Temporary work and health & well-being: A two-way street?

Alfred F. Wagenaar

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Temporary work and health & well-being: A two-way street?

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Albert Freerk Wagenaar

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Promotoren

Prof. dr. M.A.J. Kompier
Prof. dr. T.W. Taris (Universiteit Utrecht)

Copromotor

Dr. I.L.D. Houtman (TNO)

Manuscriptcommissie

Prof. dr. R.W. Holland
Prof. dr. W.B. Schaufeli (Universiteit Utrecht)
Prof. dr. M.J.P.M. van Veldhoven (Tilburg University)
Prof. dr. ir. P.M. Bongers (TNO)
Dr. N. de Cuyper (Katholieke Universiteit Leuven)

CONTENTS

DANKWOORD

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CHAPTER 1

Introduction

Partly based on:

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Wagenaar, A. F., Kompier, M. A. J., Taris, T. W., & Houtman, I. L. D. (2013). Temporary employment, quality of working life and well-being. In A. G. Antoniou & C. L. Cooper (Eds.), *The psychology of the recession on the workplace* (pp. 117-139). Gheltenham (UK): Edward Elgar.

1.1 BACKGROUND AND STRUCTURE OF THIS THESIS

As a consequence of employers' ambition to become more competitive by reducing their employment costs, the flexibilization of the European labour market has steadily increased since the 1980's. Many organizations apply one or more types of flexibility measures. The current dissertation attends to one such category, namely "external numerical flexibility", which means that organizations continuously adapt their workforce to the current labour market situation (e.g., by offering workers a temporary contract [Dekker & Olsthoorn, 2011]). We will specifically focus on the question whether the potentially adverse relationship between temporary employment and workers' health, well-being and work-related attitudes is bi-directional, or in other words "a two-way street". We examine whether temporary contracts contribute to ill health and well-being and worse work-related attitudes, but also investigate the reverse relation, i.e. whether poor health and well-being and worse work-related attitudes "lead to" more temporary employment. Therefore, we aim to answer two research questions:

1. How do various types of temporary employment differ from permanent employment in terms of job insecurity and job quality, and related to this, the health, well-being and work-related attitudes of the workers involved?

2. For whom does temporary employment serve as a bridge into higher quality permanent employment and who will become trapped in low quality temporary employment and may ultimately become unemployed?

In order to answer these two questions, the current chapter will provide a general introduction of temporary employment in terms of its definition and occurrence (§1.2); its main risk factors (§1.3); its impact on workers' health, well-being and work-related attitudes (§1.4); its dynamic nature (across time changes in employment contract: §1.5); the most important shortcomings in current literature on temporary employment (§1.6) and the added value of our studies in this respect (§1.7). In the next chapters we will present our five studies (Chapter 2-6, respectively) and conclude by a general discussion of our research findings and a proposed research agenda for future studies in this field (Chapter 7). Note that we will often refer to the (temporary) employment situation in the Netherlands, as most of our studies are based on Dutch samples of workers.

1.2 DEFINITION AND OCCURRENCE OF TEMPORARY EMPLOYMENT

1.2.1 Definition

Logically, there is a general understanding that temporary employment differs from permanent employment in its limited duration. However, generalization of research findings on temporary employment across country borders would benefit from the use of one uniform definition and measurement of temporary employment. Luckily, most current research on temporary employment (roughly) fits the OECD (Organisation for Economic Co-operation and Development) definition. It states that temporary employment is "dependent employment of limited duration", which excludes self-employment (OECD, 2002). We will also use this definition in the current thesis. Despite this definition, however, there are (at least) two international differences to consider when examining studies on temporary employment. First, regarding the vocabulary, American and Canadian researchers often use the term "contingent employment", whereas European researchers use the terms "temporary", "fixed-term" or "non-permanent" employment (De Cuyper et al., 2008). Second and more importantly, using a general definition of temporary employment (such as the OECD definition) is no guarantee for a clear understanding of research findings on temporary employment. This is mainly caused by the diversity in temporary employment (contracts) and differences in national rules and legislation on temporary employment.

Regarding temporary employment contract types we can generally distinguish between fixed-term employment, temporary agency employment and on-call employment (see also Connelly & Gallagher, 2004). The first difference between these contract types is that fixed-term and on-call workers are directly hired by an organization, whereas agency workers are employed by a third party (the temporary agency). A second difference is in the contract duration: whereas fixed-term workers are employed for a fixed term (often for a year or longer), the duration of agency and on-call contracts generally depend on the amount of work available at the employer. Such fundamental differences between temporary employment contracts make it difficult to generalize research findings across different groups of temporary contractors.

In addition to the categorization of temporary employment, national legislation differences may (further) impair the generalizability of findings in this field. For example, in the Netherlands some on-call workers have a permanent employment contract on an on-call basis (Verhulp, Beltzer, Boonstra, Christe, & Riphagen, 2002), whereas the Australian equivalent of on-call work, casual work, is characterized by a lack of legislation and thus by lack of employment stability (Campbell & Burgess, 2001). Moreover, an increasing number of temporary workers in the Netherlands has a fixed-term contract with prospects on permanent employment (CBS, 2012b). These "prospects" refer to a clause in the written formal employment contract, stating that the employee will receive permanent employment after performing well during the term of their contract. Obviously, employment stability is higher among workers with these permanent employment prospects than among fixed-

term workers without these prospects. On a more general note, North American countries do not regulate temporary employment, whereas the European Union aims to offers (at least basic) employment protection for temporary workers (Vosko, 1998). All in all, such national differences in the degree of regulation on temporary employment are likely to hamper the generalization of research findings across (groups of) countries.

To conclude, despite having a clear basic definition of temporary employment, we should keep in mind the diversity in temporary employment (contracts) and its regulation when interpreting and extending research findings within and across country borders (for a more detailed description on this matter see De Cuyper et al., 2008).

1.2.2 Occurrence

The rise in temporary employment, starting in the mid-1980s, is one of the most remarkable developments in the European labour market. In 1990 the European Community (at that time EU12) counted around 11 million temporary workers (10.3% of the workforce). A decade later 12.2% of the European workforce (EU27) had temporary employment, which further increased to 14% in 2011 (representing more than 25 million workers [Eurostat, 2012a; 2012b]). In the Netherlands this increase has been much stronger, as the share of temporary workers has grown from 7.6% in 1990 to 13.8% in 2000, and further increased to 17.7% in 2011 (Eurostat, 2012a). Currently, over 1 million Dutch employees are temporarily employed (CBS, 2012a). Interestingly, this increase in temporary employment came to a stop in 2007, due to the upcoming economic recession. As a result, the European temporary workforce decreased between 2007 and 2009 from 26.2 million workers to 24.3 million workers, which is a drop from 14.6% to 13.6% of the European workforce (Eurostat, 2012a, 2012b). This reduction increased European youth unemployment as most temporary workers are young, and as temporary work (especially agency work) is highly reliant on economic growth (Ciett, 2010; European Commission, 2010). However, when the economy and thus product demand improves again, it is likely that many market (re-)entrants will become temporary employed (again) (International Monetary Fund, 2010). In line with this, the temporary workforce (in the EU27 and also in the Netherlands) seems already slowly increasing again since 2010 (both in relative and in absolute figures [CBS, 2012b; Eurostat, 2012a; Eurostat, 2012b]). Finally, it is important to note that the majority of temporary workers in the European Union are fixed-term employees (over 85%), whereas “only” around 10% (still 3.6 million workers [Ciett, 2012]) are temporary agency workers (Eurofound, 2012). Although the same picture applies to the Netherlands, in which the majority of all temporary workers also has a fixed-term contract (515.000 workers, of which 96.000 have prospects on permanent employment), there is also a substantial group of temporary agency workers (172.000 workers) and on-call workers (187.000) (CBS, 2012a).

1.3 RISK FACTORS OF TEMPORARY EMPLOYMENT

The employer-initiated trend to employ more workers on a temporary basis is generally not desired by employees, as an estimated 60% to 75% of the temporary workers would prefer having a permanent employment contract (Guest, 2004). Therefore, questions have been raised about the impact of temporary employment on workers' health, well-being and work-related attitudes (De Cuyper et al., 2008; Quinlan, Mayhew, & Bohle, 2001). In studying this relationship, most research has focused on two main risk factors associated with temporary employment: job insecurity and a low quality of work.

1.3.1 Job insecurity

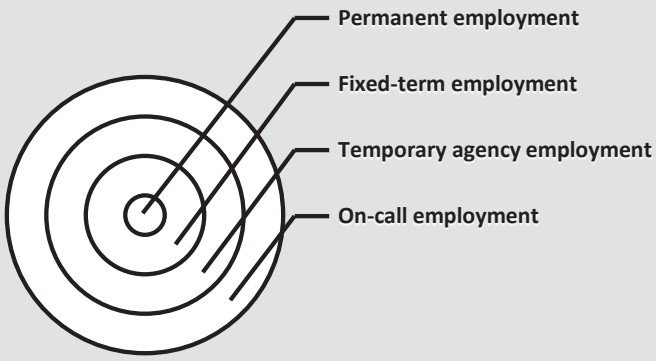
The main characteristic of temporary employment (that is, its insecure nature) may pose an important risk for workers' health, well-being and attitudes. Generally, organizations offer their employees temporary work contracts for at least one of three reasons: (1) as a probationary period (e.g., for temporary workers with prospect on permanent employment), (2) as a replacement of permanent workers on leave, or (3) as a buffer to handle temporary changes in the business environment (Booth, Dolado, & Frank, 2002; Isaksson et al., 2010). All three reasons involve situations in which permanent workers enjoy higher labour protection than temporary workers. In line with this, many current organizations possess a core-periphery structure (Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008), in which a relatively small core of permanent staff is surrounded by a periphery of several layers of increasingly precarious workers (e.g., fixed-term workers, temporary agency workers or on-call workers: see figure 1.1). This structure implies that permanent workers are relatively well-sheltered, whereas more peripheral workers have less employment stability and, thus, higher job insecurity (De Cuyper, Notelaers, & De Witte, 2009a; Pfeifer, 2009). This assumption is supported by the fact that over two third of the current European (EU27) temporary employment contracts has a duration of one year or less (Eurostat, 2012c). Not surprisingly, many studies reported higher job insecurity among temporary workers compared to permanent workers (among others, De Cuyper et al., 2009a; Kinnunen, Mauno, & Siltaloppi, 2010; Letourneux, 1998; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2008; Silla, Gracia, & Peiró, 2005; M. Virtanen, Kivimäki, Elovainio, Vahtera, & Ferrie, 2003).

These feelings of unpredictability and uncontrollability regarding one's future employment status may adversely impact workers' health, well-being and work-related attitudes (De Witte, 1999). This assumption is based on job stress theories that incorporate job security (e.g., the Effort-Reward Imbalance Model: Siegrist, 1996) or closely related concepts such as 'environmental clarity' (such as the Vitamin Model: Warr, 1987) and control (included in the Job Characteristics Model: Hackman & Oldham, 1976; and Job Demand-Control Model: Karasek, 1979), factors that are considered to be important antecedents of health and well-being (Kompier, 2003). Based on Jahoda's latent deprivation model (1982) and Fryer's agency restriction model (1986), job insecurity also means that workers are

aware of the fact that in the near future they may potentially lose important manifest (e.g., income) and latent (e.g., time structure, social contact and status) benefits that come with being employed (Creed & Macintyre, 2001; De Witte, 1999). Therefore, job insecurity may have negative consequences for workers' health, well-being and work-related attitudes.

A substantial body of research indeed supports this reasoning. In brief, job insecurity has been associated with (1) lower physical and psychological health and well-being (such as lower general health, back pain, reduced sleep quality, depression, psychological distress, higher blood pressure and lower self-esteem [Cheng & Chan, 2008; De Witte, 1999; Ferrie, Shipley, Stansfeld, & Marmot, 2002; Kinnunen et al., 2010; László et al., 2010; Lau & Knardahl, 2008; Sverke, Hellgren, & Näswall, 2002; P. Virtanen, Janlert, & Hammarström, 2011]), (2) negative health behaviour (for example, increased sickness absence and increased use of health services: Ferrie, 2001) and (3) negative work-related attitudes (such as lower job satisfaction and job involvement, lower organizational commitment and trust, higher turnover intention and reduced performance: Cheng & Chan, 2008; Sverke et al., 2002). Clearly, job insecurity constitutes an important risk factor, through which temporary work may negatively impact workers' health, well-being and work-related attitudes.

Figure 1.1 Core-periphery model of employment contracts



1.3.2 Low quality of work

The core-periphery division, differentiating temporary workers from permanent workers in terms of higher job insecurity, may well go beyond a specific organizational context and may be applied to the entire labour market. This idea stems from segmentation theories such as the flexible firm (Atkinson, 1984), human capital theory (Becker, 1993) and dual labour market theory (Doeringer & Piore, 1971). These theories propose a division between the primary and secondary segment of the labour market, or in other words, between *core* and *peripheral* workers (Hudson, 2007). According to these theories, core workers are important

to organisations because they possess job-specific skills which make them hard to replace. In order to retain these workers and to assure their commitment to the organisation, employers need to invest in these workers in terms of favourable working conditions, work relations and terms of employment, including a high salary, high job security and favourable career opportunities. In contrast, less experienced, peripheral workers are easy to replace and can thus be offered lower working standards (Hudson, 2007; Zeytinoglu & Muteshi, 2000). According to Kalleberg (2003), this segmented labour market has created a division between well-sheltered organisational insiders (those having standard working arrangements such as full-time permanent workers) and organisational outsiders, including temporary workers. Especially those lacking transferable skills and autonomy over their work may be less employable and therefore at risk for unstable employment. If so, temporary or peripheral jobs may not only be characterised by higher job insecurity but also by a lower quality of work in terms of adverse job characteristics. This is important, since job stress theories propose that combinations of such unfavourable characteristics (such as high demands and a lack of control, variety, feedback and support) may negatively impact workers' health, well-being and work-related attitudes (Kompier, 2003).

Evidence for the assumption that temporary workers have lower quality jobs is widely available. First, in terms of job content, temporary work has been associated with lower autonomy (for instance, in terms of control over the workplace, working times, order of tasks, method of work and work pace), lower complexity (e.g., fewer supervisory tasks, less skilful tasks and more repetitive tasks) and higher dynamic workload; moreover, temporary work has been found to be more often passive or high-strain work compared to permanent jobs (Goudswaard & Andries, 2002; Hall, 2006; Kompier, Ybema, Janssen, & Taris, 2009; Letourneux, 1998). Secondly, with respect to employment terms, temporary workers receive less training and development opportunities and receive lower wages and earnings (Aronsson, 1999; Aronsson, Gustafsson, & Dallner, 2002; Booth, Francesconi, & Frank, 2002; Gebel, 2009; Goudswaard & Andries, 2002; Hall, 2006; Layte, O'Connell, & Russell, 2008; Letourneux, 1998). Negative characteristics of temporary work also extend to the social relations on the job, such as less decision influence, difficulties in voicing criticism and having their viewpoint heard, and a higher prevalence of intimidation and discrimination (Aronsson, 1999; Aronsson et al., 2002; Goudswaard & Andries, 2002; Hall, 2006; Letourneux, 1998). Finally, there is some evidence that temporary workers more often encounter harmful working conditions, as temporary jobs often involve shift work, irregular working times and adverse physical working conditions (Goudswaard & Andries, 2002; Letourneux, 1998).

Despite the evidence supporting the idea that temporary workers often have jobs with low quality work, many of the aforementioned studies also found non-significant or contradictory results for at least some of the study variables. For instance, null findings have been reported for autonomy (over working hours and tasks), work pace, environmental load, social support from supervisors and colleagues and the number of overtime hours

(Aronsson et al., 2002; Goudswaard & Andries, 2002; Kompier et al., 2009; Letourneux, 1998; Saloniemi, Virtanen, & Koivisto, 2004; Saloniemi & Zeytinoglu, 2007), for which no differences were found between temporary and permanent workers. Contradictory results often refer to findings on temporary workers' task demands as compared to that of permanent workers, suggesting that temporary workers experience a lower work pace, less overload, have less working hours and are less often involved in performing overtime work (Guest, Oakley, Clinton, & Budjanovcanin, 2006; Kompier et al., 2009; Letourneux, 1998; Parker, Griffin, Sprigg, & Wall, 2002). In line with this, many temporary workers feel they are over-qualified for their job (Letourneux, 1998), experience too few demands and find their jobs not challenging enough (Goudswaard & Andries, 2002). That permanent and *not* temporary work may often involve higher task demands may partly be due to the fact that many organisations hire temporary workers to cope with peaks in product demand (Isaksson et al., 2010), implying that demands were too high to be fulfilled by their permanent staff (De Cuyper, De Witte, Krausz, Mohr, & Rigotti, 2010). As temporary workers may need attention in the form of training or some kind of supervision, feelings of responsibility and supervisory demands may (further) increase among the permanent workers supervising these temporary employees – thus, task demands may rather be higher than lower among permanent staff (De Cuyper et al., 2010).

Nevertheless, overall the evidence suggests that many temporary jobs may adequately be characterised by a lower quality of work, i.e. at least in terms of higher physical demands (and sometimes also higher task demands), lower autonomy, fewer financial benefits, and limited training and career opportunities. Furthermore, evidence on the negative relations between combinations of such adverse job characteristics and workers' health, well-being and work-related attitudes is well established (among others, Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Schaufeli, Bakker, & van Rhenen, 2009; Tsutsumi & Kawakami, 2004). Therefore, a lower quality of work life may well comprise a second risk factor of temporary employment.

1.4 TEMPORARY EMPLOYMENT AND WORKERS' HEALTH, WELL-BEING AND WORK-RELATED ATTITUDES

As can be concluded from the previous paragraph, temporary employment often involves higher job insecurity and lower job quality than permanent employment, aspects that are both negatively related to workers' health, well-being and work-related attitudes. Consequently, temporary employment can be expected to negatively impact workers' health, well-being and work-related attitudes, a hypothesis that indeed finds support in many studies. For instance, temporary work (most often agency and on-call work) has been associated with (1) lower physical and mental health (e.g. general health, fatigue, depressive symptoms, stomach symptoms, headaches and back pain: Aronsson et al., 2002; Artazcoz, Benach, Borrell, & Cortès, 2005; Benach, Gimeno, Benavides, Martínez, & Del Mar Torné, 2004; Kompier et al., 2009; Letourneux, 1998; Quesnel-Vallée, DeHaney, & Ciampi, 2010;

Waenerlund, Virtanen, & Hammarström, 2011) and even mortality (Kivimäki et al., 2003); (2) negative health behaviour (i.e. smoking [Kompier et al., 2009]); and (3) negative work-related attitudes (e.g. lower job satisfaction and lower job involvement, engagement and organizational commitment [Artazcoz et al., 2005; Benach et al., 2004; Bernhard-Oettel, De Cuyper, Berntson, & Isaksson, 2008; Booth, Francesconi, et al., 2002]; Kompier et al., 2009; Letourneux, 1998; M. Virtanen et al., 2003)

Yet, the picture is at present not entirely clear, as many of these and other studies also reported null findings or opposing results. A recent overview with regard to temporary workers' job satisfaction, organisational commitment, well-being and productive behaviour is provided by De Cuyper et al. (2008). De Cuyper and co-workers conclude that the available literature in this area is inconsistent and inconclusive, which goes against expectations based on theoretical frameworks such as job stress theories. A similar conclusion can be drawn with respect to temporary workers' health and health-related behaviours due to various non-significant findings (e.g. regarding musculoskeletal symptoms, general health, mental distress, stress, job induced tension, physical exercise, alcohol consumption and medication use [Benach et al., 2004; Bernhard-Oettel, Sverke, & De Witte, 2005; Kompier et al., 2009]) and contradictory results (for instance with regard to stress, insomnia and sickness absence [Goudswaard & Andries, 2002; M. Virtanen et al., 2003]). To conclude, despite the evidence linking temporary employment to high job insecurity and a low quality of work, no strong inferences regarding the 'direct' association between temporary employment and workers' health, well-being and work-related attitudes can be drawn. However, there are both theoretical and empirical indications that at least some temporary workers are at risk for health, well-being and work-related attitudinal problems.

1.5 THE CHANGING NATURE OF TEMPORARY EMPLOYMENT

The nature of their work contract implies that temporary workers will often experience changes in contract type, job type, and employer when their labour contract ends. Indeed, temporary employment may well be followed by a spell of unemployment – or, perhaps, by permanent employment. Theoretically, temporary work can be seen as one phase in the sequence of stages that constitutes a worker's employment history. However, it is unclear whether this stage should be evaluated positively or negatively. Temporary work may serve as a bridge or stepping stone out of unemployment into permanent employment, whereas it may also result in a spell of continuously precarious employment, ultimately guiding workers into unemployment (Scherer, 2004). The scarce longitudinal research on this issue follows two different approaches. The first approach focuses on the function of temporary employment (i.e., is it a stepping stone or a trap, and for whom?). The second approach concentrates on the impact of contract trajectories (e.g., from temporary to permanent work or from permanent work to unemployment) on workers' health, well-being and work-related attitudes.

1.5.1 Stepping stones or dead ends?

The first approach aims to answer the question: To what degree aids temporary employment to obtain permanent work? A conclusive answer to this question cannot be given as findings in this field are inconsistent. For example, some studies support the "trap hypothesis" of temporary work, meaning that temporary work raises the chance of becoming unemployed, whereas only few temporary workers acquire permanent employment (Giesecke & Groß, 2003; Tunny & Mangan, 2004; Van Gaalen, Sanders, Smits, & Ybema, 2011). However, many studies found no support for the "trap hypothesis", and instead support the stepping stone function of temporary work out of unemployment towards permanent work (Booth, Francesconi, et al., 2002; De Graaf-Zijl, van den Berg, & Heyma, 2011; Gash, 2008; Hartman, Liljeberg, & Skans, 2009; McGinnity, Mertens, & Gundert, 2005; Picchio, 2008; Scherer, 2004). Thus, although temporary work may be a trap that leads into unemployment, it is also often a bridge to permanent employment.

This raises an interesting question: *Which* temporary workers are likely to become "trapped" in precarious employment or unemployment? In this respect a so-called healthy worker effect may be of importance (Shah, 2009; M. Virtanen, Kivimäki, Elovainio, & Vahtera, 2002). The healthy worker effect implies that (1) healthy people are more likely to seek and gain (permanent) employment, and (2) healthy workers are more likely to endure the stage of temporary employment (i.e. exposure to job insecurity and adverse work characteristics) before acquiring a permanent position (M. Virtanen et al., 2002; M. Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005). Following this reasoning, it seems likely that unhealthy workers will have a lower chance to become permanently employed and are more prone to experiencing spells of unstable employment or even unemployment than others (see e.g., M. Virtanen, Kivimäki, Elovainio, et al., 2005). In a similar vein, other aspects that influence career success may impact someone's employment status as well, such as individual characteristics (e.g. gender and race [McDonough & Amick III, 2001]; tolerance for role ambiguity and role adjustment [Bauer & Truxillo, 2000]; and hostility [M. Virtanen, Kivimäki, Elovainio, et al., 2005]) and socio-economic status [M. Virtanen, Kivimäki, Elovainio, et al., 2005], including the level of education (Buch, Burkert, Hell, & Niebuhr, 2010; McDonough & Amick III, 2001), type of work (e.g. manual labour [Bartley & Owen, 1996]), and combination of both (i.e. over-qualification for a job [Scherer, 2004]). For example, a study among fixed-term employees found that those in higher positions, full-time workers and those with longer tenure (5-8 years) were more likely to acquire permanent employment (M. Virtanen et al., 2002). Moreover, this study showed that indicators of good health (behaviour) predicted an upward contract trajectory into permanent work. A similar study among female fixed-term employees found that unstable employment spells and future unemployment were predicted by non-optimal health (P. Virtanen et al., 2005). In this study, workers with more peripheral trajectories were older and often working in manual occupations. Nevertheless, the picture is not entirely clear as a recent study among Belgian workers found no evidence of such selection processes (De Cuyper, Notelaers, & De Witte,

2009b). In conclusion, temporary work may be beneficial for many workers in acquiring permanent employment. However, for some workers it may become a trap leading them into unemployment, which is likely to depend on important characteristics of the worker involved (specifically, ill-health, low educational level and low employability).

1.5.2 Impact of contract changes on health, well-being and work-related attitudes

The central research question in the second approach is: What is the impact of contract trajectories on workers' health, well-being and work-related attitudes? According to the core-periphery idea, downward transitions towards more temporary work or unemployment are for the worse, whereas upward changes towards permanent employment are for the better (Kompier et al., 2009). The small number of longitudinal studies on this issue provides some support for these hypotheses. In brief, upward contract trajectories (most often from fixed-term to permanent work) have been associated with positive outcomes (such as increased job security and enduring job satisfaction [M. Virtanen et al., 2003]; decreased risk of psychological distress [P. Virtanen et al., 2005]; and more supervisory tasks, increased co-worker support and increased engagement [Kompier et al., 2009]), whereas downward contract trajectories have been associated with negative outcomes (non-optimal health [P. Virtanen et al., 2005]; and less co-worker and supervisory support, less supervisory tasks, decreased engagement and increased medication use [Kompier et al., 2009]). However, these and similar studies also reported many non-significant findings (e.g., with regard to life satisfaction, work ability, turnover intention, general health, emotional exhaustion, minor psychiatric morbidity and life style indicators as exercise and alcohol intake) or opposing findings (for example, concerning work pace: higher among upward movers and lower among downward movers; medically certified sickness absence: higher among upward movers; and engagement and commitment: higher among downward movers) (De Cuyper et al., 2009b; Kompier et al., 2009; M. Virtanen et al., 2003; P. Virtanen et al., 2008; P. Virtanen et al., 2005). Thus, upward contract transitions are not consistently for the better, whereas downward contract transitions are not always for the worse.

One explanation for these findings may be found in a worker's motives for engaging in a specific transition. For example, a worker holding a permanent job may still have suboptimal working conditions, and may thus opt for a better, yet temporary job (De Cuyper et al., 2009b). In this respect, especially the balance between an employees' experience of a transition as being "forced" (e.g., due to end of contract or a layoff) and "voluntary" (i.e. to obtain better-fitting employment in terms of job characteristics, career opportunities, flexibility, and/or job security) may be important (cf. Bernhard-Oettel, Isaksson, & Bellaagh, 2008; Tan & Tan, 2002). This reasoning finds support in turnover theories, which suggest that employer changes may often have positive consequences for the worker involved, as many workers change job type or employer to improve their current job situation (Steel & Lounsbury, 2009). Thus, having (high quality) job alternatives, and thus being employable, may well act as a protecting factor for ending up in an unfavourable temporary employment.

In conclusion, the impact of contract trajectories on workers' health, well-being and work-related attitudes may well depend on workers' motives for a transition. However, at present studies in this area are scarce, underlining the need for further research on this issue (De Cuyper et al., 2008).

1.6 SHORTCOMINGS IN EMPLOYMENT CONTRACT RESEARCH

The previous overview showed that current employment contract research is characterised by many inconsistent findings. A variety of explanations for this inconsistency has been suggested. These often focused on methodological shortcomings of the research designs in previous studies, but the conceptual and theoretical assumptions underlying these studies have also been challenged (De Cuyper et al., 2008; Kompier et al., 2009). The main conceptual issue concerns the heterogeneity of the temporary workforce (also see §1.2.1). There are major differences between temporary employment arrangements in many areas, including employment stability, income, quality of work, contract preference, employment prospects and demographic composition (Bernhard-Oettel et al., 2005; De Cuyper et al., 2008; De Cuyper & De Witte, 2007; Galarneau, 2005; Kalleberg, 2000; Parks, Kidder, & Gallagher, 1998; Silla et al., 2005). For instance, temporary employment is often used to replace permanent workers, to cover peaks in product demand, or as a probationary period (Isaksson et al., 2010), and the content of the job and the context in which it is performed will therefore be often similar to those of permanent jobs (De Cuyper & De Witte, 2006). In contrast, more precarious workers (such as agency and on-call workers), may hold less stable jobs with adverse characteristics. Therefore, it seems imperative that researchers avoid making the overly crude distinction between permanent versus temporary work.

A first important methodological drawback in employment contract research concerns the use of convenience samples (for instance, studying specific temporary workers within a specific occupation). Studies relying on such samples can only take into account the heterogeneity of the specific sample under study, which is likely to hamper the generalisation and comparability of results. For example, specific samples of similar temporary workers (such as Swedish temporary healthcare workers [Bernhard-Oettel et al., 2005]; or temporary Belgian workers in the industry and retail sector [De Cuyper & De Witte, 2006]) are likely to differ in many respects from each other, including job security, their quality of work, contract preference and demographic composition. Therefore, important sample characteristics should be systematically measured and reported to determine if possible inconsistent results may be attributed to sample differences.

A second major methodological issue is the lack of longitudinal studies in which multiple measures are collected from the same participants during a longer study period. This means that causal inferences can usually not be made. Therefore, the results of the many cross-sectional studies (in particular those reporting to "test" possible mediating or moderating variables) should be interpreted with caution (see also Kompier, 2012). It may well be that the presumed "normal" causal relationship (that temporary work "leads

to" ill-health, lower well-being and worse work-related attitudes) describes a reverse or reciprocal relation. For example, due to higher job insecurity and a lower quality of working life, it is plausible that temporary work leads to ill-health. However, ill-health may also lead to temporary employment, for instance, because employers may be reluctant in offering unhealthy workers permanent employment. Indeed, both relationships may apply simultaneously. Clearly, more longitudinal studies are needed to capture and comprehend these potentially complex relationships.

1.7 CONTRIBUTION OF THIS THESIS

1.7.1 Addressing the conceptual and methodological issues

In our studies we aimed to overcome the conceptual and methodological issues mentioned before in several ways. First, we addressed the heterogeneity in temporary employment by examining different meaningful groups of temporary workers based on their formal employment contract (i.e., fixed-term employment [with or without permanent employment prospects], temporary agency work and on-call work). Secondly, we conducted our studies among large and (generally) representative samples of both European workers and Dutch workers, which enhances the representativeness and generalizability of our findings. Furthermore, in order to attend to the issue of "causal directions" we conducted three longitudinal studies in which we tested both normal causality (temporary employment leads to ill-health, lower well-being and worse work-related attitudes) and reversed causality (ill-health, lower well-being and worse work-related attitudes leads to temporary employment). Finally, in trying to answer our two main research questions (see below) we utilized valid and reliable measures of our central variables (e.g., quality of work, including task demands, autonomy, social support and income; health [related] measures, such as emotional exhaustion, musculoskeletal symptoms and work ability; and work-related attitudes as work satisfaction, turnover intention and in-role performance).

1.7.2 Temporary employment: negative job characteristics and outcomes? (RQ 1: Study 1-2)

Against this background the current thesis aims to answer two major research questions, whilst taking into account the most important drawbacks in the current literature. First, we aim to answer the question: How do various types of temporary employment differ from permanent employment in terms of job insecurity and job quality, and related to this, the health, well-being and work-related attitudes of the workers involved? An answer to this question is necessary to determine if temporary employment is "worse" (in terms of job insecurity and job quality) than permanent employment and to determine which temporary contract carries the largest risks regarding workers' health, well-being and attitudes. To this aim, we conducted study 1 and 2.

First, in Chapter 2 we will present a large-scale European study based on two cross-sectional data waves (for 2000 and 2005), in which we compare temporary to permanent workers in terms of their demographic profile, quality of work and work satisfaction. In this study we attend to the heterogeneity in temporary employment by distinguishing between fixed-term and temporary agency employment. Moreover, by taking into account possible EU country-cluster differences and time differences, we aim to enhance the representativeness and generalizability of the results.

In a second study (Chapter 3) we will compare different employment contracts in terms of job insecurity, job quality and workers' health, well-being and attitudes. In addition, we examine the association between temporary employment and workers' health, well-being and attitudes and the two expected underlying mechanisms in this relationship (i.e. job insecurity and quality of work). Therefore, we use a large and representative sample of Dutch workers in which we distinguish between permanent employment and four types of temporary employment: (1) fixed-term employment with prospects on permanent employment, (2) fixed-term employment without these prospects, (3) temporary agency work and (4) on-call work.

1.7.3 Temporary employment: bridge or trap and for whom? (RQ 2: Study 3-5)

Based on the employment contract literature it can be concluded that (at least some) forms of temporary employment are associated with higher job insecurity and a lower quality of work, and related to this, lower health and well-being and adverse work-related attitudes. However, as paragraph 1.5 shows, not all workers run an equal chance to "end up" in these precarious temporary jobs. This raises the question: For whom does temporary employment serve as a bridge into high quality permanent employment and who will become trapped in low quality temporary employment and ultimately become unemployed? In order to answer this second research question, we conducted three longitudinal studies, which also provide insight into the causality issue regarding the direction of the relationship between temporary employment and workers' health, well-being and attitudes.

In the first of these studies (Study 3: Chapter 4) we examine the normal causality direction, meaning that temporary employment may adversely impact workers' health, well-being and attitudes. In this 1-year longitudinal study among a large sample of Dutch employees, we examined the impact of contract changes and employer changes on workers' job insecurity, quality of work, health, well-being and attitudes. The rationale behind this study is that the expected impact of contract changes – that upward contract changes towards permanent employment are for the better, whereas downward contract changes towards more temporary employment are for the worse – may depend on whether an employee also changed employer. Based on turnover theories (Steel & Lounsbury, 2009), high employability in terms of having "high quality" job alternatives is expected to act as a protecting factor against unfavourable (temporary) employment.

Besides normal causality, we tested the "reversed causality" hypothesis (that health, well-being and work-related attitudes are predictive for workers' future employment [contract] status) in Study 4 and 5. In these studies we put the "healthy worker" hypothesis to the test: healthy workers have better chances in receiving (permanent) employment, whereas less healthy workers are more likely to become temporary employed or unemployed (see §1.5.1).

Study 4 (Chapter 5) draws on two data waves from a large sample of Dutch workers, collected during the economic recession (2008-2009). In this study we tested whether workers' health, well-being and work ability are predictive for upward changes in employment contract (from various forms of temporary employment into a permanent position) and downward changes in employment contract (from permanent employment or relatively secure temporary employment into [insecure] temporary employment or unemployment). Especially during an economic downturn, when employers can be more selective in their employment decisions (i.e. which employee to hire or to fire), it can be expected that having a lower health status, well-being or work ability increases the risk of becoming temporary employed or unemployed.

In our fifth study (Chapter 6), that was based on two data waves collected during the economic recession (2010-2012), we tested the existence of (health) selection effects beyond the formal employment contract. In this study among a substantial group of Dutch employees we examined whether dismissal and its follow-up for the employee (re-employment versus unemployment) could be predicted on the basis of workers' employment contract, age, health status and performance at baseline. Due to current employment protection in many EU countries it can be expected that temporary and younger workers are at risk for dismissal. Based on health selection mechanisms also less healthy and poor performing workers are likely to be dismissed, and, together with older workers, unlikely to be re-hired for employment and thus at risk for long-term unemployment.
For an overview of these studies, please see Table 1.1.

Table 1.1 Overview of studies in this thesis

Study	*Main research questions / topics*	*Design*	*Data characteristics*
Research Question 1: Temporary employment: Does it have negative job characteristics and outcomes?			
Study 1 (Chapter 2)	- Contract differences in terms of prevalence, composition (gender and age), quality of work and work satisfaction in the EU27	Cross-sectional	Two large and representative samples of European workers: - EWCS 2000 and 2005[1]; *N*=58,368
Study 2 (Chapter 3)	- Contract differences in quality of work, job insecurity, health and work-related attitudes - Role of job quality and job insecurity in the relationship between employment contracts and health and work-related attitudes	Cross-sectional	Large and representative sample of Dutch workers: - NWCS 2008[2]; *N*=21,639)
Research Question 2: Temporary employment: Is it a bridge or a trap and for whom?			
Study 3 (Chapter 4)	- Impact of contract- and employer changes on workers' quality of work, job insecurity, health and work-related attitudes	1-year longitudinal	Large and generally representative sample of Dutch workers: - NWCCS 2007-2008[3]; *N* = 9,688
Study 4 (Chapter 5)	- Health, work-related well-being and work ability as predictors of precarious temporary employment and unemployment	1-year longitudinal	Large and generally representative sample of Dutch workers - NWCCS 2008-2009[3]; *N* = 7,112
Study 5 (Chapter 6)	- Contract type, age, health and performance as predictors of dismissal and re-employment after dismissal	2-year longitudinal	Large sample of Dutch workers - NWCS 2010-2012[4]: *N* = 2,644

[1]European Working Conditions Survey 2000/2001 and 2005
[2]Netherlands Working Conditions Survey 2008
[3]Netherlands Working Conditions Cohort Study 2007-2009
[4]Netherlands Working Conditions Survey 2010 and follow-up in 2012

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CHAPTER 2

Labour contracts in the European Union, 2000–2005: Differences among demographic groups and implications for the quality of working life and work satisfaction

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2.1 ABSTRACT

Study aim

Current theorizing holds that organizations may be less motivated to offer good work circumstances to temporary workers because the latter do not constitute the core of the organization. This implies that their quality of working life and work satisfaction could be lower than that of permanent workers. Therefore, it is potentially important to examine the prevalence and consequences of having temporary employment. The present study assessed changes in the prevalence of various employment contracts (i.e., permanent, fixed-term, and temporary agency contracts) between 2000/01 and 2005 within five EU country clusters, as well as its gender and age composition and its association with quality of working life and work satisfaction.

Methods

Cross-sectional data were obtained for all current EU member states from the 2000/01 and 2005 European Working Conditions Surveys (total N = 58,368).

Results

Overall the percentage of temporary workers (and particularly fixed-term contractors) increased, whereas especially younger and female workers were likely to hold a temporary contract. Multivariate analysis of variance showed the highest overall quality of working life and work satisfaction for permanent contractors and the lowest for temporary agency workers. These findings were largely independent of time and country cluster.

Conclusions

Interventions targeting different labour market outcomes (such as the contract type people receive and the quality of their working life) are needed, both at the European/governmental and the organizational level.

2.2 INTRODUCTION

The present research examines differences in the prevalence of employment contracts between 2000/01 and 2005 in a large and representative sample of the European Union, in relation to its gender and age composition and, in particular, in relation to the quality of working life and work satisfaction. In line with Lawler (1982), we define the quality of working life in terms of job characteristics and work conditions. Due to the increased global competition over the past two decades, many organizations have improved their competitiveness by making labour cheaper and more flexible through reductions of their number of permanent employees and increased utilization of subcontracted and temporary workers (De Cuyper et al., 2008). In this study we define temporary employment according to the definition of the Organisation for Economic Co-operation and Development (OECD, 2002, p. 170), as "dependent employment of limited duration". Many organizations transferred jobs from the internal (high pay, high employment stability) to the external (low pay, low stability) segment of the labour market (Hudson, 2007). This has led to an increase in the number of flexible jobs (Kompier, 2006). For example, the percentage of European employees having a temporary contract increased from 11.7% in 1998 to 14.2% in 2005 (European Commission, 2006). More specifically, between 1997 and 2007, the number of temporary agency workers (in full-time equivalents) within the European Union has doubled, currently constituting about 2% of the European employees (Ciett, 2009). Therefore, presently many organizations possess a core–periphery structure, with a core of permanent workers that is surrounded by one or more layers of temporary workers. From the core to the periphery the stability and security of the respective jobs decrease (Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008).

This core–periphery structure is a basic element of the dual labour market theory. According to this theory, the labour market consists of a primary and a secondary segment that are presumed to differ in terms of employment characteristics (working conditions, skill level, stability and security, and overall attractiveness; Hudson, 2007; Reich, Gordon, & Edwards, 1973). Primary segment jobs are central to organizations. They require high levels of job-specific skills, meaning that incumbents cannot easily be replaced and that this type of jobs cannot be outsourced. In order to tie employees to these jobs, organizations must offer attractive working conditions, high pay, and high job security. Jobs in the secondary segment are expected to be relatively precarious "low quality" jobs. As such jobs require low levels of training and skills, organizations can more easily replace their incumbents. Thus, there is no need for them to provide these workers with attractive working conditions, earnings will be low, and these jobs offer little security (Hudson, 2007).

One might assume that the increase in the number of jobs offering flexible and short-term labour contracts will be accompanied by a similar increase in the number of jobs offering adverse working circumstances. In turn, this increase should translate into low levels of well-being for job incumbents. Indeed, temporary jobs are prone to offering adverse working conditions and are associated with a higher chance of job loss and negative health

aspects (Cheng & Chan, 2008; M. Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005; P. Virtanen et al., 2005). However, some labour market groups run a higher risk of being an organizational outsider. It has been argued that the typical secondary-segment worker differs in a number of respects from workers in the primary segment of the labour market (Kalleberg, Reskin, & Hudson, 2000). Barbieri (2009) speaks of a strong insider–outsider dilemma in many EU countries in which the mid-career, skilled male workers typically are the relatively well-sheltered insiders. Conversely, the outsiders who are most at risk for precarious jobs and social exclusion are market entrants, thus young workers, and, in many countries, females.

Therefore, in a large and representative sample of the European active working population we examined the changing prevalence of contract types (i.e., permanent, fixed-term, and temporary agency work) and its gender and age composition within the European Union between 2000 and 2005. Specifically, we analysed contract differences in the quality of working life and work satisfaction and examined time differences and between-country cluster differences in this relationship.

2.2.1 Differences within the European Union

Previous research on socioeconomic differences among demographic groups in Europe has often focused on comparing various clusters of countries. Although the countries assigned to these clusters tend to vary slightly among studies, with some caution the findings of studies employing different classifications of countries can meaningfully be compared (Bambra, 2009). Overall, this research has demonstrated socioeconomic differences with respect to gender, age, education, the quality of working life, health, and well-being in most country clusters, especially within the Southern countries, including Italy and Spain (Barbieri, 2009; European Commission, 2008; Hausmann, Tyson, & Zahidi, 2007). In these countries, young labour market entrants often get precarious employment, which increases the risk of unemployment and "getting trapped" in the secondary segment of the labour market. Furthermore, a recent report on the economic participation, economic opportunities, political empowerment, educational attainment, and health and well-being of male versus female employees showed that the Nordic countries, such as Denmark and Sweden, are closest to reaching equality in these respects (Hausmann et al., 2007). They are followed by most of the Anglo-Saxon (i.e., England and Ireland), Continental (e.g., Germany and France), and Eastern (e.g., Poland and Slovenia) countries, with most of the Southern countries performing poorly in these respects. Similarly, the European Commission (2008) found that workers in the Nordic countries (including The Netherlands and the UK) have comparatively high wages, good working conditions, high educational achievement and participation in training, and high job satisfaction, but also a high work intensity. Continental countries, including Ireland, Cyprus, and Slovenia, score close to the average of the EU. In contrast, for the Southern countries relatively low wages, low participation in education and training, unfavourable working conditions and relatively large gender employment

gaps were found. The new member states (such as Poland and Bulgaria who joined the EU after 2003) have also relatively low wages and unfavourable working conditions, but also relatively high educational achievement and low gender employment gaps.

2.2.2 Narrowing differences within the European Union

Relevant to the country differences within the EU, an ambitious reform agenda was established in March 2000 at the Lisbon European Council (renewed in 2005; European Commission, 2005). One of the key issues of this agenda was to create more and better jobs by drawing more people into employment, modernizing social protection systems, increasing the adaptability of workers and flexibility of the labour market, and improving workers' education and skills. Eventually this programme should reduce between-country differences in the prevalence of the type of employment contracts and the quality of working life, health, and well-being. Currently, the Nordic country cluster (which includes The Netherlands), has become closest in reaching the Lisbon goals. These countries are followed by the Anglo-Saxon and Continental countries, with the Southern and Eastern countries coming last (Blanke & Geiger,2008).

2.2.3 Current state of research

The impact of the change in labour market structure for different categories of workers and their health and well-being is as yet unclear. Findings of previous research are inconclusive and sometimes even contradict the view that temporary workers are worse off in terms of their quality of working life, health, and well-being than those holding permanent appointments (Bernhard-Oettel, Sverke, & De Witte, 2005; Connelly & Gallagher, 2004; De Cuyper et al.,2008). For example, temporary work is associated with monotonous and less complex work, physical discomfort, less control, but also with a lower incidence of overtime work, fewer demands, and less stress (Benach, Gimeno, Benavides, Martínez, & Del Mar Torné, 2004; Goudswaard & Andries, 2002; Kompier, Ybema, Janssen, & Taris, 2009; Letourneux, 1998). Furthermore, the same studies showed temporary workers to be less satisfied or less engaged with their job than permanent workers. However, several other studies, as described in a review by De Cuyper et al. (2008), showed contradictory or nonsignificant results, not only with regard to job satisfaction but also with regard to organizational commitment, health and well-being, and organizational citizenship behaviour.

Explanations for these findings include both conceptual and methodological issues (Kompier et al., 2009). A main conceptual issue concerns the heterogeneity of the temporary workforce, because temporary jobs may differ greatly in terms of the conditions they offer (such as training opportunities and salary), employment stability (for instance, contract duration), and background variables (such as gender, age, and educational level). For example, permanent and directly hired, fixed-term employees are considered to be quite similar to each other, whereas temporary agency workers and especially casual and

on-call workers are considered to have far more precarious jobs (De Cuyper et al.,2008). Methodologically, most studies employed a cross-sectional design, meaning that it is unclear how health, well-being, and occupational status of especially temporary workers change over time (but see Kompier et al., 2009; P. Virtanen et al., 2005). Furthermore, research usually refers to specific groups of workers, for example within a particular sector and country. This means that findings may not generalize to other groups, because there are major between-sector and between-country differences with respect to the quality of working life and employment expansion in the European Union (Fernández-Macías & Hurley, 2008; Jettinghoff & Houtman, 2009).

2.2.4 Aim and contribution of the current study

Against this background, the aim of the current study is twofold. Our first aim is to analyse differences in the prevalence and composition of contract types between 2000/01 and 2005 within five country clusters, involving all current members of the European Union. Our second aim is to examine the association between the type of employment contract and the quality of working life and work satisfaction, and to examine time differences and between-country cluster differences in this relationship. By comparing three contract types (i.e., workers with a permanent, fixed-term, and temporary agency contract), we aim to address the main conceptual issue of the heterogeneous temporary workforce. We also focus on potential gender and age differences among these contract types. To address methodological issues, we use a large and representative sample of the European workforce that contains data for two time points (2000/01 and 2005) and we also take between-country cluster differences into account.

2.2.5 Hypotheses

Because of the increase in the number of flexible jobs, we expect to observe a general decline in the proportion of permanent contracts in favour of temporary contracts across Europe, but between-country cluster differences may be present (Hypothesis 1). Because young market entrants and female employees may be at risk for precarious jobs, we expect them to be overrepresented in both types of temporary work included in this study (Hypothesis 2a). Moreover, based on slow progress as regards the Lisbon strategy, which should narrow existing country differences within the European Union over time (European Commission, 2005), we expect this gender and age representation across employment contracts to be comparable at both time points (Hypothesis 2b) and in the five country clusters (Hypothesis 2c).

Regarding the differences in quality of working life and work satisfaction between the primary and secondary segment of the labour market, we expect these to be related to the type of employment contract workers have. Permanent jobs that make up the core of a company are expected to offer a higher quality of working life and work satisfaction

than temporary jobs (especially temporary agency work) that constitute the periphery of a company (Hypothesis 3a). Although there are existing European country differences in the quality of working life, we have no a priori reason to assume that contract differences in the quality of working life and work satisfaction are also different among the five country clusters. Moreover, the development of more and better jobs, as initiated by the Lisbon strategy in 2000, progressed slowly. Therefore, we expect the contract differences in the quality of working life and work satisfaction to be visible at both time points (Hypothesis 3b) and across the five country clusters (Hypothesis 3c).

2.3 SAMPLE & MEASURES

2.3.1 Sample

The present study draws on two cross-sectional waves of the European Working Conditions Survey (EWCS; Paoli & Merllié, 2001; Paoli & Parent-Thirion, 2003; Parent-Thirion, Macías, Hurley, & Vermeylen, 2007). The first of these was conducted in 2000/01 in all 27 states of the current European Union. In 2000 data were collected for the 15 EU member states, whereas in 2001 data were collected for the 12 states that would join the EU in 2004 or 2007. During the second wave (2005) the same data were collected for the same countries. All data were collected using structured face-to-face interviews in the respondents' households. The overall response rate for the included countries in this study (i.e., the EU 27) varied from 51.2% to 61.1% across the study waves (mean response was 56.2%). In total, responses were obtained from 58,368 participants. For both surveys, the weighted data were representative of persons in employment, employees, and self-employed (as defined by Eurostat, 2003, p. 12), during the fieldwork periods in all countries (for detailed information on the weighting procedure and data representativeness see Paoli & Merllié, 2001; Paoli & Parent-Thirion, 2003; Parent-Thirion et al., 2007). Because analyses were restricted to workers holding a permanent, fixed-term, or a temporary agency contract, our final weighted sample contained 44,194 participants (i.e., 2000/01 N = 25,079 and 2005 N = 19,116). The mean age of the participants in the country clusters ranged from 38.5 to 39.6 years (overall M = 39.1, SD = 11.3) and the percentage of male workers ranged from 51.4% to 59.4% (overall percentage 54.3%).

2.3.2 Measures

Employment contract

We distinguished among three types of workers, namely those with a permanent contract, a fixed-term contract, and a temporary agency work arrangement. This categorization has frequently been used in other research (De Cuyper, Notelaers, & De Witte, 2009; Parent-Thirion et al., 2007).

Country clusters

We employed the typology used by the European Foundation for the Improvement of Living and Working Conditions in the fourth EWCS (Parent-Thirion et al., 2007), which was based on Esping-Andersen's (1990) typology of the three types of welfare regimes (i.e., liberal, conservative, and social-democratic regimes). This clustering is based on the degree to which an individual's welfare is dependent on the market (e.g., pensions and sickness insurance); the degree of social stratification; and the welfare provision share of the state, family, voluntary sector, and the market (Bambra, 2009). This EWCS typology also shares some features with Bonoli's (1997) and Ferrera's (1996) classifications, both of which are closely linked to economic development (i.e., coverage of the healthcare system, replacement rates, poverty rates and social expenditure). The EWCS typology also takes into account the southern countries of the EU, including Spain, Portugal, and Greece. We thus defined five clusters: (1) Nordic countries, namely Denmark, Sweden, Finland, and The Netherlands (*N* = 3842); (2) Anglo-Saxon countries, i.e., Great Britain and Ireland (*N* = 5723); (3) Continental countries, Germany, Belgium, France, Austria, and Luxembourg (*N* = 14,491); (4) Southern countries, that is, Portugal, Spain, Italy, Greece, Malta, Cyprus, and Bulgaria (*N* = 9174); and (5) Eastern countries, namely, Croatia, Estonia, Hungary, Lithuania, Latvia, Poland, Slovenia, Slovakia, and Romania (*N* = 10,965).

Quality of working life

The quality of working life was assessed in detail by measuring job content, physical working circumstances, and employment terms. *Job content* was assessed with four scales. The *work pressure* scale contained two items: (1) "Does your job involve working at very high speed?" and (2) "Does your job involve working to tight deadlines?" (1 = "all of the time", 7 = "never"). The other scales used a dichotomous answering format (1 = "yes", 2 = "no"). *Autonomy* was measured with three items, namely (1) "Are you able to choose or change your order of tasks?", (2) "Are you able to choose or change your methods of work?", and (3) "Are you able to choose or change your speed or rate of work?" *Repetitive tasks* were measured by the items (1) "Does your job involve short repetitive tasks of less than 1 minute?" and (2) "Does your job involve short repetitive tasks of less than 10 minutes?" The items of the *work complexity* scale were "Does your main paid job involve … " (1) "meeting precise quality standards?", (2) "assessing yourself the quality of your own work?", (3) "solving unforeseen problems on your own?", (4) "complex tasks?", and (5) "learning new things?" (1 = "yes", 2 = "no").

Physical working circumstances were measured using a six-item *adverse physical working conditions* scale and a three-item *physical load* scale. An example question of the first scale is "Are you exposed at work to vibrations from hand tools, machinery, etc.?" (other items referred to noise, low or high temperatures, breathing in smoke and/or dust, and being into skin contact with chemicals; 1 = "all of the time", 7 = "never"). *Physical*

load was measured by asking the participant "Does your main paid job involve … " (1) "tiring or painful positions?", (2) "carrying or moving heavy loads?", and (3) "repetitive hand or arm movements" (1 = "all of the time", 7 = "never").

Terms of employment were measured using two scales. *Irregular working times* were assessed by asking the participant: "Normally, how many times a month do you work … " (1) "at night, for at least 2 hours?", (2) "in the evening, for at least 2 hours?", and (3) "more than 10 hours a day?" Participants reported the number of times per month they engaged in these behaviours; their response was coded as missing if they engaged more than 31 times a month in these behaviours. The participant's *income* was measured using the item "Presently, what is on average your net monthly income from your main paid job?" The item was answered using a 10-point scale corresponding with the 10 income deciles in the participants' countries of origin. In line with Paoli and Parent-Thirion (2003), we recoded this item into four categories (1 = "low", 4 = "high").

Work satisfaction was measured using the question "Are you very satisfied, satisfied, not very satisfied, or not at all satisfied with working conditions in your main paid job?" (1 = "very satisfied", 4 = "not at all satisfied").

Control variables

As control variables gender, age, the participants' occupation, employers' core activity, and weekly working hours were assessed. The *participants' occupation* was measured using the ISCO-88 classification at the first digit level (International Labour Organization, 2004) with two further aggregations (Paoli & Merllié, 2001). This resulted into eight categories: 1 = Legislators, senior officials and managers; 2 = Professionals (e.g., life science, health, computing, and teaching professionals); 3 = Technicians and associate professionals; 4 = Clerks (e.g., secretaries and library clerks); 5 = Service workers and shop and market sales workers and armed forces; 6 = Plant and machine operators and assemblers and skilled agricultural and fishery workers (e.g., mining, glass, and wood-processing operators, forestry workers); 7 = Craft and related trades workers (e.g., painters, metal moulders, and blacksmiths); and 8 = Elementary occupations (e.g., street vendors, shoe cleaners, and porters). The *employers' activity* was measured using the NACE Rev. 1 codes (Nomenclature statistique des activités économiques dans la Communauté européenne; Eurostat, 1996), aggregated into five categories: 1 = Agriculture, hunting, forestry, and fishing; 2 = Industry; 3 = Services (excluding public administration); 4 = Public administration and defence, compulsory social security; 5 = Other services (Paoli & Merllié, 2001). Finally, w*eekly working hours* were assessed by asking "How many hours do you usually work per week in your main paid job?" Participants whose answers exceeded 120 hours were coded as missing.

If applicants voiced no opinion or refused to answer a question, this was coded as a missing answer. All questions and scales used in this study were first recoded according to their contents. Thus, higher scores reflect higher quantities of the measured concept (e.g., more adverse physical working conditions, more autonomy, and higher work satisfaction).

Table 2.1 Means, standard deviations, reliabilities and correlations for 2000/01 and 2005 for the study variables

Variables (range)	*2000/01*			*2005*																
	M	*SD*	*α*	*M*	*SD*	*α*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Adverse physical working conditions (1-7)	2.00	1.21	.81	1.94	1.16	.81		.56	.28	-.21	.16	.09	.10	-.01	-.26	-.29	-.04	.18	.00	-.07
(2) Physical load (1-7)	2.93	1.64	.70	2.95	1.53	.65	.53		.33	-.23	.30	.01	.09	-.18	-.29	-.08	-.06	.09	-.05	-.08
(3) Work pressure (1-7)	3.59	1.85	.65	3.68	1.87	.76	.29	.35		-.13	.24	.21	.15	.05	-.18	-.08	-.07	.16	-.01	-.08
(4) Autonomy (1-2)	1.63	0.40	.77	1.63	0.40	.76	-.20	-.21	-.08		-.11	.17	-.06	.16	.19	.03	.08	-.01	.09	.06
(5) Repetitive tasks (1-2)	1.34	0.41	.71	1.32	0.40	.63	.21	.35	.24	-.12		.04	.03	-.11	-.09	.04	-.06	.00	-.02	-.01
(6) Work complexity (1-2)	1.67	0.31	.62	1.70	0.30	.63	.15	.06	.24	.17	.09		.02	.21	.09	-.09	.00	.11	.06	.06
(7) Irregular working times (0-31)	2.72	4.12	.59	2.49	3.81	.60	.16	.10	.13	-.06	.04	.04		.09	-.10	-.15	-.05	.33	-.02	.04
(8) Income (1-4)	2.51	1.07	--	2.59	1.02	--	.01	-.07	.04	.08	-.06	.12	.09		.12	-.33	.18	.33	.22	.06
(9) Work satisfaction (1-4)	3.01	0.74	--	3.03	0.71	--	-.27	-.27	-.18	.19	-.10	.06	-.11	.02		.05	.04	-.08	.06	.02
(10) Gender (1: male; 2: female)	1.45	0.50	--	1.46	0.50	--	-.22	-.06	-.05	.02	.00	-.09	-.12	-.22	.04		-.01	-.30	-.06	.06
(11) Age (15-70)	38.74	11.23	--	39.59	11.28	--	.00	-.04	-.06	.04	-.08	.00	-.04	.14	.03	-.02		-.01	.21	.01
(12) Weekly working hours (0-120)	38.51	11.31	--	37.47	10.21	--	.17	.08	.12	-.03	-.03	.07	.38	.24	-.13	-.24	.01		.06	.09
(13) Contract (0: temp.; 1: perm.)	0.87	0.34	--	0.85	0.36	--	.01	-.03	.02	.06	-.02	.06	.00	.13	.05	-.03	.19	.08		--
(14) Contract (0: agency; 1: fixed)[A]	0.83	0.37	--	0.87	0.34	--	.03	-.03	.02	.10	-.02	.06	.04	.06	.08	.00	.03	.09	--	

[A] *N* 2000/01: 3,280; *N* 2005: 2,878. Higher scores reflect higher quantities of the measured concept. Left of diagonal: correlations for 2000/01; right of diagonal: correlations for 2005. The *N*s vary from 16,365 to 25,070. Correlations ≥ .02 are significant at $p < .01$.

Furthermore, for each scale we computed average scores per item, for which the theoretical range and descriptive information are reported in Table 2.1.

2.4 STATISTICAL PROCEDURE

To examine whether the number of permanent workers decreased over time in favour of those holding temporary contracts and to check if this was the same for all five country clusters (Hypothesis 1), we computed chi-square values for the association between contract type (indefinite vs. fixed-term vs. temporary agency contract), time (2000/01 vs. 2005), and country cluster (Nordic vs. Anglo-Saxon vs. Continental vs. Southern vs. Eastern countries), using log linear and cross-table analysis.

To test if female and younger workers were overrepresented in temporary employment (Hypothesis 2a) and to test whether such an overrepresentation was visible at both time points (Hypothesis 2b) and in all country clusters (Hypothesis 2c), stepwise logistic regression analysis was used to examine whether the type of labour contract one held could be statistically predicted on the basis of demographic characteristics, time, and country cluster. This technique is very similar to ordinary least squares regression analysis, but is especially appropriate when the dependent variables are dichotomous (Menard, 1995). The first logistic regression analysis focused on permanent (score 1) versus temporary (i.e., either fixed-term or temporary agency) employment (score 0). The second analysis focused on fixed-term (score 1) versus temporary agency (score 0) employment. Note that these analyses are statistically independent. For both analyses we first entered the control variables employers' activity and the participants' occupation, to control for a potential moderating role of these variables. Next, we entered the main effects of time, country cluster, gender, and age. Finally, all two-way interaction effects of these variables were entered. Higher order interaction effects were not included because preliminary analyses had revealed that virtually all these effects were non-significant or accounted for less than 1% of the variance in the criterion variables. Note that in these analyses a significant chi-square value indicates that at least one of the predictors significantly predicts employment status.

To find out whether permanent workers had the best quality of working life and the highest work satisfaction and temporary agency workers the worst (Hypothesis 3a), we conducted a multivariate analysis of variance (MANOVA) with type of employment contract (permanent vs. fixed-term vs. temporary agency) as the independent variable and the quality of working life indicators and work satisfaction as criterion variables. Because many participants (18% of the total sample) did not answer the income question, we conducted a second MANOVA with income as the criterion variable. Bonferroni post hoc analyses were conducted and effect sizes (Cohen's *D*) were computed to examine differences among contract types. To test if potential differences could be attributed to the type of employment contract and were not due to a moderating role of the control variables (gender, age, weekly working hours, participants' occupation, and the employers' core activity), we repeated both analyses with these control variables as covariates. For this purpose we first dummy-coded

the control variables participants' occupation and the employers' core activity. Finally, we tested if possible contract differences in the quality of working life and work satisfaction were visible at both time points (Hypothesis 3b) and in all country clusters (Hypothesis 3c). To test this we repeated the previous MANCOVAs, but in the first analysis we added "time of measurement" as an independent variable and in the second analysis we added "country cluster" as an independent variable.

2.5 RESULTS

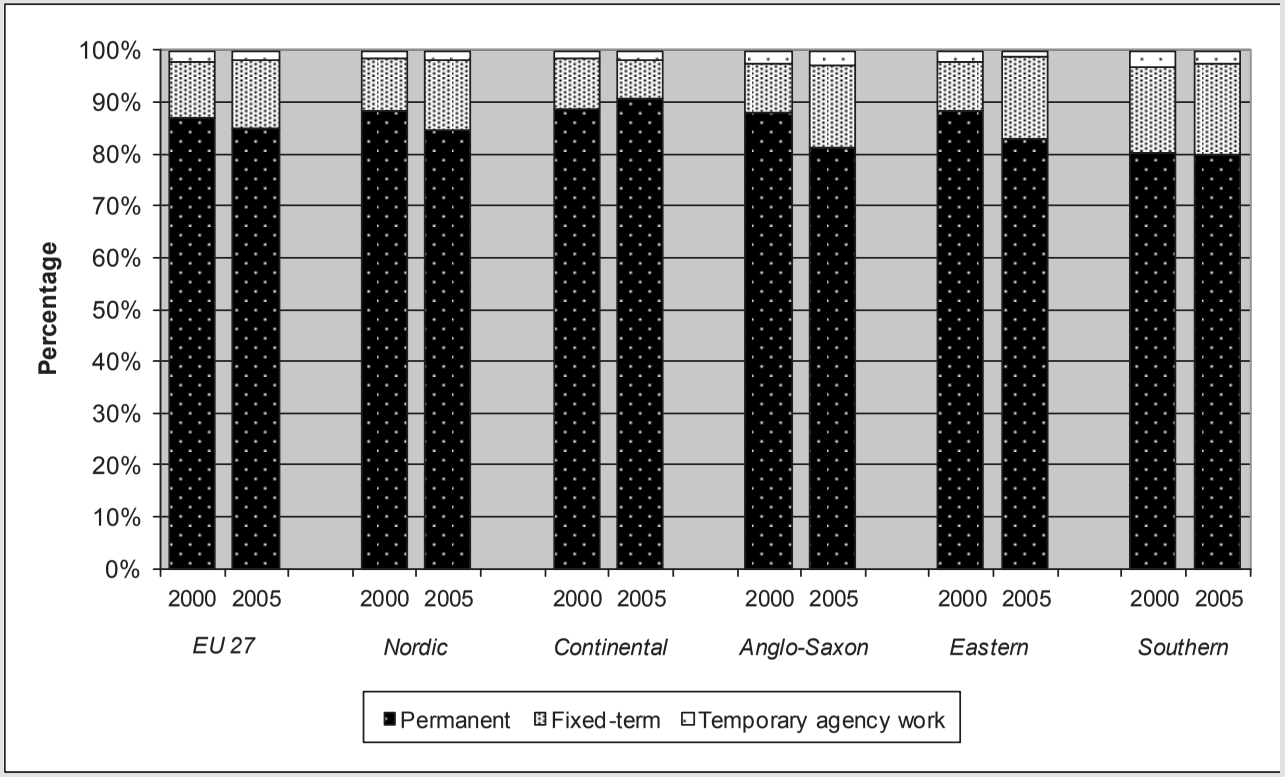
2.5.1 Contract types, time, and country clusters

Hypothesis 1 proposed a decline in the proportion of permanent contracts in favour of temporary contracts all over Europe, but between-country cluster differences may be present. Log linear analysis indeed showed significant time differences in the percentage of workers holding a permanent, fixed-term, and temporary agency contract, and these associations varied across country clusters, $\chi^2(8, N = 44{,}194) = 132.93$, $p < .01$. Figure 2.1 shows the relevant data for the EU, including the five country clusters. The results of follow-up cross-table analyses largely supported our first hypothesis. Overall, $\chi^2(2, N = 44{,}193) = 50.21$, $p < .01$, but specifically in the Nordic, $\chi^2(2, N = 3841) = 11.91$, $p < .01$, Anglo-Saxon, $\chi^2(2, N = 5723) = 55.46$, $p < .01$, and Eastern, $\chi^2(2, N = 10{,}965) = 92.71$, $p < .01$, countries the temporary workforce (mainly the share of fixed-term contractors) increased, at the expense of the permanent workforce. Although a similar but weaker trend was found for the Southern countries, their share of agency workers also showed a relatively large decline, $\chi^2(2, N = 9173) = 9.21$, $p < .05$. The Continental countries showed the opposite trend: The share of their permanent workforce increased at the expense of their share of fixed-term contractors, $\chi^2(2, N = 14{,}491) = 16.52$, $p < .01$.

2.5.2 Logistic regression analyses

We then examined if female and younger workers were overrepresented in types of temporary work (Hypothesis 2a), whether this was visible at both time points (Hypothesis 2b) and across the five country clusters (Hypothesis 2c). First, the gender and age effects presented in Table 2.2 support Hypothesis 2a. Moreover, the interaction effects between gender and age were also significant, showing that with increasing age, females were more prone to have especially temporary agency work. Second, the overrepresentation of younger and female workers in types of temporary work was visible at 2000/01 and 2005, supporting Hypothesis 2b. However, as compared to 2000/01, temporary female workers in 2005 were more represented in fixed-term contracts than in temporary agency work arrangements. Finally, Hypothesis 2c only received partial support, because country cluster differences with respect to age were present. With increasing age, the chance of having permanent work instead of temporary work was greater in the Continental countries and smaller in the Anglo-Saxon and Eastern countries, as compared to the Nordic countries. In sum, younger

Figure 2.1 Time differences (2000/01; 2005) in the share of employment contracts within the European Union and 5 country clusters.



workers (especially in the Continental countries), female workers, and older female workers were overrepresented in both forms of temporary work on both time points.

2.5.3 Contract types, the quality of working life, and work satisfaction

Hypothesis 3a stated that the quality of working life and work satisfaction of permanent workers would be best, whereas that of temporary agency workers would be worst. Inspection of the univariate *F*-values and *D*-values in Table 2.3 confirmed this hypothesis for the overall model, physical load, autonomy, work complexity, income, and work satisfaction (all *F*s > 30, *p*s < .001). Scores on repetitive tasks proved to be better for permanent workers than fixed-term workers. However, contrary to our expectations, fixed-term workers had the highest score on irregular working times, whereas the findings for physical working conditions and work pressure did not significantly differ across contract types. Finally, all contract type differences, except for repetitive tasks, remained significant after controlling for gender, age, weekly working hours, participants' occupation, and employers' core activity.

Next we examined if the contract differences concerning the quality of working life and work satisfaction were visible at both time points (Hypothesis 3b) and across the five country clusters (Hypothesis 3c). Table 2.4 shows four significant interaction effects between contract and time. The interaction effects of adverse physical working conditions and work pressure were mainly due to variations in the scores of agency workers. Interestingly, their scores varied from most favourable in 2000/01 to most unfavourable in 2005, as compared to permanent and fixed-term workers. Furthermore, the autonomy and income scores of fixed-term and agency workers were lower in 2005 than in 2000/01, whereas the scores of permanent workers were roughly the same or higher in 2005 as compared to 2000/01. Thus, although these four interaction effects do not support Hypothesis 3b, they are in line with Hypothesis 3a in that the scores of temporary agency workers in 2005 were worse compared to those of permanent and/or fixed-term workers. Furthermore, the contract differences found in the overall analyses proved to be robust as they were relatively independent of measurement time.

Regarding the interaction effects between contract and country cluster, Table 2.5 shows all effects to be significant. However, most country clusters (i.e., 3 to 5 out of 5 clusters) showed the same contract differences as found in the overall analyses, while the departing country clusters varied depending on the investigated indicator of quality of working life and work satisfaction. Accordingly, Hypothesis 3c is largely supported. Other interaction effects were mainly due to differences in the scores of agency workers, as compared to fixed-term and permanent workers. For example, agency workers in the Nordic, Continental, and Southern countries had comparatively the worst physical working conditions. Moreover, most agency workers experienced the highest work pressure, except in the Nordic countries, where

Table 2.2 Logistic regression analyses for permanent vs temporary employment, and fixed-term vs temporary agency work (across study waves: 2000/01 and 2005)

		Permanent vs temporary employment[A]		*Fixed-term vs temporary agency*[B]	
Step 1:	Control variables	*Df*=11; X^2=527.58**; R^2=.022		*Df*=11; X^2=141.96**; R^2=.040	
		Exp(*B*)	99% CI	Exp(*B*)	99% CI
	Employer's activity				
	Reference: agriculture a.o.	1.00		1.00	
	Industry	1.25**	1.03-1.52	0.86	0.53-1.39
	Services	1.03	0.85-1.25	0.88	0.54-1.43
	Incl. public administration	1.39**	1.10-1.75	1.46	0.78-2.73
	Other services	0.86	0.70-1.05	1.16	0.69-1.95
	Participant's occupation				
	Reference: legislators a.o.	1.00		1.00	
	Professionals	0.56**	0.44-0.71	0.71	0.28-1.77
	Technicians a.o.	0.58**	0.46-0.73	0.60	0.24-1.48
	Clerks	0.47**	0.37-0.59	0.28**	0.12-0.68
	Service workers a.o.	0.36**	0.29-0.45	0.43*	0.18-1.02
	Plant operators a.o.	0.49**	0.38-0.62	0.29**	0.11-0.69
	Craft workers a.o.	0.46**	0.36-0.58	0.37**	0.15-0.88
	Elementary occupations	0.27**	0.22-0.34	0.24**	0.10-0.57
Step 2:	Main effects	*Df*=7; X^2=2143.62**; R^2=.107, ΔR^2=.085		*Df*=7; X^2=44.15**; R^2=.053, ΔR^2=.013	
		Exp(B)	99% CI	Exp(*B*)	99% CI
	Year of measurement				
	Reference: 2000/01	1.00		1.00	
	2005	0.82**	0.76-0.88	1.38**	1.13-1.67
	Country cluster				
	Reference: Nordic	1.00		1.00	
	Continental	1.32**	1.14-1.52	0.82	0.55-1.22
	Anglo-Saxon	0.85	0.73-1.00	0.61*	0.40-0.93
	Eastern	0.98	0.84-1.14	1.08	0.72-1.62
	Southern	0.63**	0.54-0.73	0.97	0.65-1.44
	Gender				
	Reference: male	1.00		1.00	
	Female	0.84**	0.77-0.91	1.05	0.85-1.29
	Age (continuous variable)	1.06**	1.05-1.06	1.01	1.00-1.01

Table 2.2 (continued)

		Permanent vs temporary employment[A]		***Fixed-term vs temporary agency***[B]	
Step 3:	2-way interactions	*Df*=15; X^2=393.15**; R^2=.122, ΔR^2=.015		*Df*=15; X^2=95.22**; R^2=.079, ΔR^2=.026	
		Exp(*B*)	99% CI	Exp(*B*)	99% CI
	Time x country				
	Reference: 2001 x Nordic	1.00		1.00	
	2005 x Continental	1.72**	1.28-2.31	0.67	0.29-1.50
	2005 x Anglo-Saxon	0.83	0.60-1.14	0.96	0.40-2.28
	2005 x Eastern	0.89	0.66-1.21	2.56*	1.08-6.06
	2005 x Southern	1.35*	1.01-1.81	1.17	0.53-2.59
	Time x gender				
	Reference: 2001 x male	1.00		1.00	
	2005 x female	0.89	0.77-1.04	1.56*	1.04-2.33
	Time x age				
	Reference: 2001 x age	1.00		1.00	
	2005 x Age	1.00	0.99-1.01	0.99	0.97-1.01
	Gender x country				
	Reference: male x Nordic	1.00		1.00	
	Female x Continental	1.05	0.78-1.41	1.10	0.49-2.47
	Female x Anglo-Saxon	1.32	0.96-1.83	0.49	0.21-1.17
	Female x Eastern	1.26	0.93-1.69	0.89	0.39-2.04
	Female x Southern	0.78	0.58-1.05	0.92	0.42-2.04
	Age x country				
	Reference: age x Nordic	1.00		1.00	
	Age x Continental	1.02*	1.01-1.03	0.98	0.95-1.01
	Age x Anglo-Saxon	0.96**	0.95-0.97	1.03	1.00-1.07
	Age x Eastern	0.98*	0.97-1.00	0.99	0.96-1.03
	Age x Southern	1.00	0.99-1.02	1.02	1.00-1.06
	Gender x age				
	Reference: male x age	1.00		1.00	
	Female x age	0.99**	0.98-1.00	0.98*	0.97-1.00

[A]*N*=44,039. [B]*N*=6,278. * $p < .01$. ** $p < .001$.

Table 2.3 Quality of working life and work satisfaction as a function of employment contract (across study waves: 2000/01 and 2005)

	Contract type							
	Means			Cohen's *D*			*F* without covariates[A]	*F* with covariates[B]
	(1) Permanent	(2) Fixed-term	(3) Temporary agency	(1 vs. 2)	(2 vs. 3)	(1 vs. 3)		
Overall model							32.01**	18.81**
Adverse physical working conditions (1-7)	1.99	1.98	1.98	0.01	0.00	0.01	0.26	2.30
Physical load (1-7)	2.91	3.08	3.29	-0.11**	-0.13*	-0.24**	42.09**	13.61**
Work pressure (1-7)	3.64	3.61	3.75	0.01	-0.07	-0.06	1.79	2.91
Autonomy (1-2)	1.64	1.57	1.47	0.19**	0.23**	0.42**	131.23**	72.99**
Repetitive tasks (1-2)	1.33	1.35	1.37	-0.05*	-0.04	-0.09	8.19**	0.27
Work complexity (1-2)	1.69	1.65	1.60	0.13**	0.16**	0.30**	65.63**	21.18**
Irregular working times (0-31)	2.64	2.83	2.34	-0.05*	0.12*	0.07	7.28*	11.41**
Income[C] (1-4)	2.62	2.12	1.97	0.48**	0.15*	0.63**	514.56**	218.54**
Work satisfaction (1-4)	3.04	2.94	2.83	0.13**	0.14**	0.29**	63.52**	52.93**

[A]*N*=38,670. [B]Covariates were occupation, employer's core activity, weekly working hours, gender and age; *N*=37,923. [C]Analyzed separately; the *N* for both analyses are respectively 32,939 and 32,308. * $p < .01$. ** $p < .001$.

Table 2.4 Quality of working life and work satisfaction (mean scores for 2000/01 and 2005) as a function of employment contract over time

	2000/01						*2005*						*F*[A]
	Means			Cohen's *D*			Means			Cohen's *D*			
	(1) Perm.	(2) Fixed-term	(3) Temp. agency	1 vs. 2	2 vs. 3	1 vs. 3	1	2	3	1 vs. 2	2 vs. 3	1 vs. 3	
Overall model													5.36**
Adverse physical working conditions (1-7)	2.02	2.03	1.89	-0.01	0.12	0.11	1.95	1.93	2.13	0.02	-0.18	-0.15	10.98**
Physical load (1-7)	2.91	3.06	3.18	-0.09**	-0.07*	-0.17**	2.91	3.12	3.48	-0.13**	-0.22**	-0.37**	2.46
Work pressure (1-7)	3.61	3.52	3.43	0.05	0.05	0.10	3.67	3.70	4.22	-0.01	-0.26**	-0.30**	17.42**
Autonomy (1-2)	1.64	1.59	1.48	0.14**	0.26**	0.40**	1.64	1.54	1.46	0.25**	0.21*	0.46**	5.49*
Repetitive tasks (1-2)	1.34	1.36	1.39	-0.07*	-0.06	-0.12	1.32	1.34	1.34	-0.05	0.00	-0.05	1.12
Work complexity (1-2)	1.68	1.64	1.59	0.14**	0.15**	0.29**	1.71	1.67	1.62	0.16**	0.15*	0.31**	0.20
Irregular working times (0-31)	2.73	2.83	2.44	-0.03*	0.09*	0.07	2.45	2.76	2.28	-0.08**	0.13	0.05	0.58
Income[B] (1-4)	2.57	2.18	1.99	0.37**	0.18*	0.55**	2.69	2.05	1.95	0.64**	0.11	0.74**	20.88**
Work satisfaction (1-4)	3.02	2.94	2.77	0.11**	0.21**	0.34**	3.06	2.93	2.90	0.18**	0.04	0.23**	3.12

[A]Contract x time interaction: *N*=37,923; covariates were occupation, employer's core activity, weekly working hours, gender and age. [B]Analyzed separately: *N*=32,308. * $p < .01$. ** $p < .001$.

Table 2.5 Quality of working life and work satisfaction (mean scores) as a function of employment contract within country cluster (across study waves: 2000/01 and 2005)

	Nordic			*Continental*			*Anglo-Saxon*			*Eastern*			*Southern*			
	(1) Perm.	(2) Fixed-term	(3) Temp. agency	1	2	3	1	2	3	1	2	3	1	2	3	F^A
Overall model																4.95**
Adverse physical working conditions (1-7)	1.82	1.75	2.00	1.94	1.81	2.27	1.79	1.77	1.46	2.19	2.27	1.80	2.05	2.09	2.18	4.59**
Physical load (1-7)	2.73	2.76	2.75	2.94	2.96	3.60	2.70	2.87	2.59	2.94	3.17	3.26	3.04	3.31	3.62	4.17**
Work pressure (1-7)	3.87	3.70	3.73	3.65	3.69	3.80	3.59	3.87	4.02	3.71	3.59	3.74	3.49	3.41	3.61	5.54**
Autonomy (1-2)	1.80	1.70	1.62	1.65	1.58	1.46	1.69	1.61	1.56	1.58	1.57	1.49	1.60	1.50	1.39	3.95**
Repetitive tasks (1-2)	1.32	1.35	1.45	1.34	1.34	1.39	1.33	1.30	1.37	1.27	1.27	1.25	1.38	1.45	1.41	2.74*
Work complexity (1-2)	1.75	1.70	1.63	1.70	1.64	1.67	1.76	1.76	1.62	1.67	1.65	1.58	1.66	1.60	1.54	5.09**
Irregular working times (0-31)	2.25	2.33	1.41	2.11	2.30	1.98	3.03	2.83	1.18	3.01	2.77	3.18	2.85	3.32	3.09	6.19**
Income[B] (1-4)	2.69	1.94	1.76	2.68	1.90	1.94	2.35	2.11	1.80	2.46	2.27	2.39	2.89	2.25	1.84	28.54**
Work satisfaction (1-4)	3.21	3.12	3.24	3.09	2.96	2.94	3.31	3.29	3.14	2.88	2.81	2.68	2.88	2.79	2.54	4.34**

[A]Contract x country interaction: *N*=37,923; covariates were occupation, employer's core activity, weekly working hours, gender and age. [B]Analyzed separately: *N*=32,308. * $p < .01$. ** $p < .001$

permanent workers experienced the highest work pressure. Thus, these two interaction effects also support Hypothesis 3a because the scores of temporary agency workers were unfavourable in most country clusters (i.e., 3 to 4 out of 5 clusters), relative to permanent and/or fixed-term workers. In sum, most contract differences in the quality of working life and work satisfaction found in the overall analyses were roughly the same in most country clusters.

2.6 DISCUSSION

The current study showed that the European labour market has changed significantly between 2000/01 and 2005. The three most notable findings were the following. First, the size of the temporary workforce across Europe has increased. Especially the share of fixed-term workers has grown, at the expense of the share of permanent workers. However, in Continental countries, such as France and Germany, the opposite trend occurred (Hypothesis 1 partly supported). These findings are in line with data from the Labour force survey, which also showed an increase in the share of temporary workers in most European countries (European Commission, 2008).

Second, we identified three risk groups of workers who were more likely to be working in the secondary segment of the labour market at both time points (i.e., 2000/01 and 2005; Hypothesis 2b supported): younger workers (especially in the Continental countries; Hypothesis 2c partly supported), female workers, and older female workers, who were especially likely to have temporary agency work (Hypothesis 2a supported). These results comply with the insider–outsider dilemma described by Barbieri (2009), in which market entrants, thus younger workers, and females are at risk for precarious employment. However, Barbieri also concludes that the Southern countries have the largest age inequality, whereas we found this to be the case for the Continental countries.

Third, and in support of Hypothesis 3a, employment contracts differed in the quality of the associated jobs. As expected, permanent workers scored more favourable than temporary workers on most working life quality indicators and work satisfaction, whereas fixed-term contractors usually scored more favourable than agency workers. Most of these effects were robust as they remained significant after controlling for gender, age, weekly working hours, the participants' occupation, and the employers' core activity, and they proved to be rather independent of time (Hypothesis 3b largely supported) and country cluster (Hypothesis 3c largely supported). Furthermore, in most country clusters agency workers experienced the worst physical working conditions and the highest work pressure. Moreover, compared to 2000/01, in 2005 the physical working conditions and work pressure of temporary agency workers were the most unfavourable, as compared to both permanent and fixed-term workers. However, the findings for repetitive tasks and irregular working times were not in line with our expectations. All in all, our "large-scale European-level" findings are generally in line with other, more scattered (e.g., sectoral, occupational, and country-specific) findings confirming the core–periphery distinction,

implying that permanent workers have better job characteristics and are more satisfied than temporary employees (Benach et al., 2004; Kompier et al., 2009; Letourneux, 1998).

2.6.1 Strengths and limitations

The fact that we had to rely on existing data came with some limitations. First, although we obtained data for two time points, these are individual-level data from two independent cross-sectional samples, meaning that the causal direction of the relationships under study cannot be established. Specifically, whereas we assumed that contract type and the quality of working life would causally affect work satisfaction, it is also possible that this relationship could be reversed. Thus, this relationship should be confirmed longitudinally (see also Kompier et al., 2009).

Second, we focused on just three contract types and only considered gender and age as demographic variables. Other contract forms (e.g., casual, on-call workers) and other demographic groups (e.g., ethnic minorities, low-education workers) warrant attention as well, whereas other contract factors, such as contract duration and time until the end of the contract may also be relevant (De Cuyper et al., 2008).

Third, it had been argued that the utilization of country clustering may hide internal diversity, because it assumes all countries within a particular cluster to be similar. This could hide internal diversity and lead to over-interpretation (Peña-Casas & Pochet, 2009). For example, in particular if the results for a smaller country, such as Luxembourg, were (slightly) different from the results of its country cluster, this probably would remain unnoticed. We agree that the use of a country clustering is to a certain extent always arbitrary. Note for example, that the EWCS typology placed The Netherlands in the Nordic country cluster. Indeed, these countries are comparable, for example, with regard to the "organizational climate" dimensions of Hofstede (1980), the quality of working life (e.g., wages, working conditions, educational attainment and participation in training, job satisfaction, and work intensity), and a variety of economic indicators (Blanke & Geiger, 2008; European Commission, 2008; Jettinghoff & Houtman, 2009). Accordingly, also the other country clusters were based on a variety of different factors such as basic income, pensions, poverty rates, social expenditure, and healthcare services (Bambra, 2009). Therefore, we argue that it is not unwarranted to assume that the countries within each cluster are relatively similar with respect to the prevalence of employment contracts and the quality of working life and work satisfaction of their workers.

Europe is currently facing an economic crisis that impacts the labour market profoundly. Unemployment rates have grown dramatically and are expected to increase in 2010 (International Monetary Fund, 2009). As 81% of the companies use agency work to manage economic fluctuations (Ciett, 2009), the reported increase in temporary employment may be specific to the time period under investigation.

Perhaps the strongest point of the current study is its large data set, containing unique, representative information on all 27 current EU member states for the 2000/01–

2005 time period. This data set allowed us to study between-country and time differences in labour contracts for various demographic groups in the EU. The size of the sample provided ample statistical power to compare not only permanent workers with non-permanent workers, but also to distinguish between fixed-term contractors and temporary agency workers, two understudied groups that have not always systematically been separated in the past (De Cuyper et al., 2008; Kompier et al., 2009). Finally, we assessed the quality of working life adequately, utilizing valid indicators of important dimensions such as job content and working conditions.

2.6.2 Practical implications

The current study underlines the importance of the renewal of the Lisbon strategy in 2005 (European Commission, 2005). Not only were younger, female, and especially older female workers overrepresented in temporary work, but also the scores on most quality of working life indicators and work satisfaction were relatively poor for these jobs. Therefore, two important practical implications for the future development of the European labour market can be distinguished. First, in addition to the quality of working life and work satisfaction differences between temporary and permanent work reported in the present study, temporary workers may also experience more job insecurity, which may ultimately lead to negative outcomes (Cheng & Chan, 2008). Therefore, measures to create a more equal European labour market in terms of the contract type people get (especially for younger, female, and older female workers) are desirable. For example, organizations could be stimulated to facilitate a faster transition from temporary to permanent work. This can be done by legally "forcing" organizations to offer temporary workers a more permanent form of contract after showing good performance for a certain amount of time. Furthermore, labour market entrants have generally less opportunities to show their skills (Bjerk, 2008). Therefore, organizations should search for more and better predictors of job performance than work experience, especially when one or more of the applicants is a market-entrant applying for a permanent job.

Second, the differences in the quality of working life and work satisfaction between contract types should be reduced. Temporary workers should not be seen as secondary segment workers but should be treated with the same "care" as permanent or primary segment workers. One way to do so is by providing a comparable quality of working life (such as pay and work-time control) and equal labour protection across contract types. Besides these measures, we recommend trying to identify more specific risk groups (i.e., groups with low quality work) within the temporary workforce. For example, research shows a high incidence of temporary work in seasonal industries in sectors such as agriculture and hotels and restaurants (Letourneux, 1998). These same sectors also happen to have the worst working conditions and the lowest scores on health and well-being indicators (Jettinghoff & Houtman, 2009). Therefore, it is possible that temporary workers within these sectors are especially at risk for low quality work.

2.6.3 Future research

We propose a couple of recommendations for future research. First, in order to identify more risk factors for "ending up" in the secondary segment of the labour market, research may focus not only on factors like gender and age, but also on other background factors such as level of education, ethnicity, occupation, and contractual hours.

Second, the current study showed that fixed-term contracts and temporary agency work differed in terms of their quality of working life and work satisfaction. Also some country differences and time differences in the prevalence of these employment contracts were visible. Consequently, a simple dichotomy between permanent and temporary work is conceptually and practically unsatisfactory. Although there are some longitudinal studies involving a more fine-grained distinction between various temporary contracts and across-time contract changes (e.g., Kompier et al.,2009), the differences among various types of temporary employment still constitute an understudied area in need for more longitudinal research. In particular prospective cohort studies with multiple time points may be useful in establishing firm relationships between demographic characteristics, (changes in) contract types and the quality of working life on the one hand and their relationship with health and well-being on the other.

Third, both temporary and permanent employment may be heterogeneous regarding the quality of working life and health and well-being outcomes. For example, temporary jobs may be rewarding in terms of flexibility and may serve as a bridge to permanent work. Conversely, permanent workers may experience a negative imbalance in their effort and reward but stay in their job to avoid (income) insecurity. Accordingly they may be at risk for negative health outcomes. To gain more insight into this heterogeneity, we could study different changes in contract types and career paths and link these to theories such as the Effort–Reward Imbalance Model (Siegrist, 1996) and the Person–Environment Fit model (Tinsley, 2000).

All in all, this study of a large and representative sample of European employees showed the type of employment contract to be a moderately valid and robust proxy of labour market segment, as measured by the quality of working life and work satisfaction. In Europe, the highest overall quality of working life and work satisfaction was found among permanent contractors and the lowest among temporary agency workers, and this difference proved to be "relatively independent of time and place". In order to identify more specific risk groups for having low quality work, future research could focus on temporary workers within specific occupations and companies, and also take into account important demographic characteristics and work-related factors, such as gender, age, educational level, and contractual hours.

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CHAPTER 3

Can labour contract differences in health and work related attitudes be explained by quality of working life and job insecurity?

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3.1 ABSTRACT

Study aim

We hypothesise that due to a lower quality of working life and higher job insecurity, the health and work-related attitudes of temporary workers may be less positive compared to permanent workers. Therefore, we aimed to (1) examine differences between contract groups (i.e. permanent contract, temporary contract with prospect of permanent work, fixed-term contract, temporary agency contract and on-call contract) in the quality of working life, job insecurity, health and work-related attitudes and (2) investigate whether these latter contract group differences in health and in work-related attitudes can be explained by differences in the quality of working life and/or job insecurity.

Methods

Data were collected from the Netherlands Working Conditions Survey 2008 (N = 21,639) and Hypotheses were tested using analysis of variance and cross-table analysis.

Results

Temporary work was associated with fewer task demands and lower autonomy and was more often passive or high-strain work, while permanent work was more often active work. Except for on-call work, temporary work was more insecure and associated with worse health- and work-related attitude scores than permanent work. Finally, the quality of working life and job insecurity partly accounted for most contract differences in work-related attitudes but not in health.

Conclusions

Especially agency workers have a lower health status and worse work-related attitudes. Job redesign measures regarding their quality of working life and job insecurity are recommended.

3.2 INTRODUCTION

In the European Union (EU 27), the percentage of employees with limited contract duration has increased from 11.8% in 1999 to 14% in 2010, currently involving around 24 million workers (Eurostat, 2011a, 2011b). The share of agency workers sharply increased from 1.1 to 1.7%, and is now worldwide estimated at 9.5 million workers (in 2008 in FTE [Ciett, 2010]). This increase in non-standard employment may reflect a segmented labour market, with organisational insiders (those with standard working arrangements such as full-time permanent workers) and organisational outsiders (those holding non-standard working arrangements, such as temporary agency workers) (Kalleberg, 2003). In line with this, many organisations today have a core-periphery structure, with permanent workers in a core surrounded by a periphery of layers of flexible, less secure temporary workers (Auer & Cazes, 2000; Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008). Therefore, much research has been carried out to examine the potential risks of temporary employment, and its impact on workers' health, well-being and work-related attitudes (De Cuyper et al., 2008).

3.2.1 Temporary employment, labour market segmentation and the quality of working life

Three related theoretical perspectives suggest that temporary work is (1) low-quality work and (2) highly insecure work. First, the insider-outsider idea (standard vs. non-standard employment [Kalleberg, 2003]) stems from the aforementioned segmentation theories, which divide the labour market into core and peripheral workers (Atkinson, 1984; Becker, 1993; Hudson, 2007). Core workers possess job-specific skills and are therefore hard to replace and thus important to their company. In order to tie these workers to their organisation, employers must offer them high-quality employment, including learning opportunities, job security and a proper salary (Hudson, 2007). In contrast, employers do not need to tie the less important and more easily replaceable peripheral workers to their organisation. Consequently, these workers receive less attractive working conditions and lower earnings than primary segment workers.

Secondly and related to segmentation theories, temporary employment is expected to include more adverse job characteristics than permanent work (De Cuyper et al., 2008; De Witte & Näswall, 2003). For example, temporary work has been associated with worse ergonomic conditions, lower earnings, less autonomy, less supervisory tasks, a higher dynamic work load, more repetitive tasks, monotonous work, less training opportunities and exposure to discrimination (Brown & Sessions, 2003; De Cuyper et al., 2008; Goudswaard & Andries, 2002; Kompier, Ybema, Janssen, & Taris, 2009; Layte, O'Connell, & Russell, 2008; Letourneux, 1998; Parent-Thirion, Macías, Hurley, & Vermeylen, 2007; Parker, Griffin, Sprigg, & Wall, 2002); but also often with (indicators of) lower task demands (De Cuyper & De Witte, 2006; Goudswaard & Andries, 2002; Kompier et al., 2009; Letourneux, 1998; Parker

et al., 2002). Based on theories on well-designed "healthy" work (Kompier, 2003), it can be expected that such characteristics (e.g. combinations of high [but also low] demands and low control, low feedback, low support and high job insecurity) adversely impact workers' health, well-being and work-related attitudes.

3.2.2 Temporary employment and job insecurity

A third perspective focuses on the impact of job insecurity on temporary workers' health and well-being. Job insecurity, which increases with the temporality of the job (De Cuyper et al., 2008), implies uncertainty and thus unpredictability and uncontrollability. This can be linked to central elements of job stress theories (e.g. environmental clarity and lack of control) (De Witte, 1999). Moreover, according to Jahoda's (1982) latent deprivation model, employment is central to many people's lives as it fulfils important needs as income, social contacts and opportunities for self-improvement. Threat and worry about job loss thus include potential loss of important resources and may therefore have many negative consequences for the worker involved (De Witte, 1999). For example, job insecurity has been associated with lower work satisfaction, less organisational commitment, less organisational trust, deteriorated physical and mental health, lower self-esteem, reduced performance and increased turnover intention (Cheng & Chan, 2008; De Witte, 1999; Ferrie, Shipley, Stansfeld, & Marmot, 2002; Hellgren & Sverke, 2003; Kinnunen, Feldt, & Mauno, 2003; Lau & Knardahl, 2008; Sverke, Hellgren, & Näswall, 2002; P. Virtanen, Janlert, & Hammarström, 2011)

3.2.3 Impact of temporary employment on health, well-being and work-related attitudes

The combination of (1) a lower quality of working life and (2) higher job insecurity may make temporary work less healthy and satisfying. Indeed, non-standard employment has been associated with poorer health, lower well-being and higher mortality (Aronsson, Gustafsson, & Dallner, 2002; Benach, Gimeno, Benavides, Martínez, & Del Mar Torné, 2004; De Cuyper et al., 2008; Kawachi, 2008; Kivimäki et al., 2003; Kompier et al., 2009; P. Virtanen et al., 2005; Waenerlund, Virtanen, & Hammarström, 2011). However, such contract differences have been often found to be inconsistent and inconclusive (for an overview see De Cuyper et al., 2008). For example, De Cuyper and De Witte (2006) found no evidence for mediation by workload or autonomy between the type of employment contract (permanent vs. fixed-term) and work-related attitudes. To date, many reasons for such inconsistent findings have been offered (De Cuyper et al., 2008). These can generally be divided into (1) conceptual issues and (2) methodological issues (Kompier et al., 2009). The main conceptual issue is the heterogeneity of the temporary workforce. Temporary contracts may differ in various respects, including perceived job insecurity, the quality of working life and their demographical composition in terms of gender, age, ethnicity and

educational level (Connelly & Gallagher, 2004; De Cuyper et al., 2008). Methodologically, most research is cross-sectional and usually refers to specific groups of workers, for example within a particular sector and country, meaning that causal relationships cannot be drawn and findings may not generalise to other groups of workers.

3.2.4 Research goal and hypotheses

Against this background, the goal of the current study was twofold. First, in a large and representative sample of the Dutch working population, we aimed to examine employment contract differences [i.e. between permanent, temporary with prospects on permanent employment (semi-permanent), fixed-term without prospects (temporal- no prospects), agency work and on-call work] in (1) the quality of working life (i.e. task demands and autonomy), (2) job insecurity, (3) health (i.e. general health, musculoskeletal symptoms and emotional exhaustion) and (4) work-related attitudes (work satisfaction, turnover intention and employability). We expect agency and on-call workers to have the lowest autonomy and fewest task demands, while the opposite is expected for permanent workers (Hypothesis 1a). In line with this, temporary work (especially agency and on-call work) may be more often passive work (i.e., low control and low demands), and permanent work more often active work (high control and high demands) (Hypothesis 1b). Based on the peripheral nature of agency and on-call work, these workers are expected to report the highest job insecurity and permanent workers the lowest (Hypothesis 2). With regard to contract differences in health we expect similar results. Due to the expected lower quality of working life and higher job insecurity among agency and on-call workers, this group should have the lowest health status and permanent workers the highest (Hypothesis 3). Similarly, agency and on-call workers are expected to have the least favourable work-related attitudes, while the opposite should hold true for permanent workers (Hypothesis 4).

Secondly, we aimed to determine the role of the quality of working life and job insecurity in the relationship between employment contracts and (5) health and (6) work-related attitudes. We expect the contract differences in health to be partly explained by the quality of working life (Hypothesis 5a) and the degree of job insecurity (Hypothesis 5b). Moreover, we expect these contract differences to be best explained by the combination of the quality of working life and job insecurity (Hypothesis 5c). Similarly, we expect the contract differences in work-related attitudes to be also partly explained by the quality of working life (Hypothesis 6a) and job insecurity (Hypothesis 6b). Again, we expect that these differences in work-related attitudes will be best explained by the combination of quality of working life and job insecurity (Hypothesis 6c).

3.3 SAMPLE AND MEASURES

3.3.1 Sample

Data for the current study were obtained from the Netherlands Working Conditions Survey 2008 (NWCS [Koppes, De Vroome, Mol, Janssen, & Van den Bossche, 2009]), which focused on the Dutch working population, excluding self-employed. This survey consists of a written questionnaire, which was sent to the respondents' homes. Participants were asked to fill in and return the questionnaire or to complete an online version of the questionnaire. Responses were obtained from 22,025 participants (30.8% response rate). The data were weighted to increase its representativeness for the Dutch working population, for example with regard to gender, age, ethnicity and occupation (Koppes et al. 2009). Because we restricted our analyses to workers holding a permanent or temporary contract, our final sample comprised 21,639 participants. Their mean age was 40.2 years (*SD* = 12.0) and 53.7% was male.

3.3.2 Measures

Employment contract

The question "what is the nature of your employment?" distinguished among five contract types: 1 = employee with permanent employment (for indefinite time), 2 = employee with temporary employment with prospect on permanent employment, 3 = employee with temporary employment for a fixed term, 4 = temporary agency work and 5 = on-call work. It should be noted that, although all temporary workers are protected by the so-called flex-law in the Netherlands, this flex-law does not include specific arrangements for on-call workers. However, the latter can be characterised as having non-standard work schedules and only performing work when called upon by their employer (Verhulp et al. 2002). In general, these workers enjoy similar labour protection as other temporary workers.

Quality of working life

To assess the quality of working life, we measured task demands, autonomy and computed the combination of both characteristics (i.e. Karasek's quadrants: active, passive, high-strain and low-strain work [Karasek, 1985]). The 4-item *Task demands* scale (e.g. "do you have to perform a lot of work?" and "do you need to work extra hard?"; 1 = "never", 2 = "sometimes", 3 = "often", 4 = "always") and the 3-item *Autonomy* scale (e.g. "can you regulate your work pace?" and "can you decide yourself how to perform your work?"; 1 = "yes, regularly", 2 = "yes, sometimes", 3 = "no" [reverse coded]) were derived from the Job Content Questionnaire (JCQ [Karasek, 1985]; Karasek et al., 1998).

In order to compute four combinations of high-low scores on both factors and, thus, to distinguish between the four quadrants proposed by Karasek (1979), we first divided the

participants in a group with low demands (i.e., those with an average score of $M \leq 2$ on the job demands scale, which corresponds with the answer category "sometimes" of the items of this scale), and a group with high demands (i.e. those with an average score of > 2, meaning that job demands are experienced more frequently than "sometimes"). Similarly, based on the autonomy scale, we divided the participants into a low and a high control group (low control = $M \leq 2$; high control = $M > 2$). Finally, we combined these groups into the four Karasek quadrants: passive work (low demands and low control), active work (high demands and high control), low-strain work (low demands and high control) and high-strain work (high demands and low control).

Job insecurity

Job insecurity was measured with a two question-scale derived from Goudswaard, Dhondt, and Kraan (1998): (1) "are you at risk of losing your job?" and (2) "are you worried about retaining your job?" (1 = "yes"; 2 = "no" [reverse coded]).

Health

Health was measured using three scales. *General health* was assessed with the question "generally taken, how would you define your health?" (1 = "excellent", 2 = "very good", 3 = "good", 4 = "moderate", 5 = "bad" [reverse coded]), derived from Statistics Netherlands (2003). *Musculoskeletal symptoms* were measured with four items ("in the past 12 months, did you have trouble (pain, discomfort) from your:" (1) "neck", (2) "shoulders", (3) "arms/elbows" and (4) "wrists/hands") based on the work of Blatter, Bongers, Kraan, and Dhondt (2000), and two additional items referring to (5) back complaints and (6) hip, legs, knees and feet complaints (1 = "no, never"; 2 = "sometimes, short lived"; 3 = "sometimes, long lasting"; 4 = "multiple times, short lived"; 5 = "multiple times, long lasting"). *Emotional exhaustion* was measured with five items, adapted from the corresponding scale of the Maslach Burnout Inventory-General Survey (MBI-GS [Schaufeli, Leiter, Maslach, & Jackson, 1996]). A typical item is: "I feel burned out from my work" (1 = "never", 7 = "every day").

Work-related attitudes

Three work-related attitudes were measured, namely work satisfaction, turnover intention and employability. *Work satisfaction* was measured with two questions, "to what extent are you, all in all, satisfied with your work?" and "to what extent are you, all in all, satisfied with your working conditions?", respectively (1 = "very dissatisfied", 5 = "very satisfied"). *Turnover intention* was assessed with two questions derived from Goudswaard et al. (1998): (1) "in the past year, did you consider to search for another job than the job at your current employer?" and (2) "in the past year, have you actually undertaken something to find another job?" (1 = "yes"; 2 = "no" [reverse coded]). *Employability* was measured with the question "if you compare yourself with your colleagues, are you more broadly employable

Table 3.1 Range, means, standard deviations, correlations and Cronbach's alpha for the study variables

Variables (range)																	
		M	*SD*	*α*	1	2	3	4	5	6	7	8	9	10
1	Autonomy (1-3)	2.5	.6	.81	-									
2	Task demands (1-4)	2.3	.6	.86	-.05	-								
3	Job insecurity (1-2)	1.2	.3	.71[1]	-.09	.06	-							
4	General health (1-5)	3.4	.8	na	.10	-.07	-.13	-						
5	Musculoskeletal symptoms (1-5)	2.0	1.0	.82	-.12	.16	.12	-.37	-					
6	Emotional exhaustion (1-7)	2.0	1.1	.86	-.15	.36	.19	-.31	.31	-				
7	Work satisfaction (1-5)	3.8	.8	.83	.19	-.13	-.18	.18	-.18	-.34	-			
8	Turnover intention (1-2)	1.4	.4	.65[1]	-.05	.16	.18	-.06	.11	.24	-.27	-		
9	Employability (1-3)	2.5	.6	na	.14	.15	-.04	.08	-.04	.01	.00	.09	-	
10	Age (15-64)	40.2	12.0	na	.10	.02	.07	-.12	.08	.03	.02	-.17	.00	-

[1]Kuder-Richardson Rho (KR-20). Higher scores reflect higher quantities of the measured concept. Correlations of .02 and greater are significant at the .01 level. *na* = not applicable. The *Ns* vary from 20,889 to 21,639.

in your company than your colleagues?" (1 = "yes, more broadly employable"; 2 = "no, comparable to others"; 3= "no, less broadly employable" [reverse coded], cf. Verboon, Feyter, & Smulders, 1999).

Finally, *age* (in years) was used as a continuous control variable in the analyses including workers' health status because temporary workers are on average much younger

and therefore healthier than permanent workers (cf. M. Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005). If applicants voiced no opinion on a question, this was coded as a missing answer. For all scales, we computed average scores per item. The theoretical range of all measures, descriptive statistics, correlations and Cronbach's alphas are summarised in Table 3.1. It should be noted that instead of Cronbach's alpha, we reported the more appropriate Kuder-Richardson Rho (KR-20) for our dichotomous measures (Zeller & Carmines, 1980).

3.4 STATISTICAL PROCEDURE

Hypothesis 1 (contract differences in the quality of working life) was tested using multivariate analysis of variance (MANOVA) and cross-table analysis. First, we conducted a MANOVA with the type of employment contract as independent variable and the quality of working life indicators (task demands and autonomy) as dependent variables, followed by a Bonferroni post-hoc test. Cohen's *D* values were computed for effect sizes and were interpreted in line with Cohen (1988), as small ($d < 0.5$), moderate ($d = 0.5$-0.8) or large ($d > 0.8$). Further, we conducted cross-table analysis to examine whether the number of workers holding an active, passive, high-strain or low-strain job varied as a function of employment contract.

To test Hypothesis 2 (contract differences in job insecurity), we conducted an ANOVA with a Bonferroni post-hoc analysis and computed corresponding Cohen's *D* values. Type of employment contract was the independent variable, and job insecurity was the dependent variable.

In order to test Hypothesis 3 and 4, MAN(C)OVAs were used with the type of employment contract as independent variable. To test Hypothesis 3 (contract differences in health), we entered general health, musculoskeletal symptoms and emotional exhaustion as dependent variables and repeated this analysis with age as a covariate. Next, we entered work satisfaction, turnover intention and employability as dependent variables to test Hypothesis 4 (contract differences in work-related attitudes). For both analyses, we conducted Bonferroni post-hoc analyses and computed corresponding Cohen's *D* values.

Hypothesis 5 [contract differences in health are explained by the quality of working life (5a), job insecurity (5b) and their combination (5c)] was tested by repeating the MANCOVA conducted for testing Hypothesis 3 with the quality of working life indicators (i.e. task demands and autonomy) as additional covariates. To test Hypothesis 5b, we repeated this analysis with job insecurity as a covariate instead of the quality of working life indicators. Finally, Hypothesis 5c was tested using both the quality of working life indicators and job insecurity as covariates.

Similarly, Hypothesis 6 [contract differences in work-related attitudes explained by the quality of working life (6a), job insecurity (6b) and their combination (6c)] was first tested by repeating the MANOVA conducted for testing Hypothesis 4, but with the quality of working life indicators (i.e. task demands and autonomy) as covariates. In the same way, we

tested Hypothesis 6b, by using job insecurity as a covariate. Finally, we tested Hypothesis 6c by using both the quality of working life indicators and job insecurity as covariates.

3.5 RESULTS

3.5.1 Contract types and quality of working life

Hypothesis 1a stated that especially agency and on-call workers would experience less autonomy and fewer task demands than permanent workers. The results presented in Table 3.2 support this hypothesis. The largest difference in autonomy (i.e. between permanent and agency workers) represents a moderate effect, while the largest difference in task demands (i.e. between permanent and on-call workers) represents a small effect. Moreover, agency and on-call workers did not differ significantly in their scores on autonomy and task demands. Furthermore, the results of the cross-table analysis (Table 3.2) support Hypothesis 1b. As expected, permanent work was more often active work (i.e., high demands and high control), while temporary work was more often passive work (i.e. low demands and low control). However, temporary work was also more often high-strain work (i.e. high demands and low control). Thus, both Hypotheses 1a and 1b were supported.

3.5.2 Contract types and job insecurity

Hypothesis 2 held that agency and on-call workers would experience the highest and permanent workers the lowest job insecurity. The results in Table 3.2 support this expectation for agency work, but not for on-call work. Moreover, the largest difference in job insecurity was found for permanent versus agency work (large effect). In contrast, job insecurity among on-call workers was roughly the same as among (semi-)permanent workers. Thus, Hypothesis 2 receives support for agency work, but not for on-call work.

3.5.3 Contract types, health and work-related attitudes

Hypothesis 3 and 4 stated that agency and on-call workers would have the lowest health status and the worst work-related attitudes scores, respectively, while the opposite was expected for permanent workers. Regarding contract differences in health (Hypothesis 3), the findings in Table 3.3 support this expectation for agency work, but not for on-call work. Agency workers had the worst scores on general health, musculoskeletal symptoms and emotional exhaustion, while the opposite was true for on-call workers. However, all differences between contract groups were small, and the *F*-value for general health was strongly reduced after controlling for age (Hypothesis 3 partially supported). As regards the contract differences in work-related attitudes (Hypothesis 4), Table 3.4 shows that permanent workers indeed had the best scores, while agency workers reported the lowest work satisfaction, the highest turnover intention and (together with the 'temporal-no prospect' workers) the lowest employability. Again, on-call workers did not report the worst

scores, as they were about as satisfied with their work as permanent workers. However, most of these contract differences were small, and Hypothesis 4 thus received partial support.

3.5.4 Contract differences in health explained

Hypothesis 5 stated that the contract differences in health would be partly explained by the quality of working life (5a), job insecurity (5b) and the combination of both (5c). First, note that in the analyses including job insecurity as an additional covariate to age, the effect of age on contract differences in emotional exhaustion became non-significant. Secondly, the quality of working life hardly reduced the contract differences in health, as the *F*-values controlled for the quality of working life and age (Table 3.3) were similar to the *F*-values only controlled for age (Hypothesis 5a not supported). Furthermore, the expected reduction due to job insecurity was only supported for musculoskeletal symptoms, while the *F*-values for general health and emotional exhaustion increased (Hypothesis 5b partially supported). Finally, the contract differences in health could not for the largest part be explained when controlling for both the quality of working life and job insecurity (Hypothesis 5c not supported).

Table 3.2 Quality of working life indicators (mean scores) as a function of employment contract

	Contract type						
	Permanent *N*=17,225	Semi - permanent *N*=1,826	Temporal – no prospect *N*=993	Agency *N*=373	On-call *N*=456	Highest Cohen's *D*[1]	*F*
Overall *N*= 20,872							94.84**
Task demands (1-4)	2.34	2.22	2.22	2.14	**2.12**	0.35**	41.27**
Autonomy (1-3)	**2.56**	2.45	2.35	2.13	2.15	0.76**	141.10**
Job insecurity[2] (1-2)	**1.15**	1.25	1.36	1.47	1.20	1.00**	205.35**
Overall *N* = 20,872							χ^2= 566.78**
Passive (*N*=2,608)	10.8%	17.1%	19.9%	30.4%	27.6%		
Active (*N*=7,986)	40.8%	30.5%	26.0%	18.7%	16.1%		
Low strain (*N*=7,284)	34.9%	36.5%	35.0%	29.2%	31.9%		
High strain (*N*=2,994)	13.5%	15.9%	19.1%	21.7%	24.4%		

[1]Highest significant Cohen's *D*: difference between most 'positive' score (bold) and most 'negative' score (underlined). [2]Separate analysis: *N*=21,541. All temporary contract group means are significantly different from those of permanent workers. * $p < .05$. ** $p < .01$

Table 3.3 Health indicators (mean scores) as a function of employment contract

	Contract									
	Permanent *N* = 17,753	Semi – permanent *N* = 1,895	Temporal – no prospect *N* = 1,017	Agency *N* = 389	On-call *N* = 466	Highest Coh. *D*[1]	$F^{Contract}$ Covariates				
							None	Age	Age, Demand, Control	Age, Insecurity	Age, Demand, Control, Insecurity
Overall (*N* = 21,520)							9.19**	6.41**	6.45**	9.02**	6.99**
General health (1-5)	3.41	3.52[2]	3.51[2]	3.36	**3.57**[2]	0.25**	14.08**	2.98*	2.80*	5.34**	6.21**
Musculoskeletal sympt. (1-5)	2.02	1.95[2]	2.05	2.07	**1.86**[2]	0.23*	5.90**	4.50**	4.98**	1.98	2.29
Emotional exhaustion (1-7)	2.00	1.85[2]	2.08	2.07	**1.72**[2]	0.30**	16.22**	13.94**	13.98**	22.93**	15.01**

[1]Highest significant Cohen's D: difference between most 'positive' score (bold) and most 'negative' score (underlined). [2]significantly different from mean score of permanent workers. Note that after controlling for other variables than age (i.e. gender, educational level, ethnicity, marital status, paid job - partner, occupation and contractual hours) F-values remained significant and the explaining role of the quality of working life and job insecurity hardly changed (detailed Tables are available on request from first author). The *N*s vary from 20,666 to 21,520. * $p < .05$. ** $p < .01$.

Table 3.4 Work-related attitudes (mean scores) as a function of employment contract

	Contract									
	Permanent *N* = 17,561	Semi – permanent *N* = 1,873	Temporal – no prospect *N* = 1,004	Agency *N* = 386	On-call *N* = 457	Highest Coh. *D*[1]	$F^{Contract}$ Covariates			
							None	Demand, Control	Insecurity	Demand, Control, Insecurity
Overall (*N* = 21,281)							42.80**	33.59**	30.08**	23.23**
Work satisfaction (1-5)	3.82	**3.87**	3.66[2]	3.59[2]	3.83	0.31**	12.51**	8.84**	7.60**	5.34**
Turnover intention (1-2)	**1.36**	1.40[2]	1.49[2]	1.58[2]	1.44[2]	0.54**	61.80**	27.29**	34.07**	1.98
Employability (1-3)	**2.50**	2.37[2]	2.31[2]	2.31[2]	2.35[2]	0.32**	25.17**	48.40**	21.74**	22.93**

[1]Highest significant Cohen's D: difference between most 'positive' score (bold) and most 'negative' score (underlined). [2]significantly different from mean score of permanent workers. Note that after controlling for other variables than age (i.e. gender, educational level, ethnicity, marital status, paid job - partner, occupation and contractual hours) F-values remained significant and the explaining role of the quality of working life and job insecurity hardly changed (detailed Tables are available on request from first author). The *N*s vary from 20,502 to 21,281. * $p < .05$. ** $p < .01$

3.5.5 Contract differences in work-related attitudes explained

Hypothesis 6 consists of three sub hypotheses. First, we expected the quality of working life to partly explain contract differences in work-related attitudes (6a). Indeed, as shown in Table 3.4, the quality of working life reduced most (i.e. 2 out of 3) *F*-values for these contract differences (namely those for work satisfaction and employability), but the *F*-value for turnover intention increased (Hypothesis 6a partially supported). Secondly, all *F*-values for the contract differences in work-related attitudes, especially those for work satisfaction and turnover intention, decreased when controlling for job insecurity (Hypothesis 6b supported). Finally, most (i.e. 2 out of 3) *F*-values in Table 3.4 (namely those for work satisfaction and employability) were reduced most when controlling for both the quality of working life and job insecurity (Hypothesis 6c thus partially supported).

3.6 DISCUSSION

Temporary work is on the increase in the European Union, and there is some concern as regards the quality of working life, job insecurity, health and well-being of these temporal employees. In a large and representative sample of the Dutch working population, we first investigated contract differences in the quality of working life, job insecurity, health and work-related attitudes. Secondly, we investigated the role of the quality of working life and job insecurity in the relation between different employment contracts and health and work-related attitudes. Table 3.5 summarises the support for each of our hypotheses.

3.6.1 Theoretical implications

Four theoretical implications can be derived from the current study. First, we found support for a multi-layered core-periphery structure (Ferrie et al., 2008), meaning that from the core of permanent workers to the periphery of agency workers, work autonomy and task demands decreased, whereas job insecurity increased. In line with Goudswaard and Andries (2002), we also found the prevalence of both passive and high-strain jobs to increase with the temporality of the contract, which illustrates the heterogeneity within the temporary workforce (De Cuyper et al., 2008).

Secondly, not all “peripheral” contracts were associated with negative outcomes, which underline the need to distinguish among different forms of temporary employment (De Cuyper et al., 2008; Kompier et al., 2009). Especially, agency work was of low quality (i.e. relatively low autonomy, high job insecurity and an unfavourable health status and unfavourable work-related attitudes). However, on-call work seemed to be a distinct form of temporary work, as a large share of these workers had high-strain work, but overall they had favourable scores on job insecurity, health and work satisfaction, quite comparable to those of permanent workers. Therefore, we conducted additional post-hoc analyses to examine both categories of temporary workers in more detail, revealing that in our sample the prevalence of agency work was lower than that of on-call work [1.8% (*N* = 392) vs. 2.2%

Table 3.5 Summary of hypotheses and support-level

Hypothesis		*S*[1]	*Remark*
Agency and on-call workers, compared to permanent workers, have:			
H1a	Lowest autonomy and fewest task demands	+	
H1b	More often passive work	+	Also more often high strain work
H2	Highest job insecurity	+/-	Agency: yes; On-call: no
H3	Lowest health status	+/-	Agency: yes; On-call: no
H4	Worst work-related attitude scores	+/-	Agency: yes; On-call: no
Contract differences in health can be (partly) explained by:			
H5a	Quality of working life	-	
H5b	Job insecurity	+/-	1 out of 3 indicators
H5c	Combination of quality of working life and job insecurity	-	
Contract differences in work-related attitudes can be (partly) explained by:			
H6a	Quality of working life	+/-	2 out of 3 indicators
H6b	Job insecurity	+	3 out of 3 indicators
H6c	Combination of quality of working life and job insecurity	+/-	2 out of 3 indicators

[1]Support for hypothesis: '+' = supported; '+/-' = partly supported; '-' = not supported.

(*N* = 467)]. Furthermore, agency workers were less often females (45.0% vs. 59.4%), young workers (13.5% vs. 44.5% ≤ 20 years) and low educated (29.4% vs. 39.4%), and they worked more days [4.2 (*SD* = 1.4) vs. 2.7 (*SD* = 1.5)] and more hours [28.3 (*SD* = 14.7) vs. 7.6 (*SD* = 9.6)] a week than on-call workers. Moreover, they were relatively often employed in the business services (36.0%), industry (13.3%) and transport (10.6%) sectors, whereas on-call workers were most often employed in the health care (28.1%), catering (19.1%) and trading (20.2%) sectors. This suggests that a large share of on-call workers may be (high school) students holding part-time jobs (because they are young, low educated and only employed for a few hours a week), for whom paid work is not especially salient. This may explain their low job insecurity, which in combination with little exposure to low-quality work (i.e. only few hours a week) may explain their favourable health status and high job satisfaction.

The third and fourth implication can be derived from the answer to our title question: "Can labour contract differences in health and in work-related attitudes be explained by quality of working life and job insecurity?". Both aspects could *hardly* explain contract differences in health, whereas they could *not fully* explain contract differences in work-related attitudes. First, regarding health, we should note that many contract differences

(i.e. in general health and musculoskeletal symptoms) were already small, especially after controlling for age. Moreover, work-related variables as the quality of working life and job insecurity may only have a small impact on a multidimensional outcome as general health (P. Virtanen et al., 2011). Nevertheless, both aspects failed to explain contract differences in emotional exhaustion, which is a work-related health outcome. It does not seem plausible that this depends upon poor measurement of the quality of working life (i.e. autonomy and task demands), as these concepts were measured using the corresponding scales from the well-validated Job Content Questionnaire (Karasek et al., 1998). Also, job insecurity seems rather well reflected by the measurement of both cognitive and affective job insecurity (Probst 2003). In addition, similar measures for autonomy, task demands and job insecurity are strongly related to health and well-being measures (Cheng & Chan, 2008; Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Sverke et al., 2002)

Therefore, we argue that this finding may be explained by a healthy worker effect, in that healthy workers are the most likely to seek and gain (permanent) employment, while unhealthy workers may become 'trapped' into temporary employment or even be drawn into unemployment (M. Virtanen et al., 2005). This explanation finds support in several studies among fixed-term workers, demonstrating that good health, low psychological distress and high work satisfaction increase the chance on future permanent employment (M. Virtanen, Kivimäki, Elovainio, & Vahtera, 2002), and that non-optimal health increases the chance of becoming unemployed (P. Virtanen et al., 2005). To complicate matters, this explanation is challenged by a recent Belgian study which failed to find evidence of such selection processes (De Cuyper, Notelaers, & De Witte, 2009). This underlines the need for further research in this area. Secondly, not all contract differences in work-related attitudes could be fully attributed to differences in the quality of working life and job insecurity. Therefore, other possible important determinants of temporaries' work-related attitudes warrant attention as well, such as positive elements of temporary employment (e.g. flexibility); expectations and preferences regarding employment contract, occupation and workplace; and, related to this, motives for being temporary employed (e.g. to obtain permanent employment or to become more flexible) (Aronsson & Göransson, 1999; De Cuyper et al., 2008; De Cuyper & De Witte, 2006; Tan & Tan, 2002).

3.6.2 Practical implications

The current study found that agency workers, but not on-call workers, constitute a risk group for health and work attitudinal problems in the Netherlands. Especially, the large share of temporary workers having (1) high-strain jobs and those having (2) passive jobs may be at risk for entrapment in precarious employment, and even unemployment. High-strain work may lead to health and well-being problems (Häusser et al., 2010; Karasek, 1979), whereas passive workers may have fewer learning opportunities (Van der Doef & Maes, 1999), which may lower their employability. Therefore, measures aimed at improving the quality of working life are needed. In combination with measures targeting job insecurity,

they may be effective in reducing contract differences in work-related attitudes. In order to improve the quality of working life among temporary workers, the latter could better be treated as primary segment workers (e.g. in terms of salary, career opportunities, work-time control and fringe benefits). Especially since 70% of the Dutch employers report small to large differences in the way they treat their temporary versus their permanent personnel, which often means better career and training opportunities among the latter (Isaksson et al., 2010). Furthermore, a longitudinal study showed a reduction in job insecurity after acquiring permanent, and thus job secure work (M. Virtanen, Kivimäki, Elovainio, Vahtera, & Ferrie, 2003). Similar results may be obtained by offering temporary workers better work security guarantees (Bryson, Cappellari, & Lucifora, 2009).

3.6.3 Strengths and limitations

The most important limitation of the current study is its cross-sectional design, meaning that no causal inferences concerning the associations between employment contracts and the quality of working life, job insecurity, health and work-related attitudes can be drawn. It should be noted that the causal direction of the associations among employment contract, health and work-related attitudes may well be reversed, as it is unlikely that employees with (chronic) health and well-being problems will easily find permanent employment. Secondly, we only measured task demands and autonomy to assess the quality of working life whereas other job characteristics, such as social support, may also be of importance (Kompier, 2003). Finally, this study employed a sample of Dutch employees only. In some respects, there are large differences within the European Union, for example with regard to the number of temporary workers, employment protection legislation with regard to permanent and temporary contracts, job quality and job insecurity (European Commission, 2008; Leschke & Watt, 2008). Therefore, the degree to which our findings can be generalised to other countries is unknown.

The strongest point of the current study is its large and representative national sample. This allowed us to differentiate among four types of temporary work, including agency and on-call work, which are not always systematically separated (e.g., Kompier et al., 2009). A second asset is our focus on two different mechanisms (quality of working life and job insecurity) that may theoretically account for contract differences in health and work-related attitudes. We also used valid operationalizations to measure both concepts. In line with Probst (2003), we measured job insecurity as a 'rich' concept, including both cognitive job insecurity (i.e. perceived chance of job loss) and affective job insecurity (i.e. worry about job loss). We also focused on the combination of task demands and autonomy. This gave us the opportunity to assess, within each contract type, the proportion of jobs with four theoretically relevant combinations of job characteristics, both positive and negative. Finally, we did not operationalize Karasek's four job types by a rough division of autonomy and task demands (e.g. by means of a crude median split), but based our division

on substantive grounds, that is, on absolute answer category labels, which more accurately correspond to the categorisation of “low” versus “high” control and demands.

3.6.4 Future research

Some recommendations for future research are the following. First, the current study showed much diversity in the quality of working life and job insecurity among temporary workers. Therefore, future research should search for specific risk groups for health and well-being problems by focusing on temporary workers, especially agency workers, with a low quality of working life and high job insecurity. Secondly, on-call work proved to be a distinct form of temporary employment. Therefore, future research should separate on-call work from other forms of temporary employment and should investigate the profile(s) of these workers more extensively. Thirdly, the quality of working life and job insecurity acted somewhat differently in explaining health and work-related attitudinal differences between contract types. Thus, future research should distinguish between these two factors in the context of employment contracts, most notably in relation to employability and turnover intention. Finally, longitudinal research is needed to test whether employment contracts and health and work-related attitudes affect each other reciprocally. To this aim, we must study different career paths, not only in terms of contract transitions and transitions between employment and unemployment (e.g., Kompier et al., 2009; P. Virtanen et al., 2005), but also regarding quality of working life and job insecurity. In this way, we can discover which type of work leads to health and attitudinal problems (and eventually to unemployment), and which type of work serves as a stepping stone to healthier work.

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CHAPTER 4

Impact of employment contract changes on workers' quality of working life, job insecurity, health and work-related attitudes

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4.1 ABSTRACT

Study aim

Changes in employment contracts may impact the quality of working life, job insecurity, health and work-related attitudes. We examined the validity of two partly competing theoretical approaches. Based upon a segmentation approach, we expected no change in scores among stable trajectories, whereas upward trajectories were expected to be for the better and downward trajectories to be for the worse (Hypothesis 1). As turnover theories suggest that this hypothesis may only apply to workers who do *not* change employer, we also examined these contract trajectories stratified for a change of employer (Hypothesis 2).

Methods & Results

Drawing on the 2007 and 2008 waves of the Netherlands Working Conditions Cohort Study (*N* = 9,688), repeated measures analysis of covariance showed little across-time change in the criterion variables, thus largely disconfirming our first hypothesis. These results could (at least partly) be explained by employer change; this was generally associated with improved scores among all contract trajectories (Hypothesis 2). However, workers receiving a less stable contract from the same employer were found to be at risk for health and well-being problems.

Conclusions

Segmentation theory-based assumptions on contract trajectories primarily apply to stable and downward contract trajectories at the same employer, whereas assumptions from turnover theories better apply to contract trajectories combined with a change of employer. Future research should focus more closely on factors predicting “involuntary” downward trajectories into precarious temporary employment or unemployment.

4.2 INTRODUCTION

In the middle of 2011, the European workforce counted around 25.5 million temporary employees (14.2% of the EU active population [Eurostat, 2011a; Eurostat, 2011b]), and the number of temporary employees is likely to increase as temporary employment is highly dependent on economic growth (European Commission, 2010). Although temporary employment has important advantages for organizations in terms of flexibility and innovativeness, the shift away from firm long-term organizational relationships towards more flexible temporary relationships has raised concerns regarding the health and well-being of the workers involved (De Cuyper et al., 2008; Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005).

Temporary work is often assumed to involve higher job insecurity and a lower quality of working life (De Cuyper et al., 2008), which in turn are expected to negatively impact workers' health, well-being and work-related attitudes (Cheng & Chan, 2008; Kompier, 2003; M. Virtanen et al., 2005). This assumption builds upon a core-periphery model of employment contracts, in which permanent workers are well-sheltered organizational insiders forming the core of an organization, which is surrounded by a "buffer workforce" of multiple layers of temporary workers with increasingly precarious employment (Aronsson, Gustafsson, & Dallner, 2002; Kalleberg, 2003). The core-periphery view stems from organizational segmentation theories, which differentiate between primary segment (core) workers and secondary segment (peripheral) workers (Hudson, 2007; Kalleberg, 2003). Core workers are important to the organization, as they possess scarce skills, valuable knowledge and useful experience and are hard to replace, whereas the opposite holds for secondary segment workers. Consequently, core workers receive more secure (permanent) and higher quality employment (better working conditions, job content, work relations and terms of employment) than peripheral workers. Therefore, the latter often receive temporary employment contracts.

4.2.1 Impact of contract trajectories on workers' health, well-being and work-related attitudes

Building upon segmentation theories, it can be expected that upward contract changes (towards the core of permanent employment) are generally associated with an improvement in job security, the quality of working life and thus improved health and well-being. The opposite may apply to downward contract changes towards less secure, more temporary employment (e.g., agency or on-call work). The few studies on contract transitions indeed provided some support for these assumptions in terms of workers' job security, supervisory tasks, social support from colleagues, engagement, work satisfaction and risk of psychological distress (Kompier, Ybema, Janssen, & Taris, 2009; Virtanen, Kivimäki, Elovainio, Vahtera, & Ferrie, 2003; P. Virtanen et al., 2005). However, these and other studies also reported no significant and even contradictory results. For example, no impact of a change in

employment contract has been found regarding various measures of health, lifestyle, work-related attitudes and life satisfaction (De Cuyper, Notelaers, & De Witte, 2009; Kompier et al., 2009; Virtanen et al., 2003). Moreover, contrary to the segmentation assumptions, downward contract trajectories have been associated with an increase in work engagement and affective organizational commitment (De Cuyper et al., 2009), whereas upward contract trajectories have been associated with an increase in work pace (Kompier et al., 2009) and medically certified sickness absence (Virtanen et al., 2003). These inconsistent findings challenge a segmentation approach towards employment contracts and therefore raise doubts concerning its validity.

4.2.2 Employment contract changes: "deterministic" segmentation or self-initiated change?

Segmentation theories reflect a rather deterministic view on employment contracts because they suggest all upward contract changes to be for the better (i.e., resulting in higher quality and more secure employment) and all downward contract changes to be for the worse. This view ignores the fact that many contract changes are part of a larger, often employee-initiated, change such as a switch in job type or employer, which may alter the consequences for the worker involved. This latter assumption finds support in theories on job turnover, which generally hold that job search and exit behaviour stem from an imbalance between costs and rewards of the current job (Steel & Lounsbury, 2009). This means that employees who cannot successfully improve their current employment situation will try to switch employer or job type to acquire a better work situation. Consequently, such changes may often result in an improvement in workers' quality of working life and therefore also in their health, well-being and work-related attitudes. This improvement may be independent from a possible change in contract type: it is conceivable that workers will leave unfavourable *permanent* employment (e.g., those who are not in their preferred occupation [Aronsson & Göransson, 1999]) when they are able to acquire better "fitting" *temporary* employment. This would make a downward change in contract actually an improvement of workers' employment situation (De Cuyper et al., 2009). Furthermore, an employer change combined with the acquisition of a more stable contract is likely to enhance both workers' job security and quality of working life, whereas receiving a more stable contract at the current employer may merely enhance workers' job security but not their quality of working life. In sum, we argue that a change in workers' job type or employer may alter the impact of employment contract changes on workers' health, well-being and work-related attitudes and may therefore account for (some of) the inconclusive findings in this area.

4.2.3 Aim of the current study

In a large and representative longitudinal sample of the Dutch working population, we aimed to examine the validity of the segmentation approach towards employment contract changes

by taking into account a change of employer. Therefore, we first differentiated between stable, upward and downward contract trajectories, for which we tested the impact on employee quality of working life, job insecurity, health and work-related attitudes. We started by examining the "segmentation approach" and tested if (a) stable contract trajectories (i.e., no across-time change of contract type) would not be associated with changes in workers' quality of working life, job insecurity, health and work-related attitudes (also because of the limited time-span of the current study; *Hypothesis 1a*); (b) upward contract trajectories would result in an improvement in scores (except for demands, which are often found to be higher among permanent workers (except for demands, which are often found to be higher among permanent workers [Letourneux, 1998; Wagenaar, Kompier, Houtman, Van den Bossche, Smulders, et al., 2012]; Hypothesis 1b); and (c) downward contract transitions would result in a deterioration in scores (*Hypothesis 1c*).

Secondly, we examined whether these segmentation assumptions hold when taking into account a change of employer. As turnover theories suggest employer changes to be generally for the better, they challenge the segmentation assumptions regarding the impact of stable and downward contract trajectories (i.e., Hypothesis 1a and 1c). Consequently, Hypothesis 1 may only apply to workers who do *not* change employer (*Hypothesis 2a*), whereas workers who do change employer can be expected to improve in terms of their quality of working life, and thereby their health and work-related attitudes, *irrespective* of a change in their employment contract (*Hypothesis 2b*). We tested these two assumptions by stratifying all previous analyses for a change of employer.

4.3 SAMPLE AND METHODS

4.3.1 Sample

The current study draws on two waves of the Netherlands Working Conditions Cohort Study (Koppes, De Vroome, & Van den Bossche, 2011), which studies the working conditions, health and well-being of the Dutch working population (excluding self-employed workers) over time. The first wave started in October 2007 and continued until January 2008 (N = 22,759; response rate: 32.8%) and was generally representative for the Dutch working population (Van den Bossche, Koppes, Granzier, De Vroome, & Smulders, 2008). The follow-up measurement (N = 10,393; response rate: 54.2%) began in November 2008 and continued until January 2009. A written version of the questionnaires was sent to the respondents' homes, and the accompanying letter also mentioned the possibility of completing the questionnaire online. Note that this study fully complies with the Dutch law on the protection of personal data, which means that respondents have the guarantee that their data is only used for statistical purposes, and that no institution can demand access to their data. As our analyses were restricted to permanent and temporary workers (excluding on-call workers) who filled in the questionnaire at both time points, our final sample comprised 9,686 participants (48.5% males; $M_{age\text{-}T1}$ = 42.9, SD = 11.0). The nonresponse rate

during follow-up measurement was 44.6% among permanent employees and varied from 50% (temporary work with the prospect of permanent employment) to 56.7% (temporary agency work) among temporary employees. Note that this nonresponse rate is unlikely to be caused by health selection, as we found no significant health differences at baseline between initially temporary employed participants and nonparticipants.

4.3.2 Measures

Employment contract trajectories

Five contract types were distinguished using the question "what is the nature of your employment?" (1 = "permanent employment [for indefinite time]", 2 = "temporary employment with the prospect of permanent employment", 3 = "temporary employment for a fixed term", 4 = "temporary agency work", and 5 = "on-call work"). Note that on-call work was excluded in the current study, as a previous study among another cross-sectional sample of the Dutch working population showed these workers to differ in many respects from other temporary workers (Wagenaar, Kompier, Houtman, Van den Bossche, Smulders, et al., 2012). Moreover, in the Netherlands, the notion of having the prospect of permanent employment refers to explicit clauses in the written formal employment contract, rather than the subjective interpretation of the worker involved.

Change of employer

Change of employer was assessed by asking participants: "Did you change employer in the past 12 months?" (1 = "yes", 2 = "no" [reversed]).

Quality of working life

Quality of working life was assessed by measuring psychosocial work characteristics, including physical working conditions, task demands, autonomy and work relations. Adverse physical working conditions were measured with 7 items derived or adapted from the Permanent Study on Living Conditions (POLS [Statistics Netherlands, 2003]) and the (Dutch) Labour Force Survey (EBB [Granzier, Kösters, & Van der Valk, 2008]). A typical scale item is "do you have to perform dangerous work?", while other items referred to repeated movements, working in an uncomfortable stance, work that requires the exertion of much force, the use of tools that vibrate, or are noisy and exposure to chemicals, dust, gasses or smoke (1 = "yes, regularly", 2 = "yes, sometimes", 3 = "no" [reversed]). The Task demands scale (4 items, e.g., "do you have to perform a lot of work?" 1 = "never", 4 = "always") and Autonomy scale (3 items, e.g., "can you decide yourself how to perform your work?" 1 = "yes, regularly", 2 = "yes, sometimes", 3 = "no" [reversed]) were both derived from the Job Content Questionnaire JCQ (Karasek et al., 1998). Work relations were measured with an adapted version (Houtman et al., 1995) of Karasek's *supervisory support* (e.g.,

"my colleagues help me to get the work done") and *co-worker support* scales (e.g., "my supervisor pays attention to what I say"), both answered on a 4-point Likert scale (1 = "fully disagree"; 4 = "fully agree").

Job insecurity

Job insecurity was measured with the items (1) "are you at risk of losing your job?" and (2) "are you worried about retaining your job?" (1 = "yes", 2 = "no" [reversed]), which were derived from the study of Goudswaard, Dhondt, and Kraan (1998).

Health

Health was assessed by measuring general health, musculoskeletal symptoms and emotional exhaustion. *General health* was measured with the question "generally taken, how would you define your health?" (1 = "excellent", 2 = "very good", 3 = "good", 4 = "moderate", 5 = "bad" [reversed] [Statistics Netherlands, 2003]). Musculoskeletal symptoms were measured with four items developed by Blatter, Bongers, Kraan, and Dhondt (2000). The four items concerned (1) the "neck", (2) the "shoulders", (3) the "arms/elbows" and (4) "wrists/hands"; for example, the item for the neck was as follows: "in the past 12 months, did you have trouble (pain, discomfort) from your neck?" (1 = "no, never"; 2 = "sometimes, short lived"; 3 = "sometimes, long lasting"; 4 = "multiple times, short lived"; 5 = "multiple times, long lasting"). Emotional Exhaustion was measured with an adapted five-item version of the corresponding scale of the Maslach Burnout Inventory-General Survey (MBI-GS [Schaufeli, Leiter, Maslach, & Jackson, 1996]). A typical item is "I feel burned out from my work" (1 = "never"; 7 = every day").

Work-related attitudes

Work satisfaction was measured by asking participants: "to what extent are you, all in all, satisfied with your work?" and "to what extent are you, all in all, satisfied with your working conditions?" (1 = "very dissatisfied"; 5 = "very satisfied"). In-role performance was measured with three items based on the performance indicators defined by Goodman and Svyantek (1999): (1) "I achieve all targets (work assignments) that belong to my work", (2) "I perform well at the tasks involved in my work" and (3) "I perform well at my job" (1 = "fully agree"; 5 = "fully disagree" [reversed]). Turnover intention was assessed with two items derived from the study of Goudswaard et al. (1998): (1) "in the past year, did you consider to search for a job other than the job at your current employer?" and (2) "in the past year, have you actually undertaken something to find another job?" (1 = "yes", 2 = "no" [reversed]).

Control variables

Gender, age as a continuous variable, educational level (1, 2 and 3, which respectively represented low, meaning no education, primary school or lowest level of secondary school; moderate, meaning secondary school and intermediate vocational education; and high, meaning higher education such as a university degree [dummy-coded]) and contractual hours were recorded as control variables.

The reliability of all presented scales was generally high (α = .69 - .88), except for turnover intention (which was moderate: α = .63), and explanatory factor analysis showed that the items of all scales loaded on the intended factors. If participants did not respond to a question, the answer was coded as missing. For each scale, the scores on the respective items that received a valid response were averaged.

4.4 STATISTICAL PROCEDURE

In order to test our first hypothesis (regarding the impact of contract trajectories), we clustered all workers into three contract trajectory groups: (1) workers who did not change in employment contract between T1 (2007) and T2 (2008) ("stayers": *N* = 8,614), (2) workers who received a more stable employment contract over time ("upward movers": *N* = 631) and (3) workers who received a less stable contract over time ("downward movers": *N* = 441). Furthermore, to test the role of an employer change (Hypothesis 2), we stratified these three contract trajectory groups for a change of employer (no or yes), which resulted in six groups.

Before testing both hypotheses, we first analysed possible baseline differences between the three contract trajectory groups (stayers, upward movers and downward movers) using multivariate analysis of variance (MANOVA) with the quality of working life, job insecurity, health and work-related attitudes indicators as criterion variables. In addition, we conducted Bonferroni post hoc analyses to examine the between-group differences in more detail and computed corresponding Cohen's *d* values as effect size (Hartung, Knapp, & Sinha, 2008). Following Cohen (1988), we distinguished between small (*d* = 0.2 to 0.5), moderate (*d* = 0.5 to 0.8), and large (*d* ≥ 0.8) effects. Secondly, we repeated these analyses separately for the no change of employer and at least one change of employer groups.

To test our first hypothesis, we conducted a 3 (group: stayers versus upward versus downward) × 2 (time: T1 versus T2) analyses of covariance with repeated measures on time (RM-ANCOVA) for each quality of working life indicator, job insecurity and health and work-related attitudes indicator. In these analyses, we controlled for age and educational level at baseline and for a change of contractual hours (by subtracting the number of contractual hours worked at baseline from those at follow-up). Additionally, we computed for each contract trajectory group Cohen's *d*s for the across-time change of workers' quality of working life, job insecurity, health and work-related attitudes scores.

In order to test our second hypothesis, we repeated the previous RM-ANCOVAs for the three contract trajectory groups stratified for a change of employer.

4.5 RESULTS

4.5.1 Baseline differences

Contract trajectory groups

We found many significant baseline differences in the quality of working life, job insecurity, health and work-related attitudes between stayers, upward movers and downward movers (see Table 4.1 for mean scores at T1: $F(24, 18318) = 23.42$, $p < .01$). As many differences were negligibly small in terms of effect size, we will only report differences with a small effect size or more ($d \geq .20$). First, univariate analysis revealed that upward movers had the most favourable baseline scores for task demands and supervisory support, and compared with downward movers, they also scored more favourably on co-worker support, emotional exhaustion, work satisfaction and turnover intention (all $Fs (2, 9169) \geq 7.21$, all $ps < .01$). Furthermore, stayers were the most job secure, and compared with downward movers, they reported higher autonomy and a lower turnover intention (all $Fs (2, 9169) \geq 15.92$, $ps < .01$). Note that these baseline differences were small, except for the difference in work satisfaction and turnover intention between upward and downward movers (respectively, $d = .50$ and $d = .51$) and the difference in turnover intention between stayers and downward movers ($d = .73$), which represent moderate effects.

Contract trajectory – same employer groups

Among workers who stayed with the same employer over time, we found similar but fewer "relevant" ($d \geq .20$) baseline differences between the three contract trajectory groups (see Table 4.2 for mean scores at T1: $F(24, 16668) = 10.35$, $p < .01$). Again, we found that upward movers were more satisfied with their work at baseline than downward movers and that they reported more supervisory support at baseline than stayers (but not compared with downward movers) (both $Fs (2, 8344) \geq 8.09$, $ps < .01$). Moreover, stayers "still" reported the lowest baseline job insecurity and, compared with downward movers, also higher autonomy; but they also reported the highest task demands (all $Fs (2, 8344) \geq 6.25$, all $ps < .01$). All these baseline differences were small.

Contract trajectory – new employer groups

Among workers who changed employer between 2007 and 2008, we found various significant and "relevant" ($d \geq .20$) baseline differences between the three trajectory groups (see Table 4.3 for mean scores at T1: $F(24, 1574) = 3.11$, $p < .01$). Upward movers reported the lowest task demands at baseline but also the lowest autonomy, and they scored more favourably

on supervisory support than downward movers (all Fs (2, 797) ≥ 3.99, all ps < .05). Moreover, stayers reported better baseline scores for job insecurity compared with upward movers, and they reported better scores for emotional exhaustion and work satisfaction compared with downward movers (all Fs (2, 797) ≥ 4.39, all ps < .05). Again, these baseline differences were small, except for the difference in autonomy between stayers and upward movers (d = .53), which represents a moderate effect.

4.5.2 Across-time changes

Hypothesis 1: Impact of employment contract trajectories

The repeated-measures ANCOVA's for the three contract trajectories (Table 4.1) showed a pattern of significant group differences over time that was similar to the baseline pattern, although many of these group differences seemed to have decreased over time. In addition, we also found some significant main effects of time, but these were not consistent among the various trajectory groups.

In order to test Hypothesis 1, we focused on the group×time interaction effects. First, the results in Table 4.1 support Hypothesis 1a (stable contract trajectories are associated with "stable" scores), since all Cohen's d effect sizes for the change in criterion variables were negligibly small (d < .06). However, the results in Table 4.1 hardly support Hypothesis 1b (upward trajectories are for the better) and Hypothesis 1c (downward trajectories are for the worse): although job insecurity improved among upward movers, all other indicators hardly changed over time (d < .20). Moreover, many indicators hardly changed among downward movers, while their scores for supervisory support, work satisfaction and turnover intention improved instead of deteriorated (small effects).

Hypothesis 2: Impact of employment contract trajectories and a change of employer

First and partly in support of Hypothesis 2a, the results for workers who did not change employer partly corroborated the segmentation assumptions posed in Hypothesis 1 (see Table 4.2). As expected, scores among the stable group (same contract – same employer) remained fairly stable over time (d < .08) and various scores among downward movers (at the same employer) deteriorated, i.e., in terms of supervisory support, job insecurity, work satisfaction and turnover intention (small effects). However, little evidence was found for an improvement in scores among upward movers, as only their job insecurity improved (small effect), whereas all other scores hardly changed.

Second, the results in Table 4.3 largely support Hypothesis 2b (all contract trajectories with an employer change are for the better). Among all workers who changed employer, social support (co-worker and / or supervisory support) and work satisfaction increased and turnover intention decreased. In addition, workers in an upward contract trajectory also improved in terms of their autonomy, job insecurity and emotional exhaustion (although

Table 4.1 Contract trajectories: Change in quality of working life, job insecurity, health and work-related attitudes

Change in contract:	*No change (N^2 = 8,614)*					*Upward (N = 631)*					*Downward (N = 441)*					*F^6*		
Variables (range[1])	T1		T2		*D^5*	T1		T2		*D*	T1		T2		*D*	G	T	G×T
	M^3	*SD*	*M^4*	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*				
Adverse physical working conditions (1-3)	1.41	0.4	1.40	0.5	-0.02	1.39	0.4	1.41	0.4	0.04	1.41	0.4	1.34	0.4	-0.16	G*	T**	GxT**
Task demands (1-4)	2.38	0.6	2.37	0.6	-0.01	2.18	0.6	2.26	0.6	0.13	2.36	0.6	2.25	0.6	-0.19	G**		GxT**
Autonomy (1-3)	2.60	0.6	2.62	0.5	0.04	2.50	0.6	2.56	0.5	0.11	2.49	0.6	2.50	0.6	0.02	G**	T*	
Supervisory support (1-4)	2.84	0.7	2.84	0.6	-0.01	3.02	0.6	2.99	0.6	-0.05	2.72	0.7	2.93	0.7	**0.32**	G**		GxT**
Co-worker support (1-4)	3.27	0.5	3.26	0.5	-0.02	3.34	0.5	3.36	0.5	0.04	3.23	0.6	3.29	0.5	0.11	G*		GxT**
Job insecurity (1-2)	1.15	0.3	1.16	0.3	0.03	1.28	0.4	1.14	0.3	**-0.40**	1.24	0.4	1.31	0.4	0.16	G**	T**	GxT**
General health (1-5)	3.46	0.8	3.43	0.8	-0.04	3.55	0.8	3.47	0.8	-0.10	3.53	0.8	3.55	0.8	0.02			
Musculosk. symptoms (1-5)	1.91	1.0	1.87	1.0	-0.04	1.90	1.0	1.81	1.0	-0.09	1.94	1.0	1.89	0.9	-0.06			
Emotional exhaustion (1-7)	1.93	1.1	1.97	1.1	0.04	1.85	1.0	1.93	1.1	0.08	2.21	1.3	1.99	1.1	-0.18	G**		GxT**
Work satisfaction (1-5)	3.84	0.7	3.80	0.7	-0.05	3.90	0.7	3.86	0.8	-0.05	3.51	0.8	3.73	0.8	**0.27**	G**		GxT**
In-role performance (1-5)	4.40	0.5	4.39	0.6	-0.02	4.33	0.6	4.37	0.6	0.06	4.35	0.6	4.29	0.6	-0.11	G**		GxT*
Turnover intention (1-2)	1.35	0.4	1.35	0.4	-0.01	1.43	0.4	1.38	0.4	-0.12	1.64	0.4	1.53	0.4	**-0.26**	G**		GxT**

[1]Higher scores reflect higher quantities of the measured concept. [2]Maximum *N*: actual *N*s differed per analysis due to missing values. [3]Mean score T1 (2007). [4]Mean score T2 (2008). [5]Cohen's *D* effect size for the mean difference between T1 and T2: relevant effect sizes are in bold (i.e., $d > .20$). [6]Significance of the *F*-values referring to the main effects of group (G), the main effects of time (T) and the interaction effects between group and time (GxT) controlled for gender, age, educational level and change in contractual hours. * $p<.05$. ** $p<.01$.

Table 4.2 Contract trajectories – No change in employer: Change in quality of working life, job insecurity, health and work-related attitudes

Change in contract:	*No change (N^2 = 8,208)*					*Upward (N = 509)*					*Downward (N = 105)*					*F^6*		
Variables (range[1])	T1		T2		*D^5*	T1		T2		*D*	T1		T2		*D*	G	T	G×T
	M^3	*SD*	*M^4*	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*				
Adverse physical working conditions (1-3)	1.41	0.5	1.40	0.5	-0.01	1.38	0.4	1.41	0.5	0.07	1.37	0.4	1.43	0.5	0.12			GxT**
Task demands (1-4)	2.38	0.6	2.37	0.6	-0.01	2.18	0.6	2.27	0.6	0.15	2.18	0.7	2.28	0.7	0.15	G**	T**	GxT**
Autonomy (1-3)	2.60	0.6	2.62	0.5	0.03	2.54	0.5	2.57	0.5	0.06	2.43	0.6	2.37	0.6	-0.10	G**		
Supervisory support (1-4)	2.85	0.7	2.83	0.6	-0.03	3.04	0.6	2.98	0.6	-0.10	2.91	0.7	2.75	0.8	**-0.23**	G**	T**	
Co-worker support (1-4)	3.27	0.5	3.26	0.5	-0.04	3.35	0.5	3.35	0.5	0.00	3.28	0.5	3.29	0.5	0.03			
Job insecurity (1-2)	1.15	0.3	1.16	0.3	0.04	1.26	0.4	1.12	0.3	**-0.42**	1.23	0.4	1.40	0.4	**0.40**	G**	T**	GxT**
General health (1-5)	3.45	0.8	3.42	0.8	-0.04	3.54	0.8	3.49	0.8	-0.06	3.61	0.9	3.54	0.9	-0.07			
Musculosk. symptoms (1-5)	1.91	1.0	1.87	1.0	-0.04	1.87	1.0	1.80	0.9	-0.08	1.81	1.0	1.82	0.9	0.01			
Emotional exhaustion (1-7)	1.92	1.1	1.98	1.1	0.05	1.79	0.9	1.95	1.1	0.16	1.90	1.2	1.99	1.1	0.08		T**	
Work satisfaction (1-5)	3.85	0.7	3.80	0.7	-0.07	3.98	0.7	3.86	0.8	-0.17	3.77	0.7	3.56	0.9	**-0.25**	G**	T**	GxT*
In-role performance (1-5)	4.40	0.5	4.39	0.6	-0.02	4.32	0.6	4.38	0.5	0.11	4.33	0.6	4.38	0.6	0.09			GxT**
Turnover intention (1-2)	1.34	0.4	1.34	0.4	0.01	1.37	0.4	1.37	0.4	0.00	1.38	0.4	1.48	0.4	**0.22**	G*	T**	GxT*

[1]Higher scores reflect higher quantities of the measured concept. [2]Maximum *N*: actual *N*s differed per analysis due to missing values. [3]Mean score T1 (2007). [4]Mean score T2 (2008). [5]Cohen's *D* effect size for the mean difference between T1 and T2: relevant effect sizes are in bold (i.e., $d > .20$). [6]Significance of the *F*-values referring to the main effects of group (G), the main effects of time (T) and the interaction effects between group and time (GxT) controlled for gender, age, educational level and change in contractual hours. * $p<.05$. ** $p<.01$.

Table 4.3 Contract trajectories – Change in employer: Change in quality of working life, job insecurity, health and work-related attitudes

Change in contract:	*No change (N^2 = 385)*					*Upward (N = 118)*					*Downward (N = 335)*					*F*[6]		
Variables (range[1])	T1		T2		*D*[5]	T1		T2		*D*	T1		T2		*D*	G	T	G×T
	M[3]	*SD*	*M*[4]	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*				
Adverse physical working conditions (1-3)	1.39	0.4	1.32	0.4	-0.16	1.42	0.4	1.38	0.4	-0.10	1.42	0.4	1.32	0.4	**-0.24**		T*	
Task demands (1-4)	2.39	0.6	2.31	0.6	-0.14	2.19	0.6	2.20	0.6	0.02	2.42	0.6	2.23	0.6	**-0.30**			GxT*
Autonomy (1-3)	2.59	0.5	2.65	0.5	0.11	2.31	0.7	2.50	0.6	**0.30**	2.51	0.6	2.54	0.6	0.06	G**	T*	
Supervisory support (1-4)	2.71	0.7	2.99	0.7	**0.40**	2.90	0.7	3.02	0.6	0.18	2.66	0.7	2.99	0.6	**0.50**			
Co-worker support (1-4)	3.23	0.5	3.35	0.5	**0.23**	3.26	0.5	3.38	0.6	**0.22**	3.21	0.6	3.29	0.5	0.14			
Job insecurity (1-2)	1.20	0.4	1.20	0.4	0.01	1.36	0.4	1.22	0.3	**-0.36**	1.25	0.4	1.28	0.4	0.09	G**	T*	GxT**
General health (1-5)	3.57	0.8	3.50	0.8	-0.08	3.57	0.8	3.38	0.8	**-0.25**	3.50	0.8	3.55	0.8	0.06			GxT**
Musculosk. symptoms (1-5)	1.88	1.0	1.89	1.0	0.01	2.03	1.2	1.89	1.0	-0.13	1.98	1.0	1.91	1.0	-0.08			
Emotional exhaustion (1-7)	2.03	1.1	1.84	1.0	-0.18	2.13	1.3	1.88	1.0	**-0.21**	2.30	1.3	1.99	1.1	**-0.26**	G*		
Work satisfaction (1-5)	3.61	0.8	3.90	0.8	**0.36**	3.53	0.9	3.86	0.8	**0.39**	3.43	0.8	3.79	0.8	**0.45**	G**		
In-role performance (1-5)	4.34	0.6	4.34	0.6	0.00	4.39	0.7	4.30	0.8	-0.13	4.36	0.6	4.26	0.6	-0.17			
Turnover intention (1-2)	1.67	0.4	1.48	0.4	**-0.45**	1.70	0.4	1.43	0.4	**-0.64**	1.71	0.4	1.54	0.4	**-0.44**	G*	T**	

[1]Higher scores reflect higher quantities of the measured concept. [2]Maximum *N*: actual *N*s differed per analysis due to missing values. [3]Mean score T1 (2007). [4]Mean score T2 (2008). [5]Cohen's *D* effect size for the mean difference between T1 and T2: relevant effect sizes are in bold (i.e., $d > .20$). [6]Significance of the *F*-values referring to the main effects of group (G), the main effects of time (T) and the interaction effects between group and time (GxT) controlled for gender, age, educational level and change in contractual hours. * $p<.05$. ** $p<.01$.

their general health decreased). Moreover, workers in a downward trajectory also improved in terms of their physical working conditions, task demands and emotional exhaustion. Note that all these effects were small, except for the increase in supervisory support among downward movers (d = .50) and the decrease in turnover intention among upward movers (d = -.64), which represent moderate effects.

4.6 DISCUSSION

Many workers enter, leave or change jobs within the labour market each year (European Commission, 2010). The current study focused on Dutch workers who reported a change of employment contract between 2007 and 2008 using data from a nationally representative, longitudinal sample of 9,688 Dutch workers. We examined the impact of stable, upward and downward contract trajectories on workers' quality of working life, job insecurity, health and work-related attitudes from a segmentation perspective. We expected no change among stable trajectories, positive changes among upward trajectories and negative changes among downward trajectories. As previous findings were not always in line with this view, we also explored the role of experiencing a change of employer in this relationship as a possible explanatory mechanism, especially since turnover theories suggest employer changes to be for the better irrespective of the employment contract trajectory workers are in. Table 4.4 summarizes the support for each of our hypotheses. Overall, it can be concluded that segmentation assumptions regarding the impact of employment contract changes largely held for job insecurity, but not for workers' quality of working life, health and work-related attitudes, as these aspects strongly depended on a change of employer. In line with turnover theories, a change of employer had overall positive consequences regardless of the contract trajectory workers were in. Nevertheless, the impact of contract trajectories for those workers who remained with their current employer was more in line with the segmentation view.

4.6.1 Theoretical and practical implications

First, an employer change had positive consequences in terms of workers' quality of working life and their health and work-related attitudes, irrespective of the type of contract trajectory. Although this finding goes against segmentation theories, it corroborates turnover theories (Steel & Lounsbury, 2009), which hold that workers change employer to improve their current employment situation. Interestingly, this "improvement" could also be achieved by a downward change in contract, as these workers reported an improvement in their demands, supervisory support, emotional exhaustion, work satisfaction and turnover intention. These findings are in line with a recent Belgian study (De Cuyper et al., 2009) showing an increase in work engagement and, to a lesser extent, affective organizational commitment among permanent workers who moved downward into fixed-term employment. Therefore, many

Table 4.4 Synthesis of evidence

Hypothesis 1:	*Support*[1]	*Overall support*
(H1a) No contract change = No change in		Supported
Quality of working life	5/5 +	+
Job insecurity	1/1 +	
Health	3/3 +	
Work-related attitudes	3/3 +	
(H1b) Upward contract change = Positive change in		Partly supported
Quality of working life	0/5 –	±
Job insecurity	1/1 +	
Health	0/3 –	
Work-related attitudes	0/3 –	
(H1c) Downward contract change = Negative change in		Not supported
Quality of working life	0/5[a] –	–
Job insecurity	0/0 –	
Health	0/3 –	
Work-related attitudes	0/3[b] –	

Hypothesis 2:				*Overall support*
(H2a) No change of employer = Same expectations as in Hypothesis 1				*Partly supported*
	No contract change = No change	Upward contract change = Positive	Downward contract change = Negative	
Quality of working life	5/5 +	0/5 –	1/5 ±	
Job insecurity	1/1 +	1/1 +	1/1 +	
Health	3/3 +	0/3 –	0/3 –	
Work-related	3/3 +	0/3 –	2/3 ±	
	+	–	±	
(H2b) Change of employer = Positive change in				*Largely supported*
	No contract change	Upward contract change	Downward contract change	
Quality of working life	2/5 ±	2/5 ±	3/5 ±	
Health	0/3 –	1/3[c] ±	1/3 ±	
Work-related	2/3 ±	2/3 ±	2/3 ±	
	±	±	±	

[1]Support level: total number of indicators for which the hypothesis is supported: + = supported, +/– = partly supported, – = not supported. [a]Supervisory support increased. [b]Work satisfaction increased and turnover intention decreased. [c]General health decreased.

workers may accept a less stable contract with another employer to improve their initial situation, perhaps also with regard to their future career opportunities.

Second, segmentation theories do have explanatory power for understanding contract trajectories within the *same* employer. We found stable trajectories (at the same employer) to be associated with stable outcomes and downward trajectories to be associated with deterioration in various indicators, which is in line with previous findings on the impact of contract trajectories (De Cuyper et al., 2009; Kompier et al., 2009; Virtanen et al., 2003; P. Virtanen et al., 2005). However, there was no clear improvement in scores among workers involved in an upward contract trajectory, except for their job insecurity. This may be explained by the fact that these workers "just" received a more stable contract, in that they kept the same employer and probably also the same job type over time. With such an administrative change, not much change in their quality of working life, health and work-related attitudes would be expected. Our study thus suggests that segmentation theory-based assumptions on contract trajectories primarily apply to stable and downward contract trajectories at the same employer, whereas assumptions from turnover theories better apply to contract trajectories combined with a change of employer.

Third, the current study indicates that temporary workers with few opportunities to change employer may constitute a risk group for future health and well-being problems due to continuous exposure to the negative aspects of temporary work (higher job insecurity and a lower quality of working life (higher job insecurity and a lower quality of working life [Wagenaar, Kompier, Houtman, Van den Bossche, Smulders, et al., 2012]; Wagenaar, Taris, et al., 2012). This may especially apply to workers involved in a downward contract trajectory at their initial employer, which is unlikely to have occurred "voluntarily" given the negative consequences of this transition in terms of their supervisory support, job insecurity, work satisfaction and turnover intention. In addition to temporary workers, permanent workers who find themselves in unfavourable employment (e.g., not in their preferred occupation [Aronsson & Göransson, 1999]) may also constitute a risk group for future health and well-being problems. As secure employment is a valuable asset these days, it may discourage many permanent workers from changing employer, leaving them at risk for future health and well-being problems.

4.6.2 Strengths and limitations

The most important asset of the current study is probably its large and representative longitudinal sample of the Dutch working population. This gave us the opportunity to apply a fine-grained, theory-based approach towards examining stable, upward and downward contract trajectories (i.e., based on segmentation theories and turnover theories), which may be considered a second asset of our study. By taking into account employer changes, this study is one of the first studies that does not examine employment contract changes as isolated events but as changes that may impact workers' entire employment situation.

Finally, we measured a broad range of important work characteristics, including job insecurity, health indicators and work-related attitudes, using valid and reliable measures.

Despite these strong points, the current study has also some important limitations. First, our study only included two time points, covering a one-year time span. Therefore, changes in the quality of working life, job insecurity, health and work-related attitudes may be small and no long-term "follow-up" perspectives could be tested. For instance, we could not exclude the possibility that positive consequences of an employer change were only temporary and due to a "honeymoon-hangover" effect (the pattern that after a job change scores often improve but in time deteriorate [Boswell, Boudreau, & Tichy, 2005]). Moreover, no information was available concerning the exact moment (i.e., in which month) participants changed contract type and / or employer. Consequently, we could not control for variations in the length of exposure to a new contract type or employer among the participants. A final limitation is the lack of information on the degree to which contract trajectories and a change of employer occurred voluntarily. Many temporary workers may have remained in their contract because they could not acquire a permanent contract, making this a "forced" trajectory. The same may apply to temporary and permanent workers in an unfavourable work situation without the opportunity to change employer or workers who changed employer but as a "last resort" to avoid unemployment. As control over one's work situation belongs to the core elements of job stress theories (Kompier, 2003), it may be one of the most important aspects in determining the impact of contract and employer changes on workers' health, well-being and work-related attitudes.

4.6.3 Future research

The current study suggests several avenues for future research. First, a downward contract transition may serve as a mechanism to cope with an unfavourable work situation. Moreover, many of these downward transitions may not only lead to better work but may also serve as a bridge to future permanent employment, as temporary work is often used as a probation period before acquiring permanent employment (Isaksson et al., 2010). The "bridge" or "stepping stone" function of temporary work has only been studied for upward contract changes (such as trajectories involving transitions from unemployment or temporary work towards permanent employment (such as trajectories involving transitions from unemployment or temporary work towards permanent employment [De Cuyper et al., 2009]; De Graaf-Zijl, van den Berg, & Heyma, 2011). However, downward trajectories from stable – but unfavourable – employment to less stable – but favourable – work should also be considered as a way to obtain both stable *and* favourable work in the future. Second and in line with this, future research should study contract trajectories over a longer time span with multiple measurement points in order to identify more specific contract trajectories carrying risks for workers' health and well-being. Therefore, future research should focus more closely on factors predicting workers' (lack of) control over contract and employer changes. In this respect, health selection mechanisms (Shah, 2009) may be of particular importance,

as healthy workers may have better chances of receiving permanent employment, whereas less healthy workers may be at risk for out-selection into less stable temporary employment or unemployment (Wagenaar, Kompier, Houtman, Van den Bossche, & Taris, 2012). Besides health, other factors may warrant attention as well, such as employability (Leschke, 2009), work centrality (Wagenaar, Kompier, Houtman, Van den Bossche, Smulders, et al., 2012), type of work (e.g., low vs. high qualified work [Scherer, 2004]) and demographic information like workers' age and their level of education.

4.6.4 Concluding remarks

The current study found weak evidence for a deterministic, labour market-driven view of the effects of contract transitions on employee health and well-being. It is not the case that downward contract changes consistently and necessarily have corresponding adverse consequences for the work situation or employee health and well-being. Rather, downward transitions may often involve a conscious and voluntary decision to temporarily accept a position that is more attractive in many respects than the previous job, as it is likely that this (often) "probation period" (Isaksson et al., 2010) will be followed by a transition towards an even more attractive permanent appointment in the same job. The current study suggests that both temporary and permanent workers who find themselves in an unfavourable work situation without opportunities to change employer may constitute a risk group for future health, well-being and attitudinal problems and future unemployment, particularly during the recent economically difficult times in many European countries (European Commission, 2010).

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CHAPTER 5

Employment contracts and health selection: unhealthy employees out and healthy employees in?

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5.1 ABSTRACT

Study aim

The healthy worker effect implies that healthy workers go "up" in employment status whereas less healthy workers go "down" into precarious temporary employment or unemployment. These hypotheses were tested during an economic recession, by predicting various upward and downward contract trajectories based on workers' health status, work-related well-being and work ability.

Methods

Two waves (2008 and 2009) of the Netherlands Working Conditions Cohort Study (*N*=7,112) were used and performed logistic regression analyses were performed to test the hypotheses of this study.

Results

Lower general health and higher emotional exhaustion at baseline predicted future unemployment among permanent employees. Various downward trajectories were also predicted by lower work-related well-being and lower work ability, whereas the opposite was true for one of the upward trajectories.

Conclusions

Workers with lower health, lower work-related well-being or lower work ability are at risk for ending up in precarious temporary employment or unemployment.

5.2 INTRODUCTION

The European temporary workforce has grown since the 1980s, currently constituting around 26 million workers, which equals 14.4% of the European labour force (Eurostat, 2011a, 2011b). As temporary employment may expose workers to higher job insecurity and a lower quality of working life (De Witte, 1999; De Witte & Näswall, 2003; Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008; Gash, Mertens, & Gordo, 2007; Kalleberg, Reskin, & Hudson, 2000), and only few temporary workers prefer their temporary contract over a permanent contract (Guest, 2004), concerns have been raised regarding the health and well-being of these workers (De Cuyper et al., 2008). Although the overall picture is not entirely clear, many studies indeed support the notion that employment status affects workers' well-being (for reviews of the literature see De Cuyper et al., 2008; Guest, 2004; Nicol & Botterill, 2004; Quinlan, Mayhew, & Bohle, 2001; Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005).

Surprisingly, to date the opposite hypothesis – that is, that health and well-being predict future employment status – has received less attention, although it may equally well apply. Due to the recent economic recession many organizations (further) increased their flexibility. To do so, they cut their costs by laying off permanent workers and by not retaining many of their temporary employees (Hijman, 2009; International Monetary Fund, 2010). When making such employment decisions employers may take into account the health and well-being of the workers' involved. This hypothesis stems from a "healthy worker effect": the phenomenon that the working population is healthier than the general population. This effect is thought to be caused by (1) a "healthy hire effect", meaning that healthy workers are more likely to be hired for (permanent) employment than others, and (2) a "healthy worker survivor effect", meaning that less healthy workers are more prone to *out-selection* (less healthy workers often leave their employment), and thus at risk for ending up in precarious employment and ultimately unemployment (Li & Sung, 1999; Shah, 2009; M. Virtanen, M. Kivimäki, M. Joensuu, et al., 2005). This out-selection process may be more pronounced among temporary employees, as these workers are often used as a buffer workforce that surrounds a better-sheltered core of permanent workers (Kalleberg, 2003). However, when employers feel the need to downsize their permanent workforce, they are likely to dismiss their least healthy workers first. As these out-selected workers may have fewer chances in (re)gaining (permanent) employment, they are at risk for (precarious) temporary employment or unemployment. To summarize, healthy workers are more likely to receive permanent employment, whereas unhealthy workers may be condemned to spells of unstable temporary employment or unemployment (Bartley, 1988; Virtanen, Kivimäki, Elovainio, & Vahtera, 2002; West, 1991).

Similar reasoning may apply to other health-related worker characteristics. For example, it can be expected that satisfied and dedicated workers, well able to perform their job, have a better chance to receive (permanent) employment than other workers. Also,

reduced work-related well-being and work ability are more likely to result in a downward change in employment status.

Until now, the limited number of longitudinal studies on health selection mechanisms merely focused on health indicators. A study among initially fixed-term Finnish hospital employees showed that future permanent employment was predicted by self-rated good health, non-caseness of psychological distress, high job satisfaction and a non-sedentary lifestyle (Virtanen et al., 2002). Another Finnish study among female fixed-term workers, initially working at local government administrations, found that non-optimal self-rated health at baseline was associated with unstable employment and future unemployment (P. Virtanen et al., 2005). Indeed, mental health problems in childhood have been reported to predict temporary employment at the age of 42 years (M. Virtanen, M. Kivimäki, M. Elovainio, et al., 2005). This latter article also presents a 2-year longitudinal study among Finnish hospital employees, showing that a doctor-diagnosed psychiatric disorder increases the chance of staying temporarily employed, instead of receiving a permanent contract (M. Virtanen, M. Kivimäki, M. Elovainio, et al., 2005). Still, the available evidence is not fully supportive as some of these studies also reported non-significant findings (in terms of sickness absence, psychological distress and smoking and alcohol behaviour), whereas a Belgian study mainly among high-skilled professionals failed to find health selection mechanisms (in terms of engagement, affective organizational commitment, life satisfaction and turnover intention) when transitioning between fixed-term and permanent employment (De Cuyper, Notelaers, & De Witte, 2009b).

Such inconsistent findings in the field of employment contract research (in relation to workers' health and well-being) are often attributed to a range of conceptual and methodological issues (De Cuyper et al., 2008). The most important conceptual issue is the aggregation of various types of temporary work (e.g., fixed-term, temporary agency or on-call work) which differ from each other in terms of demographic composition, employment stability and quality of work (Bernhard-Oettel, De Cuyper, Berntson, & Isaksson, 2008; De Cuyper, Notelaers, & De Witte, 2009a; Engellandt & Riphahn, 2005; Kalleberg et al., 2000; Kompier, Ybema, Janssen, & Taris, 2009; Wagenaar, Kompier, et al., 2012). From a methodological perspective, the main issue entails the many cross-sectional studies (single time-point data), which fail (1) to capture changes in workers' employment status (inherent to temporary employment owing to its limited duration [Gash, 2008]; Giesecke & Groß, 2003; Picchio, 2008) and (2) to establish a causal relationship between workers' employment contract and their health and well-being. Therefore, more large and representative longitudinal studies (multiple time-point data within persons) are needed.

Against this background, this study aimed to test the health selection hypothesis (healthy workers go up in employment status and unhealthy workers go down in employment status) in a large and generally representative longitudinal sample of the Dutch working population in times of an economic recession (i.e., 2008-2009). Besides workers' health status, two related aspects were also considered, namely, employees' work-related

well-being (work satisfaction and work dedication) and work ability (general, physical and mental work ability). To acknowledge the heterogeneity in temporary employment, the hypotheses of this study were tested for multiple *downward* and *upward* trajectories involving two types of temporary employment (i.e., [1] *with* permanent employment prospects ["temporary-prospect"] and [2] *without* permanent prospects: fixed-term and temporary agency work ["temporary-no prospect"]). In addition to temporary employment, a downward trajectory from permanent employment into unemployment was also included. All other "into-unemployment" trajectories were excluded due to small group size ($n < 17$). This resulted in four downward and two upward employment contract trajectories: three downward trajectories out of permanent employment (1= into temporary-prospect; 2= into temporary-no prospect; 3= into unemployment); one downward trajectory out of temporary employment into more precarious temporary employment (4= temporary-prospect into temporary-no prospect); and two upward trajectories from temporary employment to permanent employment (5= temporary-prospect into permanent; 6= temporary-no prospect into permanent). Table 5.1 provides an overview of these contract trajectories and the corresponding hypotheses.

On the basis of the hypothesized healthy worker effect, all downward trajectories are expected to be predicted by a *lower* health status (hypothesis 1a), *lower* work-related well-being (hypothesis 1b) and *lower* work ability (hypothesis 1c) at baseline (2008), as compared with those holding the same employment contract over time. In contrast, all upward trajectories are expected to be predicted by a *better* health status (hypothesis 2a), *better* work-related well-being (hypothesis 2b) and *higher* work ability (hypothesis 2c) at baseline (compared with holding the same employment contract over time).

5.3 SAMPLE AND MEASURES

5.3.1 Sample

The sample under study was drawn from the three-wave Netherlands Working Conditions Cohort Study (Koppes, De Vroome, & Van den Bossche, 2011). This longitudinal study among a large sample of the Dutch working population (excluding self-employed workers) aimed to examine causal relationships regarding employees' working conditions, health and well-being over time. Respondents received a written questionnaire at their home address; it was also possible to complete the questionnaire online. The first wave was conducted at the end of 2007 and was generally representative for the Dutch workforce (Van den Bossche, Koppes, Granzier, De Vroome, & Smulders, 2008). This wave entailed 22,759 respondents (32.8% response rate), of which 19,161 participants gave their consent and could be traced for participation in a follow-up wave. This study focused on the time period during the economic recession and therefore only included the 2008 (baseline = November 2008 - January 2009: n = 10,393; 54.2% follow-up response rate) and 2009 study waves (follow-up

= October 2009 – January 2010: *n* = 7,909; 75.1% follow-up response rate). The analyses in this study were restricted to permanent workers, temporary workers (excluding on-call workers) and former permanent workers who entered unemployment between 2008 and 2009, who returned a valid questionnaire at both time points. The final sample comprised 7,112 participants (48.9% males; $M_{age\text{-}2008}$ = 44.4, SD = 10.7). Nonresponse analysis revealed that the nonresponse during follow-up measurement was *higher* among temporary employees than among permanent employees (26.8% to 33.3% vs 23.0% in 2009). This is unlikely to be caused by health selection as no significant health differences at baseline (2008) were found between temporary workers who participated in the follow-up wave in 2009 and those who did not. It should also be noted that the possibility of health selection among temporary workers between the start of the survey in 2007 and the baseline of 2008 in this study was checked, for which no evidence was found.

5.3.2 Measures

Employment contract

The type of employment contract was assessed by using the question: "What is the nature of your employment?" (1 = "employee with permanent employment [for indefinite time]", 2 = "employee with temporary employment with prospect on permanent employment", 3 = "employee with temporary employment for a fixed term", 4 = "temporary agency worker", and 5 = "on-call worker"). It should be noted that on-call workers were excluded because analyses of a similar, cross-sectional sample of the Dutch workforce revealed large differences between this category and other types of temporary workers, such as fixed-term and agency workers.[28] Moreover, in the Netherlands, the notion of having prospect on permanent employment refers to explicit clauses in the written formal employment contract, rather than to subjective interpretations of one's career prospects.

Unemployment

The question, "What is your current situation? (multiple answers are possible)", assessed the employment status of those who left paid employment between 2008 and 2009. One of the possible answers to this question involved "unemployment", referring to unemployed workers receiving unemployment benefits, who are both able and willing to regain employment.

Health status

Health status included general health, musculoskeletal symptoms and emotional exhaustion. General health was measured by asking participants: "generally taken, how would you define your health?" (1 = "excellent", 2 = "very good", 3 = "good", 4 = "moderate", 5 = 'bad' [reversed]; Statistics Netherlands, 2003). Musculoskeletal symptoms were measured by

using a six-item scale, four of which were composed by Blatter, Bongers, Kraan, and Dhondt (2000): "in the past 12 months, did you have trouble (pain, discomfort) from your: (1) neck, (2) shoulders, (3) arms / elbows, (4) wrists / hands, (5) back complaints and (6) hip, legs, knees and feet complaints" (1 = "no, never"; 2 = "sometimes, short lived"; 3 = "sometimes, long lasting"; 4 = "multiple times, short lived"; 5 = "multiple times, long lasting"). Emotional exhaustion was assessed by using an adapted version of the corresponding five-item scale of the Maslach Burnout Inventory-General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996). A typical item is, "I feel burned out from my work" (1 = "never", 7 = "every day").

Work-related well-being

Work-related well-being was assessed by measuring work satisfaction and work dedication. Work satisfaction was measured by two questions: (1) "To what extent are you, all in all, satisfied with your work?" and (2) "To what extent are you, all in all, satisfied with your working conditions?" (1 = "very dissatisfied", 5 = "very satisfied"). Work dedication was measured with four items derived from the engagement scale "dedication", as developed by Schaufeli, Salanova, González-Romá, and Bakker (2002): (1) "I find the work that I do full of meaning and purpose", (2) "I am enthusiastic about my job", (3) "My job inspires me" and (4) "I am proud of the work that I do" (1= "never"; 4= "always").

Work ability

Work ability included general work ability, physical work ability and mental work ability, respectively measured by the following three questions, respectively: (1) "How is your work ability in general?", (2) "How is your work ability with regard to the physical demands of your work?" and (3) "How is your work ability with regard to the psychological demands of your work?" (1= "very bad"; 5= "very good" [S.N.J. Van den Bossche & Houtman, 2007]).

Control variables

Control variables were gender, age (1 = 15 to 34 years; 2 = 35 to 44 years; 3 = 45 to 65 years), educational level (1 = low: no education, primary school or lowest level of secondary school; 2 = moderate: secondary school and intermediate vocational education; 3 = high: higher education such as a university degree), marital-financial status (recoded into: 1 = married/cohabiting with or without children living at home and having a partner with a paid job; 2 = married/cohabiting with or without children living at home and having a partner without a paid job; 3 = single [parents] or another family composition), and weekly working hours.

Exploratory factor analysis revealed that all scales (i.e., musculoskeletal symptoms, emotional exhaustion, work satisfaction and work dedication) loaded on a single factor. Moreover, scale reliabilities were high (with α's ranging from 0.76 to 0.89). If participants did not respond to a question this was coded as a missing answer. Moreover, scale scores were computed as the mean of the items receiving a valid response. Finally it is important to

note that the control variable "weekly working hours" and all eight exposure variables (i.e. general health, musculoskeletal symptoms, emotional exhaustion, work satisfaction, work dedication, general work ability, physical work ability and mental work ability) were treated as continuous variables in all analyses.

5.4 STATISTICAL PROCEDURE

Before testing the hypotheses of this study, possible baseline (2008) differences between all three "stability" (i.e., permanent, temporary-prospect and temporary-no prospect) and six "change" groups were examined. To do so, cross-table analyses were conducted for the categorical variables (gender, educational level and marital-financial status), two multivariate analyses of variance (MANOVA) were performed for all other variables. The first of these MANOVAs included the control variables age and weekly working hours as criterion variables. The second MANOVA included the indicators of workers' health status, work-related well-being and work ability. For both analyses, Fisher's Least Significant Difference (LSD) post-hoc analyses were conducted to determine the largest between-group difference on each indicator and corresponding Cohen *D* values were computed as effect size (Hartung,

Table 5.1 Contract trajectories and corresponding hypotheses

Trajectories					*Hypotheses*		
Stability (0)		vs.		Change into (1)	H1a:	H1b:	H1c:
					Health	Work rel. well-being	Work ability
1	Permanent (*N*=6.272)	vs.	↓	Temp.-prospect (*N*=119)	–	–	–
2	Permanent (*N*=6.272)	vs.	↓	Temp.-no prospect (*N*=88)	–	–	–
3	Permanent (*N*=6.272)	vs.	↓	Unemployment (*N*=68)	–	–	–
4	Temp.-prospect (*N*=137)	vs.	↓	Temp.-no prospect (*N*=55)	–	–	–
					H2a	H2b	H2c
5	Temporary-prospect (*N*=137)	vs.	↑	Permanent (*N*=213)	+	+	+
6	Temp.-no prospect (*N*=105)	vs.	↑	Permanent (*N*=55)	+	+	+

Note. ↓ = downward transition, ↑ = upward transition; '+' = positive predictor, '–' = negative predictor. Temporary-into-unemployment trajectories were excluded due to a small N (<15

Knapp, & Sinha, 2008), which were interpreted as "small" (d = 0.2 to 0.5), "medium" (d = 0.5 to 0.8), or "large" (d > 0.8) (Cohen, 1988).

To test the six hypotheses of this study (1a to 2c) three series of stepwise logistic regression analyses were conducted to examine whether employment contract changes could be statistically predicted by workers' health status, work-related well-being and work ability. First, it was tested for each control variable (gender, age, educational level, marital-financial status and weekly working hours at baseline) whether it could predict each of the four downward and two upward contract trajectories as shown in Table 5.1. Therefore, each control variable was entered as the independent variable and each of the six contract trajectories (stability [0] vs. change [1]) as the dependent variable. Secondly, in a similar manner, for each indicator of workers' health status, work-related well-being and work ability at baseline it was examined whether it could predict each of the six contract trajectories. Thirdly, in order to rule out competing explanations, the latter series of analyses were repeated by controlling for gender, age, educational level, marital-financial status and weekly working hours. Finally, it was examined whether the power of the analyses was large enough to detect even small effect sizes, which was found to be true for trajectory 1, 2 and 5 as shown in Table 5.1 (Power ≥ 0.78 at d = 0.3). Moreover, all six trajectories had enough power (between 85% and 100%) to detect medium effect sizes (d = 0.5) or over.

5.5 RESULTS

5.5.1 Baseline differences between contract trajectory groups

Table 5.2 provides an overview of the trajectory group differences at baseline (2008) regarding employees' health status, work related-well-being, work ability and control variables. First, as could be expected, less positive baseline scores (in terms of health, work-related well-being and work ability) were found among permanent workers who later on entered unemployment (trajectory 3). This group largely consisted of male workers, relatively many low educated workers and on average older workers. This group also reported the highest number of weekly working hours. In contrast, temporary-no prospect workers who were about to enter permanent employment (trajectory 6) generally reported a favourable health status, whereas temporary-prospect workers who were about to enter permanent employment (trajectory 5) generally reported a favourable work-related well-being and work ability.

5.5.2 Control variables as predictors of contract trajectories (1 to 6)

Logistic regression analyses revealed that *only* downward contract trajectories out of permanent employment (Table 5.1: trajectories 1 to 3), and *none* of the upward trajectories could be predicted by one or more control variables at baseline (2008). The first trajectory (permanent into temporary-prospect) could be predicted by being younger (compared to being 45 years or older: odds ratio $[OR]_{15\text{-}34\ year}$ = 3.34 [2.18-5.11], p < 0.01; $OR_{35\text{-}44\ year}$ = 1.82

Table 5.2 T1 (mean score) differences in health status, work-related well-being, work ability and control variables between all trajectory groups

	Stability			*Downward change Trajectory:*			*Upward change Trajectory:*			*Largest Cohen's D*[1]	*F*
				1	2	3	4	5	6		
	Permanent (P)	Temp.-prospect (T-P)	Temp.-no prospect (T-NP)	P ↓ into T-P	P ↓ into T-NP	P ↓ into Unempl.	T-P ↓ into T-NP	T-P ↑ into P	T-NP ↑ into P		
Exposure variables											
Overall (*N*=6,907)	*N*=6,082	*N*=137	*N*=100	*N*=116	*N*=87	*N*=67	*N*=54	*N*=210	*N*=54		3.02**[2]
lower general health (1-5)	2.56	**2.42**	2.42	2.45	2.57	*2.76*	2.48	2.49	2.44	0.45**	1.99*
musculoskeletal sympt. (1-5)	1.86	1.75	*1.99*	1.86	1.93	1.96	1.87	1.89	**1.64**	0.37*	0.93
emotional exhaustion (1-7)	1.97	1.83	2.05	2.10	1.98	*2.24*	1.94	1.93	**1.81**	0.34*	1.32
lower work satisfaction (1-5)	2.16	2.07	2.36	2.37	2.33	*2.71*	2.23	**2.06**	2.19	0.85**	8.75**
less work dedication (1-4)	1.84	1.81	2.05	2.13	2.07	*2.24*	1.80	**1.63**	1.83	0.98**	11.36**
lower general work ability (1-5)	1.53	1.45	1.55	1.57	1.71	*1.75*	**1.35**	1.38	1.65	0.51**	3.52**
lower physical work ability (1-5)	1.60	1.55	1.56	1.57	1.66	*1.73*	1.44	**1.40**	1.65	0.50**	2.52*
lower mental work ability (1-5)	1.60	**1.48**	1.67	1.56	1.71	*1.90*	1.56	1.51	1.59	0.56**	2.72**
Control variables[3]											
weekly working hours (0-98; IR=15)	*N=6,254*	*N=137*	*N=102*	*N=119*	*N=88*	*N=68*	*N=55*	*N=213*	*N=55*		
	32.17	32.72	26.84	30.69	29.95	*33.91*	31.49	33.40	**25.18**	0.84**	10.40**
Gender (*N*=7,036)	*N=6,248*	*N=137*	*N=105*	*N=118*	*N=87*	*N=68*	*N=54*	*N=211*	*N=55*	χ^2= 26.34**	
male (*N*=3,465)	49.6%	43.8%	41.0%	41.5%	48.3%	66.2%	37.0%	40.8%	40.0%		
female (*N*=3,618)	50.4%	56.2%	59.0%	58.5%	51.7%	33.8%	63.0%	59.2%	60.0%		

Table 5.2 (Continued)

	Stability			*Downward change Trajectory:*			*Upward change Trajectory:*			*Largest Cohen's D*[1]	*F*
				1	2	3	4	5	6		
	Permanent (P)	Temp.-prospect (T-P)	Temp.-no prospect (T-NP)	P ↓ into T-P	P ↓ into T-NP	P ↓ into Unempl.	T-P ↓ into T-NP	T-P ↑ into P	T-NP ↑ into P		
Control variables[3] *(continued)*											
Age group	*N=6,223*	*N=137*	*N=104*	*N=118*	*N=88*	*N=68*	*N=52*	*N=212*	*N=55*	χ^2= 416.62**	
15-34 year (*N* = 1,537)	18.6%	56.2%	49.0%	38.1%	33.0%	13.2%	63.5%	52.8%	45.5%		
35-44 year (*N* = 1,637)	23.5%	19.0%	13.5%	26.3%	18.2%	25.0%	17.3%	22.2%	18.2%		
45-65 year (*N* = 3,886)	57.9%	24.8%	37.5%	35.6%	48.9%	61.8%	19.2%	25.0%	36.4%		
Education (*N* = 7,077)	*N=6,241*	*N=137*	*N=104*	*N=118*	*N=88*	*N=68*	*N=54*	*N=212*	*N=55*	χ^2= 34.76**	
low (*N*=1,243)	17.8%	16.1%	12.5%	14.4%	17.0%	29.4%	14.8%	14.2%	12.7%		
moderate (*N*=2,653)	37.9%	40.9%	26.9%	39.8%	36.4%	35.3%	31.5%	32.1%	25.5%		
high (*N*=3,181)	44.3%	43.1%	60.6%	45.8%	46.6%	35.3%	53.7%	53.8%	61.8%		
Marital-financial status (*N*=6,820)	*N*=6,048	*N*=129	*N*=95	*N*=103	*N*=83	*N*=66	*N*=51	*N*=197	*N*=48	χ^2=65.06**	
together-partn. paid job (*N*=4,766)	70.5%	61.2%	61.1%	72.8%	61.4%	62.1%	64.7%	69.0%	56.3%		
together-partn. *no* paid job (*N*=875)	13.3%	8.5%	10.5%	3.9%	14.5%	12.1%	7.8%	8.1%	10.4%		
single / other (*N*=1,179)	16.2%	30.2%	28.4%	23.3%	24.1%	25.8%	27.5%	22.8%	33.3%		

[1] Largest significant Cohen's D (based on LSD post-hoc analyses): difference between lowest average score (italicized) and highest average score (bold). [2] Multivariate F. [3]All control variables were separately tested: weekly working hours was tested using an ANOVA, whereas all other control variables were tested using cross-table analyses. * p < .05. ** p < .01.

[1.14-2.90], $p < 0.01$) and having a partner *with* a paid job or being single (compared to having a partner *without* a paid job, respectively: *OR* = 3.54 [1.29-9.70], $p < 0.05$; *OR* = 4.94 [1.71-14.31], $p < 0.01$). The second trajectory (permanent into temporary-*no* prospect) could also be predicted by being younger (15-34 years old compared to being 45 years or older: *OR* = 2.10 [1.31-3.38], $p < 0.01$), as well as having fewer weekly working hours (*OR* = 0.97 [0.95-1.00], $p < 0.05$). Finally, compared to female workers with permanent employment, male workers had a higher risk of becoming unemployed (trajectory 3: *OR* = 1.99 [1.20-3.30], $p < 0.01$). Note that all presented odds ratios were tested for a 95% Confidence Interval.

5.5.3 Hypothesis 1: Health, well-being and work ability as predictors of downward trajectories (1 to 4)

Hypothesis 1 held that the four downward contract trajectories would be predicted by a *lower* health status (Hypothesis 1a), *lower* work-related well-being (Hypothesis 1b) and *lower* work ability (Hypothesis 1c) at baseline (2008). First, regarding workers' health status, Table 5.3 supports this hypothesis for the permanent-into-unemployment trajectory (trajectory 3) regarding general health and emotional exhaustion, but not for the trajectories 1, 2 and 4 (hypothesis 1a partly supported). As to work-related well-being (hypothesis 1b), Table 5.3 shows that a lower work satisfaction at baseline predicted all four downward trajectories, whereas a lower work dedication predicted three out of four downward trajectories (all downward trajectories out of permanent employment [trajectories 1 to 3]: hypothesis 1b largely supported). Finally, the "permanent into temporary-no prospect" trajectory (trajectory 2) and "permanent into unemployment" trajectory (trajectory 3) were also predicted by lower general work ability and lower mental work ability at baseline (hypothesis 1c partly supported).

5.5.4 Hypothesis 2: Health, well-being and work ability as predictors of upward trajectories (5 and 6)

The second hypothesis focused on upward contract trajectories and stated that these would be predicted by a *better* health status (Hypothesis 2a), *better* work-related well-being (Hypothesis 2b) and *higher* work ability (Hypothesis 2c) at baseline. Table 5.4 shows that fewer musculoskeletal symptoms at baseline predicted one of the two upward trajectories ("temporary-no prospect into permanent": trajectory 6), whereas a better work dedication and a better general work ability predicted the other upward trajectory ("temporary-prospect into permanent": trajectory 5). However, after adjustment for the control variables only having a better work dedication remained predictive for the upward "temporary-prospect into permanent" trajectory (hypothesis 2b partly supported).

Table 5.3 Downward employment contract trajectories predicted by workers' health status, work-related well-being and work ability at T1

	Trajectory 1:			Trajectory 2:			Trajectory 3:			Trajectory 4:		
	Down into temp.-prospect (1) vs. staying permanent (0)			Down into temp.-no prospect (1) vs. staying permanent (0)			Down into unemployment (1) vs. staying permanent (0)			Down into temp.-no prospect (1) vs. staying temp.-prospect (0)		
	OR	95%CI		*OR*	95%CI		*OR*	95%CI		*OR*	95%CI	
Health status (H1a)												
lower general health	0.87	0.70	1.08	1.02	0.79	1.32	**1.43***	1.05	1.93	1.11	0.75	1.64
musculoskeletal symptoms	1.00	0.83	1.20	1.07	0.87	1.31	1.10	0.88	1.39	1.14	0.81	1.59
emotional exhaustion	1.10	0.94	1.29	1.05	0.87	1.27	**1.21**[1]	1.00	1.46	1.10	0.81	1.48
Work rel. well-being (H1b)												
lower work satisfaction	**1.45****	1.17	1.81	**1.39***	1.07	1.81	**2.20****	1.73	2.80	**1.35**[1]	0.89	2.05
less work dedication	**1.88****	1.45	2.44	**1.74****	1.28	2.36	**2.39****	1.70	3.35	0.98	0.60	1.61
Work ability (H1c)												
lower general work ability	1.09	0.85	1.39	**1.39***	1.08	1.79	**1.52****	1.15	2.00	0.77	0.46	1.28
lower physical work ability	0.96	0.75	1.23	1.13	0.86	1.47	1.33	1.00	1.76	0.80	0.50	1.26
lower mental work ability	0.95	0.74	1.23	**1.23**[1]	0.95	1.61	**1.67****	1.27	2.18	1.14	0.73	1.77

Note. All predictors are continuous variables and separately tested (crude odds ratios). Significant odds are bold. [1]Significant after controlling for gender, age, educational level, marital-financial status and weekly working hours (i.e., $p < .05$). * $p < .05$. ** $p < .01$.

Table 5.4 Upward employment contract trajectories predicted by workers' health status, work-related well-being and work ability at T1

	Trajectory 5:			Trajectory 6:		
	Upward into permanent (1) vs. staying temp.-prospect (0)			Upward into permanent (1) vs. staying temp-no prosp. (0)		
	OR	95%CI		*OR*	95%CI	
Health status (H2a)						
lower general health	1.14	0.87	1.50	1.06	0.73	1.53
musculoskeletal symptoms	1.19	0.93	1.52	**0.66*[1]**	0.45	0.98
emotional exhaustion	1.12	0.89	1.41	0.83	0.61	1.15
Work-rel. well-being (H2b)						
lower work satisfaction	0.97	0.72	1.31	0.85	0.57	1.26
less work dedication	**0.62****	0.43	0.88	0.70	0.44	1.11
Work ability (H2c)						
lower general work ability	0.85	0.60	1.20	1.19	0.80	1.78
lower physical work ability	**0.71*[1]**	0.51	0.99	1.18	0.78	1.77
lower mental work ability	0.95	0.74	1.23	**1.23**[1]	0.95	1.61

Note. All predictors are continuous variables and were separately tested (crude odds ratios). Significant odds are bold. * $p < .05$. ** $p < .01$. [1]Non-significant after controlling for gender, age, educational level, marital-financial status and weekly working hours.

5.6 DISCUSSION

Many studies in the field of employment contract research have focused on the impact of different employment contracts on workers' health and well-being. Although it may equally well apply, the reverse relationship – that health and well-being impact on workers' employment status – has received considerably less attention. On the basis of a healthy worker effect – healthy people are more likely to become employed ("healthy hire effect") and remain employed ("healthy worker survivor effect") than less healthy people – it can be expected that healthier and higher-work ability employees go up in employment status, whereas less healthy and lower-work ability employees go down in employment status. This study aimed to test this reversed causation mechanism by examining employment contract trajectories, based on workers' health status, work-related well-being and work ability in a large and generally representative longitudinal sample of the Dutch working population during an economic recession. Table 5.5 offers an overview of the support level for each of the hypotheses of this study. Some evidence for health selection mechanisms was found: After adjustment for gender, age, educational level, marital-financial status and weekly working hours, a lower health status (in terms of general health and emotional exhaustion) at baseline predicted future unemployment among permanent employees. Moreover, downward trajectories were also predicted by lower work-related well-being (four of four trajectories) and lower work ability (two of four trajectories), whereas one of the two upward trajectories was predicted by higher work dedication. Finally, it is important to note that lower physical work ability also predicted this latter upward trajectory and fewer musculoskeletal symptoms predicted the other upward trajectory, but these effects became non-significant after adjustment for the control variables.

5.6.1 Theoretical and practical implications

These findings have at least four theoretical and practical implications. First, permanent employment did not protect less healthy and less "workable" employees against a downward change in employment status. Employees with reduced work ability were at risk for precarious temporary employment (i.e., *without* permanent prospects), whereas both lower-work ability and less healthy employees were at risk for future unemployment. These findings corroborate earlier findings on health selection into unemployment, generally showing that good health is associated with equal or better chances in remaining (permanently) employed (also during a recession [Bartley & Owen, 1996]), whereas ill health is associated with layoffs and lower success in acquiring a new job (Mastekaasa, 1996), and future unemployment (Heponiemi et al., 2007). Thus, especially during a recession, less healthy and less "workable" permanent workers may be at risk for dismissal (out-selection) and spells of unstable employment or unemployment. Accordingly, measures should be taken to improve the health and work ability of these workers, for example, by means of

Table 5.5 Summary of hypotheses and support-level

Hypothesis:		Support level per variable[1]		Overall support
Downward employment (contract) trajectories are predicted by:				
H1a	Lower health status:			Partly supported
	lower general health	1/4	Partly supported	
	musculoskeletal symptoms	0/4	Not supported	
	emotional exhaustion	1/4	Partly supported	
H1b	Lower work-related well-being:			Mainly supported
	lower work satisfaction	4/4	Mainly supported	
	lower work dedication	3/4	Mainly supported	
H1c	Lower work ability:			Partly supported
	lower general work ability	2/4	Partly supported	
	lower physical work ability	1/4	Not supported	
	lower mental work ability	2/4	Partly supported	
Upward employment (contract) trajectories are predicted by:				
H2a	Better health status:			Not supported
	better general health	0/2	Not supported	
	fewer musculoskeletal symptoms	0/2	Not supported	
	lower emotional exhaustion	0/2	Not supported	
H2b	Higher work-related well-being:			Partly supported
	higher work dedication	1/2	Partly supported	
	higher work satisfaction	0/2	Not supported	
H2c	Higher work ability:			Not supported
	higher general work ability	0/2	Not supported	
	higher physical work ability	0/2	Not supported	
	higher mental work ability	0/2	Not supported	

[1] Support level: number of trajectories for which the Hypothesis is supported.

health protection/promotion programs in the workplace (for overviews see Kuoppala, Lamminpää, & Husman, 2008; Pelletier, 2009, 2011).

Second, some groups of temporary workers had better chances on future stable employment than other groups. Temporary workers *with* prospect on permanent employment had better chances on future permanent employment when they reported higher work dedication and better physical work ability. Moreover, having fewer musculoskeletal symptoms increased future permanent employment chances among temporary workers *without* permanent prospects. However, as the control variables of this study could "explain" most of these health selection mechanisms, these workers who received permanent employment are likely to have (also) been selected on the basis of their demographic profile (e.g., in terms of age or educational level). Still, these results indicate that temporary workers who are physically less employable and less dedicated to their job are more likely to remain temporary employed, and may thus be cumulatively exposed to the negative aspects of temporary employment (i.e., higher job insecurity and a lower quality of working life [De Witte, 1999; De Witte & Näswall, 2003; Ferrie et al., 2008; Gash et al., 2007; Kalleberg et al., 2000; Wagenaar, Kompier, et al., 2012]). In turn, this may lead to (further) deterioration of the health and well-being of these workers, reducing their job opportunities (healthy hire effect) and making them prone to out-selection into unemployment (healthy worker survivor effect). Therefore, measures should be taken to prevent health and well-being problems among temporary workers, and thus out-selection into unemployment. On the one hand, these measures should aim at improving temporary employment by reducing job insecurity and improving the quality of working life (especially physical working conditions), whereas on the other hand they should aim at minimizing exposure to unfavourable temporary employment by improving workers' employability, for example, by investing in their training and education opportunities (see also Bryson, Cappellari, & Lucifora, 2009; Gaston & Timcke, 1999; Mitlacher, 2006, 2008).

Third, compared to many previous studies (Virtanen et al., 2002; M. Virtanen, M. Kivimäki, M. Elovainio, et al., 2005; P. Virtanen et al., 2005), little evidence was found for health selection mechanisms among temporary workers in terms of health indicators. This may be explained by the relatively favourable health status of the differentiated groups of temporary employees at baseline (see Table 5.2). This questions our assumption that employers are able to detect and thus act on health differences when making employment contract decisions. In addition, the time frame of this study (i.e., an economic recession) may have led many employers to refrain from offering permanent employment contracts. Therefore, many healthy and employable temporary workers, especially those who had prospect on permanent employment at baseline, may have remained temporarily employed over time.

Finally, findings on health selection mechanisms through employment contracts, such as reported in this study, may contribute to the debate on the "stepping-stone" versus "dead-end" function of temporary employment (Booth, Francesconi, & Frank, 2002;

Picchio, 2008; Scherer, 2004; Wagenaar, Taris, et al., 2012). Especially during an economic recession, it can be expected that both functions apply simultaneously. On the one hand, employers will offer a contract prolongation or permanent contract to the healthiest and most dedicated employees with the highest work ability scores, whereas on the other hand they will try to dispose their least healthy and least "workable" employees. This indirectly implies that healthier and more dedicated workers are not only more likely to achieve better job security (permanent employment), but are also more likely to have a higher quality of working life (in terms of job content, working circumstances, terms of employment and work relations). Following this reasoning, a vicious circle is likely between insecure and low quality (temporary) employment and workers' health and well-being. Therefore, future studies on the function of temporary employment should take into account the many possible worker characteristics (such as health, work-related well-being and work ability) and work characteristics (high job insecurity and a low quality of working life) that determine whether employees will climb or descend the staircase that connects unemployment and high-quality permanent employment.

5.6.2 Future research

The findings of this study suggest several avenues for further research. First, health selection mechanisms should not only be considered for temporary employment but also for permanent employment. Especially, longitudinal research over a longer time period, differentiating permanent employment from various types of temporary employment and unemployment, is needed to capture both the short- and long-term impact of health selection mechanisms on workers' employment status. Second, health selection hypotheses (the healthy hire effect and healthy worker survivor effect) may be extended to include other relevant employee characteristics as well, such as work-related well-being and work ability. This may help us to improve the identification of workers at risk for entrapment in locked-in positions, that is, unfavourable work situations that offer little opportunity for improvement (Aronsson & Göransson, 1999). Third and related to this, future research may focus on the impact of workers' health, work-related well-being and work ability on their turnover behaviour, especially in times of job insecurity. For example, it seems likely that job insecurity stimulates healthy and employable workers to acquire another job (Berntson, Näswall, & Sverke, 2010), whereas it may induce a state of helplessness among less healthy and employable workers, especially among those in locked-in positions.

5.6.3 Strengths and limitations

The most important strengths of the current study are its sample size and its longitudinal time frame during an economic recession. The large sample size allowed us to differentiate between various meaningful upward and downward trajectories in employment status (including permanent employment, multiple types of temporary employment and

unemployment), thereby accounting for the heterogeneity in temporary employment contracts. Further, multiple measurements during the economic recession enhanced the probability of finding health selection mechanisms. Finally, many variables related to health selection were included and measured these in a "rich" way, that is, besides general health and general work ability specific measures of the physical and mental component of both concepts were also included.

Apart from these strengths, the current study also has several limitations. Most importantly, the exact timing of changes in workers' employment contract is unknown. Therefore, the time lag between baseline measures and change in employment (contract) status differed among the participants: some workers may have changed just after the baseline measurement, whereas others may have changed just before the follow-up measurement. However, this is unlikely to have biased the findings of this study, as these differences will have been randomly distributed across the study groups. Second, the one-year time frame of the study was relatively short. Therefore the health selection mechanisms regarding the long-term career trajectories of workers (e.g., if a lower health predicts a downward trajectory into temporary employment, followed by unemployment or a trajectory of continuously precarious employment) could not be examined. Third, despite the large sample size of this study some groups of workers were excluded due to a small group size. Other groups were relatively small and had therefore not enough power to detect small effects in the analyses, which may have been responsible for part of the non-significant findings. In addition to this, a large number of analyses were performed, which increases the risk of finding "casual" significant results. However, by applying a Bonferroni correction to account for this, the power of the analyses would have been too low to detect even small effects, and would thus have resulted in overcorrection and a loss of many of the findings of this study. Therefore, our results should be interpreted with some restraints. Finally, the economic recession may have masked health selection mechanisms among temporary workers, as it may have restricted upward mobility opportunities among especially temporary workers who initially had prospects on permanent employment.

5.6.4 Concluding remarks

The healthy worker effect implies that less healthy workers are at risk for losing their job ("healthy worker survivor effect") and are less likely to acquire a new job ("healthy hire effect"), which leaves these workers at risk for precarious temporary employment and ultimately unemployment. In this study, clear evidence was found for the existence of such mechanisms among both permanent and temporary workers in the Dutch working population, in times of an economic recession. Less healthy and less "workable" permanent employees were at risk for future unstable temporary employment or unemployment or both, whereas temporary employees, physically less able to perform their job or less dedicated to their job were less likely to receive permanent employment. Following the healthy worker effect, it can be expected that these less healthy and lower work ability

permanent and temporary workers are a risk group for long-term unemployment. Therefore, measures should be taken to prevent a further deterioration of the health, work-related well-being and work ability of these workers.

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CHAPTER 6

Who gets fired, who gets re-hired: The role of workers' employment contract, age, health and performance

Based on:
Wagenaar, A. F., Kompier, M. A. J., Houtman, I. L. D., Van den Bossche, S., Smulders, P., & Taris, T. W. (Under review). Who gets fired, who gets re-hired: The role of workers' employment contract, age, health and performance.

6.1 ABSTRACT

Study aim

The current study examined whether dismissal and its follow-up for the employee (re-employment versus unemployment) could be predicted from workers' employment contract, age, health status and performance indicators at baseline.

Methods

Our sample comprised a selection of participants from the Netherlands Working Conditions Survey 2010 who participated in a follow-up questionnaire in 2012 (N = 2,644). We used logistic regression analyses to test our hypotheses.

Results

Temporary employment, low health status and most indicators of poor work performance at baseline predicted future dismissal. Furthermore, older workers and workers reporting decreased work performance due to impaired health at baseline had a lower chance of re-employment after being dismissed.

Conclusions

Temporary, less healthy and poor performing workers are at risk for dismissal, whereas older and less healthy workers are (also) at risk for long-term unemployment after being dismissed.

6.2 INTRODUCTION

The on-going economic recession in the European Union forces many organizations into a process of downsizing, in which many workers lose their job. At the start of the recession in 2008 the number of corporate insolvencies in Western Europe alone increased with almost 20% to 178.235 in 2009, resulting in the loss of about 2 million jobs (Creditreform Economic Research Unit, 2012). Since then the number of corporate insolvencies has remained fairly high, around 174.000 in 2010/11 (Creditreform Economic Research Unit, 2012), resulting in increasing unemployment levels (Eurostat, 2012).

Clearly, many European workers have been dismissed in the past few years, either becoming unemployed or finding re-employment. As it can be expected that not all workers run an equal chance of dismissal (and thereby future unemployment), it is an interesting question whether risk groups of workers can be identified for dismissal. Moreover, some of these dismissed workers will be able to find re-employment at short notice, whereas others may not. Therefore, among a large and 2-year longitudinal sample of Dutch employees we examined whether a dismissal between 2010 and 2012 and its follow-up for the employee (being re-employed versus unemployed in 2012) could be predicted on the basis of (1) workers' employment contract and age and (2) workers' health status and performance at baseline (2010).

6.2.1 Worker's employment contract and age

Workers' employment contract and age may play an important role in employers' dismissal decisions because of European legislation and regulations regarding employment protection. Many European countries, including the Netherlands, have relatively strict employment protection legislation regarding regular contracts compared to legislation on temporary contracts (Cahuc & Postel-Vinay, 2002; Venn, 2009). Therefore, temporary contracts are often used as an extended probation period before offering workers a permanent contract (Engellandt & Riphahn, 2005; Isaksson et al., 2010). Moreover, temporary workers (who are often market entrants such as younger workers) may serve as a buffer stock surrounding the core workforce of permanent employees (Booth, Dolado, & Frank, 2002; Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008; Pfeifer, 2009). As a result, temporary workers may be more prone to involuntary job loss than permanent workers.

Younger workers can be expected to run a relatively high risk of dismissal because younger workers are often temporary workers. Moreover, due to the "last in – first out" principle (i.e., dismissing workers with the shortest tenure) applied in several European countries (including the Netherlands [Ius Laboris, 2011]) they are often among the first to be dismissed, even if they hold a permanent contract. In support of this reasoning, European statistics show that both temporary and younger workers were struck disproportionally hard by the recent economic recession in terms of job loss (OECD, 2010), which may often have been occurred through dismissal. Note, however, that the expectation that temporary and

younger workers have a high risk of dismissal may be less pronounced in the Netherlands (the country under study) due to a change in Dutch legislation on collective dismissals in 2006. This legislation holds that before employers may apply the "last in – first out principle" (which mostly affects younger workers), they first need to distribute the total number of dismissals across five pre-determined age groups (Dop & Van den Heuvel, 2008). Despite this change in procedure, collective dismissals in the Netherlands will still often involve temporary and relatively younger workers (due to their shorter tenure).

6.2.2 Worker's health and performance

The notion that workers' health and employee performance-related characteristics influence employers' lay-off decisions is based on studies aiming to explain the healthy worker phenomenon (the observation that the working population is healthier than the general population [Shah, 2009]). This phenomenon is thought to be caused by the difficulty of less healthy persons to obtain employment (healthy hire effect) and their tendency to prematurely leave employment (healthy worker survivor effect) (Shah, 2009; M. Virtanen, Kivimäki, Joensuu, Virtanen, & Elovainio, 2005). Both mechanisms can be expected to be (partly) caused by employer's hiring and firing decisions, in which the healthiest workers are likely to be hired and the least healthy workers may be fired. A large body of evidence supports this reasoning, showing that less healthy individuals (in terms of mental and physical health and sickness absence) are more prone to job loss and dismissal (Bartley & Owen, 1996; Goodman & Boss, 1999; Hesselius, 2007; Hultin, Lindholm, & Moller, 2012; M. Virtanen et al., 2006; P. Virtanen, Janlert, & Hammarstrom, 2013; P. Virtanen et al., 2005; Wagenaar, Kompier, Houtman, Van den Bossche, & Taris, 2012) and are less likely to regain employment (Claussen, 1999; Mastekaasa, 1996; P. Virtanen et al., 2013).

However, the healthy hire effect and healthy worker survivor effect may well go beyond workers' health and apply to other performance-related indicators as well, such as workers' physical and mental ability to perform their job, their work-related attitudes (e.g., in-role performance, work motivation and work satisfaction) and previously conducted company-investments in the employee in terms of training and promotion. In line with these expectations, a recent prospective Dutch study showed that lower physical and mental work ability, lower work satisfaction and less work dedication at baseline predicted downward transitions from permanent into precarious temporary employment and unemployment (Wagenaar et al., 2012). Moreover, employee investments such as training can positively influence organizational performance, as firms offering good training opportunities have a much lower turnover rate (both voluntary and involuntary) and a larger share of satisfied employees than firms offering fewer such opportunities (Molina & Ortega, 2003). Also promotions are likely to enhance workers attitudes and decrease workers' risk of dismissal. For example, promoted employees outperform workers who quit their organization or are fired (Wells & Muchinsky, 1985) and promotions enhance workers' job quality perceptions and thereby their job satisfaction and organizational commitment (Kalleberg & Mastekaasa,

2001). In turn, favorable work-related attitudes, such as work engagement and job satisfaction, may positively influence employee performance (Dalal, Baysinger, Brummel, & LeBreton, 2012; Judge, Thoresen, Bono, & Patton, 2001), and thereby reduce workers' risk of dismissal.

6.2.3 The current study

All in all, temporary and younger workers and less healthy and poorly performing workers may run a higher risk of dismissal than others. Furthermore, based on the healthy hire effect, workers reporting indicators of poor work performance (in this present study: lower work ability, worse work-related attitudes and no investments from their employer) are expected to be less likely to regain employment after their dismissal, and will therefore remain unemployed. The same can be expected for older workers, as many organizations employ older workers but are reluctant in (re-)hiring them (e.g. due to negative expectations regarding their performance, motivation and cost-effectiveness (Adler & Hilber, 2009; Daniel & Heywood, 2007), especially in the case of previous dismissal (Karren & Sherman, 2012). Finally, we do not formulate expectations regarding workers employment contract, as it is difficult to assess whether employers prefer hiring a former permanent worker who has been dismissed (but may be regarded as having much experience) over a former temporary worker who has been dismissed (but may be regarded as possessing more general skills, and being broader employable).

In conclusion, the current study aims to examine whether dismissals of Dutch employees between 2010 and 2012 and workers' employment status after dismissal (re-employment versus unemployment in 2012) can be predicted by their employment contract and age at baseline (2010), and by their health status (general health, emotional exhaustion, sickness absence and decreased work performance due to impaired health) and indicators of work performance (i.e., physical and mental work ability; work-related attitudes: work satisfaction, in-role performance and decreased work performance due to a lack of motivation; and previously received employer investments in terms of training and promotion) at baseline. First, we expect that temporary employment and younger age (Hypothesis 1a) and a low health status and indicators of poor work performance (Hypothesis 1b) at baseline will increase the chance of future dismissal (between baseline and follow-up). Secondly, the chances of regaining employment after one's dismissal (i.e. being dismissed between 2010 and 2012 and re-employed instead of unemployed in 2012) are expected to be lower for older workers (Hypothesis 2a) and for workers with a low health status and indicators of poor work performance at baseline (Hypothesis 2b).

6.3 SAMPLE AND MEASURES

6.3.1 Sample

This longitudinal study is based on a selection of participants from the Netherlands Working Conditions Survey 2010 (NWCS, N = 23,788; response rate: 33.2% [Koppes, De Vroome, Mol, Janssen, & Van den Bossche, 2011]) who participated in a follow-up questionnaire in 2012. The NWCS is conducted yearly among a large and representative sample of Dutch employees (excluding self-employed workers) that aims to assess the quality of working life in the Netherlands. Respondents of the NWCS 2010 received a written questionnaire, and also had the possibility to complete the questionnaire online. 5,504 participants who had in 2010 agreed to participate in a follow-up wave and who were traceable through e-mail correspondence received an online follow-up questionnaire in October 2012, of which 2,644 responded (response rate: 48%). As 135 respondents could not be successfully linked to the baseline measurement and due to missing values, our final sample comprised 2,407 participants (57.8% male; $M_{\text{age-2012}}$ = 45.7, *SD*=11.4). Between baseline and follow-up measurement (2010-2012) 135 participants (i.e., 5.6% of the total sample) were dismissed by their employer, of whom 63 were re-employed in 2012.

6.3.2 Measures

Dismissal and employment status after dismissal

To assess whether respondents were dismissed between 2010 and 2012, those who left paid employment or changed employer received the question: “Did dismissal play a role in your situation?” (1 = “no”; 2 = “yes, I have been dismissed after 2010”; 3 = “yes, I have quit my job after 2010”). In order to compare dismissed workers with those who were not dismissed, we dummy-coded a new variable *Dismissal* in which all workers who were not dismissed by their employer or who quit their job were coded as “0” and all workers who were dismissed by their employer as “1”. For this latter group of dismissed workers we then computed a new variable *Re-employment*, indicating whether these workers were (still) unemployed in 2012 (code “0”) or were re-employed in 2012 (code “1”).

Employment contract

We distinguished between (1) permanent workers, (2) fixed-term workers with prospect on permanent employment and (3) temporary workers without prospect on permanent employment (i.e., fixed-term workers without permanent prospects, temporary agency workers and on-call workers) by asking participants “What is the nature of your employment?” (1 = “employee with permanent employment (for indefinite time)”, 2 = “employee with temporary employment with prospect on permanent employment”, 3 = “employee with temporary employment for a fixed term”, 4 = “temporary agency worker”,

and 5 = “on-call worker”). Note that in the Netherlands the notion of “having prospect on permanent employment” is explicitly stated in the written formal employment contract.

Age

Age was measured as a continuous variable and was recoded into three categories: 1 = 16-34 years; 2 = 35-44 years; 3 = 45-64 years.

Health status

Workers’ health status was assessed by measuring general health, emotional exhaustion, sickness absence and decreased work performance due to impaired health. General health was measured by asking participants “Generally taken, how would you define your health?” (1 = “excellent”, 2 = “very good”, 3 = “good”, 4 = “moderate”, 5 = “bad” [Statistics Netherlands, 2003]) and dichotomized into “low” (moderate/bad) and “high” ([very]good/excellent). Emotional exhaustion was assessed by using an adapted version of the corresponding five-item scale of the Maslach Burnout Inventory-General Survey (an exemplary item: “I feel burned out from my work”; 1 = “never”, 7 = “every day” [Schaufeli, Leiter, Maslach, & Jackson, 1996]). Based on the reference scores of the Dutch translation of the original scale (Schaufeli & Van Dierendonck, 2000), we dichotomized this variable into “low” ($M < 3.2$) and “high” ($M \geq 3.2$). Furthermore, we assessed employee sickness absence by asking participants “Have you been absent in the past 12 months?” (1 = “yes”, 2 = “no”; reversed), with absence being defined as “working less hours or days than normal due to illness, an accident or other health reasons. General pregnancy leave is not considered to be sickness absence”. Finally, we measured whether one’s work performance suffered from impaired health using the question “How often do the following issues restrict you in your job performance”, with one of the issues being raised was: “restrictions regarding your health” (1 = “never/rarely”; 2 = “about monthly”; 3 = “about weekly”; 4 = “about daily”). We dichotomized this variable into “never/rarely” (0) and “monthly or more often” (1).

Work performance indicators

We measured three (categories of) employee performance-related indicators: work ability, work-related attitudes and employer investments.

First, physical and mental work ability were measured respectively with the questions “I can easily meet the physical demands of my job” and “I can easily meet the psychological demands of my job” (1 = “fully disagree”; 2 = “disagree”; 3 = “agree”; 4 = “fully agree”) and were dummy-coded into “low” ([fully] disagree) and “high” ([fully] agree).

Secondly, three work-related attitudes were measured: work satisfaction, in-role performance and decreased work performance due to lack of motivation. Work satisfaction was assessed by the question “To what extent are you, all in all, satisfied with your work?” (1 = “very dissatisfied”, 5 = “very satisfied”) and dummy-coded into “low” (not dissatisfied

nor satisfied/[very]dissatisfied) and "high" ([very] satisfied). In-role performance was assessed with three items inspired by the performance indicators defined by Goodman and Svyantek (1999): (1) "I achieve all targets (work assignments) that belong to my work", (2) "I perform well at the tasks involved in my work" and (3) "I perform well at my job" (1 = "fully agree", 5 = "fully disagree"). We dichotomized this variable based on its mean score into "low/average" (M ≥ 3: i.e., "neither agree nor disagree" or "[fully] disagree") and "high" (*M* < 3: i.e., [fully] agree). Whether one's work performance was hampered due to lack of motivation was measured by asking participants "How often do the following issues hamper you in your job performance"; one of the issues being: "limited motivation for your current job" (1 = "never/rarely"; 2 = "about monthly"; 3 = "about weekly"; 4 = "about daily"). We dummy-coded this variable into "never/rarely" (0) and "monthly or more often" (1).

Finally, employee investments included employees' participation in training activities in the past 2 years and whether they had been promoted in the past 2 years before 2010. Participation in training activities was measured with the questions (1) "Did you participate in an internal course within your organization in the past 2 years?" and (2) "Did your organization pay an external course for you in the past 2 years?" (1 = "yes"; 2 = "no"), which we dichotomized into a new variable: 0 = no participation in training in past 2 years; 1 = participation in internal or external training in past 2 years. Furthermore, to determine whether employees had been promoted in the past 2 years, the question "Have you received a promotion within your organization in the last 2 years?" (1 = "yes", 2 = "no" [reversed]) was used. Note that all questions regarding employee investments were derived from Verboon, Feyter, and Smulders (1999).

Control variables

As control variables, we included gender, marital-financial status (recoded into: 1 = "married/cohabiting with a partner with a paid job"; 2 = "married/cohabiting with a partner without a paid job"; 3 = "single or another family composition"), educational level (recoded into: 1 = "low: no education, primary school or lowest level of secondary school"; 2 = "moderate: secondary school and intermediate vocational education"; 3 = "high: higher education such as a university degree") and weekly contractual working hours (as a continuous variable). 31 participants reported more than 40 contractual weekly working hours, which was recoded into "40" (which is the maximum number of contractual weekly working hours in the Netherlands).

If participants voiced no opinion on an item this was coded as a missing answer and scale scores (when applicable) were computed as the mean of the items receiving a valid response. Descriptive statistics and correlations are summarized in Table 6.1.

Table 6.1 Means, standard deviations and correlations for the variables under study

Variables (range)																							
		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Dismissal (Yes/No)	5.6%	na																					
2	Re-employment (Re-employed/Unemployed)	46.7%	na	na																				
3	Gender (Male/Female)	57.8%	na	-.01	-.02																			
4	Marital-Financial status 1	82.5%	na	.01	-.10[a]	-.20																		
5	Marital-Financial status 2	75.4%	na	.09	.02	.02	na																	
6	Educational level (1-3)	2.40	.7	.01	.12[a]	.01	-.08	-.07																
7	Weekly working hours (0-40)	32.80	9.0	.01	-.11[a]	-.47	.12	.01	.12															
8	Employment contract 1	93.8%	na	.15	.19	.03	-.02	.11	.02	-.01														
9	Employment contract 2	93.1%	na	.12	.22	.10	-.03	.17	-.05	-.34	na													
10	Age (16-64)	43.52	11.4	-.04	-.28	-.12	.27	-.22	-.08	.14	-.24	-.27												
11	General health (1-5)	3.43	.8	-.07	.09[a]	-.05	-.07	-.07	.10	.03	.00	-.03	-.06											
12	Emotional exhaustion (1-7)	2.08	1.1	.09	-.10[a]	-.03	.01	.10	.07	.09	.03	-.02	-.01	-.31										
13	Work performance hampered by health (1-4)	1.19	.6	.06	-.32	.01	.04	.03	-.08	-.03	-.03	.01	.06	-.35	.33									
14	Sickness absence (No/Yes)	51.0%	na	.07	.04	.08	-.03	.03	-.01	-.02	-.04	-.01	-.10	-.22	.16	.19								
15	Physical work ability (1-4)	3.52	.7	-.05	.12[a]	-.06	-.04	-.07	.23	.09	.03	-.02	-.05	.29	-.22	-.35	-.09							
16	Mental work ability (1-4)	3.39	.7	-.06	.12[a]	-.02	-.01	-.07	.05	-.01	-.01	.04	-.04[b]	.24	-.42	-.20	-.08	.57						
17	Work satisfaction (1-5)	3.94	.8	-.11	.00	.03	.01	-.10	.06	-.01	-.02	-.07	.09	.19	-.34	-.14	-.11	.20	.25					
18	Inrole performance (1-5)	4.46	.6	-.03	.02	.06	.02	-.04	-.14	-.07	-.06	.00	.03	.12	-.30	-.14	-.08	.13	.33	.17				
19	Work performance hampered by lack of motivation (1-4)	1.28	.6	.09	-.05[a]	-.06	-.04	.08	.00	.07	.01	.03	-.11	-.14	.42	.14	.15	-.08	-.20	-.45	-.17			
20	Followed course (No/Yes)	25.8%	na	-.05	.01	-.03	-.03	-.10	.16	.16	-.09	-.19	.03	.07	-.03	-.04	.00	.07	.06	.12	-.05	-.09		
21	Received promotion (No/Yes)	84.4%	na	-.03	.00	-.05	-.03	.00	.05	.13	-.01	-.03	-.14	.09	-.05	-.06	-.04	.10	.07	.10	.02	-.05	.13	

Note. Correlations of .05 and higher are significant (i.e., $p < .05$) unless otherwise specified: [a] Non-significant; [b] Significant. Marital-Financial status 1 = Together-partner with paid job/Together-no partner (with paid job); Marital-Financial status 2 = Together-partner with paid job/Single or other. Educational level (1-3) = Low/Moderate/High). Employment contract 1 = Permanent/Fixed-term–prospect; Employment contract 2 = Permanent/Temporary–no prospect

6.4 STATISTICAL PROCEDURE

We tested our first hypothesis (i.e., the prediction of dismissal) by conducting two series of stepwise logistic regression analyses. In the first series of analyses we tested for each predictor separately (i.e. for workers' employment contract, age and each health and performance indicator) whether it could statistically predict dismissal (no dismissal vs. dismissal). To rule out competing explanations, we repeated these analyses controlling for gender, marital-financial status, educational level and weekly contractual working hours. In a similar way, we tested our second hypothesis (i.e., the prediction of workers' employment status after dismissal) by repeating all previous analyses, but now with workers' employment status after their dismissal as dependent variable (unemployed vs. re-employed). Next, we were interested in the relative importance of each predictor. Therefore, we conducted two multivariate stepwise logistic regression analyses, in which we entered the control variables in block 1 and all predictors in block 2. In the first analysis we entered dismissal as dependent variable and in the second analysis workers' employment status after their dismissal.

6.5 RESULTS

6.5.1 Hypothesis 1: Temporary work, younger age, ill-health and poor performance at T1 increases chance of dismissal

First, the results in Table 6.2 (left side) show that temporary employment (both with- and without prospect on permanent employment), but not younger age at baseline (2010) increased the chance of future dismissal between 2010 and 2012 (hypothesis 1a partly supported). Secondly and largely supporting hypothesis 1b, all baseline measures regarding a lower health status and most baseline measures regarding poor employee performance (in terms of physical and mental work ability, all work-related attitudes and employee investments in terms of training) predicted future dismissal. However, a previous promotion did not predict dismissal. Note that all reported effects remained significant after controlling for gender, marital-financial status, educational level and contractual weekly working hours. We then examined the relative importance of all predictors (see Table 6.3, left side). This analysis revealed that temporary employment (both with- and without permanent employment prospects), previous sickness absence and low work satisfaction at baseline significantly predicted future dismissal. Note that all predictors explained 11% of the variance in dismissal (in addition to the 2% explained by the control variables). Also note that workers who were not married or cohabiting were twice more likely to be dismissed than workers living together with a partner with a paid job.

Table 6.2 Predicting dismissal and employment status after dismissal (univariate logistic regression analyses)

	Hypothesis 1				*Hypothesis 2*			
	No. of cases / no. of participants (%)		Being dismissed: Yes (1) vs. No (0)		No. of cases / no. of participants (%)		After dismissal: Re-employed (1) vs. unemployed (0)	
			OR	95% CI			*OR*	95% CI
Employment contract								
Permanent	87/2099	(4.1%)	1.00		33/87	(37.9%)	1.00	
Fixed-term – prospects	25/138	(18.1%)	5.12**	3.16 -8.30	15/25	(60.0%)	2.46	0.99 -6.10
Temporary – no prospects	23/156	(14.7%)	4.00**	2.45 -6.54	15/23	(65.2%)	3.07*[a]	1.17 -8.02
Age								
45-64	65/1236	(5.3%)	1.00		22/65	(33.8%)	0.31**	0.14 -0.69
35-44	25/571	(4.4%)	0.83	0.51 -1.32	13/25	(52.0%)	0.66	0.25 -1.77
15-34	45/600	(7.5%)	1.46	0.99 -2.17	28/45	(62.2%)	1.00	
Health status								
General health								
High	109/2183	(5.0%)	1.00		54/109	(49.5%)	1.00	
Low	26/220	(11.8%)	2.55**	1.62 -4.01	9/26	(34.6%)	0.54	0.22 -1.31
Emotional exhaustion								
Low	99/2038	(4.9%)	1.00		50/99	(50.5%)	1.00	
High	36/368	(9.8%)	2.12**	1.43 -3.17	13/36	(36.1%)	0.55	0.25 -1.22
Work perf. hampered by health								
Never / rarely	109/2108	(5.2%)	1.00		59/109	(54.1%)	1.00	
Monthly or more often	25/286	(8.7%)	1.76*	1.12 -2.76	4/25	(16.0%)	0.16**	0.05 -0.50
Absent in past 12 months?								
No	50/1227	(4.1%)	1.00		22/50	(44.0%)	1.00	
Yes	85/1180	(7.2%)	1.83**	1.28 -2.62	41/85	(48.2%)	1.19	0.59 -2.39
Work performance indicators								
Work ability								
Physical work ability								
High	117/2233	(5.2%)	1.00		57/117	(48.7%)	1.00	
Low	18/171	(10.5%)	2.13**	1.26 -3.59	6/18	(33.3%)	0.53	0.19 -1.50
Mental work ability								
High	111/2214	(5.0%)	1.00		53/111	(47.7%)	1.00	
Low	24/184	(13.0%)	2.84**	1.78 -4.55	10/24	(41.7%)	0.78	0.32 -1.91

Table 6.2 (Continued)

	Hypothesis 1					*Hypothesis 2*				
	No. of cases / no. of participants (%)		Being dismissed: Yes (1) vs. No (0)			No. of cases / no. of participants (%)		After dismissal: Re-employed (1) vs. unemployed (0)		
			OR	95% CI				*OR*	95% CI	
Work-related attitudes										
Work satisfaction										
High	84/1926	(4.4%)	1.00			39/84	(46.4%)	1.00		
Low/Average	50/454	(11.0%)	2.71**	1.88	-3.91	23/50	(46.0%)	0.98	0.49	-1.98
In-role performance										
High	126/2347	(5.4%)	1.00			59/126	(46.8%)	1.00		
Low/Average	9/58	(15.5%)	3.24**	1.56	-6.74	4/9	(44.4%)	0.91	0.23	-3.54
Work perf. hampered by lack of motivation										
Never / rarely	93/1907	(4.9%)	1.00			46/93	(49.5%)	1.00		
Monthly or more often	40/486	(8.2%)	1.75**	1.19	-2.57	17/40	(42.5%)	0.76	0.36	-1.59
Employer investments										
Followed course in past 2 years?										
Yes	89/1784	(5.0%)	1.00			42/89	(47.2%)	1.00		
No	46/623	(7.4%)	1.52*	1.05	-2.20	21/46	(45.7%)	0.94	0.46	-1.92
Received promotion in past 2 years?										
Yes	15/374	(4.0%)	1.00			7/15	(46.7%)	1.00		
No	120/2027	(5.9%)	1.51	0.87	-2.61	56/120	(46.7%)	1.00	0.34	-2.93

Note. All significant findings remained significant (i.e., $p < .05$) after controlling for gender, marital-financial status, educational level and contractual weekly working hours, except for [a]. *$p < .05$. **$p < .01$.

6.5.2 Hypothesis 2: Older age, ill-health and poor performance at T1 reduces re-employment chances after dismissal

First, hypothesis 2a was supported (see Table 6.2, right side): older workers (≥ 45 years) at baseline (2010) were less likely to find re-employment after their dismissal (between 2010 and 2012) instead of remaining jobless. Furthermore, also temporary workers without permanent employment prospects had a higher chance of regaining employment after dismissal, although this effect rendered non-significant after correcting for the control variables. Secondly, limited support was found for hypothesis 2b. After correcting for the control variables, only decreased work performance due to impaired health (at baseline)

Table 6.3 Predicting dismissal and employment status after dismissal (multivariate logistic regression analyses)

	Being dismissed: Yes (1) vs. No (0)		*After dismissal: Re-employed (1) vs. unemployed (0)*	
	OR	95%CI	*OR*	95%CI
Step 1: Control variables	χ^2=15.88*; R^2=.02		χ^2=5.34; R^2=.06	
Gender				
Male	1.00		1.00	
Female	0.87	0.57 - 1.32	0.76	0.32 - 1.80
Marital – financial status				
Together – partner with paid job	1.00		1.00	
Together – no partner (with paid job)	1.19	0.67 - 2.12	0.63	0.19 - 2.10
Single / other	2.27**	1.52 - 3.39	1.14	0.51 - 2.53
Educational level				
Low	1.00		1.00	
Moderate	1.16	0.60 - 2.22	2.09	0.49 - 8.85
High	1.12	0.59 - 2.14	3.03	0.73 - 12.56
Weekly working hours	1.00	0.98 - 1.02	0.97	0.93 - 1.02
Step 2: Main effects	χ^2=86.62**; R^2=.13; ΔR^2=.11		χ^2=31.68**; R^2=.35; ΔR^2=.29	
Contract type				
Permanent	1.00		1.00	
Fixed-term – prospects	5.78**	3.26 - 10.26	2.25	0.62 - 8.22
Temporary – no prospects	4.51**	2.41 - 8.45	14.42**	2.37 - 87.66
Age				
45-64	1.00		0.39	0.11 - 1.30
35-44	0.79	0.48 - 1.31	1.25	0.36 - 4.30
15-34	0.72	0.43 - 1.20	1.00	
Lower health status				
General health				
High	1.00		1.00	
Low	1.77	1.00 - 3.15	2.32	0.61 - 8.79
Emotional exhaustion				
Low	1.00		1.00	
High	1.10	0.65 - 1.88	0.68	0.16 - 2.90
Work perf. hampered by health				
Never / rarely	1.00		1.00	
Monthly or more often	0.88	0.48 - 1.59	0.03**	0.00 - 0.21
Absent in past 12 months?				
No	1.00		1.00	
Yes	1.69*	1.12 -2.53	2.02	0.77 - 5.33

Table 6.3 (continued)

	Being dismissed: Yes (1) vs. No (0)		*After dismissal: Re-employed (1) vs. unemployed (0)*	
	OR	95%CI	*OR*	95%CI
Work performance indicators				
Work ability				
Physical work ability				
High	1.00		1.00	
Low	1.50	0.78 - 2.89	0.94	0.21 - 4.27
Mental work ability				
High	1.00		1.00	
Low	1.56	0.84 - 2.92	2.20	0.50 - 9.65
Work-related attitudes				
Work satisfaction				
High	1.00		1.00	
Low/Average	1.76*	1.08 - 2.88	1.64	0.44 - 6.03
In-role performance				
High	1.00		1.00	
Low/Average	1.23	0.50 - 3.04	0.34	0.04 - 2.77
Work perf. hampered by lack of motivation				
Never / rarely	1.00		1.00	
Monthly or more often	1.04	0.63 - 1.73	0.64	0.18 - 2.33
Employer investments				
Followed course in past 2 years?				
Yes	1.00		1.00	
No	1.12	0.73 - 1.71	0.70	0.25 - 1.92
Received promotion in past 2 years?				
Yes	1.00		1.00	
No	1.07	0.60 - 1.92	1.43	0.36 - 5.65

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

significantly lowered the chance of re-employment after one's dismissal. Although Table 6.2 shows that the effects for many other health and performance indicators also point in the hypothesized direction and corresponding group differences are quite large (e.g. with regard to workers' general health, emotional exhaustion and physical work ability), these were non-significant. This is possibly due to a lack of power, since the numbers of participants in many of these predictor groups were relatively small.

Finally, the results regarding the relative importance of each predictor (see Table 6.3, right side) were generally in line with the findings reported above: temporary employment

without permanent employment prospects at baseline (2010) increased the chance of re-employment after one's dismissal (compared to remaining unemployed), whereas the opposite was true for workers who reported decreased work performance due to impaired health at baseline. Note that that all predictors (together) explained 29% of the variance in workers' employment status after dismissal (in addition to the 6% accounted for by the control variables).

6.6 DISCUSSION

During an economic recession many workers are being laid-off and experience difficulties in reacquiring employment. Based on European employment protection and two health selection processes (i.e., the healthy hire and healthy worker survivor effect) we expected that workers' employment contract, age, health status and performance would play an important role in this process of dismissal and re-hiring. We tested this assumption in a large, 2-year longitudinal sample of Dutch employees, examining whether dismissal and workers' employment status after dismissal (i.e., remaining unemployed versus re-employed) could be predicted on the basis of workers' employment contract, age, health and performance

Table 6.4 Summary of hypotheses and level of support

		Support level[a]		*Remark*
Chance of dismissal is higher for:				
H1a:	Temporary workers	1/1	Supported	Supported for all temporary workers
	Younger workers (< 45 yrs.)	0/1	Not supported	
H1b:	Less healthy workers	4/4	Supported	
	Poorly performing workers	6/7	Largely supported	Supported for work ability, work-related attitudes and employer investments (except promotion)
Chance of re-employment after dismissal is lower for:				
H2a:	Older workers (≥ 45 yrs.)	1/1	Supported	Compared to younger workers (15-34 yrs.)
H2b:	Less healthy workers	1/4	Partly supported	Only supported for "work performance hampered by health", although most other health differences were also large (but non-significant)
	Poorly performing workers	0/7	Not supported	Difference in physical work ability was large but non-significant

[a] Support level: number of indicators for which the Hypothesis is supported.

indicators at baseline. First, we expected temporary and younger workers (H1a) and those with a low health status and reporting indicators of poor work performance (H1b) to be especially at risk for future dismissal. Regarding workers' employment status after being dismissed, we expected older workers (≥ 45 years [H2a]) and workers reporting ill-health and indicators of poor work performance (H2b) at baseline to have a low chance of re-employment. An overview of the level of support for both hypotheses is presented in Table 6.4.

Table 6.4 shows that hypothesis 1 was largely supported: temporary employment, low health status and indicators of poor work performance at baseline predicted future dismissal. Hypothesis 2 was only supported for older workers and for those reporting decreased work performance due to impaired health at baseline: both groups had a lower chance of finding re-employment after dismissal. Note that the results for most other health indicators and physical work ability also pointed in the hypothesized direction, but were non-significant (probably) due to a lack of power. In addition, workers' employment contract, previous sickness absence and work satisfaction at baseline were the best predictors of future dismissal, whereas workers' employment contract and decreased work performance due to impaired health at baseline were the best predictors of workers' future employment status after dismissal.

6.6.1 Theoretical and practical implications

At least three theoretical and practical implications can be drawn from this study. First, regarding workers' employment contract and age, temporary workers were 4 to 5 times more likely to be dismissed than permanent workers. This fits the core-periphery idea of temporary workers being used as a buffer stock to sustain the permanent workforce (Pfeifer, 2009). Although temporary workers are often younger workers, especially older workers (≥ 45 years) were found to be at risk for long-term unemployment as they were not better protected against dismissal than younger workers (16-34 years) and had a much lower chance of re-gaining employment after being dismissed. This may be due to old-age stereotyping and the relatively high labour costs of older workers compared to younger workers (Adler & Hilber, 2009; Daniel & Heywood, 2007; Heywood, Jirjahn, & Tsertsvardze, 2010). Against the background of an ageing workforce (Adler & Hilber, 2009), it is important that measures are taken to enhance older workers' employability, e.g. by offering them self-paced training (Callahan, Kiker, & Cross, 2003) that also enhances job-skills in related fields of work (de Graaf, Peeters, & van der Heijden, 2011). However, also young workers' (15-24 years) employability deserves attention, as the worldwide youth unemployment rate increased to 12.6% in 2012, representing 73.8 million unemployed persons of which many are not participating in training or education (ILO, 2013).

Secondly, corroborating earlier findings on health selection mechanisms and dismissal (Mastekaasa, 1996), workers with a lower health status and poorer work

performance were more likely to be dismissed than others (healthy worker survivor effect), and those with a lower health status were also less likely to regain employment after dismissal (healthy hire effect). These findings are in line with an impressive number of unemployment studies, showing that less healthy workers (e.g. in terms of a medical diagnosis, sickness absence, stress symptoms and lower mental health) are drawn into unemployment (Hesselius, 2007; Hultin, Lindholm, Malfert, & Moller, 2012; Hultin, Lindholm, & Moller, 2012; Schuring, Burdorf, Kunst, & Mackenbach, 2007; M. Virtanen et al., 2006; P. Virtanen et al., 2013; Wagenaar et al., 2012) and unlikely to (re-)gain employment (Claussen, 1999; Claussen, Bjorndal, & Hjort, 1993; Schuring et al., 2007; Taris, 2002; P. Virtanen et al., 2013). In order to prevent such health-based out-selection of workers, measures are needed to improve their health and work ability, and thereby their work performance. In this respect, it is indicated to combat age-related stereotypes, to design "decent work" and to promote a proper human resource policy including an individual "tailor-made" approach. As to the latter, increasing work-time control seems a promising avenue (Nijp, Beckers, Geurts, Tucker, & Kompier, 2012). More generally, also health protection and promotion programs in the workplace may be fruitful, as they have been associated with positive outcomes such as enhanced well-being and work ability and decreased sickness absence (for overviews see Kuoppala, Lamminpää, & Husman, 2008; Pelletier, 2009, 2011).

Thirdly, multivariate analyses regarding the relative importance of our predictors suggest that temporary employment, previous sickness absence and work satisfaction may serve as important selection criteria in lay-off decisions. This finding is interesting since Dutch legislation on dismissals (as in many other EU countries) strongly restricts the possibilities of dismissing temporary workers during their contractual employment period, as well as dismissal on health grounds (Ius Laboris, 2009, 2011). Another interesting finding is that when workers were previously temporary employed (without permanent employment prospects), this greatly enhanced their re-employment chances after dismissal. The opposite was true for those reporting decreased work performance due to health issues. The first finding may be explained by employers' stigmatization of previously dismissed workers (Karren & Sherman, 2012). As temporary workers are often used to sustain the permanent workforce of an organization, employers may attribute the previous dismissal of a temporary worker to external factors (e.g. bad economic circumstances), but that of a permanent employee to personal factors (such as a lack of skills and experience and poor work performance). The second finding suggests that not workers' health status, but rather its impact on employee performance is important when it comes to finding and re-gaining employment. To conclude, after being dismissed especially workers who were previously permanent employed and those who performed poorly in their previous job due to health issues are at risk for long-term unemployment.

6.6.2 *Future research*

The current study suggests several directions for further research. First, it is important to further unravel the process that leads to the out-selection of workers through dismissal into long-term unemployment. The current study showed that aside from workers' health status, other employee performance-related indicators warrant attention as well, such as physical and mental work ability, work-related attitudes (e.g., in-role performance and work motivation) and employer investments in terms of training (also see Wagenaar et al., 2012). In this respect, future research could relate health to work performance, and study its relationship with sickness absence, which is an important precursor of dismissal (as found in the current study), and future disability pension and (long-term) unemployment (Hesselius, 2007; Hultin, Lindholm, Malfert, et al., 2012; Hultin, Lindholm, & Moller, 2012; M. Virtanen et al., 2006).

Secondly, workers' employment contract (permanent vs temporary) should be considered when studying employee dismissal and their chance of re-entering employment after dismissal. It would be interesting to further investigate the possibility that employers take into account workers' "pre-dismissal" employment contracts when making hiring decisions.

Finally, we studied risk factors for dismissal and long-term unemployment separately (e.g. lower general health and lower work satisfaction), whereas these variables are associated with each other (see Table 6.1). Therefore, future studies could combine related risk factors to identify more specific risk groups for dismissal and long-term unemployment (e.g. less healthy older workers or less motivated workers who received fewer investments from their employer).

6.6.3 *Strengths and limitations*

The major strengths of the current study are its large sample size, its prospective 2-year design, and – most importantly – its focus on (health) selection mechanisms in relation to workers' dismissal and their employment status after dismissal (re-employed vs unemployed) during an economic recession. Moreover, this is one of the first studies that extend health selection mechanisms to a variety of other employee performance-related indicators including work ability, work-related attitudes such as in-role performance and employee investments in terms of training and promotion. In addition, we examined the role of workers' employment contract and age in dismissal decisions, based on the system of employment protection legislation as applied in many European countries. Despite these strengths, there are also several important limitations. First, only respondents who filled in the on-line version of the baseline questionnaire were selected for our follow-up questionnaire (which was also administered on-line). However, nowadays in the Netherlands the large majority of the population has access to the internet (OECD, 2012) and various studies indicate that there are no substantial differences in non-response, reliability and validity

between self-reported measures assessed through on-line administration and traditional paper-and-pencil administration (Bates & Cox, 2008; Campos, Zucoloto, Bonafe, Jordani, & Maroco, 2011). Secondly, as our measures were self-reports and dismissal is a sensitive subject, some dismissed workers may have been motivated to say that they quit their job or were not dismissed. Moreover, some temporary workers may have wrongly interpreted the expiration of their contract as dismissal. Finally, the exact moment of dismissal and re-employment after dismissal was unknown. Although this is unlikely to have systematically biased our results, employees who knew they were about to be dismissed at the baseline measurement may have filled in the questionnaire more negatively.

6.6.4 Concluding remarks

Current employment protection legislation in many EU countries may increase temporary and younger workers' vulnerability to dismissal, especially during an economic recession. Based on the healthy worker survivor effect, also less healthy and poor performing employees can be expected to be at risk for dismissal. Due to a healthy hire effect these less healthy and poor performing workers are in turn unlikely to re-gain employment. In a large and 2-year longitudinal sample of Dutch employees, we found clear evidence of the existence of such selection mechanisms during an economic recession.

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CHAPTER 7

Discussion

Partly based on:

Wagenaar, A. F., Houtman, I. L. D., Van den Bossche, S. N. J., Kompier, M. A. J., & Taris, T. W. (2013). Flexibiliteit, kwaliteit van arbeid en gezondheid. In R. van Gaalen, A. Goudswaard, J. Sanders & W. Smits (Eds.), *Dynamiek op de Nederlandse Arbeidsmarkt 2013*. The Hague (Netherlands): Centraal Bureau voor de Statistiek.

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7.1 INTRODUCTION

This dissertation started with a review of the literature on the relationship between temporary employment and workers' health, well-being and work-related attitudes. From this overview it was learned that temporary employment has clear advantages for the employer (Booth, Dolado, & Frank, 2002), but is often not desired by the employee (Guest, 2004). Temporary jobs are often insecure and involve adverse job characteristics (see e.g., Goudswaard & Andries, 2002; Kompier, Ybema, Janssen, & Taris, 2009; Letourneux, 1998; Silla, Gracia, & Peiró, 2005), and may therefore negatively impact workers' health, well-being and work-related attitudes (Aronsson, Gustafsson, & Dallner, 2002; Kompier et al., 2009; Letourneux, 1998). However, as previous studies have not always supported this reasoning, the precise nature of the relationship between temporary employment and workers' health, well-being and work-related attitudes remained unclear (De Cuyper et al., 2008). One of the main reasons for this ambiguity is the fact that the literature often studied temporary workers as a homogeneous group, thus neglecting the large heterogeneity within the temporary workforce (e.g. in terms of employment stability, income, quality of work, contract preference, employment prospects and demographic composition [Bernhard-Oettel, Sverke, & De Witte, 2005; De Cuyper et al., 2008; De Cuyper & De Witte, 2007; Galarneau, 2005; Kalleberg, 2000; Parks, Kidder, & Gallagher, 1998; Silla et al., 2005]). Another important reason is the lack of studies including multiple measurement times (longitudinal designs), which withhold researchers from making causal inferences between temporary employment and workers' health, well-being and work-related attitudes. Therefore, it is not entirely clear whether temporary employment negatively impacts upon workers' health, well-being and work-related attitudes; whether less healthy workers with a lower well-being and worse work-related attitudes are drawn into temporary employment (because employers are unlikely to hire them on a permanent basis); or whether both relationships apply simultaneously. In the current thesis we aimed to unravel some of this ambiguity in the employment contract literature by answering two research questions, to find out whether the potentially adverse relationship between temporary employment and workers' health, well-being and work-related attitudes can be conceptualized as a two-way street:

1. How do various types of temporary employment differ from permanent employment in terms of job insecurity and job quality, and related to this, the health, well-being and work-related attitudes of the workers involved?

2. For whom does temporary employment serve as a bridge into higher quality permanent employment and who will become trapped in low quality temporary employment and may ultimately become unemployed?

In order to answer these two research questions we conducted five studies which were reported in Chapter 2 to 6. In this final chapter we summarize and integrate the main

findings of these studies and discuss their theoretical and practical implications. Next, we discuss the main strengths and limitations of our studies, followed by a short research agenda with some promising avenues for future research. We then conclude this chapter by briefly summarizing the main contribution of this thesis.

7.2 MAIN FINDINGS

7.2.1 Research question 1

Table 7.1 provides an overview of our studies' answers to the two main research questions of this thesis. By answering the first research question, we aimed to test whether all forms of temporary employment have negative consequences for workers' health, well-being and work-related attitudes. Based on the assumption that temporary employment often involves secondary-segment jobs (Hudson, 2007) and is often used as a buffer workforce that surrounds the permanent staff of an organization (Booth et al., 2002), we expected this to be the case. This means that permanent jobs may often involve workers who are hard to replace and therefore offered favourable working conditions, work relations and terms of employment (e.g. a high salary) in return, whereas the opposite may apply to more peripheral or temporary jobs (Hudson, 2007; Kalleberg, 2003; Zeytinoglu & Muteshi, 2000). However, we also expected this core-periphery model of employment contracts to be a continuum, rather than a strict division between permanent and temporary employment (Ferrie, Westerlund, Virtanen, Vahtera, & Kivimäki, 2008). This means that temporary jobs that are closer to the core of permanent workers (e.g. fixed-term employment with prospects on permanent employment) were expected to be more secure and to involve higher-quality employment than more peripheral temporary jobs such as agency and on-call work. Therefore, these more peripheral temporary jobs (i.e., agency and on-call work) were expected to have the most negative consequences for workers' health, well-being and work-related attitudes. We tested this hypothesis by conducting two studies in which we compared different types of temporary employment with permanent employment, in terms of worker's job quality, job insecurity, health, well-being and work-related attitudes.

Our first large-scale European study (N = 58,368; chapter 2) indeed supported the core-periphery idea, as agency workers and to a lesser extent fixed-term workers (who were often younger and female workers) reported a lower job quality (most notably in terms of physical load, autonomy, work complexity and income) and were less satisfied with their work compared to permanent workers. These findings proved to be robust in that they were largely independent of time (2000/01 and 2005) and country. However, these contract differences were generally small.

Our second study (chapter 3) was conducted among a large and representative sample of Dutch employees (N = 21,639) and provided similar but more fine-grained results. First, we found that agency and on-call workers and, to a lesser extent, fixed-term workers without permanent employment prospects, had relatively often low quality employment,

that is 'high strain' employment (high work pressure & low autonomy) or "passive" employment (low work pressure & low autonomy). Secondly, these same temporary workers (except on-call workers) reported higher job insecurity, a lower health status and lower work satisfaction compared to permanent workers. Note that on-call workers were relatively job secure and healthy compared to other temporary workers, probably because many of them are students with a small part-time job aside of their study, as is supported by figures from Dutch statistics (Bierings & Siermann, 2006). This means that the importance of the job for on-call workers, and thereby its impact on their health and well-being, is much lower compared to that of other temporary workers. Finally, it is important to note that this study (partly) supported the idea that temporary employment adversely impacts workers' work-related attitudes through a lower job quality and higher job insecurity. However, no such evidence was found with regard to workers' health status, which suggests that the relationship between temporary employment and workers' health status may rather be the other way around (i.e., that a lower health status leads to temporary employment).

To conclude, in line with the core-periphery model both in Europe and in the Netherlands especially agency work, but also other forms of temporary employment (most notably those without permanent employment prospects) were associated with a lower health status and worse work-related attitudes. However, on-call work was not associated with health problems (at least in the Netherlands).

7.2.2 Research question 2

With our second research question we aimed to identify specific groups of workers for which temporary employment serves as a bridge into high quality permanent employment or as a trap leading workers into unemployment. To this aim, we conducted three longitudinal studies in which we investigated the relationship between changes in workers employment contract or employment status and employee characteristics such as their health, well-being, work-related attitudes and performance indicators.

In the first of these studies (Study 3; chapter 4) we used the 2007 and 2008 wave of the Netherlands Working Conditions Cohort Study (N = 9,688). This is a large and representative 2-year longitudinal study among Dutch employees. Based on segmentation theories and the core-periphery idea, we examined whether upward contract changes (towards more permanent employment) would be for the better (in terms of workers' job quality, job insecurity, health and work-related attitudes) and whether downward contract changes (towards more temporary employment) would be for the worse (also see Kompier et al., 2009). We also investigated whether these assumptions would hold when taking into account a change of employer, as turnover theories suggest that many workers change employer to improve their work situation (Steel & Lounsbury, 2009). Indeed, this latter hypothesis was supported. Our results showed an employer change to be generally associated with positive outcomes, irrespective if workers received a more temporary or permanent employment contract from their new employer. In line with segmentation

Table 7.1 Summary of our studies' answers to the two main research questions of this thesis

Question 1:	*Temporary employment: Does it have negative job characteristics and outcomes?*	
Answer:	Yes, but not all temporary jobs are 'bad':	
Study 1 (chapter 2)	Fixed-term and especially agency workers (often younger and female workers) reported: - Lower quality of work (e.g., in terms of physical load, autonomy, work complexity and income) - Lower work satisfaction	
Study 2 (chapter 3)	Fixed-term (without-prospects) and especially agency and on-call workers had: - Relatively often low quality employment ('high-strain' or 'passive' work) Fixed-term (without-prospects) and especially agency workers, but not on-call workers reported: - Higher job insecurity - Lower health status - Lower work satisfaction All temporary workers reported: - Higher turnover intention and lower employability	
Question 2:	*Temporary employment: Is it a bridge or a trap and for whom?*	
Answer:	It is both a bridge and a trap, but for different groups of workers:	
Study 3 (chapter 4)	Trap:	Workers who received a more temporary contract at their current employer; they reported a negative change in: - Supervisory support - Job insecurity - Work-related attitudes (work satisfaction and turnover intention)
	Bridge:	Workers who changed employer and received a more permanent or a more temporary contract than they had at their previous employer; they reported a positive change in: - Job quality - Emotional exhaustion - Work-related attitudes (work satisfaction and turnover intention)
Study 4 (chapter 5)	Trap:	Permanent workers with lower work-rel. well-being and work ability were at risk for: - Future precarious temporary employment - Future unemployment[1]
	Trap:	Permanent workers with lower health status were at risk for: - Future unemployment[1]
Study 5 (chapter 6)	Trap:	Temporary, less healthy and poorly performing workers were at risk for: - Future dismissal[1]
	Trap:	Older workers and those with poor health-rel. work performance were at risk for: - Long-term unemployment after dismissal[1]
	Bridge:	Temporary workers (without-prospects), who had: - Good re-employment chances after dismissal

[1]Note that workers who are at risk for dismissal and future unemployment are also at risk for future spells of unstable temporary employment as they are unlikely to be (re-)hired on a permanent basis.

theories, which suggest permanent jobs to be for the better (i.e., more secure and of higher quality) and temporary jobs to be for the worse, the opposite was true for workers who changed into a more temporary contract at their initial employer. They reported a decrease in supervisory support and work satisfaction and an increase in job insecurity and turnover intention. All in all, these results suggest that employability in terms of having job alternatives is very important in protecting (temporary) workers from becoming trapped in low quality, highly insecure employment or unemployment.

In our fourth study (chapter 5) we examined whether health selection mechanisms played a role in employment contract changes during the recent economic recession. We used 2008 and 2009 data from the Netherlands Working Conditions Cohort Study (*N* = 7,112). This study draws forth on previous research into the healthy worker phenomenon: the observation that the working population is healthier than the general population (Shah, 2009). These earlier studies generally supported the idea that less healthy individuals are less likely to find and (re-)gain employment (healthy-hire effect), and have the tendency to prematurely leave employment (healthy worker survivor effect) (see e.g., Mastekaasa, 1996; P. Virtanen, Janlert, & Hammarstrom, 2013). Such health-selection effects may be especially salient during an economic downturn, when employers can be expected to become more selective in their hiring and firing decisions. Against this background, we expected healthier and higher work-ability employees and those with higher work-related well-being to have better chances in receiving permanent employment. We also expected less healthy and lower work-ability employees and those with lower work-related well-being to be drawn into precarious temporary employment or unemployment. We tested both hypotheses by predicting various upward and downward employment contract changes based on workers' initial health status, work ability and work-related well-being. In support of our expectations, we found that permanent employees with a lower health status (in terms of general health and emotional exhaustion) and lower work ability were at risk for future unemployment, whereas permanent workers with lower work ability were also at risk for future precarious temporary employment. Moreover, lower work-related well-being (i.e. lower work satisfaction and/or less work dedication) predicted all downward (contract) trajectories (including those into precarious temporary employment and unemployment), whereas one of the upward trajectories into permanent employment was predicted by higher work dedication. Although our results also suggested that upward contract changes into permanent employment were predicted by better physical health, these effects became non-significant after adjustment for the control variables. To conclude, especially less healthy (permanent) workers with lower work ability may be at risk for entrapment in future precarious temporary employment, and ultimately long-term unemployment.

In our final study (chapter 6) we further investigated the role of (health) selection mechanisms during the economic recession, by predicting dismissals and their follow-up for the employee (re-employment versus unemployment) from workers' employment contract, age, health status and performance indicators at baseline. Among a large 2-year

(2010-2012) longitudinal sample of Dutch employees (*N* = 2,644) we found that temporary employment, low health status (e.g. in terms of general health, emotional exhaustion and sickness absence) and indicators of poor work performance (such as lower work ability and lower in-role performance and lacking employer investments in terms of training) at baseline increased the chance of future dismissal. Furthermore, especially older workers and those reporting decreased work performance due to impaired health at baseline were unlikely to become re-employed after their dismissal. In contrast, former temporary workers without permanent employment prospects had much better re-employment chances after being dismissed than previously employed permanent workers. In sum, temporary, less healthy and poor performing workers are at risk for dismissal, whereas older and less healthy workers are (also) at risk for long-term unemployment after their dismissal.

Overall we can conclude that the relationship between temporary employment and employee health, well-being and work-related attitudes can be conceptualized as a two-way street. On the one hand, temporary employment may favour one's labour market position when it involves high quality work-employment or when it is a link in the chain towards high quality work-employment. This may be particularly true for highly employable (permanent) workers, who accept a temporary position that is more favourable than their previous job, as this (often) 'probation period' (Isaksson et al., 2010) may result in an even more attractive permanent position. However, on the other hand it is questionable to what degree temporary employment is voluntary, as most temporary workers would prefer a permanent position (Guest, 2004). Moreover, temporary employment is highly dependent on economic growth, meaning that many temporary workers have lost their job or will lose their job during the on-going economic downturn (OECD, 2010a). In this respect, especially workers with a lower health status, reduced work ability or poor work performance are at risk of losing their job and unlikely to be re-hired for (permanent) employment. Consequently, these workers are likely to become trapped in spells of low quality insecure temporary employment and unemployment.

7.3 THEORETICAL IMPLICATIONS

7.3.1 Temporary employment is heterogeneous

As we found large differences between and within different forms of temporary employment, our results emphasize the heterogeneity in temporary employment. First, in terms of between-contract differences our findings generally supported the core-periphery model: from the core of permanent work to the periphery of agency work, workers' job insecurity increased and their job quality and health status decreased. Interestingly, on-call work (at least in the Netherlands) did not fit the core-periphery model very well. Although it was similar to agency work in that it relatively often involved low quality employment, on-call workers were relatively job secure and reported a favourable health status. This may be due to the fact that many on-call workers are (high school) students with a part-time job

on the side (Bierings & Siermann, 2006). For these workers the salience of their job, and thus its impact on their health and well-being, much lower than that of agency workers' jobs. Secondly, many temporary jobs do not involve high job insecurity or low quality employment, as we found large within-contract differences in these respects (chapter 3). For example, in the Netherlands over 60% of all fixed-term workers and around half of all agency workers were neither involved in high-strain employment, which may lead to health and well-being problems (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Karasek, 1979), nor involved in passive employment, which may involve fewer learning opportunities (Taris & Kompier, 2004; Van der Doef & Maes, 1999) and may therefore have negative consequences for workers' employability. In sum, there is a large heterogeneity within the temporary workforce, both between and within different forms of temporary employment. Therefore, when studying temporary employment a crude permanent-temporary contract dichotomy should be avoided and its extensive heterogeneity should be taken into account when interpreting findings on the relationship between temporary employment and workers' health, well-being and work-related attitudes (also see § 1.2.1 and § 1.6).

7.3.2 Temporary employment is dynamic

As temporary employment is of limited duration, changes in workers' employment contract or employer are inevitable. Temporary employment may serve as a bridge into (high quality) permanent employment, but may also be a trap resulting into spells of unstable employment or unemployment. Some earlier studies support this "trap function" of temporary employment (e.g., Giesecke & Groß, 2003; Tunny & Mangan, 2004), whereas many others favour the 'bridge function' of temporary employment instead (see e.g., Gash, 2008; Hartman, Liljeberg, & Skans, 2009; Picchio, 2008; Scherer, 2004).

First, our results suggest that both functions of temporary employment may apply simultaneously, but are strongly dependent on workers' health, well-being and work-related attitudes. For example, we found clear evidence that a lower health status, lower well-being and worse work-related attitudes put workers at risk for dismissal and downward trajectories into precarious temporary employment and unemployment (chapter 5 and 6). Moreover, workers who reported decreased work performance due to health issues were unlikely to re-gain employment after being dismissed (chapter 6). In addition, our results suggested that temporary workers who were more dedicated to their work and were physically better able to perform their job had a better chance of receiving permanent employment than others (chapter 5).

Secondly, this relationship between temporary employment and worker' health, well-being and work-related attitudes may be moderated by workers' job importance and their ability to improve their work situation. This can be expected since exposure to job insecurity and adverse job characteristics (aspects that are often present in temporary jobs [chapter 2 and 3]) may only have negative long-term consequences when job importance is high (chapter 3) and when workers have no opportunity to improve this unfavourable work

situation internally (by making promotion or receiving a permanent employment contract) or externally (by acquiring better fitting employment and/or a more permanent employment contract at a new employer [chapter 4]). In support of this reasoning, we found that both agency and on-call workers had relatively often low quality employment, but only agency workers reported a lower health status. This finding was likely to be due to a higher job importance among agency workers as compared to on-call workers (chapter 3). Moreover, employability in terms of acquiring alternative employment had a positive impact on workers' job quality and thereby their health and well-being (chapter 4). Interestingly, this was also the case when workers' received a more temporary contract from their new employer. This underlines the fact that not all temporary jobs involve low quality employment and have negative consequences for workers' health and well-being.

Thirdly, the ability to improve one's work situation may depend on the interplay of many (other) employability-related moderators, both on an individual level (such as workers' age and educational level) and contextual level (e.g., employment legislation and economic context) (also see § 7.6 and De Cuyper et al., 2008). For example, older workers, but also young workers (especially those who are less skilled) face great difficulties in (re-) acquiring employment, especially during an economic recession (chapter 6; OECD, 2010b). More generally, in times of an economic recession all workers can be expected to have fewer opportunities to improve their work situation than during periods of economic growth. Note that this may especially affect temporary workers, as this type of employment is highly dependent on economic growth (European Commission, 2010).

In sum, our results support a bi-directional relationship ("two-way street") between temporary employment and workers' health, well-being and work-related attitudes. This means that healthier workers with favourable work-related attitudes can be expected to be in a virtuous circle towards high quality and secure (permanent) employment, whereas less healthy workers with unfavourable work-related attitudes can be expected to be in a vicious circle leading them into low quality, insecure employment and ultimately into unemployment. In this respect, temporary employment may rather be a risk factor for workers' health, well-being and work-related attitudes, as it relatively often involves high job insecurity and low quality employment, than a risk in itself. Although temporary workers ability to achieve high quality and secure (permanent) employment may largely depends on their health status, well-being and work-related attitudes, many individual factors (such as their job importance and employability) and contextual factors (e.g., the economic situation) may moderate this relationship. Therefore, more longitudinal studies are needed, both during periods of economic growth and during periods of economic downturn, to obtain a more complete picture of the (health) selection mechanisms that are active in changes in workers' employment status (see §7.6.3).

7.4 PRACTICAL IMPLICATIONS

7.4.1 Better and more secure employment

Due to higher job insecurity and adverse job characteristics many peripheral temporary workers are at risk for future health and well-being problems (chapter 2 and 3). Many other temporary workers may have jobs that involve fewer learning and development opportunities (so-called 'passive jobs'), which may restrict their employability prospects (chapter 3; Van der Doef & Maes, 1999). Thus measures are needed that level job quality differences between permanent and temporary workers. For example, European member states may monitor more closely whether organizations act in line with European employment legislation promoting equal treatment in terms of working and employment conditions (e.g. in terms of rest periods, night work, annual leave and income) of permanent and temporary workers (who perform comparable jobs). Aside from measures targeting workers' job characteristics also measures aimed at reducing job insecurity are needed. For example, more (European) countries could introduce temporary employment with prospects on permanent employment, which is a common form of temporary employment in the Netherlands. This type of temporary employment formally ensures employees that they will receive permanent employment after performing well for the duration of their contract. In support of this measure, a longitudinal study showed a reduction in job insecurity after receiving permanent, and thus job secure employment by their employer (M. Virtanen, Kivimäki, Elovainio, Vahtera, & Ferrie, 2003). However, similar results may be obtained by "simply" offering temporary workers (better) work security guarantees, as this may lower the chance of forced organizational exits and workers' perceptions of job insecurity (Bryson, Cappellari, & Lucifora, 2009).

7.4.2 Improving employability

Our results suggest that both temporary and permanent employees who find themselves in unfavourable employment (i.e., highly insecure and/or low quality employment) and have few opportunities to change employer may be at risk for future health and well-being problems, and thereby future unemployment. Therefore, measures are needed to improve their employability:

- *From passive to challenging jobs*

  Many temporary workers have passive employment (chapter 3), feel that they are over-qualified for their job (Letourneux, 1998) and find their jobs not challenging enough (Goudswaard & Andries, 2002), especially as compared to permanent workers. Accordingly, more active and challenging employment, which incorporates sufficient development opportunities should be promoted among temporary workers (also see Mitlacher, 2008). In this respect, it is important that temporary

workers have enough task demands, but also sufficient autonomy in their jobs, as this type of employment has been positively associated with high levels of learning (Taris & Kompier, 2004). One might argue that the "creation" of more challenging jobs is not particularly easy in times of the current economic recession, in which both permanent and temporary do report low levels of autonomy. However, recent European statistics show only a slight decline in job autonomy in the past two decades, which stabilized in 2005 (Eurofound, 2007, 2012).

- *Training and development*

Temporary employment has systematically been associated with fewer training and development opportunities (among others, Aronsson, 1999; Aronsson et al., 2002; Goudswaard & Andries, 2002; Hall, 2006; Layte, O'Connell, & Russell, 2008; Letourneux, 1998). In line with this, 70% of the Dutch employers report small to large differences between their temporary and permanent staff, which often means better career and training opportunities among the latter (Isaksson et al., 2010). Therefore, employers should invest in their temporary workforce by offering them sufficient training and development opportunities (Mitlacher, 2008), as this may facilitate temporary workers' transition into permanent employment (Gaston & Timcke, 1999). However, in general, but especially during the economic recession, employers may not be inclined to invest in their temporary personnel. Therefore, also measures are needed on a government-level, for example, by promoting "best HR practices" regarding temporary personnel, such as a proper introduction period for job-entrants, who are often temporary workers, and organizations that equally invest in their temporary as in their permanent personnel.

- *Health protection and promotion*

Less healthy workers ran an elevated risk of out-selection into precarious temporary employment and unemployment (chapter 5 and 6). Accordingly, employers should invest in the health and well-being of their workers. They could, for example, introduce health protection and promotion programs in the workplace, which have been positively associated with workers' well-being and work ability and reduced sickness absence (for overviews see Kuoppala, Lamminpää, & Husman, 2008; Pelletier, 2009, 2011). Moreover, to stimulate employers in taking such measures, governments could promote "best practices" in these areas.

- *Special attention for disadvantaged groups of workers*

Some workers face great difficulties in becoming and remaining employed. Such disadvantaged groups of workers, therefore, deserve more attention when it comes

to their employability than others. In this respect, at least three groups of workers warrant special attention.

- *Older workers*

  Employability measures are needed for older workers, as these workers are less likely to (re-)gain employment (Chapter 6). In this respect, employers may fit their training or educational system more closely to the needs of older workers, for example, by offering them self-paced training (Callahan, Kiker, & Cross, 2003). In addition, workers should keep up their competence levels throughout their career, which should be facilitated by their employer. In this respect, organizations could benefit from training and development programs, in which the competences of their workers are regularly monitored on a regular basis and converted into concrete actions to further develop their knowledge and skills.

- *Young workers*

  Young workers (15-24 years) deserve special attention from governments, as current youth unemployment rates are high and many unemployed youngsters are not participating in training or education (ILO, 2013). Therefore, measures are needed that facilitate the school-to-work transition, especially for disadvantaged groups such as low-skilled immigrants and those unable to acquire stable employment (e.g., by promoting the combination of study and work and by offering active job search programs [OECD, 2010b]). Note that this contradicts current government measures in the Netherlands that save on higher education by discouraging longer than necessary study periods and the participation in multiple educations.

- *Dismissed workers*

  Future employers may often attribute previous dismissals of current job applicants to personal factors (such as a lack of knowledge and skills), rather than to external factors such as economic circumstances. This may be especially true for minorities and older workers (Karren & Sherman, 2012), but also for previously employed permanent workers (chapter 6). Accordingly, measures are needed to aid previously dismissed workers in finding and re-acquiring employment (e.g., by retraining them and offering them job seeking assistance [Cavaco, Fougere, & Pouget, 2013]). However, given the current economic hard times it does not seem realistic to expect much benefit of such measures on the short hand.

7.4.3 The current economic recession

One cannot deny that the current economic downturn is not the best period to promote and apply the aforementioned measures. First, employers are generally reluctant to invest in their temporary staff because the return on investment may well be below that of permanent workers. This is especially true during the current economic recession, in which many temporary workers are fired or otherwise lose their job. Secondly, the effectiveness of measures aimed at individual and work factors can be questioned, considering the large and wide-spread negative effects of the economic recession on the labour market. Currently, not only "risk group-workers" (e.g., less healthy and less employable workers) find it more difficult to remain or (re-)gain employment, but this now applies to all workers. Therefore, we would like to argue that the more severe the economic situation becomes, the more it may overshadow other individual and work factors. In other words, our suggested measures may yield more effect and support in times of economic growth, when employers are less selective in their hiring and firing decisions.

7.5 STRENGTHS AND LIMITATIONS OF THIS THESIS

7.5.1 Strengths

- *Large and representative heterogeneous samples*

  One of the main strengths of this thesis is its utilization of (very) large samples which were representative on a European-level or national-level (i.e., the Netherlands) and covered many different types of workers. Therefore, our results are not limited to a specific group of workers (e.g. in terms of gender, age or occupation) but can be generalized to all types of workers. Moreover, the use of both European and nationally representative data enhanced the external validity of our studies, which means that (some of) our findings may be generalized to other countries within and beyond the European Union.

- *Comparison of different formal temporary employment contracts*

  The large number of participants in our studies allowed us to distinguish between all different formal forms of temporary employment (i.e., fixed-term employment [with and without prospects on permanent employment], agency work and on-call work). Therefore, we were able to unravel some of the heterogeneity in temporary employment, by studying contract differences in terms of job quality, job insecurity and workers' health, well-being and attitudes. For example, we found that (Dutch) on-call workers differed in many respects from other temporary workers. Moreover, temporary workers with prospects on permanent employment were quite similar to permanent workers, whereas those without these prospects (except on-call

workers) had relatively often low quality and insecure employment. These findings underline the need to distinguish between different groups of temporary workers.

- *Cross-sectional and longitudinal research*

Another asset of the current thesis is its systematic approach by using both cross-sectional and longitudinal data to gain more insight into the relationship between temporary employment and workers' health, well-being and work-related attitudes. First, we used large and representative cross-sectional data to thoroughly test the hypothesis that temporary employment involves high job insecurity and low quality employment and is therefore negatively associated with workers' health, well-being and work-related attitudes (chapter 2 and 3). As we indeed found support for this assumption, we decided to further investigate the direction of the relationship between temporary employment and workers' health, well-being and work-related attitudes. This investigation showed that contract changes are not isolated events, as their impact strongly depended on whether workers changed employer or not (chapter 4). Whereas a change in employer had generally positive consequences, the opposite was true for workers who received more temporary employment from their initial employer. This suggests that temporary employment may be a bridge for more employable workers and a trap for less employable workers. To more closely examine this bridge and trap function of temporary employment we tested the reverse causality, meaning that workers' health, well-being and work-related attitudes predict both upward and downward changes in workers employment contract and employment status (chapter 5 and 6). In general, these studies suggest that healthier and more employable workers may go 'upward' towards high quality permanent employment, whereas less healthy and less employable workers may be at risk for precarious, low quality temporary employment and ultimately unemployment. Clearly, this well-structured research approach enhanced our insights in the diversity within the temporary workforce and its relationship with workers' health, well-being and work-related attitudes.

- *High quality measures*

A final asset of our studies is that we assessed a large variety of important work characteristics, health and well-being indicators and work-related attitudes, by using valid and reliable measures. This allowed us to obtain a much more detailed picture of the relationship between temporary employment and workers job quality, job insecurity and health, well-being and work-related attitudes.

- *Detailed measurement of Job quality*

  Job quality was assessed by measuring working conditions (adverse physical working conditions [chapter 2 and 4] and physical load [chapter 2]), job content (task demands and autonomy [chapter 2-4]) and repetitive tasks and work complexity [chapter 2]), work relations (supervisory and co-worker support [chapter 4]) and employment terms (irregular working times and income [chapter 2]). Moreover, by combining workers' autonomy and task demands into Karasek's (1985) four Job Demand-Control combinations in chapter 3, we were able to assess the distribution of four theoretically relevant combinations of job characteristics, both positive and negative, for each contract type. Note that this division was not conducted by means of a crude median split, but by using the absolute answer category labels which better correspond to the categorisation of "low" versus "high" control and demands.

- *Rich measurement of Job insecurity, health and work ability*

  In order to assess job insecurity, we measured both cognitive job insecurity (i.e. perceived chance of job loss) and affective job insecurity (i.e. worry about job loss) (Goudswaard, Dhondt, & Kraan, 1998). Furthermore, also workers' health status and work-ability were measured in a "rich" way, by including both the physical and mental component of these aspects in most of our studies (chapter 3-6).

- *Extending health selection mechanisms*

  Previous research on health selection mechanisms has been limited to workers' health and well-being. Due to the availability of many health-related measures we were able to extend these selection mechanisms to many other aspects of the worker involved, such as their work ability, work dedication, work-related attitudes like work satisfaction and in-role performance and employee investments in terms of training and promotion (chapter 5 and 6). Furthermore, the 2-year longitudinal data in chapter 6 allowed us to study health selection mechanisms and the role of workers' employment contract and age in employee dismissal and their chances to re-gain employment. Note that in this study we dichotomized all predictors in a similar way as the demand-control division in chapter 3, that is, based on the absolute answer category labels (instead of a median split) to achieve better correspondence with the categorisation of 'low' versus 'high' on the predictor variables.

7.5.2 *Limitations*

- *Limited across-country generalizability*

  Caution is advised in generalizing our findings to other countries, as most of our studies only involved Dutch employees (chapter 3-6) and there are large between-country differences in temporary employment. For example, there are differences with regard to the occurrence of temporary employment, which is strongly related to economic growth, and differences in employment legislation on regular and temporary contracts, job quality and job insecurity (European Commission, 2008; Leschke & Watt, 2008; Venn, 2009). Furthermore, despite our large sample sizes some analyses were conducted among particular sub-groups with relatively few workers in them (chapter 5 and 6). This is likely to have resulted in a lack of power.

- *Heterogeneity in temporary employment goes beyond the formal employment contract*

  Our division purely based on workers' formal employment contract may not always have been fine-grained enough to detect specific risk groups for health and well-being problems. For example, many temporary workers sharing the same formal temporary employment contract did not report higher job insecurity and were not in low quality employment (chapter 3). Therefore, temporary employment should be further classified, for example, in terms of the nature of their employment (e.g., whether they substitute permanent staff, are employed on a project basis or conduct seasonal employment [Aronsson et al., 2002]).

- *Measurement-related issues*

  All our studies relied on self-reports. One might argue that the utilization of the same method to assess all variables under study leads to common method variance bias (CMV). This means that the variance in variables is influenced by the method of measurement rather than to the constructs being assessed (for an overview of the literature see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, from Spector (2006) we learn that the degree of CMV bias is often overrated. Moreover, in our studies it is not very likely that self-reports of workers' employment contract were biased, and even so, this measure would have been biased differently as can be expected of self-reports on workers' job quality, job insecurity, health, well-being and work-related attitudes. Therefore, associations between workers' employment contract and these latter aspects are unlikely to have suffered from CMV. However, there are (at least) two other, more specific measurement-related issues that may have biased our findings. First, our measurement of workers' employment contract may not have always accurately captured the employment contract of agency and

on-call workers, as some of these workers (at least in the Netherlands) may have been employed on a permanent basis (i.e., in service of the agency company or permanently employed on an "on-call basis"). Secondly, as dismissal is a sensitive subject, self-reports on this matter may have been biased (chapter 6). For example, some dismissed workers may have been motivated to state that they were not dismissed. Moreover, some temporary workers may have wrongly interpreted the expiration of their employment contract as dismissal.

- *Limitation of our cross-sectional studies (chapter 2 and 3)*

  Obviously, the most important limitation of our two cross-sectional studies is the inability to draw causal conclusions from its findings. However, this drawback was (partly) compensated for by conducting three longitudinal studies (Study 3-5), that tested both directions in the relationship between temporary employment and workers' health, well-being and work-related attitudes.

- *Limitations of our longitudinal studies (chapter 4-6)*

  Although our longitudinal studies included multiple measurement points they were not free from limitations. The most important of these are the following:

  - *Two time points of measurement*

    All three longitudinal studies included two time points, covering a one-year or two-year time span. In combination with the large number of participants in each study this enabled us to extensively examine the relationship between workers' employment contract and their health, well-being and work-related attitudes. However, no long-term perspectives could be tested. For example, in chapter 4, the positive change in scores associated with a change in employer may only be temporary and due to a "honeymoon-hangover" effect (i.e., that after a job change scores initially improve but in time deteriorate [Boswell, Boudreau, & Tichy, 2005]). Moreover, in chapter 5 and 6, we were only able to examine (health-)selection mechanisms in short-term career trajectories (i.e., an upward or downward change in contract or employment status). However, many workers may undergo multiple career changes before acquiring high quality permanent employment or becoming long-term unemployed (e.g., from permanent employment into temporary employment into unemployment).

  - *No information on exact timing of changes*

    Our data did not contain any information on the exact timing of the changes in employment contract, employer or employment status. This means that we

were unable to control for differences in the duration of exposure to a new employment contract, employment status, or employer. However, as these differences are likely to have been randomly distributed across participants, this is unlikely to have biased our results.

- *No information on degree of volition of changes*

  In chapter 4 and 5 we did not have any information on the degree of workers' volition regarding their contract trajectories and employer changes. Therefore, it cannot be assumed that our findings regarding specific contract trajectory or employer change groups are representative for all its group members. For example, some former permanent workers may have opted for less demanding temporary employment, whereas others may have been dismissed and re-hired on a temporary basis. Similarly, many workers change employer to acquire better fitting employment (chapter 4), whereas few others change employer to avoid unemployment.

- *Chance capitalization*

  A final limitation regards our studies in chapter 5 and 6, in which we conducted many separate (univariate) analyses for a variety of variables. This increases the risk of finding random significant results (i.e., chance capitalization). As we were unable to correct for this (due to relatively small group sizes) by applying a Bonferroni correction, the findings of these studies should be interpreted with caution.

7.6 EMPLOYMENT CONTRACTS: A RESEARCH AGENDA

Historically, employment contract research started out with the question: Is temporary employment bad for workers' health, well-being and work-related attitudes? This question can be answered as Yes, it may be bad, but not for all temporary workers. This answer highlights the heterogeneity within the temporary workforce and raises several additional questions that need to be further addressed in future research.

7.6.1 Unfold the heterogeneity of temporary employment contracts

The first question that future research should attend to is: *What kind of temporary employment is a problem for workers' health, well-being and work-related attitudes?* This refers to a lack of a clear and systematically used classification of temporary employment in many of today's research. Most studies, including ours, apply a formal contract categorisation by distinguishing between one or more forms of temporary employment, besides permanent employment. In these studies temporary employment generally involved

fixed-term employment (e.g., Brown & Sessions, 2003; De Cuyper & De Witte, 2006; Gash, Mertens, & Gordo, 2007; M. Virtanen, Kivimäki, Elovainio, & Vahtera, 2002), although several studies also incorporated temporary agency work, on-call work or non-contract work (among others, chapter 2-6; De Cuyper, Notelaers, & De Witte, 2009; Kompier et al., 2009; Sousa et al., 2010). However, having a formal contract tells little about the nature of the job. For instance, the characteristics of the job of a fixed-term worker in a 1-year traineeship may differ strongly from those of the job of a fixed-term worker who is hired to replace a permanent worker on leave for 3 months. These and other temporary workers in the same formal employment contract (such as agency workers or on-call workers) may differ greatly in terms of their job insecurity and quality of working life (chapter 3; Goudswaard & Andries, 2002). Therefore, we argue that future research should extend the formal contract categorisation of temporary work in two ways:

- *Employment prospects*

  First, we propose to systematically measure employment prospects in order to more accurately assess diversity in job security (e.g., contract duration, time left before the contract ends, prospects on continued employment and prospects on permanent employment: see Clinton, Bernhard-Oettel, Rigotti, & de Jong, 2011; Kalleberg, 2003; Kompier et al., 2009; Polivka, 1996; P. Virtanen et al., 2005).

- *Nature of employment*

  Secondly, we recommend to more precisely assess the nature of the job in order to enhance our understanding of differences in job quality (for instance, replacement work, probationary employment, interim or project-based work, traineeship, vacation work and seasonal work [Aronsson, 1999; Aronsson et al., 2002; Hartman et al., 2009]).

By measuring both employment prospects and the nature of the job (i.e., the heterogeneity in employment contracts), these factors can be controlled for in small-sample studies (when applying a permanent-temporary dichotomy due to a small n), whereas they may enhance our understanding of the core-periphery structure in large scale studies (such as Aronsson et al., 2002).

7.6.2 Unfold the heterogeneity within temporary employment contracts

The second question that future research should address is: *Who is exactly at risk for health, well-being and work-related attitudinal problems within a specific employment contract?* Although the answer would seem trivial (namely, "those with high job insecurity and low quality work"), it is not easy to identify these high-risk workers. This may be partly explained by differences in temporaries' personal characteristics (i.e. [socio-]demographic

composition and [initial] health, well-being and work-related attitudes [Study 1-5; Fuller & Vosko, 2008; Gash et al., 2007; Gebel, 2010; M. Virtanen et al., 2002; P. Virtanen et al., 2008; P. Virtanen et al., 2005]). Therefore, future studies should attend more systematically to the role of such personal characteristics in relation to workers' job insecurity and job quality (Fuller & Vosko, 2008; Gebel, 2010), and in relation to (changes in) workers' health, well-being and work-related attitudes (Gash et al., 2007; Menéndez, Benach, Muntaner, Amable, & O'Campo, 2007). In addition, one should search for other plausible determinants of temporary workers' health, well-being and work-related attitudes as well, because differences in these respects cannot be (fully) attributed to personal characteristics or to work-related characteristics (chapter 3; De Cuyper & De Witte, 2006; Waenerlund, Virtanen, & Hammarström, 2011). In order to do so, it is important to know what drives temporary (and permanent) workers. Two promising avenues to answer this issue are the following.

First, it is important to determine what kind of motives, preferences and expectations are most important to a worker: those regarding their employment contract, their occupation, their workplace or their employer? For instance, many temporary employees pursue personal development (i.e. to increase their knowledge and skills and gain experience [Ciett, 2009; Tan & Tan, 2002]), and are therefore likely to value their occupation (e.g. challenging work) and employer (e.g. career opportunities) above their contract (e.g. temporary employment) and workplace (e.g. adverse working conditions). However, many others may value (financially) secure employment above everything, especially during an economic recession. Therefore, this is an important factor that may (at least partly) explain the inconsistent findings in employment contract research.

Secondly, we recommend examining the degree to which workers feel free to hold on to a certain temporary or permanent job at a certain employer. For instance, both temporary and permanent employment may become a trap if someone prefers a change in contract, job type or employer, but lacks the opportunity to change (e.g. due to lack of alternative employment or the risk of losing job security in the case of permanent employment [Ellingson, Gruys, & Sackett, 1998]; Ortiz, 2010). It can therefore be expected that motivations characterised by "lack of opportunities" have negative consequences for workers' health, well-being and attitudes, whereas the opposite should apply to motivations based on "expected opportunities" (for instance to acquire a permanent job, to gain experience, to gain additional income, or to become more flexible: see e.g., Bernhard-Oettel, Isaksson, & Bellaagh, 2008; Ciett, 2009; De Jong, De Cuyper, De Witte, Silla, & Bernhard-Oettel, 2009; Tan & Tan, 2002). Moreover, one should also take into account that expected opportunities today do not guarantee one's future employment status. Both labour market changes (such as an economic downturn) and work-related changes (e.g. changing employment terms or job content), as well as personal changes (for example, due to health problems or changing financial needs) may well transform expectancies into a lack of opportunities. Therefore, future research should examine the impact of (temporary) workers' motivations on their health, well-being and work-related attitudes

more extensively, especially in relation to their career paths. We hypothesise that the more "voluntary" motives (i.e. "expected opportunities") play a role and the better these match with someone's career path, the better the consequences will be for the worker's health, well-being and work-related attitudes.

To summarize, the extensive heterogeneity of the temporary workforce requires further investigation of meaningful subgroups (e.g. in terms of personal and work-related characteristics and workers' motivations, preferences and expectations regarding their employment contract, occupation, workplace and employer), to fully understand the relationships between workers' employment contracts and their health, well-being and work-related attitudes.

7.6.3 Capture change and determine causality

Longitudinal designs are needed to examine the impact of temporary employment on employees' health, well-being and work-related attitudes. As temporary employment is of limited duration, it is per definition characterised by change over time. This means that in most cross-sectional studies it is unknown how long temporary workers are 'exposed' to their job, which may explain part of the inconsistency in the findings reported in the employment contract literature. Although many interrelated 'exposure-to-temporary-work' confounders may be measured and accounted for (e.g., age, weekly working hours, organisational and occupational tenure, contract duration and time until end of contract), underlying mechanisms will remain invisible. For instance, in a sample of temporary workers, drawn from a labour market where most temporary workers change within a few years (because they become permanently employed or unemployed), hardly any impact of temporary employment on workers' health, well-being and attitudes can be expected. A longitudinal design can overcome such problems by distinguishing workers who are continuously exposed to temporary employment, from those who become permanently employed and those entering unemployment (Kompier et al., 2009; M. Virtanen et al., 2003; P. Virtanen, Janlert, & Hammarström, 2011; P. Virtanen et al., 2005).

A second, more important advantage of longitudinal designs is the possibility to investigate causal hypotheses. This means that not only many of the assumed relationships can be causally established, but also that possible reverse or reciprocal relationships can be studied. For example, such a design would allow a researcher to examine whether (i) highly insecure temporary employment leads to ill health, and/or (ii) whether ill health holds temporary workers back from obtaining permanent, and thus secure employment. A similar reasoning may apply to the relationship between temporary workers' quality of working life and their health and work-related attitudes, or between the type of employment contract and workers' motives for an employment contract. Therefore, many of these and other issues in the field of employment contract research need to be extended and replicated using large and representative, longitudinal samples. In particular data including three or more time points may enhance our understanding of the underlying mechanisms (such as

mediating variables) which may explain the (inconsistent findings in) contract differences in health, well-being and work-related attitudes.

7.7 CONCLUSIONS

This dissertation focused on the question whether the potentially adverse relationship between temporary employment and employee health, well-being and work-related attitudes may be conceptualized as a two-street. Therefore, we first answered the question: *How do various types of temporary work differ from permanent work in terms of job insecurity and job quality, and related to this, the health, well-being and work-related attitudes of the workers involved?* In general we found that temporary employment was characterized by higher job insecurity and a lower job quality, and therefore related to a lower health and well-being and worse work-related attitudes, as compared to permanent employment. This was especially true for agency workers and to a lesser extent for fixed-term workers without permanent employment prospects. However, far from all temporary jobs were "bad", as many temporary jobs had rather favourable work characteristics (e.g., high task demands in combination with sufficient autonomy). This is not necessarily surprising as most workers start out in a temporary position. However, for many of these workers (especially fixed-term workers with prospect on permanent employment) this is just one step in their career towards (high quality) permanent employment.

To further examine this issue, we posed our second research question: *For whom does temporary employment serve as a bridge into high quality permanent employment and who will become trapped in low quality temporary employment and may ultimately become unemployed?* All in all, our results suggest a "two-way street-relationship" between temporary employment and employee health, well-being and work-related attitudes. Workers who are attractive for an employer (e.g., healthier workers, who are well able to perform their job) are in a *virtuous* circle towards high quality and secure (permanent) employment, whereas less attractive workers (such as less healthy workers with a poor work performance) are in a *vicious* circle leading them into low quality, insecure employment and ultimately into unemployment. Whether temporary workers are able to acquire secure (permanent) and high quality employment seems to largely depend on their health status, well-being and job-related attitudes, although this relationship may be moderated by many (other) work-related factors (e.g., job insecurity and job quality), individual factors (e.g., job importance and employability) and contextual factors (e.g., the economic situation). Currently, especially the economic downturn is a very powerful factor, as it restricts employers in providing permanent employment contracts and increases their selectiveness in hiring and firing decisions. Therefore, not surprisingly today's major challenge is to improve the current economic situation, as unfortunately the economic downturn overshadows the support for and effectiveness of measures targeting individual factors (e.g., risk groups in terms of employability) and work factors (such as job insecurity and job quality).

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SUMMARY

Introduction

Since the mid-1980s there has been a remarkable growth in the share of temporary workers across the European Union. To date, this employer-initiated trend to become more flexible and cost-effective has resulted in over 25 million European temporary workers. As temporary employment is often not desired by the employee, given the fact that most temporary workers would prefer a permanent appointment, concerns have been raised regarding its impact on workers' health, well-being and work-related attitudes. In this thesis we focus on two of these concerns: job insecurity and a lower quality of work. Both risk factors stem from the idea that temporary employment is often used as a "peripheral" workforce to surround, and thereby protect organizations "core" workforce of permanent workers. As these latter workers can be expected to own job-specific skills, they are harder to replace, and may therefore be offered higher working standards than the more easily replaceable temporary workers. Consequently, temporary jobs may be less secure and of lower quality than permanent jobs.

In chapter 1 we discuss the definition and occurrence of temporary employment and provide an overview of the literature on temporary employment in terms of its risks factors and consequences for workers' health, well-being and work-related attitudes. From this overview it is concluded that in spite of evidence linking temporary employment to high job insecurity and a low quality of work, no strong inferences regarding the 'direct' negative association between temporary employment and workers' health, well-being and work-related attitudes can be drawn.

This conclusion is based on many inconsistent findings which can be attributed to several important shortcomings in previous research. First, temporary employment is often studied as a single category of workers, which ignores the fact that there are many different forms of temporary employment (e.g., fixed-term, temporary agency and on-call employment) which differ greatly from each other (e.g., in terms of employment stability, quality of work and demographic composition). Secondly, many studies rely on convenience samples (i.e., very specific samples such as temporary agency workers in a hospital setting), and this limits the generalisation and comparability of results. Finally, there is a lack of longitudinal studies, resulting in haziness regarding the direction of the relationship between temporary employment and workers' health, well-being and work-related attitudes. For example, due to higher job insecurity and lower job quality temporary employment may lead to ill-health, but ill-health may also lead to temporary employment as employers can be expected to hire the healthiest workers on a permanent basis.

The aim of the present thesis is to investigate whether the potentially adverse relationship between temporary employment and workers' health, well-being and work-related attitudes

is bi-directional, or in other words "a two-way street". To this aim, we examine whether temporary contracts "lead to" to ill health and well-being and worse work-related attitudes, but also investigate the reverse relationship: whether poor health and well-being and worse work-related attitudes "lead to" more temporary employment. Therefore, we present two cross-sectional studies (Chapter 2 and 3) and three longitudinal studies (Chapter 4-6) that respectively aim to answer the following two research questions:

1. How do various types of temporary employment differ from permanent employment in terms of job insecurity and job quality, and related to this, the health, well-being and work-related attitudes of the workers involved? (Chapter 2 and 3)

2. For whom does temporary employment serve as a bridge into higher quality permanent employment and who will become trapped in low quality temporary employment and may ultimately become unemployed? (Chapter 4-6)

Findings from our studies

Research question 1

Chapter 2 (Study 1): Labour contracts in the European Union, 2000–2005: Differences among demographic groups and implications for the quality of working life and work satisfaction

In chapter 2 we investigated on a European-level whether temporary employment (fixed-term and temporary agency employment) differed from permanent employment in terms of workers' demographic profile, quality of work and work satisfaction. Large and representative cross-sectional data were obtained from the 2000/01 and 2005 European Working Conditions Surveys (total *N* = 58,368). First, we found that the percentage of temporary workers, who were often younger and female workers, increased between 2000 and 2005. Secondly, we found general support for the core-periphery idea, as permanent workers reported the highest overall quality of work (most notably in terms of physical load, autonomy, work complexity and income) and highest work satisfaction and temporary agency workers the lowest. Although most of these differences were small, they proved to be robust as they were largely independent of time and country.

Chapter 3 (Study 2): Can labour contract differences in health and work related attitudes be explained by quality of working life and job insecurity?

Temporary employment may adversely impact workers' health, well-being and work-related attitudes through a higher job insecurity and lower job quality. In this third chapter we tested this hypothesis in a large and representative sample of Dutch employees (Netherlands Working Conditions Survey 2008; *N* = 21,639). In this study we distinguished between four

forms of temporary employment: (1) fixed-term employment with prospects on permanent employment, (2) fixed-term employment without these prospects, (3) temporary agency work and (4) on-call work. First and corroborating the core-periphery idea, low quality employment in terms of high demands and low control (high strain employment) and low demands and low control (passive employment) was relatively common among agency and on-call workers and, to a lesser extent, among fixed-term workers without permanent employment prospects. Secondly, the same was found for job insecurity and to lesser extent for workers' health status and work satisfaction, although on-call workers appeared to be relatively job secure and healthy. This latter finding is probably due to a lower job importance among on-call workers, who may often be students with a small part-time job aside of their study. Finally and in line with our expectations, we found that contract differences in employee work-related attitudes could be rather well explained by workers' job insecurity and job quality. However, this was not the case for contract differences regarding workers' health status, which suggests that a lower health status may rather lead to temporary employment, than the other way around.

Research question 2

Chapter 4 (Study 3): Impact of employment contract changes on workers' quality of working life, job insecurity, health and work-related attitudes

Each year, many workers change in employment contract and employer. Following the core-periphery idea "upward" contract changes, from temporary to more permanent employment, should be for the better, whereas "downward" contract changes, towards more temporary employment, should be for the worse. However, this latter assumption is challenged by turnover theories, from which it can be expected that high employability in terms of having job alternatives (and thus the ability to change employer) protects workers against low quality (temporary) employment. In chapter 4 we examined this hypothesis in a large and generally representative 1-year longitudinal sample of Dutch employees, by using the 2007 and 2008 wave of the Netherlands Working Conditions Cohort Study (N = 9,688). In line with turnover theories, we found that an employer change was generally for the better (e.g., in terms of job quality aspects, work satisfaction and turnover intention), irrespective if workers received a more temporary or permanent employment contract from their new employer. However, in line with the core-periphery idea we found that workers who received more temporary employment from their initial employer reported a negative change in scores, for example, a decrease in supervisory support and work satisfaction and an increase in job insecurity and turnover intention.

Chapter 5 (Study 4): Employment contracts and health selection: unhealthy employees out and healthy employees in?

Although temporary employment may adversely impact workers' health and well-being, the opposite hypothesis – that is, that health and well-being predict future employment status – may equally well apply. This hypothesis can be based on the healthy worker survivor effect and healthy hire effect, which respectively hold that less healthy workers tend to prematurely leave employment and are less likely to be hired for employment. Therefore, it can be expected that healthier workers will receive more stable employment, whereas less healthy workers end up in precarious temporary employment or unemployment. This may be especially true during an economic downturn in which employers will become more selective in their employment decisions. Therefore, in our fifth chapter we tested these health selection mechanisms by using two data waves from a large 2-year longitudinal study among Dutch workers (Netherlands Working Conditions Study; *N* = 7,112), which were collected during the economic recession (2008-2009). First, we found that less healthy permanent workers were at risk for future unemployment, whereas permanent workers with lower work ability were also at risk for future precarious temporary employment. Moreover, lower work-related well-being (lower work satisfaction/or less work dedication) was predictive for downward changes into both (precarious) temporary employment as well as into unemployment. Secondly, we found some evidence that temporary workers with higher work dedication and better physical health were more likely to receive permanent employment. To conclude, workers with a lower health, well-being and work ability are likely to be drawn into precarious temporary employment or unemployment, especially during the current economic recession.

Chapter 6 (Study 5): Who gets fired, who gets re-hired: The role of workers' employment contract, age, health and performance

In the past few years of economic hardship, many European workers have been dismissed, either becoming unemployed or finding re-employment. In chapter 6 we extended the results of chapter 5 by examining whether dismissal and its follow-up for the employee (re-employment versus unemployment) could be predicted from workers' employment contract, age, health status and performance indicators at baseline. As in many European countries employment protection is lower for market entrants, who are often temporary and younger workers, these workers may be at risk for dismissal. Based on health selection mechanisms the same can be expected for less healthy and poorly performing workers, who are also, together with older workers, unlikely to be re-hired for employment and thus at risk for long-term unemployment. We tested these hypotheses among a large, 2-year longitudinal sample of Dutch employees collected during the current economic recession (2010-2012), by using data from the Netherlands Working Conditions Survey 2010 and a follow-up wave

in 2012 (*N* = 2,644). First, we found that temporary workers and workers with a low health status and indicators of poor work performance (e.g., lower work ability and lower in-role performance) were more likely to be dismissed by their employer. Secondly, older workers and workers with decreased work performance due to impaired health were less likely to become re-employed after their dismissal. Interestingly, the opposite was true for former temporary workers without permanent employment prospects. They had much better re-employment chances after dismissal than previously dismissed permanent workers. In conclusion, temporary, less healthy and poorly performing workers are at risk for dismissal, whereas older and less healthy workers are (also) at risk for long-term unemployment after being dismissed.

Discussion

In chapter 7 we discuss the implications of our research findings and propose a research agenda for future studies in this field. We also address the assets and limitations of our studies.

Theoretical implications

First, our studies emphasize the large heterogeneity in temporary employment as we found general support for the core-periphery idea: from the core of permanent work to the periphery of agency work job insecurity increased and workers' job quality and health status decreased. However, many temporary jobs do not involve high job insecurity or low quality employment. For example, around half of all temporary workers in the Netherlands did not have jobs which are potentially harmful for their health and well-being or their employability. Therefore, when studying temporary employment it is important to avoid a crude permanent-temporary contract dichotomy and to consider the extensive heterogeneity within the temporary workforce.

Secondly, temporary employment is not by definition a static phenomenon, but characterized by change over time. It may lead workers into a permanent job, but may also lead workers into spells of temporary jobs and unemployment. In this respect, our results suggest a bi-directional relationship ("a two-way street") between temporary employment and workers' health, well-being and work-related attitudes: healthier and high-work ability employees are more likely to receive high quality permanent employment, whereas less healthy workers who are less able to perform their job may become trapped in low quality, insecure employment and may ultimately become unemployed. The ability of workers' to achieve higher quality permanent employment may largely depend on their health status, well-being and work-related attitudes, although many work-related factors (e.g., job insecurity and job quality), individual factors (such as job importance and employability) and contextual factors (most notably the economic situation) may moderate this relationship.

Further longitudinal research may shed more light upon these relationships between workers' employment contract and their health, well-being and work-related attitudes.

Practical implications

This thesis has at least three practical implications regarding temporary workers' job quality, job insecurity and their employability. First, due to higher job insecurity and adverse job characteristics (e.g., higher work pressure and a lack of autonomy and of learning and development opportunities) many temporary workers are at risk for health and well-being problems and may face poor future career prospects. Therefore, we advise European governments to monitor more closely whether organizations comply to legislation on the equal treatment of permanent and temporary workers in terms of their working and employment conditions (e.g. in terms of rest periods, night work, annual leave and income).

Secondly, measures aimed at reducing job insecurity are needed. For example, governments could introduce temporary employment with prospects on permanent employment. This relatively common form of temporary employment in the Netherlands formally ensures the acquisition of permanent employment after performing well during the fixed-term period of the temporary contract. In addition, employers can reduce job insecurity feelings among their temporary personnel by providing them with work security guarantees.

Finally, employability measures are needed to enhance workers' career prospects. As many temporary workers find themselves in jobs that restrict their learning and development opportunities, employers should be encouraged to invest in the employability of their temporary workers. In order to do so, governments could promote "best practices" in this area. In a similar vein, governments could promote the application of health protection and promotion programs on the work floor that have been proven to positively affect workers' health and well-being. Aside from these general measures, at least three groups of workers warrant special attention when it comes to their employability: older workers, young workers and previously dismissed workers. For example, employers could benefit from monitoring the competences of their (older) workers, to stimulate the further development of their skills and knowledge. Moreover, governments could facilitate the school to work transition by promoting the combination of school and work. However, the current economic downturn may not be the best period to promote and apply such measures, as currently, all workers face difficulties in remaining or (re-)gaining employment. Therefore, not surprisingly today's major challenge is to improve the current economic situation.

Assets

The presented studies in this thesis have four important strengths. First, they were all based on (very) large samples, which were often representative on a European-level or national-

level and included many different types of workers. This enhanced the generalizability and representativeness of our results.

Secondly, because of our large samples we were able to gain more insight into the heterogeneity of temporary employment as we could distinguish between all different formal forms of temporary employment (such as fixed-term and temporary agency employment).

Thirdly, by using a systematic research approach of conducting two cross-sectional studies and three longitudinal studies, we enhanced our insight into the relationship between temporary employment and workers' health, well-being and work-related attitudes. Most importantly, our results suggest that this relationship is bi-directional ("a two-way street"), and is likely to be moderated by many work-related factors (e.g., job quality and job insecurity), individual factors (e.g., job importance and workers' ability to improve their work situation) and contextual factors (most notably the economic situation).

Finally, we incorporated a large variety of job quality measures and indicators of workers' health, well-being and work-related attitudes, which were measured in a valid and reliable way. This enabled us to obtain a more fine-grained picture of the relationship between temporary employment in these respects.

Limitations

The most important limitation of our studies is probably the fact that most studies were solely conducted among samples of Dutch workers. Therefore, one should be cautious in automatically extending our results to other countries, since there are large country differences in the area of temporary employment.

Another important limitation is that the heterogeneity of temporary employment seems to exist beyond the formal employment contract. For example, we found a large diversity in job quality among workers sharing the same formal employment contract. Therefore, our division based on workers employment contract may not always have been fine-grained enough to detect specific risk groups for health and well-being problems.

Thirdly, there are some measurement-related issues, most importantly, the fact that our measurement of temporary agency work and on-call work may include some workers who were employed on a permanent basis.

Finally, our cross-sectional studies are limited in that there cannot be drawn any causal inferences from its findings. Although our longitudinal studies (partly) accounted for this issue, these also had some limitations. Most importantly, they were all 1-year or 2-year studies with "only" two measurement times, because of which no long-term perspectives could be tested (e.g., multiple changes in workers' employment contract, employment status or employer). Moreover, in some studies the volition of changes (e.g., whether a permanent worker voluntary choose for a temporary job or was "forced" into a temporary job) was unknown, which may have somewhat biased our results.

Recommendations for future research

We identify three important challenges for future research. First, future studies should more precisely identify what kind of temporary employment causes problems for workers' health, well-being and work-related attitudes. Therefore, we propose to extend the formal contract categorisation by including employment prospects (e.g., contract duration and time left before the contract ends) and the nature of employment (for instance, probationary employment, project-based work or seasonal employment). In doing so, we may gain a more precise insight into the core-periphery structure of employment contracts and its relationship with workers' health, well-being and work-related attitudes.

Secondly, it is important to further determine which persons are exactly at risk for health, well-being and work related attitudinal problems within a specific employment contract. Besides the role of personal characteristics (e.g., demographic characteristics such as gender and age or health and well-being) and work-related characteristics (e.g., job insecurity and job quality), it may be important to investigate the motives, preferences and expectations of both temporary and permanent workers regarding their employment contract, occupation, workplace and employer. For example, some (temporary) workers may be mainly motivated to obtain secure employment, whereas others may be mainly motivated to obtain challenging employment. Moreover, workers' expectations may or may not fit their actual career paths, which may influence the impact of permanent and temporary employment on workers' health, well-being and work-related attitudes. All in all, such individual differences between workers may explain some of the inconsistent findings in the employment contract research to date.

Finally, more longitudinal studies are needed to reveal the underlying mechanisms in the relationship between workers' employment contract and their health, well-being and work-related attitudes. For example, many temporary workers change in contract or employment status over time, which can only be studied using multiple time-point data, preferably over a longer time period. Moreover, a more important asset of a longitudinal design is its possibility to further causally establish assumed relationships, but also to test possible reverse or reciprocal relationships.

SAMENVATTING

Inleiding

Sinds het midden van de jaren 80 is het aantal tijdelijke werknemers in de Europese Unie opmerkelijk hard gegroeid. Deze vanuit de werkgever ontstane trend om flexibeler en meer kosten-effectief te worden heeft inmiddels geresulteerd in meer dan 25 miljoen tijdelijke werknemers in Europa. Uit onderzoek blijkt echter dat het merendeel van deze tijdelijke werknemers liever een vast contract heeft, wat betekent dat tijdelijk werk vaak ongewenst is. Dit heeft geleid tot de nodige zorg omtrent de impact van tijdelijk werk op de gezondheid, het welzijn en de werk-gerelateerde attitudes van werknemers. In dit proefschrift richten we ons op twee van deze zorgen: baanonzekerheid en kwaliteit van de arbeid van tijdelijk werk. Deze beide risicofactoren komen voort uit de gedachte dat veel organisaties tijdelijk werk gebruiken als een flexibele schil (beschermlaag) om hun "kern-personeel" van vaste werknemers. Omdat dit "kern-personeel" vaak over specifieke werkgerelateerde kennis en vaardigheden beschikt, zijn deze werknemers moeilijk te vervangen. Daarom krijgen ze vaak kwalitatief beter werk aangeboden dan de gemakkelijker vervangbare, tijdelijke werknemers. In andere woorden, een tijdelijke baan zou wel eens minder zeker kunnen zijn en een lagere kwaliteit van arbeid kunnen hebben dan een vaste baan.

In hoofdstuk 1 bespreken we de definitie en het voorkomen van tijdelijk werk. Daarnaast geven we een literatuuroverzicht van de mogelijke risicofactoren van tijdelijk werk en de consequenties van tijdelijk werk voor de gezondheid, het welzijn en de werkgerelateerde attitudes van werknemers. Dit overzicht leert ons dat we niet eenduidig kunnen concluderen dat tijdelijk werk negatief gerelateerd is aan de gezondheid, het welzijn en de werkgerelateerde attitudes van de werknemer, ondanks het nodige bewijs dat tijdelijk werk linkt aan een hoge baanonzekerheid en een lage kwaliteit van arbeid.

Deze conclusie is gebaseerd op een veelheid aan inconsistente resultaten uit eerder onderzoek, die voor een groot deel te wijten zijn aan een aantal belangrijke tekortkomingen in deze studies. Ten eerste is tijdelijk werk vaak onderzocht als een homogene groep werknemers. Dit doet geen recht aan de verschillende verschijningsvormen van tijdelijk werk (bijv. tijdelijke werknemers met een contract voor bepaalde tijd, een uitzendcontract of oproepcontract) die in veel opzichten van elkaar verschillen (bijv. in termen van baanstabiliteit, kwaliteit van arbeid en demografische samenstelling). Ten tweede maken veel studies gebruik van zogenaamde "toevallige steekproeven" (d.w.z., een zeer specifieke groep tijdelijke werknemers, zoals uitzendkrachten werkzaam in een ziekenhuis), wat de generaliseerbaarheid en vergelijkbaarheid van de resultaten beperkt. Tenslotte is er een gebrek aan longitudinale studies (studies met meerdere meetmomenten). Dit betekent dat de richting van de relatie tussen tijdelijk werk en de gezondheid, het welzijn en de werkgerelateerde attitudes van de werknemer onduidelijk blijft. Zo kan tijdelijk werk leiden tot een slechte gezondheid, vanwege een hogere baanonzekerheid en een lagere

kwaliteit van arbeid, maar een slechte gezondheid kan ook leiden tot tijdelijk werk; omdat werkgevers geneigd kunnen zijn alleen hun meest gezonde (en productieve) werknemers een vast contract aan te bieden.

Het doel van dit proefschrift is te onderzoeken of de mogelijk negatieve relatie tussen tijdelijk werk en de gezondheid, het welzijn en de werkgerelateerde houdingen van werknemers bi-directioneel is, of in andere woorden een "two-way street" is. Daarom onderzoeken we ten eerste of het hebben van een tijdelijk contract "leidt tot" een slechtere gezondheid, een lager welzijn en slechtere werkgerelateerde attitudes. Daarnaast onderzoeken we de tegengestelde relatie, namelijk of een slechtere gezondheid, een lager welzijn en slechtere werkgerelateerde attitudes "leiden tot" tijdelijk werk. Dit doen we door middel van twee cross-sectionele studies (Hoofdstuk 2 en 3) en drie longitudinale studies (Hoofdstuk 4-6). Hiermee beogen we respectievelijk de volgende twee onderzoeksvragen te beantwoorden:

1. In welke mate verschillen diverse vormen van tijdelijk werk van vast werk in termen van baanonzekerheid en kwaliteit van arbeid, en gerelateerd hieraan, de gezondheid, het welzijn en de werkgerelateerde attitudes van de betrokken werknemers? (Hoofdstuk 2 en 3)

2. Voor wie fungeert tijdelijk werk als een brug naar kwalitatief goed en zeker werk en wie raakt gevangen in kwalitatief slecht tijdelijk werk en eindigt uiteindelijk werkloos? (Hoofdstuk 4, 5 en 6)

Uitkomsten van onze studies

Onderzoeksvraag 1

Hoofdstuk 2 (Studie 1): Labour contracts in the European Union, 2000–2005: Differences among demographic groups and implications for the quality of working life and work satisfaction

In hoofdstuk 2 hebben we op Europese schaal onderzocht of tijdelijk werk (voor bepaalde tijd en uitzendwerk) verschilt van vast werk in termen van het demografische profiel van de werknemers en hun kwaliteit van arbeid en werktevredenheid. Hiervoor hebben we de 2000/01 en 2005 meting van de European Working Conditions Survey gebruikt: een grote cross-sectionele steekproef, representatief voor de Europese beroepsbevolking (totale N = 58,368). Ten eerste bleek het percentage tijdelijke werknemers toegenomen te zijn tussen 2000 en 2005, waarbij het relatief vaak ging om vrouwen en jongere werknemers. Ten tweede vonden we in algemene zin bewijs voor de kern-periferie gedachte. Dit betekent dat vaste werknemers de hoogste kwaliteit van arbeid rapporteerden (vooral met betrekking tot hun fysieke belasting, autonomie, complexiteit van het werk en inkomen) en het meest

tevreden waren met hun werk en dat het tegenovergestelde gold voor uitzendkrachten. Ondanks het feit dat deze verschillen klein waren, bleken ze robuust te zijn aangezien ze in grote mate tijds- en landonafhankelijk waren.

Hoofdstuk 3 (Studie 2): Can labour contract differences in health and work related attitudes be explained by quality of working life and job insecurity?

Tijdelijk werk zou de gezondheid, het welzijn en de werkgerelateerde houdingen van een werknemer negatief beïnvloeden door een hogere baanonzekerheid en een lagere kwaliteit van arbeid. In dit derde hoofdstuk hebben we deze hypothese getest in een grote representatieve steekproef van de Nederlandse beroepsbevolking (Nationale Enquête Arbeidsomstandigheden 2008; *N* = 21,639). In deze studie hebben we onderscheid gemaakt tussen vier vormen van tijdelijk werk: (1) tijdelijk werk voor bepaalde tijd met uitzicht op een vast contract, (2) tijdelijk werk voor bepaalde tijd zonder uitzicht op een vast contract, (3) uitzendwerk en (4) oproepwerk. Ten eerste bleek in lijn met de kern-periferie gedachte dat een lage kwaliteit van arbeid, in termen van een hoge werkdruk in combinatie met weinig regelmogelijkheden (stressvol werk) en een lage werkdruk in combinatie met weinig regelmogelijkheden (passief werk), relatief vaak voorkwam onder uitzend- en oproepkrachten, en in mindere mate ook onder tijdelijke werknemers met een contract voor bepaalde tijd zonder uitzicht op vast werk. Ten tweede vonden we vergelijkbare contractverschillen met betrekking tot de baanonzekerheid en in mindere mate ook met betrekking tot de gezondheid en werktevredenheid van deze werknemers, hoewel oproepkrachten relatief baanzeker en gezond bleken te zijn. Dit laatste komt waarschijnlijk door een relatief laag baanbelang onder oproepkrachten omdat veel van hen student of scholier zijn met een kleine parttime baan naast hun studie. Ten slotte bleken zoals verwacht de contractverschillen in werkgerelateerde attitudes redelijk succesvol te kunnen worden verklaard door de baanonzekerheid en kwaliteit van arbeid van de werknemers. Dit bleek echter niet te gelden voor de gevonden contractverschillen in gezondheid, wat suggereert dat een minder goede gezondheid eerder leidt tot tijdelijk werk, dan andersom.

Onderzoeksvraag 2

Hoofdstuk 4 (Studie 3): Impact of employment contract changes on workers' quality of working life, job insecurity, health and work-related attitudes

Ieder jaar wisselen veel werknemers van arbeidscontract en werkgever. Redenerend vanuit de kern-periferie gedachte zou een "opwaartse" contractverandering naar een vastere baan positief moeten zijn. Een "neerwaartse" contractverandering daarentegen, richting meer tijdelijk werk, zou negatief moeten zijn. Deze veronderstellingen kunnen echter in twijfel worden getrokken wanneer men rekening houdt met het feit dat veel contractveranderingen gepaard gaan met een verandering van werkgever. Verloopintentie theorieën suggereren

namelijk dat een hoge mate van inzetbaarheid, in termen van baanalternatieven (en dus de mogelijkheid om van werkgever te wisselen) werknemers beschermt tegen kwalitatief slecht (tijdelijk) werk. In hoofdstuk 4 hebben we deze hypothese getoetst door gebruik te maken van de 2007 en 2008 meting van de Nationale Enquête Arbeidsomstandigheden cohortonderzoek (*N* = 9,688): een grote longitudinale en grotendeels representatieve steekproef van de Nederlandse beroepsbevolking. In overeenstemming met verloopintentie-theorieën had een verandering van werkgever, ongeacht of dit leidde tot een meer tijdelijk of vast contract, over het algemeen positieve gevolgen voor de werknemer (bijvoorbeeld met betrekking tot aspecten van de kwaliteit van arbeid, werktevredenheid en verloopintentie). Aan de andere kant, bleek de kern-periferie gedachte te gelden voor werknemers die een meer tijdelijk contract bij hun initiële werkgever hadden gekregen. Deze neerwaartse contractverandering had negatieve gevolgen voor de werknemer, zoals een afname in sociale steun van de leidinggevende en een afname in werktevredenheid en een toename in baanonzekerheid en verloopintentie.

Hoofdstuk 5 (Studie 4): Employment contracts and health selection: unhealthy employees out and healthy employees in?

Hoewel tijdelijk werk negatieve gevolgen zou kunnen hebben voor de gezondheid en het welzijn van werknemers, zou de tegenovergestelde hypothese evengoed kunnen gelden. Dat wil zeggen dat de gezondheid en het welzijn van een werknemer bepalend is voor zijn of haar toekomstige arbeidsmarktpositie. Deze hypothese is gebaseerd op het zogenaamde "healthy worker survivor effect" en "healthy hire effect". Beide effecten houden respectievelijk in dat minder gezonde werknemers geneigd zijn voortijdig uit te vallen uit hun werk en een minder grote kans hebben om aangenomen te worden door een werkgever. Dit impliceert dat alleen gezonde werknemers een stabiele (vaste) baan krijgen, terwijl minder gezonde werknemers in onzeker tijdelijk werk terecht komen of werkloos raken. Zeker tijdens een periode van economische neergang, waarin werkgevers selectiever worden in het aannemen en ontslaan van personeel kan verwacht worden dat deze gezondheid-selectiemechanismen extra sterk plaatsvinden. In dit vijfde hoofdstuk hebben we deze hypothese getest tijdens de economische recessie, door gebruik te maken van de 2008 en 2009 meting van de 2-jarige longitudinale Nationale Enquête Arbeidsomstandigheden cohortonderzoek (*N* = 7,112). Ten eerste bleken vaste werknemers met een minder goede gezondheid een groter risico te lopen om werkloos te raken, terwijl vaste werknemers met een lager werkvermogen daarnaast ook een groter risico liepen om in onzeker tijdelijk werk terecht te komen. Daarnaast bleek een verminderd werkgerelateerd welzijn (lagere werktevredenheid of verminderde toewijding aan het werk) voorspellend te zijn voor neerwaartse veranderingen resulterend in (onzeker) tijdelijk werk en in werkloosheid. Ten tweede vonden we enig bewijs dat tijdelijke werknemers met een grotere toewijding aan het werk en een betere fysieke gezondheid meer kans hadden op een vast contract.

Concluderend kunnen we stellen dat minder gezonde werknemers met een lager welzijn en lager werkvermogen een grotere kans hebben om in onzeker tijdelijk werk terecht te komen of werkloos te raken, vooral in een economische recessie.

Hoofdstuk 6 (Studie 5): Who gets fired, who gets re-hired: The role of workers' employment contract, age, health and performance

In de afgelopen jaren van economische recessie zijn veel Europese werknemers ontslagen en daardoor werkloos geraakt of in een nieuwe baan beland. In hoofdstuk 6 hebben we de bevindingen van hoofdstuk 5 uitgebreid door te onderzoeken of het ontslag van een werknemer na tijdstip 1 en het gevolg hiervan voor de werknemer (een nieuwe baan versus werkloosheid) voorspeld kon worden vanuit zijn/haar arbeidscontract, leeftijd, gezondheid en werkprestatie-indicatoren op tijdstip 1. Omdat in veel Europese landen nieuwkomers op de arbeidsmarkt, veelal tijdelijke en jongere werknemers, een minder goede arbeidsbescherming genieten lopen zij een relatief groot risico op ontslag. Op basis van gezondheid-selectiemechanismen kan hetzelfde verwacht worden voor minder gezonde en slecht presterende werknemers. Daarnaast is het voor deze werknemers, evenals voor oudere werknemers, onwaarschijnlijk dat ze opnieuw aangenomen worden door een werkgever, waardoor zij het risico lopen om langdurig werkloos te blijven. Deze hypothesen hebben we getest tijdens de huidige economische recessie, gebruikmakend van de Nationale Enquête Arbeidsomstandigheden 2010 en een follow-up studie in 2012 (N = 2,644). Het gaat hierbij om een grote 2-jarige longitudinale steekproef van Nederlandse werknemers. Hieruit bleek ten eerste dat tijdelijke werknemers, minder gezonde werknemers en werknemers met slechtere werkprestatie indicatoren (bijvoorbeeld een lager werkvermogen en slechtere in-rol-prestatie) een grotere kans hadden om ontslagen te worden door hun werkgever. Ten tweede bleken oudere werknemers en werknemers die vanwege gezondheidsredenen slechter presteerden een kleinere kans te hebben om na hun ontslag weer aangenomen te worden door een nieuwe werkgever. Interessant genoeg, bleek het tegenovergestelde het geval te zijn voor ontslagen tijdelijke werknemers met een contract voor bepaalde tijd (zonder uitzicht op een vast contract): zij hadden veel betere baankansen na hun ontslag dan ontslagen werknemers vanuit een vast contract. Al met al kunnen we concluderen dat tijdelijke, minder gezonde en minder goed presterende werknemers een relatief groot risico lopen op ontslag, terwijl oudere en minder gezonde werknemers daarnaast ook een relatief groot risico lopen om na hun ontslag langdurig werkloos te blijven.

Discussie

In hoofdstuk 7 bespreken we de implicaties van onze onderzoeksresultaten en presenteren we een onderzoeksagenda voor toekomstige studies. Daarnaast besteden we aandacht aan de belangrijkste sterke punten en beperkingen van onze studies.

Theoretische implicaties

Ten eerste benadrukken onze studies de grote heterogeniteit in tijdelijk werk. Zo vonden we over het algemeen ondersteuning voor de kern-periferie gedachte: van de kern van vast werk naar de periferie van uitzendwerk nam de baanonzekerheid toe en de kwaliteit van arbeid en de gezondheid af. Tegelijk bleken veel tijdelijke banen niet baanonzeker of van een lage kwaliteit te zijn. Zo bleek dat ongeveer de helft van alle tijdelijke werknemers in Nederland geen baan heeft met potentiële risico's voor hun gezondheid, welzijn of hun inzetbaarheid. Dit betekent dat het belangrijk is om in studies naar tijdelijk werk de dichtome "vast versus tijdelijk" contractsindeling te vermijden en rekening te houden met de brede heterogeniteit in tijdelijk werk.

Ten tweede is tijdelijk werk niet een statisch fenomeen, maar per definitie onderhevig aan verandering over tijd. Tijdelijk werk kan werknemers naar een vaste baan leiden, maar kan werknemers ook in een positie brengen van periodes van precair tijdelijk werk, afgewisseld met periodes van werkloosheid. In die zin suggereren onze resultaten een bi-directionele relatie ("a two-way street") tussen tijdelijk werk enerzijds en de gezondheid, het welzijn en de werkgerelateerde attitudes van de werknemer anderzijds: gezondere werknemers met een groter werkvermogen hebben een grotere kans op kwalitatief goed en zeker (vast) werk, terwijl werknemers die minder goed in staat zijn hun werk goed uit te voeren vast komen te zitten in kwalitatief "slecht" en onzeker werk en uiteindelijk werkloos raken. Hoewel de mogelijkheid van werknemers om kwalitatief goed en zeker werk te krijgen dus voor een groot deel afhangt van hun gezondheid, hun welzijn en hun werkgerelateerde attitudes, zullen veel werkgerelateerde factoren (bijvoorbeeld baanonzekerheid en baankwaliteit), individuele factoren (zoals het belang van een baan en inzetbaarheid) en contextuele factoren (vooral de economische situatie) deze relatie modereren. Verder longitudinaal onderzoek is nodig om meer inzicht te geven in deze relatie tussen het type arbeidscontract en de gezondheid, het welzijn en de werkgerelateerde attitudes van de werknemer.

Praktische implicaties

Dit proefschrift heeft minimaal drie praktische implicaties ten aanzien van de baankwaliteit, baanonzekerheid en inzetbaarheid van tijdelijke werknemers. Ten eerste: door een hogere baanonzekerheid en negatieve baankenmerken (bijvoorbeeld een hogere werkdruk en weinig regelmogelijkheden en/of weinig trainings- en ontwikkelingsmogelijkheden) lopen veel tijdelijke werknemers het risico op gezondheids- en welzijnproblemen en een mogelijke beperking van hun baanperspectieven. Daarom adviseren we Europese overheden om meer nauwkeurig te monitoren in hoeverre organisaties voldoen aan de wetgeving op het gebied van gelijke rechten van vaste en tijdelijke werknemers in termen van hun arbeidsomstandigheden en arbeidsvoorwaarden (bijvoorbeeld in termen van pauzes, nachtwerk, jaarlijkse verlofmogelijkheden en inkomsten).

Ten tweede zijn er maatregelen vereist gericht op het terugdringen van baanonzekerheid. Zo zouden meer overheden tijdelijk werk met uitzicht op vast werk kunnen introduceren. Deze relatief veelvoorkomende vorm van tijdelijk werk in Nederland verzekert de werknemer er formeel van dat hij of zij een vast contract krijgt na voldoende gefunctioneerd te hebben tijdens de duur van zijn/haar contract. Daarnaast kunnen werkgevers de perceptie van baanonzekerheid onder hun tijdelijk personeel reduceren door hun baanzekerheidgaranties te bieden.

Ten slotte zijn er maatregelen nodig op het gebied van de inzetbaarheid van tijdelijke werknemers om hun carrièremogelijkheden te verbeteren. Aangezien veel tijdelijke werknemers een baan hebben waarin hun opleiding- en ontwikkelingsmogelijkheden beperkt zijn zouden werkgevers aangemoedigd moeten worden om te investeren in de inzetbaarheid van hun tijdelijke personeel. Om dit te bereiken zouden overheden "best practices" op dit gebied kunnen promoten. Ook zouden overheden vitaliteitprogramma's op de werkvloer kunnen bevorderen, waarvan bewezen is dat ze positieve effecten hebben op de gezondheid en het welzijn van werknemers. Naast deze algemene maatregelen, verdienen tenminste drie groepen werknemers speciale aandacht met betrekking tot hun inzetbaarheid: oudere werknemers, jongere werknemers en voormalig ontslagen werknemers. Zo kunnen werkgevers profiteren van het monitoren van de competenties van hun (oudere) personeel om de ontwikkeling van hun kennis en vaardigheden verder te stimuleren. Daarnaast kunnen overheden de school-naar-werk transitie faciliteren door de combinatie van school en werk te promoten. Desalniettemin zijn de huidige zware economische tijden waarschijnlijk niet de beste periode om dit type maatregelen te stimuleren en te implementeren, aangezien momenteel alle werknemers moeilijkheden ondervinden om hun baan te behouden of om (opnieuw) werk te krijgen. Het moge duidelijk zijn dat het verbeteren van de economische situatie op dit moment de grootste uitdaging is en daarmee de hoogste prioriteit heeft.

Sterke punten

De gepresenteerde studies in dit proefschrift hebben vier belangrijke sterke punten. Ten eerste waren alle studies gebaseerd op (zeer) grote steekproeven, welke over het algemeen representatief waren op Europees niveau of nationaal niveau en veel verschillende soorten werknemers bevatten. Dit verhoogt de representativiteit en de generaliseerbaarheid van onze resultaten.

Ten tweede verschafte het gebruik van deze grote steekproeven ons de mogelijkheid om meer inzicht te krijgen in de heterogeniteit van tijdelijk werk. Hierdoor konden we onderscheid maken tussen alle formele vormen van tijdelijk werk (zoals een tijdelijk contract voor bepaalde tijd en uitzend werk).

Ten derde heeft onze systematische onderzoeksaanpak met twee cross-sectionele studies en drie longitudinale studies ons inzicht vergroot in de relatie tussen tijdelijk werk en de gezondheid, het welzijn en de werkgerelateerde attitudes van werknemers. Belangrijker nog, onze resultaten suggereren dat deze relatie bi-directioneel is ("a two-way street"), en

waarschijnlijk gemodereerd wordt door werkgerelateerde factoren (bijvoorbeeld de kwaliteit van arbeid en baanonzekerheid), individuele factoren (zoals het belang van een baan en de mogelijkheid van werknemers om hun werksituatie te verbeteren) en contextuele factoren (vooral de economische situatie).

Tenslotte hebben we veel verschillende aspecten van de kwaliteit van arbeid, gezondheid, welzijn en werkgerelateerde attitudes opgenomen en op een betrouwbare en valide manier gemeten. Dit gaf ons de mogelijkheid om een meer gedetailleerd beeld te krijgen van de relatie tussen tijdelijk werk en de bovengenoemde aspecten.

Beperkingen

De belangrijkste beperking van onze studies is waarschijnlijk het feit dat het merendeel van de studies alleen is uitgevoerd onder Nederlandse werknemers. Daarom dient men voorzichtig te zijn met het automatisch generaliseren van onze resultaten naar andere landen omdat er grote landsverschillen zijn wanneer het aankomt op tijdelijk werk.

Een andere beperking is dat de heterogeniteit van tijdelijk werk verder lijkt te gaan dan het formele arbeidscontract van iemand. Zo vonden we een grote variatie in de kwaliteit van arbeid onder tijdelijke werknemers met hetzelfde formele arbeidcontract. Dit betekent dat onze verdeling op basis van het type arbeidscontract waarschijnlijk niet altijd gedetailleerd genoeg is geweest om specifiekere risicogroepen voor gezondheid en welzijnsproblemen te identificeren.

Ten derde is een aantal tekortkomingen gerelateerd aan onze meetmethoden, met als belangrijkste dat onze maat van uitzendwerk en oproepwerk een aantal werknemers met een vast contract kan bevatten.

Tenslotte zijn onze cross-sectionele studies beperkt in de zin dat er geen causale conclusies uit getrokken kunnen worden. Hoewel onze longitudinale studies hiervoor (gedeeltelijk) compenseren, hebben ook deze een aantal tekortkomingen. De belangrijkste hiervan is dat het gaat om 1-jarige of 2-jarige studies met “slechts” twee meetmomenten waardoor geen lange-termijn perspectieven getest konden worden (bijvoorbeeld meerdere opeenvolgende veranderingen van arbeidscontract, arbeidsstatus of werkgever). Daarnaast was het in een aantal studies onbekend in hoeverre veranderingen van contract of werkgever vrijwillig waren (bijvoorbeeld of een vaste werknemer vrijwillig voor een tijdelijke baan had gekozen of geen andere optie had dan voor deze tijdelijke baan te “kiezen”). Dit kan onze resultaten enigszins vertekend hebben.

Aanbevelingen voor vervolgonderzoek

We zien drie belangrijke uitdagingen voor toekomstig onderzoek. Ten eerste zouden toekomstige studies preciezer in kaart moeten brengen welke soorten tijdelijk werk problemen veroorzaken voor de gezondheid, het welzijn en de werkgerelateerde attitudes van werknemers. Daarom stellen we voor om de formele contractsindeling uit te breiden

met baanvooruitzichten (bijvoorbeeld contractduur en resterende tijd tot het einde van het contract) en het type werk (zoals een proeftijd, projectwerk of seizoenswerk). Door dit te doen krijgen we nauwkeuriger inzicht in de kern-periferie structuur van arbeidscontracten en de relatie met de gezondheid, het welzijn en de werkgerelateerde attitudes van werknemers.

Ten tweede is het belangrijk om preciezer inzicht te krijgen in welke personen binnen een specifiek arbeidscontract risico's lopen met betrekking tot hun gezondheid, welzijn en werkgerelateerde attitudes. Naast de rol van persoonlijke kenmerken (bijvoorbeeld demografische kenmerken zoals geslacht en leeftijd of gezondheid en welzijn) en werkgerelateerde eigenschappen (bijvoorbeeld baanonzekerheid en kwaliteit van arbeid) is het belangrijk om onderzoek te doen naar de motieven, voorkeuren en verwachtingen van zowel tijdelijke als vaste werknemers ten aanzien van hun arbeidscontract, beroep, werkplek en werkgever. Zo zullen sommige (tijdelijke) werknemers vooral op zoek zijn naar zeker werk (een vast contract), terwijl voor anderen uitdagend werk belangrijker is. Daarnaast kunnen de verwachtingen van werknemers in meer of mindere mate overeenkomen met hun eigenlijke carrièrepad, wat van invloed kan zijn op de impact van vast en tijdelijk werk op de gezondheid, het welzijn en de werkgerelateerde attitudes van werknemers. Al met al kunnen dergelijke individuele verschillen tussen werknemers een gedeelte van de inconsistente resultaten in onderzoek naar tijdelijk werk verklaren.

Tenslotte zijn er meer longitudinale studies nodig om de onderliggende mechanismen bloot te leggen in de relatie tussen het arbeidscontract en gezondheid, welzijn en werkgerelateerde houdingen. Veel tijdelijke werknemers wisselen bijvoorbeeld na verloop van tijd van arbeidscontract of arbeidsstatus. Dit kan alleen bestudeerd worden door onderzoek met meerdere meetmomenten verspreid over een langere tijdsperiode. Een ander, nog belangrijker voordeel van een longitudinaal design is de mogelijkheid om veronderstelde relaties causaal te kunnen testen, maar ook om mogelijke tegengestelde en wederzijdse relaties te testen.

ABOUT THE AUTHOR

Alfred Wagenaar was born on September 9, 1985 in Emmen (The Netherlands). After finishing grammar school in 2003 at Christelijk College Schaersvoorde in Aalten he studied psychology in Nijmegen. In 2007 he graduated as a Work and Organizational psychologist, after which he worked two years as a research consultant in the area of employee satisfaction. In 2009 he started his PhD-project at the Behavioural Science Institute of the Radboud University Nijmegen. Since July 2009, Alfred works as an R&D manager at Dariuz, an organisation providing services to cities and "SW-companies" aimed at people with poor employment prospects.

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