiet quitting' (Atalay & Dağıstan, 2023).

FIGURE 1 Effect of worker health investment on output.

While a worker is able to offer greater effort in the moment (to suddenly increase effort as a consequence of some stimulus), a worker is not able to do more than their health permits them to do at any moment (see MacIntosh et al., 2007). The worker cannot immediately improve their health in order to do more just as an individual cannot choose to be well if they are sick with the flu. Effort is chosen and can be increased or reduced immediately but one cannot choose to have better health instantaneously.

Of course, one can choose a healthier lifestyle that leads to better health, but the health benefits of these choices are only realized over a period of time. Returning to our athlete, they cannot choose to be able to run faster than they are physically capable of so doing at the point of competition irrespective of their motivation to win. The athlete can amend their diet and intensify their exercise over a period of months before a competition in order to increase their capacity to perform, but that is very different from the athlete being able to increase their capacity in the moment of competition. In the workplace, managerial initiatives to enhance the health of workers (initiatives we refer to as worker health investment) will only have an impact on health over a prolonged period.

Whilst a worker may immediately increase their effort as a consequence of coercion, managerial mechanisms designed to enhance effort have no immediate impact on worker health, unless the impact is negative and recklessness results in workplace hazards, diminishes health and safety and leads to accidents. Moreover, initiatives designed to enhance effort might have a positive or a negative impact on worker health over the longer term. It stands to reason that coercion leading to better organizational performance where the outcomes of organizational success are shared by employees in the form of higher wages means that the employee is able to enjoy a better and healthier quality of life (e.g., through the benefits of profit sharing, see Kruse et al., 2008). Similarly, if greater employment security is experienced as a consequence of better organizational performance then the employee will experience a reduction in stress and anxiety about the longevity of their job (see e.g., Lewchuk et al., 2008; Lübke, 2021; Shoss, 2017). Conversely, managerial mechanisms designed to enhance effort might have a negative impact on worker health over the longer term if said coercion leads to performance targets that are not achieved resulting in stress and anxiety for the worker (see for example research into the impact of performance-related pay and worker health, Artz & Heywood, 2023; Sayre, 2023). Neither will worker health investment lead to an immediate positive impact on worker health in the same way in which it is possible for coercion to have an immediate impact on effort.

WORKER HEALTH INVESTMENT

As stated above, worker health investment can have an indirect impact on output through enhancing the potency of effort. It is also the case that worker health investment can have a direct moderating impact on the indeterminacy of labour effort and of labour mobility *independently* of any impact on worker health. In this regard, while the primary objective of worker health investment is to generate productive potential, (i.e., to increase the health of the worker and therefore their capacity), worker health investment also serves to activate productive potential (i.e., to motivate employees to greater effort, see Harvey, 2019). Holmqvist (2009), for example, draws on the principle of reciprocity (Gouldner, 1960) to explain the impact of worker health investment on productivity. According to this argument, worker health investment creates a perceived obligation for the workers to reciprocate the investment with additional effort. In this way, worker health investment serves to activate productive potential, stimulating

employees to give more of themselves because they feel that they ought to do so. A similar connection exists between investment in worker health and the indeterminacy of labour mobility where worker health investment has the potential to create a normative bond felt by the worker or a sense of obligation to reciprocate by remaining in their post.[2] Aside from generating a sense of obligation to the organisation, worker health investment will be seen by some as a benefit of organizational membership. If so, then this will be factored into a rational evaluation of the costs and benefits of leaving an organisation thereby increasing continuance commitment (Allen & Meyer, 1990). An increase in continuance commitment is believed to inspire greater effort as the worker increases their effort because they understand the benefits of membership and want to retain their job. An understanding of the benefits of membership also reduces the likelihood of departure. Finally, there is the potential for worker health investment to be perceived by at least some workers to be an expression of employee-centred organizational values that enhance the affective commitment of those workers (Breitsohl & Ruhle, 2013). Theoretically, at least, investment in worker health also moderates the indeterminacy of labour effort directly (see Figure 2).

Worker health investment: Boundary conditions

There is a strong business case or economic motive for worker health investment. Interest in worker health as a source of competitive advantage has existed for decades and there is a wealth of literature focused on the relationship between workforce health and productivity (see e.g., Berry et al., 2010; Bloom et al., 2004; Bloom et al., 2014; Calderwood et al., 2016; Gubler et al., 2018; Hafner et al., 2015; Loeppke et al., 2009; Pacheco et al., 2014; Remes & Singhal, 2020). Aside from the impact of health on productivity, there are significant gains to be made through worker health investment if that investment leads to a reduction in the costs associated with employee absenteeism (see e.g., Almond & Healey, 2003; Hill & Korolkova, 2017; Kerr & Vos, 1993; Parks & Steelman, 2008). UK Office for National Statistics (2022) data reveal that 149.3 million working days were lost due to sickness or injury in the UK in 2021, at the cost of around £21 billion according to the UK Health and Safety Executive (2022). The cost of presenteeism is harder to measure, but estimates have it at around $180 billion annually in the US (Prater & Smith, 2011) and £15 billion in the UK (Karanika-Murray et al., 2021).

Due to the costs of absenteeism and presenteeism, it is not surprising that many organisations have adopted wellbeing policies to offset the uncertainty associated with worker health. According to a survey carried out by the UK professional body for HR professionals, the Chartered Institute of Personnel and Development (2022), 51% of businesses had a standalone wellbeing strategy; whilst employee wellbeing is reported to be on the agenda of 70% of businesses senior leaders. In the same survey, 41% of respondents anticipated an increase in their company's health and wellbeing budget (CIPD, 2022). Likewise in 2022, one of the 'big four' accounting/professional service organisations, PwC, was set to invest $2.4 billion in employee

FIGURE 2 Direct effect of investment in worker health on labour power.

wellbeing (Kelly, 2022). It is important to note at this point, however, that while employee health is valuable to all labour intensive organisations, some labour intensive organisations are able to abdicate responsibility for worker health, and it is by no means guaranteed that organisations will invest in worker health. Although addressing health and safety rather than investment in worker health per se, analysis by Pagell et al. (2020) reveals that safe workplaces have lower odds of surviving unsafe workplaces over the long term. The idea here is that 'organisations that do not provide a safe workplace gain an economic advantage by avoiding burdensome costs and being more productive' and that 'there are incentives for organisations to ignore safety' (ibid, p. 4864).

There are of course high reliability organisations (Oliver et al., 2017) to which safety is critical. For some occupational groups, health screening is necessary because of legitimate safety concerns and the implications for the worker, for their colleagues and for customers. The work of the commercial airline pilot is an especially relevant example here. Commercial airline pilots must maintain peak mental and physical health, which is tested prior to employment and every 12 months before the age of 40 and every 6 months thereafter. These tests can result in the loss of one's commercial licence (if a problematic condition such as certain heart diseases, poor vision or hearing, or epilepsy is identified).

However, there are evidently boundary conditions to worker health investment and there exist several high-profile examples of labour-intensive organisations that choose not to invest in worker health, relying on substitution of workers rather than support for workers. Such organisations evidently consider coercion to be more effective as a means of moderating the indeterminacy of labour health, reducing absenteeism because employees fear the consequences of being absent. For example, Sports Direct in the UK whose workers at its Shropshire site required an ambulance on 80 occasions over a 2-year period, with around half of these calls for medical crew to deal with life threatening conditions—on one occasion a female employee worked despite being heavily pregnant and subsequently gave birth in the site's restroom (Farrell, 2015). It has been argued that the culture of fear is key to the competitive advantage of the organisation with workers managed according to 'Dickensian practices' (Jahshan, 2019) at 'Victorian workhouses' (Lansley, 2021; see also Clark, 2016; Forde & Slater, 2016; O'Sullivan, 2020; Seifert, 2013; Villiers, 2021), whose fear of losing their employment inspires high productivity and low absence. While the situation appears to have improved at Sports Direct, at least according to the incidence of ambulance call outs, other organisations in the same industry such as ASOS and JD Sports have since been lambasted for similar deficiencies (Jahshan, 2019).

A particularly interesting case concerning employee health is that of the global online retail titan, Amazon, whose profits soared during the pandemic (Thornhill, 2020) when it relied on its employees (as keyworkers) to attend work despite the health risks (BBC, 2020). The employment practices at Amazon have come in for scrutiny from researchers and journalists alike (see Briken & Taylor, 2018; Cunningham-Parmeter, 2016; Harney, 2023; Harney & Dundon, 2020; Kantor et al., 2021). Employee health initiatives such as the Wellness Chamber, variously referred to as the Ama-Zen Booth or 'crying booth', reveal a deep level of cynicism towards worker health. The introduction of these 'coffin sized boxes' where 'employees can... watch short videos featuring easy-to-follow wellbeing activities, including guided meditations, positive affirmations, calming scenes with sounds' (BBC, 2021) at an organisation where workers felt compelled to urinate in bottles due to inadequate break time and the pressures of work (Bateman, 2021) reveal little genuine concern for employee health.

What is especially interesting about Amazon is that worker health remains critical to organizational success. Despite innovation in automation, Amazon's success is currently dependent upon employees who are able to meet its exacting productivity targets. Two factors are critical in enabling Amazon to avoid worker health investment that reflect Wright's (2000) distinction between the structural and associational power resources of workers. First then, while Amazon workers are structurally important in one sense (i.e., the operation is labour intensive), workers require limited training and possess no specific skills (e.g., workers have been given haptic bands to direct their movements in order to reduce mistakes and eliminate inefficiencies). Consequently, the organisation can tolerate labour attrition because it has access to a loose labour market. Second, Amazon has vociferously opposed trade union recognition at its sites (see Briken & Taylor, 2018; Harney, 2023; Kassem, 2022; Taylor, 2022) and so the potential for collective resistance to Amazon's people management strategy (or the associational power of labour) is diminished. Therefore, rather than investing in the health of its workers, the organisation is able to adopt a strategy that moderates the indeterminacy of labour health by labour substitution unencumbered by collective resistance. As Kelly (2021) puts it 'Amazon encourages its employees to leave. When they leave, the spot is filled with a fresh face, eager to work'. The Amazon case shows how the indeterminacy of worker health and the indeterminacy of labour mobility interact and how an organisation is able to tolerate the indeterminacy of labour mobility because of access to a 'vast industrial army' (Harvey, 2014) and due to the absence of a powerful collective response. For Amazon, worker health investment makes less economic sense as employee turnover is a more cost-effective substitute for employee support (in the form of worker health investment). The question of whether or not Amazon's people management strategy is ethical or sustainable is an important one, but one that we cannot answer in this paper.

The indeterminacy of labour mobility creates greatest problems for organisations that depend on high skilled workers and for whom there is a tight labour market. Worker health investment is a rational economic policy for these organisations because of the possibility that it generates productive potential (i.e., increasing the health of workers) but also for its direct impact in moderating the indeterminacy of labour mobility.

In outlining the boundary conditions to worker health investment, it is necessary to consider the place which organisations occupy within a wider societal context. Securing a population with strong productive potential is a political goal, and this is underpinned by economic considerations at a national level. As such, investment in worker health should be understood as an issue of public health, as well as one for private companies (Dew & Taupo, 2009; Lupton, 1995). Within the UK context, much attention given to investment in worker health has followed from the publication of a report conducted on behalf of the UK Department for Work and Pensions, and Department of Health, explicitly looking at 'the health of Britain's working age population' (Black, 2008). Following from this, Public Health England launched the Workplace Wellbeing Charter, a scheme providing a set of worker health benchmarks, which employers are encouraged to publicly sign up to, and against which they can be accredited (Health@work, 2024). Successfully being accredited allows access to the Workplace Wellbeing Charter branding to be used in corporate publicity. Conversely, an examination of the cases of Sports Direct and Amazon make it abundantly clear that, given the availability of public health care, some organisations will forgo investment in worker health and instead rely on the public purse to provide a minimal safety net to employees. Whilst this paper has focussed on labour process theory as a key means of explaining investment in worker health, it is also apparent that the interests of workers,

employers and society are complex and highly intertwined. In this regard, the actions of individual employers form part of a much larger landscape of workplace health investment.

CONCLUSION

This paper presents a labour process critique of worker health investment and in doing so, we position worker health as a third source of labour power indeterminacy. The paper delineates the indeterminacy of worker health from the indeterminacy of labour effort and explains both the way in which worker health moderates the outcome of effort and why an increase in worker health does not necessarily lead to increased effort. The paper also argues that worker health investment that is designed primarily to improve the health of the worker so that their effort is more potent (i.e., to generate productive potential) also potentially moderates the indeterminacies of labour effort and of labour mobility. If the worker perceives worker health investment to be a demonstration of organizational support or a benefit of organizational membership then there is the potential for the worker to reciprocate with greater effort and/or loyalty to the organisation irrespective of the impact of worker health investment on worker health. In this way, worker health investment activates productive potential. Finally, despite the benefits of worker health investment, the paper explores the boundary conditions of worker health investment and specifically why and how some labour-intensive organisations whose workers are neither highly skilled nor organized by trade unions are able to avoid the costs associated with worker health investment.

AUTHOR CONTRIBUTIONS

Geraint Harvey: Conceptualisation (lead); writing—original draft (equal); writing—review & editing (supporting). **James Wallace**: Conceptualisation (supporting); writing—original draft (equal); writing—review & editing (lead).

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N/A This is a conceptual paper and no primary data are analysed in this paper.

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ENDNOTES

[1] We also acknowledge that cardiovascular and resistance exercise requires effort and so in this sense effort leads to greater capacity. However, our use of effort in this paper is labour effort commodified in the employment relationship.

[2] We acknowledge that normative commitment has been shown to result in decreased health states (Vandenberghe et al., 2015).

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