

**OCCUPATIONAL STRESS AND WORK-LIFE BALANCE  
IN UK ACADEMICS**

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**“Work is about a search for daily meaning as well as daily bread, for recognition as well as cash, for astonishment rather than torpor; in short, for a sort of a life rather than a Monday through Friday sort of dying”**

**Studs Turkel**

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# Publications

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## Journal articles and reports

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## **Abstract**

### **Occupational Stress and Work-life Balance in UK Academics**

**Gail Kinman**

**A thesis submitted for the degree of Doctor of Philosophy at the University of Hertfordshire, January, 2006.**

The research presented in this thesis aimed to provide insight into the work-related wellbeing of a little-studied occupational group: academic employees working in universities in the UK. More specifically, it examined how aspects of the content and context of academic work were related to the health, job satisfaction, work-life balance, and turnover intentions of employees. The findings of an initial questionnaire study (Study 1) administered to a national sample of academic staff highlighted a number of features of work that were strong predictors of psychological distress and job satisfaction, and worthy of further investigation.

Two main issues emerged from this initial research that were examined in greater depth in a subsequent national study of academic employees (Study 2). Firstly, the predictive validity of two theoretical models of job stress (the Job Demand-Control-Support and the Effort-Reward Imbalance models) was tested in explaining strain outcomes. A model that comprised elements of both theoretical frameworks (most notably job control, rewards and over-commitment) was found to be a more effective predictor of some strain outcomes than either model independently. A combination of generic and job-specific demands was found to be a major predictor of job satisfaction. Secondly, the nature, predictors and outcomes of work-life conflict experienced by academics were investigated through the analysis of quantitative and qualitative data. A model that combined generic and job-specific job demands, working practices, supportive features of the working environment, and over-commitment predicted a considerable proportion of the variance in perceived conflict. Findings suggest that preferences for work-life integration are subject to considerable variation, as are the strategies utilised by academics to minimise conflict between work and home. Although certain practices might facilitate work-life balance, others pose a risk to wellbeing.

The final study (Study 3) introduced a longitudinal element to this programme of research. Comparisons between the findings of Studies 1 and 2 (conducted six years apart) found no significant improvement in levels of specific stressors and strains in the study period.

Comparisons were also made between the overall levels of psychological health of academic staff and those reported by other professional groups and the general population of the UK. The very poor level of psychological health found amongst academics in 1998 remained stable in 2004; this gave cause for concern, as did the discrepancy between levels of job demands and social support found, and those recommended by Health and Safety Executive benchmarks for the management of specific job stressors.

The findings of this research programme highlight the important role of the working environment in shaping the antecedents, experience and expression of occupational stress. It is therefore argued that a job-specific approach to the study of workplace stress has greater potential to aid the development of interventions to promote the wellbeing of employees. Based on the findings reported in this thesis, a range of strategies and initiatives are recommended that have the potential to improve the wellbeing and job satisfaction of academic employees in the light of growing concerns about recruitment and retention in the sector.

## Preface

Stress has become one of the most important health and safety issues in the workplace. There is considerable support in the literature for a relationship between job stressors and the health, satisfaction, job performance and retention of workers. The negative impact that work experiences can exert on family life is also receiving increased attention by researchers, government and the media. The Health and Safety Executive in the UK has recently introduced a set of benchmarks for measuring employers' performance in preventing work-related stress, thus making it easier for them to enforce offences related to psychosocial hazards in the workplace (McKay, Cousins, Kelly, Lee & McCaig, 2004). There is a clear incentive for employers to manage job-related stress in the workplace more effectively.

It has been suggested that many stress management interventions do not succeed because they fail to recognise the wider contextual issues of different occupations and organisations (Briner & Reynolds, 1994). The important role played by the working environment in shaping the antecedents, experience and expression of occupational stress has been emphasised (e.g. Narayanan, Menon & Spector, 1999; Kirkcaldy & Martin, 2000). Nonetheless, studies that have adopted an occupationally specific approach to the measurement of job stressors are few compared to those that have utilised a generic approach.

The research presented in this thesis adopts a job specific approach to the examination of the work-related wellbeing of one occupational group: lecturers and researchers working in the university sector in the UK. It considers how the demands inherent in academic work, and the working practices adopted by employees to cope with these, might impact on health, job satisfaction, work-life balance and turnover intentions. Also examined is whether specific characteristics of the organisation and the individual moderate the relationship between stressors and strains.

National studies conducted in the university sectors in North America, Australia and New Zealand have concluded that the stressors and strains experienced by academic employees have intensified owing to fundamental changes in the content and context of their work. The demands placed on academics in the UK increased rapidly during the 1980s and 1990s as a result of pressures brought about through, for example, expanding student numbers, increased requirements for efficiency and accountability, the growing commercialisation of higher education and the move towards financial self-reliance for institutions. These changes



suggest that academic work in the UK might also have become more stressful, with potentially negative implications for the wellbeing of employees. With few exceptions, however, the majority of studies conducted in the university sector in the UK have been based on small and unrepresentative samples. Clearly, further systematic research is required to gain greater insight into the specific nature of the stressors and strains experienced by this occupational group.

In order to justify the approach adopted in this thesis, Chapter 1 introduces and evaluates the main theoretical models and methodologies utilised in contemporary stress research. Particular focus is placed on an examination of the strengths and weaknesses of self-report, cross-sectional survey methodology, as this is utilised in the current research programme. The stressors, strains and individual difference variables that are typically investigated under the work stress rubric are also discussed. Chapter 1 also considers the relative merits of generic and occupationally specific measures of occupational stressors.

In order to provide a general background to this programme of study, Chapter 2 reviews research that has examined the stressors and/or strains experienced by academic employees in several countries. The historical and contemporary context of academic work in the UK is described, and the wide-ranging changes that the sector has faced over the last two decades are also discussed. The paucity of research on a national scale in the UK is noted and the need for further research is justified. Generic and job-specific measures of stressors initially discussed in Chapter 1 are re-evaluated in the context of the available research conducted on academic employees.

Chapter 3 describes the first of the three studies carried out in this research programme (Study 1). This national study (conducted in 1998) aimed: firstly, to provide initial insight into the stressors and strains experienced by academic employees working in universities in the UK; and secondly, to highlight specific areas where further research might prove fruitful. Chapters 4 and 5 describe a further national study, conducted six years later in 2004. Study 2a, described in Chapter 4, examined the predictive validity of two key models of job stress: the Job Demand-Control-Support and the Effort-Reward Imbalance models. Based on the findings of Study 1, these were thought to be particularly appropriate to the working conditions currently experienced by academic employees. Furthermore, as these two models emphasise different elements of the psychosocial work environment in different ways, it has been suggested that there is considerable promise in studying their combined effects

(Karasek *et al.*, 1998). Study 2a tested the performance of the two models (both independently and combined) in predicting a broader range of strain outcomes than was included in Study 1.

Study 2b (Chapter 5) drew upon quantitative and qualitative data to investigate a range of issues relating to work-life balance experienced by academic employees, as this was a main issue emerging from Study 1. Several models were tested to examine relationships between features of academic work, working practices and preferences, work-life conflict, organisational support, and a number of strain indicators. Particular focus was placed on establishing the predictors of work-life conflict in this occupational group, and isolating factors that might minimise or exacerbate the risk to the non-work domain.

Chapter 6 (Study 3) aimed to examine the stability over the six-year study period of specific stressors and strains experienced by academic employees. This study compared data obtained from the two measurement phases (i.e. the 1998 and 2004 studies described above). Study 3 also examined the extent to which the university sector achieves with minimum levels of key job stressors recommended by the UK Health and Safety Executive.

The final chapter initially summarises the findings of the research studies that comprise this thesis. The implications of the findings for the wellbeing of individual employees and the UK university sector as a whole are subsequently considered. How the findings of this programme of research could be utilised to develop interventions to improve the wellbeing of academic staff and improve recruitment and retention in the sector is then discussed. The chapter concludes by discussing several issues emerging from this research programme, and highlighting directions for further research.

Gail Kinman, January 2006

# Chapter 1

## Introduction to the study of occupational stress

### 1.1 Summary

The first chapter of this thesis presents a general overview of occupational stress research. Firstly, research that has examined the incidence and impact of work stress is outlined. Key models of occupational stress of relevance to this research programme are then reviewed, and variables included under the work stress rubric of particular relevance to this thesis examined. Conceptual and methodological issues relating to the study of occupational stress are subsequently discussed. In this section, particular focus is placed on examining the strengths and weaknesses of generic and occupationally specific models of workplace stressors and strains. Finally, the aims of this programme of research are presented.

### 1.2 The incidence and cost of occupational stress

The incidence and cost of occupational stress to employees and organisations in advanced industrial societies are frequently expounded in both the academic and the popular press. The ubiquity of occupational stress is reflected in the popular discourse surrounding the term (Kinman & Jones, 2005). Factors such as advances in information technology and information load, the need for rapid response, the importance attached to quality of customer care, decreasing levels of job security, technological change, the rise of dual-career families, and a trend towards longer working hours, are all believed to have contributed to the so-called "stress epidemic" (Guest, 2001). A number of large-scale studies conducted in the USA, Europe and the UK have reported that the incidence of self-reported workplace stress has risen since the mid-1990s (Cox, Griffiths & Rial-Gonzalez, 2000) especially amongst public sector workers such as nurses, teachers and social workers (Jones, Huxtable, Hodgson & Price, 2003).

A growing body of literature documents the role played by work stress in the aetiology and development of a range of physical and psychological disorders. A survey of working conditions in the European Union conducted in 2000 reported that 28 percent of respondents considered that their health had been adversely affected by work stress (EFILWC, 2000). In the UK, an epidemiological study of the incidence and nature of work-related illness conducted by the Health and Safety Executive (HSE) indicated that stress and stress-related conditions formed the second most commonly reported group of work-related ill-health conditions (after musculoskeletal disorders) (Jones *et al.*, 2003). One respondent in five experienced stress, anxiety and depression due to their work, or a

physical condition ascribed to work stress, with around 6,500 new cases per year. According to the authors, this implies a national prevalence rate of around 500,000 affected individuals.

The HSE have estimated that 105 million working days are lost to work stress each year (accounting for 11 percent of all absences); this is thought to represent a cost to organisations of £8 billion<sup>1</sup> (HSE, 2003). As well as absenteeism, strong associations have also been found between occupational stress and a number of other negative outcomes that are costly to organisations, such as under-performance, employee turnover, accidents, and substance abuse (Beehr & Newman, 1978; McKenna, Oritt & Wolff, 1981; Fletcher, 1988; Steffy & Jones, 1988; Karasek & Theorell, 1990; Holt, 1993). Employees with stress-related health problems also frequently seek disability payments and early retirement benefits (Earnshaw & Cooper, 2001).

There is little doubt that workplace stress can exert a negative impact on individuals and organisations; it should be emphasised, however, that estimates of its incidence and cost can, at best, be broad approximations and, at worst, be based on “educated” guesswork and speculation (Cox *et al.*, 2000; Goldin, 2004). The term “stress” has such a wide range of meanings that attempts to quantify the phenomenon should be carefully scrutinised. Furthermore, the very nature of work stress is the subject of some ambivalence. Some have argued that the rise in work stress is the consequence of unsustainable demands placed on employees by late industrial capitalism, whereas others see stress as representing nothing more than unsubstantiated claims made by discontented workers in response to a greater awareness of the phenomenon (Wainwright & Calnan, 2002; Kinman & Jones, 2005).

It has been argued that the cost of occupational stress can perhaps be more validly quantified through legal claims for personal injury (Earnshaw & Cooper, 2001). In UK law, all employers have a duty to take reasonable care of the health and safety of their employees (HASAWA: HSE, 1974). Breach of this duty of care may enable employees to resign, and then claim constructive dismissal, or seek compensation for physical or psychological damage. Although not signifying a rise in the actual incidence in workplace stress, personal injury claims against employers for psychological damage incurred by occupational stress have increased significantly in the UK in response to the high-profile legal precedents established in the mid to late 1990s. The Trades Union Congress indicated in 2002 that work-related stress cases rose twelve-fold in 2002 from the

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<sup>1</sup> These figures are based on responses from 700 senior human resource managers and almost 2,000 employees

previous year, with almost 6,500 new cases reported (Trades Union Congress, 2002). There is evidence to suggest that workers in the public sector (especially teachers and lecturers) are most likely to seek compensation for work-related stress (Earnshaw & Cooper, 2001).

After extensive consultation with researchers and stakeholders, the HSE has recently developed a set of management standards (or benchmarks) for measuring employers' performance in preventing work-related stress (McKay, Cousins, Kelly, Lee & McCaig, 2004). In this framework, the concept of risk assessment and management, traditionally utilised with respect to the physical and chemical work environment, is applied to the psychosocial work environment. Organisations will only achieve the minimum standard if a specified percentage of employees indicate that they are satisfied with the way specific elements of work activity are managed: these relate to job demands, job control, role ambiguity, social support, interpersonal conflict and involvement in organisational change (McKay *et al.*, 2004). It is envisaged that the introduction of these benchmarks will make it easier for the HSE to enforce health and safety offences related to psychosocial hazards in the workplace. Many employers have developed stress management policies in response to HSE recommendations (Paige, 1999). In general, however, secondary and tertiary stress management strategies, such as relaxation training and employee counselling programmes, are favoured rather than more radical preventative measures such as job redesign (Hogarth, Hasluck, Pierre, Winterbotham & Vivian, 2001; Giga, Noblet, Faragher & Cooper, 2003).

### **1.3 Models of stress and health**

Early scientific research on the relationship between stress and illness saw stress as a fundamentally biological and deterministic process. In 1939, Cannon documented an array of physiological responses designed to help the individual survive life-threatening situations and events. Since that time, many diverse models of stress have been developed that are extremely diverse in nature. On the whole, however, these models have conceptualised stress as either a stimulus, a response, a stimulus-response relationship or a transaction between the individual and his or her environment (Cox, 1978; Cooper & Dewe, 2004). The main features of each type of model will now be discussed and evaluated.

Stimulus-based definitions see stress as an external force that acts upon the individual. According to this perspective, stress is an aspect of the environment that causes a strain reaction in the individual exposed to a stressful event. The stimulus-based approach was adopted by Meyer in the 1940s in an attempt to draw a direct causal link between the

occurrence of stressful life events (such as bereavement or job change) and subsequent susceptibility to disease (Mayer, 1948). This theory was formalised and expanded in the 1960s by Holmes and Rahe (1967) who maintained that profound changes in an individual's social and personal environment are likely to result in illness, as they involve some degree of social readjustment on the part of the individual. The stimulus-based perspective also influenced early research into stress in the workplace that focused on the impact on employees of extremes of workload and intensive sensory stimulation (such as noise and overcrowding) (Cox, 1978). The implication of the stimulus definition is that stress can be defined using objective or external criteria; there is no acknowledgement of individual differences in the perception of, or response to, stressful environmental conditions.

In contrast to the stimulus-based perspective, Selye (1956) conceptualised stress as a reaction (or response to) challenging situations or events that disrupts normal homeostatic regulatory physiological functioning. He defined stress as the "the non-specific response of the body to any demand made upon it": the term "non-specific" implying that, irrespective of the demand on the body or whether the stimulus is pleasant or unpleasant, the individual's response follows a universal pattern. His concept of the "general adaptation syndrome", first outlined in 1936, documented a sequence of alarm, resistance and exhaustion. Subsequently, Selye differentiated between four types of stress: eustress (good stress), distress (bad stress), hyperstress (overstress) and hypostress (understress) (Cooper & Dewe, 2004). Response-based models of stress are concerned with identifying the response (or pattern of responses) which suggest that an individual "is, or has been, experiencing pressure from a disturbing environment" (Cox, 1978, p.4). This definition is problematic, as different responses may be associated with different stressors, and these responses may change over time (Sulsky & Smith, 2005). As the focus is on the individual's response only, the situation or event that elicited this response is not considered. Furthermore, in the context of work stress, the simple equating of demand with stress has been associated with the popular belief that a certain amount of stress is linked to maximal performance - and possibly good health. This belief in an "optimal level of stress" has been used on occasions to justify poor management practices (Cox *et al.*, 2000).

The simple stimulus and response models can be utilised to make associations between environmental events and individual wellbeing in a straightforward cause and effect manner. As argued by Jones and Bright (2001), adopting such an approach to the study of work stress might be justified under certain conditions: e.g. where researchers are looking for general trends, such as the overall impact of working hours on health. These

simple models are problematic, however, as they do not acknowledge the interaction between an employee and his or her working environment, or the role played by individual differences in how stress is perceived and responded to.

“Mid-range” definitions have been proposed that combine elements of the stimulus and response approaches. Researchers who conceptualise stress as a stimulus-response relationship refer to the interaction between environmental stimuli and responses, whilst also taking account of individual characteristics (Cox, 1993). This type of definition is very popular amongst work stress researchers. For example, Beehr and Newman (1978) conceived stress as “a condition wherein job-related factors interact with the worker to change (disrupt or enhance) his/her psychological or physiological condition such that the person (mind and/or body) is forced to deviate from normal functioning” (p. 670). Typically, organisational research that utilises an interactional approach assesses a range of working conditions or situations (stressors), psychological, physiological, cognitive or behavioural responses to these conditions or situations (strain outcomes) and the role played by intervening variables (e.g. demographic factors or personality traits) in the relationship between stressors and strains. The stressors, strains and individual difference variables that are typically examined in work stress research are discussed further in Section 1.5 below.

The stimulus, response or interactional models of stress discussed above do not stipulate that an individual must perceive an event or situation to be unpleasant or stressful for it to have a negative effect. The transactional model, however, shifts the emphasis from more “objectively defined” stressors and strains to the process by which an individual appraises a situation to be stressful (Cooper & Dewe, 2004). In this model, stress is conceptualised as a dynamic system where reciprocal interactions occur between the individual’s cognitive, perceptual and emotional functions on the one hand, and the characteristics of the external environment on the other (Lazarus & Folkman, 1984). According to the transactional model, a situation or event cannot *unambiguously* be classified as a stressor; the manner in which an individual appraises an event plays a fundamental role in determining: a) the magnitude of the stress response; and b) the kind of coping strategies that the individual may employ in efforts to deal with the stressor and/or the stress response.

#### **1.4 Theoretical approaches to the study of work stress**

Numerous attempts have been made to model the process of work stress, utilising the frameworks described above. Jones and Bright (2001) have identified three main types of model: simple, interactional and transactional. These are now discussed in turn.

#### **1.4.1 Simple models**

Warr's "Vitamin" model (1987) has specified nine features of the working environment that have the potential to affect mental health, namely: opportunity for control; opportunity for skill use; externally generated goals; variety; environmental clarity; opportunity for interpersonal contact; availability of money; physical security and valued social position. Warr has maintained that some of these environmental characteristics are related to wellbeing in a linear, and others in a curvilinear fashion. In this model, the analogy of vitamins is used in order to explain how the different environmental features are related to wellbeing. It is suggested that factors such as money and social position are similar to vitamins C and E, as above a certain level there is no added benefit to health if more of these features are added. In the case of other vitamins (for example, A or D) large amounts are potentially harmful to health. Similarly, Warr suggests that variety, control, clarity and interpersonal contact will be harmful if levels are very high (hence the curvilinear relationship). The vitamin model has been tested in several studies. Whilst significant associations between Warr's features and health outcomes have frequently been observed, only partial support for the curvilinear relationships specified in the model has been found (Warr, 1991; De Jonge & Schaufeli, 1998; Jeurissen & Nyklicek, 2001).

#### **1.4.2 Interactional models**

More than fifty years ago, Lewin (1951) observed that the characteristics of an individual employee interact with environmental stressors to determine the level of strain he or she experiences. This perspective subsequently informed a number of interactional models of stress. The interaction between the individual and the environment is made explicit in the person-environment (PE) fit model of stress (French, Caplan & Van Harrison, 1982). This maintains that stress is not merely a reaction to objective job demands, but the product of a perceived misfit between properties of the working environment and features of the individual. The PE fit model indicates that strain will occur when there is a "mismatch" between the demands and resources inherent in a particular working environment and the skills, needs and behavioural preferences of the employee.

The predictions made by the PE fit model have had some support in organisational settings (e.g. Chemers, Hays, Rhodewalt & Wysocki, 1985), but this is equivocal (e.g. Blau, 1981). The model has been criticised for two main reasons: firstly, it fails to distinguish between different forms and types of fit; secondly, it focuses on the processes whereby strain occurs rather than specific work characteristics (stressors) that actually produce the strain (Edwards & Cooper, 1990). It is evident, therefore, that the PE fit model would not be a useful framework through which to examine job stressors and strain



outcomes in a specific occupational group. Nonetheless, the model may be useful in conceptualising and researching aspects of the work-home interface. This is discussed further in Chapter 5. Two other interactional models of relevance to this thesis are examined below: the demand-control model and the effort-reward imbalance model.

a) *The Job Demand-Control Model*

A body of research in occupational settings has associated perceptions of personal control to positive health-related outcomes and lack of personal control to health-related decrements. An early study of workers in a mechanised production industry conducted by Johansson, Aronsson and Lindstrom (1978) found that physiological stress reactions were greatest, and levels of physical symptoms and sickness absence were highest, when employees could not control the pace of their work. More recent research conducted in a range of organisational settings have consistently found inverse associations between job control and various strain outcomes (e.g. Spector, 1986; Kroesser, Meckley & Ranson, 1991).

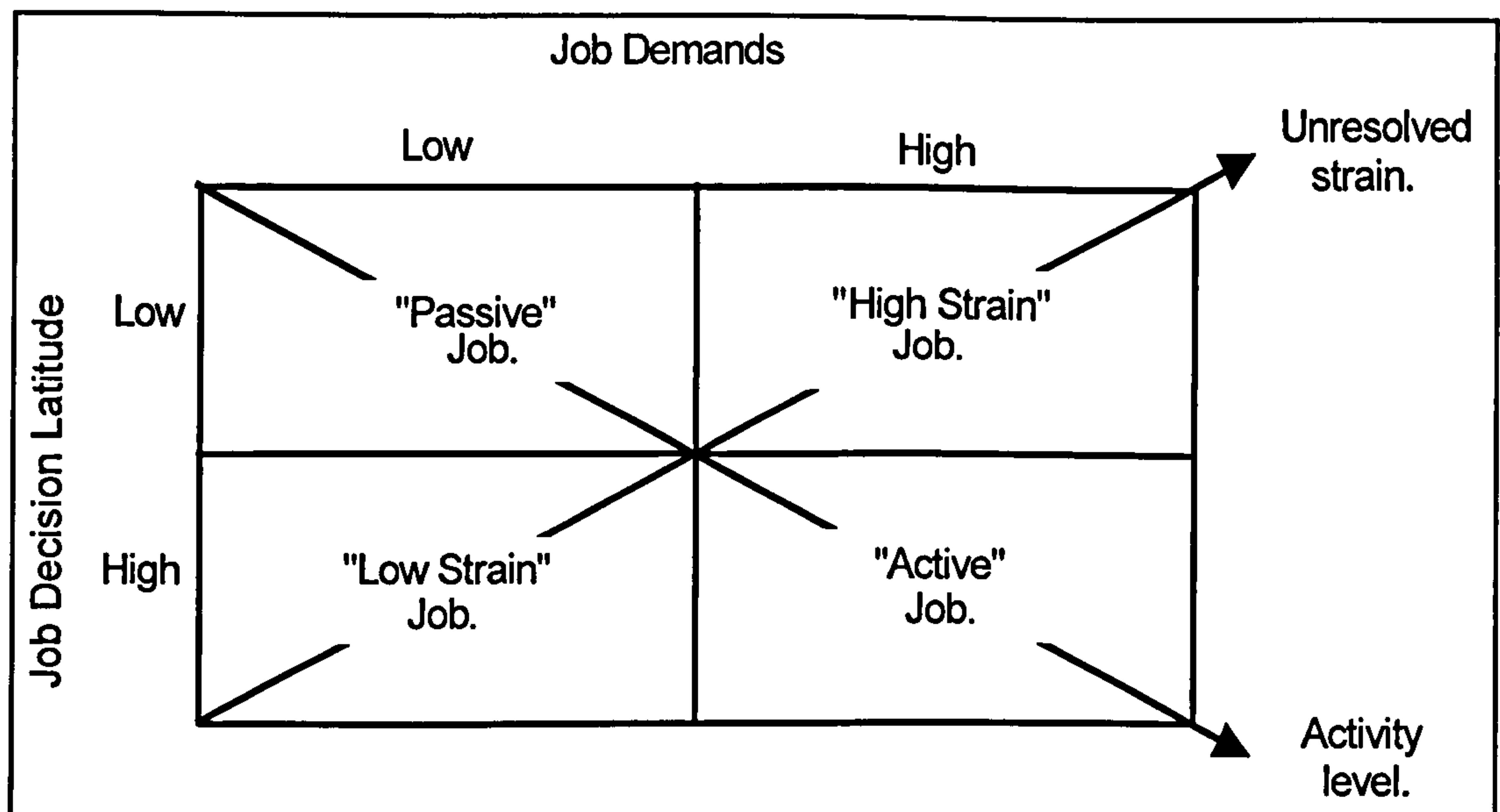
Job control is central to one of the most influential and widely used models of occupational stress: the Job Demand-Control (JDC) model, also known as the Job Strain model (Karasek, 1979). This model predicts that psychological strain is engendered when job demands are high and job control is low. The general premise behind this model is that high demands produce a state of physiological and psychological arousal that, if paired with conditions of low control, cannot be adequately dissipated or managed, leading to an increased likelihood of negative health symptoms. Karasek originally defined job demands as psychological stressors present in the work environment – primarily heavy workload. Job control (or discretion) was originally conceptualised as a measure of task authority and skill utilisation, but has subsequently been operationalised in various other ways (Wall, Corbett, Clegg, Jackson & Martin, 1990).

The JDC model distinguishes between four types of job based on the opportunities provided for demand and control (shown in Fig. 1.1). As can be seen, it is hypothesised that a combination of high levels of job demand and low levels of discretion constitutes a “high strain” job. In contrast, a “low strain” job is one that is characterised by low demands and high discretion. A job which combines high levels of demand and high levels of discretion is categorised as “active”, as such a job would allow the employee to develop behaviours that protect against strain (Karasek & Theorell, 1990). A “passive job”, characterised by low demand and low discretion, will not encourage protective behaviours and is likely to result in reduced activity, gradual loss of previously acquired skills and learned helplessness. The model generally maintains that a low strain job is the most

preferable; however "low demands" really refers to "no excessive demands" since very low demands may themselves be problematic (Karasek & Theorell, 1990).

**Fig. 1.1**

**Job demand-control model**



Studies have found an increased risk of cardiovascular disease amongst workers in high-strain jobs (Karasek & Theorell, 1990; Schnall, Landsbergis & Baker, 1994). The demand-control model has also been widely used in occupational samples to predict less severe forms of health outcomes ranging from psychological distress to job satisfaction and turnover intentions (Karasek and Theorell, 1990; Dwyer & Ganster, 1991; Mullarkey, Jackson, Wall, Wilson & Grey-Taylor, 1997; Calnan, Wainwright, Forsythe, Wall & Almond, 2001).

A central feature of the JDC model is the interactive (or moderated) effect, whereby a high level of demand coupled with a low level of control produces a strain effect that is greater than the additive effect of the two variables independently. Several reviews of the JDC literature have been conducted (e.g. Schnall, Landsbergis & Baker, 1994; Van der Doef & Maes, 1999; Terry & Jimmieson, 1999; Jones & Fletcher, 2003): these tend to find considerably stronger evidence for additive or main effects of demands and control (particularly the latter) than the hypothesised interaction between these features. The demand-control model is briefly evaluated in relation to other models of work stress in section 1.4 below. It is discussed in more detail in relation to the current programme of research in Chapter 4.

b) *The Effort-Reward Imbalance Model*

Another approach to work stress, the Effort-Reward Imbalance model (ERI: Siegrist, 1996) is becoming increasingly popular in the field of work psychology. The ERI model differs from the JDC model discussed above as it focuses on the efforts and rewards inherent in work rather than on levels of demands and control. The ERI model indicates that it is not merely employee effort (i.e. workload or other job demands) that results in strain, but a perceived *imbalance* between the effort that employees are expected to put into their jobs and the rewards that they receive. By assessing the degree of distress that employees perceive relating to the absence or presence of different types of effort and reward, the ERI model relies more on subjective appraisal than the JDC model which attempts to examine features of work in a more “objective” manner.

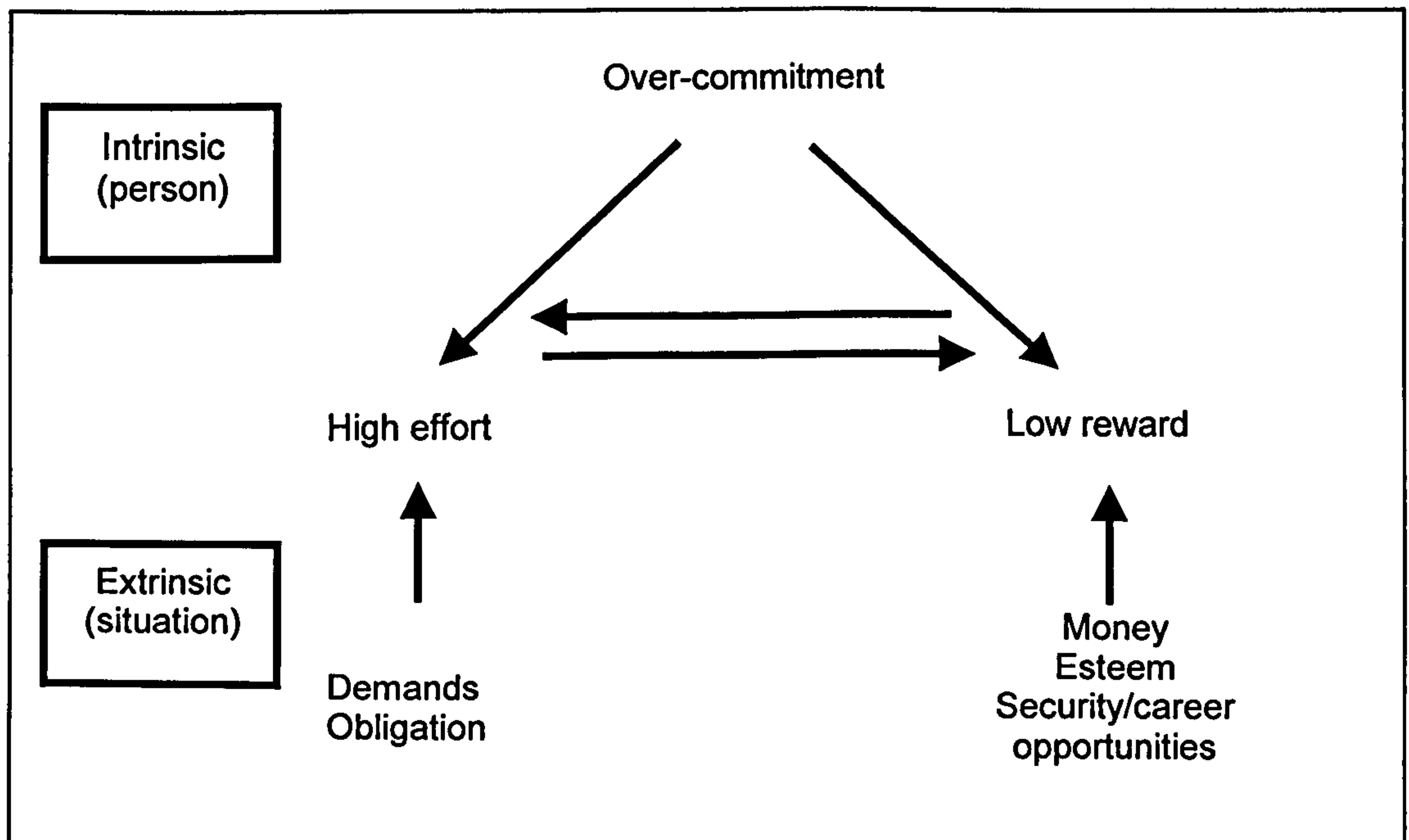
The ERI model is based on the notion of social reciprocity, whereby efforts should be equalised by rewards (Siegrist, 1996). Three types of rewards are identified: money, esteem, and career opportunities. The model maintains that perceptions of “appropriate” social rewards will promote employee health and satisfaction. Conversely, the model predicts that perceptions of failed reciprocity in terms of costs (i.e. high efforts given at work) and gains (i.e. low rewards received) are likely to result in recurrent negative emotions and a sustained strain response. Siegrist (2001) has provided several examples of “high cost/low gain” conditions at work, for example: having a demanding but unstable job and achieving at a high level without any prospects for promotion (p.55).

Unlike the JDC model previously discussed, an individual difference component is incorporated into the ERI model. It is postulated that the experience of effort-reward imbalance at work will be more frequent in employees who exhibit a particular cognitive and motivational pattern of coping with work demands that is characterised by excessive commitment to work. This pattern is known as “over-commitment” which is defined as “a set of attitudes, behaviours and emotions that reflect excessive striving in combination with a strong desire of being approved and esteemed” (Siegrist, 2001, p. 55). There is evidence that excessive efforts result from perceptual distortion (in particular, an underestimation of challenges and an overestimation of one’s coping resources) which in turn may be triggered by an underlying motivation of experiencing recurrent esteem and approval (Siegrist 1996).

The ERI model is shown below in Fig. 1.2 below. The extrinsic working conditions and the intrinsic characteristics of the individual exposed to these conditions, together with the three dimensions of reward, are highlighted. An examination of the literature suggests that four main hypotheses can be derived from this model:

1. High efforts and low rewards will independently predict strain
2. An imbalance between high effort and low reward (non-reciprocity) increases the risk of strain over and above the risk associated with either component separately.
3. Over-committed employees are at increased risk of strain.
4. The highest risks of strain are expected in people who are characterised by conditions (2) and (3).

**Fig. 1.2 The effort-reward imbalance model**



Compared to the JDC model, few studies have examined the adverse effects of effort-reward imbalance at work. Nonetheless, there is some evidence to suggest that the model provides a useful framework through which to examine work stress and a range of health outcomes. Cross-sectional and prospective research has found evidence that a “co-manifestation” of indicators of high effort at work and low reward are related to a number of cardiovascular risk factors and psychiatric disorder (Stansfeld, Fuhrer, Shipley & Marmot, 1999; Siegrist, 2001). Other studies have associated effort-reward imbalance with less serious physical symptomatology, job dissatisfaction and leaving intentions (Peter, Geissler & Siegrist, 1998; Tsusumi & Kawakami, 2004). The ERI model is discussed further in the context of the present programme of research in Chapter 4.

### 1.4.3 Transactional models

The JDC model described above focuses on the interaction between features of the working environment and characteristics of the employee in predicting strain. Although

interactional models are widely used to investigate workplace stressors and strains, they have been criticised as failing to consider the role played by appraisal in mediating the impact of stressful working conditions on the emotional reactions of employees (Jones & Bright, 2001). Although the ERI model also referred to above attempts to incorporate the notion of appraisal of efforts and rewards, it remains interactional in nature. Individual appraisal is, however, the fundamental component of the transactional model developed by Lazarus and Folkman (1984). They have defined stress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing” (p.19). Two processes are involved in this model: “primary appraisal” is concerned with whether an individual believes there is a potential for negative outcomes to occur from a particular event, situation or demand; “secondary appraisal” is where the individual evaluates the coping resources available to him or her in order to deal with this event, situation or demand.

In the context of work stress, a transactional approach examines the relationship between the employee and his or her work environment through the personal *meanings* that he or she gives to their work and their working environment. Compared to the simple and interactional models reviewed above, few studies of occupational stress have attempted to operationalise the transactional approach. The majority of studies that have utilised this perspective have tended to adopt the “daily hassles” framework where employees are asked to rate the extent to which they feel stressed by everyday events (Kanner, Coyne, Shaefer & Lazarus, 1981). A number of studies have found relationships between daily work stressors (known as hassles) and negative health outcomes and mood disturbance (e.g. Barling & Kryl, 1990; Kircaldy & Siefen, 2002). A more novel method of operationalising the transactional approach was used in a study by research by Troup and Dewe (2002). This involved 134 employees providing “free-form” descriptions of recent workplace events that were considered stressful; these descriptions were subsequently rated to establish primary appraisal, situational control, situational emotions and coping behaviour in response to the events.

#### **1.4.4 Evaluation of models of work stress**

The transactional approach has been considerably less influential in the field of occupational psychology than simple and interactional models. Some fundamental conceptual and measurement problems mean that the application of transactional models in organisational settings is limited. The ongoing, dynamic relationship between the individual and the environment is central to the transactional definition of stress. This poses a considerable challenge to work-stress researchers as it implies that reliable

measurement of stressors, strains and mediating or moderating traits of the individual will be insufficient to capture the stress process as the inter-relationships between these variables will be constantly changing.

A further problem that limits the utility of the transactional model in workplace settings is apparent. Due to the emphasis on individual appraisal inherent in the model, it is maintained that a certain degree of confounding between independent variables (e.g. stressors such as work overload) and dependent variables (e.g. strains such as distress) will be inevitable (Lazarus, De Longis, Folkman & Gruen, 1985). The majority of studies that examine relationships between work stressors and strains (irrespective of the approach adopted) utilise cross-sectional self-report data obtained at a single point in time (Derogatis & Coons, 1993). The risk of confounding already inherent in such methodology is likely to be exacerbated if a transactional perspective is used. The biases involved in self-report methods are discussed further below.

For the reasons discussed above, it seems likely that individual appraisal of stressors and strains will be better examined by more holistic, process-oriented methodologies such as daily diaries, ecological momentary assessments, or emotional narratives (Lazarus, 1999; Tennen, Affleck & Carney, 2000; Almedia, Wethington & Kessler, 2002). Such methodologies can track fluctuating processes such as stress appraisals, emotions, and coping behaviours close to their real-time occurrence. These methodologies have disadvantages, however, as they are time consuming to conduct and complex to analyse and interpret. The transactional approach maintains that appraisal is unique to each person (Lazarus & Folkman, 1984). Clearly, this approach has the potential to provide greater insight into individual psychological functioning that could be used to develop “tailor-made” interventions. In order to inform policy and practice, it is necessary for occupational research to identify features of the environment that are harmful to the *majority* of employees exposed to them (Brief & George, 1995). This is especially the case where little is known about the stressors and strains experienced in a particular occupational group. On the whole, simple and interactional approaches are likely to be more useful than transactional theories when investigating stress in the working environment (Jones & Bright, 2001).

Unlike transactional models of stress, the interactional approach adopted in Karasek’s JDC model clearly delineates the conditions under which work demands will produce strain in employees. Furthermore, its relative simplicity and parsimony means that the model is easily testable (Jones, Bright, Searle & Cooper, 1998). It has been argued, however, that the model is conceptually very narrow and excludes other job factors that

may have an equal (or greater) impact on the health of employees (Fletcher & Jones, 1993). Research suggests that versions of the JDC models that incorporate a broader range of variables tend to explain more variance in strain outcomes (Fletcher & Jones, 1993; Griva & Joeke, 2003). The addition of social support (known as the iso-strain model) is thought to be a particularly promising extension to Karasek's model. The job demand-control-support model, or JDC(S) model, maintains that high demands combined with low job control and low social support represents the most detrimental work situation for employees. Cross sectional and longitudinal studies indicate that when job strain is combined with low workplace support, the risk of psychological and physical health problems increases (Parkes, Mendham & Von Rabeneu, 1994; Van der Doef & Maes, 1999). It has more recently been argued that the inclusion of job-specific demands may also enhance the predictive value of the JDC(S) model (Noblet, 2003). This issue is discussed further in Chapter 4 in the context of the current programme of research.

Recent studies have attempted to compare the performance of the JDC model with the ERI model in predicting strain outcomes (Bosma, Peter, Siegrist & Marmot, 1998). Initial findings have highlighted the potential advantages in devising a hybrid job stress model that combines a wider range of personal and environmental factors to help explain differences in employee strain outcomes (Calnan, Wainwright & Almond, 2000). The more transactional nature of the ERI also has the potential to complement the more static and objective nature of the JDC(S) model. This is discussed further in Chapter 4 in the context of the present programme of research.

The features of several models of work stress have been described in this section. Some of these models are narrowly defined, whereas others incorporate a wider range of variables. Clearly, no single model will be relevant to all types of employee and every work culture. The model that is selected will also be dependent upon the purpose of the research. Where little is known about the stressors experienced by a particular occupational group it may be more appropriate to initially conduct exploratory or descriptive studies that utilise simple models incorporating a broad range of variables, and examine direct effects (Sulsky & Smith, 2005). Such studies can develop the groundwork for more systematic, hypothesis-driven research using more complex models of job stress. The current programme of research adopts such an approach to examine the stressors and strains experienced by university lecturers and researchers.

## **1.5 The stress rubric**

The previous section described and evaluated several different approaches to the study of occupational stress: many more can be found in the literature. There remains

considerable disagreement in the field of work stress research about whether the phenomenon should be defined in terms of the person, the environment, or some form of interaction or transaction between the two. A study conducted by Jex, Beehr and Roberts in 1992 illustrates this lack of consensus. The researchers analysed articles published in six eminent journals in the field of organisational behaviour over a period of several years. In the 52 articles reviewed, "stress" was defined in several different ways: as a stimulus from the working environment, as a response to environmental stimuli, and as a stimulus-response relationship. In 14 percent of articles reviewed, the terms "stress" or "stressful" were either not defined or could not be fitted into any recognisable theoretical framework. More recent observations made by researchers in the field suggest that definitions of work stress, on the whole, continue to be vague and ambiguous (e.g. Briner, Harris & Daniels, 2004). Research findings on lay representations of work stress further suggest that employees' personal explanations of the concept are also subject to wide variation (Kinman & Jones, 2005).

Attempts to develop a unified theory of work stress have not been successful. In 1978, Beehr and Newman, developed a theory that aimed to incorporate all known work-related stressors, strains and individual difference variables. Perhaps unsurprisingly, the resulting theory proved to be so complex and unwieldy that even the authors acknowledged that it was of little practical significance. Should a unified theory of job stress ever be developed that is both acceptable and practical, it could be argued that the psychosocial hazards inherent in new ways of working would anyway soon make it redundant.

A growing number of researchers now maintain that the search for a unified theory of work-related stress should be abandoned, as it seems impossible for any one approach to encompass the breadth of the concept. Some, such as Briner (1994) go further in suggesting the concept of stress should be abandoned altogether as it is essentially meaningless. However, as argued by Cassidy (1999) and others, the concept of stress is useful as it helps to unite a disparate field within which can be subsumed a diverse range of variables, processes and approaches. A trend has developed for researchers to conceptualise stress as an umbrella term or "rubric consisting of many variables and processes" rather than a simple unitary phenomenon (Lazarus & Folkman, 1984, p.12). Jones and Bright (2001) have identified three broad dimensions within this rubric: stressors, intervening variables and strains. The researcher's task is to select the concepts, models and variables from within this rubric that have the potential to offer the most explanatory power in specific working environments. The approach adopted in the current programme of research is to use stress as an organising term, under which is



investigated the relationship between stressors and strains and the role played by a number of intervening variables as moderators of the stressor-strain relationship.

In order to demonstrate its breadth, some variables typically included within the stress rubric are shown in Table 1.1. These variables are divided into stressors, strains and intervening factors, but their categorisation is not clearly defined. Some, such as social support and work-life conflict, have been operationalised by researchers variously as stressors, intervening variables and/or strains. A full consideration and evaluation of such a diverse range of factors is beyond the scope of this thesis. Some examples of job stressors, strains and intervening variables that are of relevance to the current programme of research will be described and discussed. Research relating to the home-work interface is subsequently introduced as this topic is of considerable bearing on this thesis.

### **1.5.1 Job stressors**

A job stressor can be broadly defined as “any antecedent condition in one’s job or organisation that requires some type of adaptive response on the part of the employee” (Jex & Beehr, 1991, p. 319). As discussed above, the job characteristics and working conditions that might be considered stressful are varied, but the work stressors of particular relevance to this thesis will now be discussed. Organisational change and role stressors are initially examined. Job control and job demands were discussed above under the aegis of Karasek’s JDC model. Work overload will, however, be further considered in this section, together with its relationship with working hours. It is acknowledged that the stressors experienced by employees will, to some extent, be specific to their working environment. The role played by generic and job-specific stressors in contributing to strain experienced by academic staff will be discussed in Chapters 2 and 3.

#### *a) Organisational change*

To remain competitive, it is frequently necessary for organisations to adapt to the changing demands and circumstances of the marketplace and the environment. Such changes often alter not only individual jobs, but also the structure and function of organisations themselves. The relationship between organisational change and stress has been extensively researched. As will be argued in Chapter 2 of this thesis, changes to the context and content of academic work might have exacerbated levels of stressors and strains in this occupational group. Three aspects of organisational change are of particular relevance to the current programme of research: the changing nature of work, the impact of rapid change, and the management of the change process. The changing context of

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**Table 1.1**  
**Some examples of variables included under the stress rubric**

<b>Work features</b>	<b>Individual difference variables</b>	<b>Strains</b>
<p>Working hours (including overtime work)            Workload            Pace of work/deadlines            Role overload, ambiguity and clarity            Physical working environment            Skill utilisation            Job discretion/autonomy            Participation in decision making            Training and promotion prospects            Organisational change            Management style            Communication            Complexity and demands of new systems            Availability of resources (human and technical)            Isolation from colleagues            Lack of respect and recognition            Emotional labour            Client relationships            Work-life conflict            Bullying/violence            Dangerous work            Traumatic incidents            Sexual harassment and discrimination            Physically demanding work</p>	<p>Gender            Age            Socio-economic group            Education level            Grade in organisation            Social support from work            Coping style            Hardiness/Sense of Coherence            Dispositional pessimism/optimism            Negative affectivity            Type A behaviour pattern            Meaningfulness of work            Conscientiousness/perfectionism            Self efficacy            Self esteem            Locus of control            Job involvement/commitment            Work-life integration/boundaries            Workaholism</p>	<p>Serious health complaints (e.g. coronary heart disease)            Minor psychosomatic symptoms (e.g. headaches)            Depression and anxiety            Burnout syndrome            Irritability/anger            Negative affective states (e.g. cynicism)            Low morale            Accidents            Substance abuse            Impaired productivity            Impaired decision making/error making            Cognitive failures/memory problems            Job dissatisfaction            Absenteeism            Turnover intentions/actual turnover            Sleep disturbance            Quality of working life/quality of family life            Social withdrawal            Work-life conflict            Transmission/crossover of strain to family</p>

working life raises new questions about how features of the work environment might directly or indirectly impact on employee health and wellbeing. Some have argued that what might be considered more “contemporary” job stressors, such as the introduction of new technology and information overload, have become more relevant to employees in some sectors of the economy than more “traditional” demands such as role conflict (e.g. Jex, Adams, Elazqua & Lux, 1997; Strazdins, D’Souza & Lim, 2004).

Research findings suggest that both anticipation of change and change itself can have a negative impact on employees (Ashford, 1988). Employees undergoing major organisational change commonly report feelings of anxiety and insecurity, a lack of confidence in their abilities, poor morale, and uncertainty about their future (Schweiger & DeNisi, 1991; Callan & Terry, 1994; Ferrie, Shipley, Marmot, Stansfeld & Davey-Smith, 1998). The way in which change is managed can also have an impact on the health of employees. The stress associated with organisational transitions may be alleviated by providing as much information as possible (i.e. increasing perceived control) and encouraging social support groups (Ashford, 1988).

*b) Role stressors*

Role theory is based on the notion that individuals occupy various roles or social positions in different arenas of life. Three types of role stressor can be found in the literature: role conflict, role ambiguity and role overload (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). All three types have some bearing on this research programme, but role conflict is of particular relevance. Each role that an individual occupies (whether internal or external to the workplace) is associated with specific demands and with a pattern of behaviours which the individual occupying the role is expected to perform. Whilst there is evidence that involvement in multiple roles can provide individuals with important psychological benefits (e.g. Barnett, 2004), the demands inherent in each role (particularly work and family roles) have the potential to conflict. Role conflict has been defined as the “simultaneous occurrence of two or more sets of pressures such that compliance with one would make more difficult compliance with the other” (Kahn *et al.*, 1964, p. 25). There is evidence that role conflict, in general, is associated with negative outcomes for employees and organisations (Jackson & Schuler, 1985). Role conflict and its impact on employee wellbeing is discussed further in the context of work-life conflict below and in Chapter 5.

Another form of role stress, role ambiguity, is thought to result whenever an individual perceives that his or her role demands are ambiguous. It has been defined as “the extent to which required information is available to a given organisational position”: it relates to

uncertainty about role definition, expectations, responsibilities, tasks and behaviours (Kahn *et al.*, 1964, p. 25). As with role conflict, job ambiguity has been associated with strains such as low organisational commitment, anxiety and turnover intentions (Jackson & Schuler, 1985). Role overload is the third category of role stressor. According to Kahn and colleagues, role overload occurs when an employee cannot meet all of his or her role demands within a given time frame (Kahn *et al.*, 1964). More recent research, however, has tended to investigate the nature and outcomes of workload stressors through the concept of “work overload” (Cooper & Dewe, 2004).

c) *Workload and working hours*

A number of studies suggest that work overload is significantly and positively associated with strains such as psychological and psychosomatic symptoms, job dissatisfaction, sickness absence and turnover intentions (e.g. Cooper & Marshall, 1976; DeFrank & Ivancevich, 1998; Michie & Williams, 2003). Furthermore, psycho-physiological studies have highlighted neuro-endocrine and cardiovascular responses triggered by work overload that are believed to be the precursors of disease (e.g. Frankenhaeuser, Lundberg & Frederikson, 1989). The threat to wellbeing posed by perceptions of work overload (characterised by job demands and job-related efforts) is explicitly recognised in the JDC and ERI models that were described earlier in the chapter. As was noted above, these models hypothesise that perceptions of a heavy workload are not inherently damaging and may be offset by certain protective factors.

Research findings suggest that many employees attempt to cope with work overload by working longer hours (Sparks, Cooper, Fried & Shirom, 1997). Although findings are not conclusive, research has linked long working hours with psychological and physical ill health (e.g. Stevens, Faragher & Sparks, 2000). A meta-analysis of the impact of work on health conducted by Sparks *et al.* (1997) suggests that this relationship is especially strong where average working weeks regularly exceed 48 hours, and when the individual perceives low levels of job control. The potential health and safety implications of working long hours have been recognised in the UK by the introduction in 1998 of the European Directive on Working Time which set a limit of 48 hours on working time<sup>2</sup>. As well as health and safety outcomes, the negative impact of long working hours on the home life of employees has also been examined (e.g. Voydanoff, 2004). This is discussed later in this chapter in the context of work-life conflict.

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<sup>2</sup>Certain groups of workers are currently exempt from this directive: most notably transport workers and some healthcare employees. Furthermore, workers can choose to work more if they wish to under the UK's opt-out agreement, but this is currently under dispute.

Some stressors of relevance to this programme of study have been discussed in this section. Some of the strains that are typically investigated within the stress rubric are briefly outlined below. Particular focus is placed on psychological distress and job satisfaction, as these outcomes are examined in this thesis .

### 1.5.2 Strains

“Strains” is a general term related to a class of psychological, physical or behavioural outcome variables thought to be adversely affected by stressors (Jex *et al.*, 1992). As can be seen from Table 1.1, many different forms of strain are included under the stress rubric. Physical and psychological health symptoms, in particular, are frequently investigated as outcomes of workplace stress. Relationships between job stressors and a range of major and minor health symptoms have been discussed in relation to the different models of stress described earlier in this chapter.

#### a) *Physical symptoms*

Researchers have found significant associations between chronic job stressors and physiological reactions ranging from minor psychosomatic symptomatology (such as headaches, upper respiratory tract infections and digestive disorders) to more serious disorders (such as hypertension and cardiovascular disease) (e.g. Landsbergis, Schnall, Schwartz, Warren & Pickering, 1995; Cohen, Frank, Doyle, Skoner, Rabin & Gwaltney, 1998; Goldenhar, Swanson, Hurrell, Ruder & Deddens, 1998; Quick, 1998; Theorell, Tsutsumi, Hallqvist, Reuterwall, Hogstedt, Fredlund, Emlund & Jonson, 1998). High levels of perceived stress at work have also been associated with negative health-related behaviour such as smoking, alcohol consumption, unhealthy eating and lack of exercise; such behaviours are acknowledged as important mediators of the relationship between work stressors and disease outcomes (Steptoe & Ayers, 2004).

Some studies have obtained physiological measures of strains, such as cardiovascular reactivity, electrodermal responses, and changes in levels of adrenalin, noradrenalin and cortisol (Seigrist & Klein, 1990; Theorell *et al.*, 1990; Aronsson & Rissler, 1998). In general, such studies have provided evidence for physiological changes in response to demands from the working environment. Physiological measures of strain are frequently seen as more objective than other approaches, and therefore superior. There are, however, disadvantages to relying on biological markers alone as *de facto* signs of stress. Fletcher and Payne (1980) highlighted some difficulties with physiological measures that challenge their claims of objectivity. They observed that, where studies have used a number of physiological indicators, there is little pattern of inter-correlation between the

various measures utilised. Furthermore, it is evident that physiological measures can only indicate physical reactivity, not subjective feelings. There are instances where some individuals report feeling “stressed” but show no obvious arousal, whereas others can demonstrate clear patterns of physiological reactivity to a stimulus but report no subjective stress (Katkin, Dermit & Wine, 1993). The relative strengths and weaknesses of objective and subjective measures of stressors and strains are examined further in Section 1.6 below.

*b) Psychological symptoms*

A review of the literature suggests that stronger relationships are found between workplace stressors and psychological symptoms such as depression and anxiety than with physical symptoms (e.g. Spector & Jex, 1998). Investigating relationships between job stressors and psychological health is important for two reasons. Firstly, information gained on direct associations between specific job stressors and psychological distress is useful in its own right, as this will help organisations target more effective interventions to improve the wellbeing of their employees. Secondly, research in the field of psychoneuroimmunology suggests that chronic affective reactions might mediate the relationship between environmental stressors and physiological responses, possibly via reduced immunological functioning (Evans, Hucklebridge & Clow, 2000). This suggests that psychological distress might be the first step in a reactive sequence that eventually leads to more serious physical illness.

A number of studies have found positive relationships between work stressors and general manifestations of psychological wellbeing (e.g. Daniels & Guppy, 1994a; Guppy & Rick, 1996; De Jong, Dormann, Janssen, Dollard, Landweerd & Nijhuis, 2001). Most researchers have utilised context-free measures of psychological distress such as the General Health Questionnaire (GHQ: Goldberg & Williams, 1988). Others, however, have examined relationships between job stressors and mood that is more specific to the work context such as job-related depression-enthusiasm and anxiety-contentment (Warr, 1990). Individuals employed in “people-oriented” professions are believed to be at risk from a more idiosyncratic form of psychological strain known as the burnout syndrome (Maslach & Jackson, 1986). This is viewed as an affective reaction to chronic stressors that comprises three dimensions: emotional exhaustion, depersonalisation/cynicism and lack of personal accomplishment (Maslach & Schaufeli, 1993). Burnout is generally considered to be cyclical where chronic interpersonal stressors result in emotional exhaustion (i.e. depletion of emotional resources), which results in depersonalisation and cynicism (i.e. an excessively detached response to others), which, in turn, leads to lack of personal

accomplishment (i.e. a perceived lack of competence and reduced sense of self-efficacy) (Maslach & Jackson, 1986).

*c) Job satisfaction*

Job satisfaction is generally considered to be a combination of cognitive and affective reactions to the perceptions of what employees *want to receive*, compared with what they *actually receive*, from their work (Cranny, Smith & Stone, 1992). In occupational stress research, job satisfaction tends to be viewed as a dependent variable that is modified according to the perceived quality of working conditions. Inverse relationships are frequently found between occupational stressors and job satisfaction (e.g. Daniels & Guppy, 1994a; Guppy & Rick, 1996). Less frequently job satisfaction has been investigated as an independent variable which determines a variety of consequences such as absenteeism and leaving intentions (Hellman, 1997).

Relationships between specific features of the working environment and job satisfaction are frequently examined in the work stress literature. In particular, there is evidence that jobs which enhance employees' levels of control over their work improve levels of job satisfaction (Warr, 2002). As with job stressors, the job features that contribute to (or detract from) job satisfaction are likely to vary by occupation. For example, a study of schoolteachers suggest that good relationships with colleagues and students and positive perceptions of students' motivation to learn are the main sources of their satisfaction (Delle Fave & Massimini, 2003).

Job satisfaction is frequently examined by a single item where respondents are required to make a global estimation of "overall" satisfaction with their job (e.g. Brief, 1998). As job satisfaction is thought to encompass a number of different dimensions, more insight into the construct is likely to be gained through the examination of different facets of satisfaction with work. A model developed by Warr, Cook and Wall (1979) has the potential to further elucidate the relationship between job stressors and satisfaction with work, as it distinguishes between two aspects of job satisfaction: intrinsic and extrinsic. Intrinsic satisfaction refers to people's affective reactions to job features that are integral to the job itself (e.g. variety, opportunity to utilise skills and autonomy), whereas extrinsic satisfaction covers features external to the job (e.g. pay and opportunities for promotion).

Although appearing counter-intuitive, some research findings suggest that some occupational groups, such as nurses and teachers, perceive a high level of strain from their work whilst simultaneously obtaining high levels of satisfaction (McCormick & Solman, 1992). Some studies suggest that job satisfaction and psychological distress are



influenced by different features of the working environment (e.g. Kircaldy & Martin, 2000). Others, however, find that the same factors impact on job satisfaction as do on psychological strain (e.g. Lyne, Barrett, Williams & Coaley, 2000).

Research that has examined the work stressors that predict job satisfaction and health symptoms in academic staff is discussed in Chapter 2,

*d) Other types of strain*

Although psychological distress and job satisfaction are the strains that are most frequently investigated in work stress research, negative relationships have also been observed between job stressors and cognitive outcomes such as creativity, concentration, decision-making, memory and problem solving (Janis, 1993; Lansisalmi & Kivimaki, 1999; Fletcher, 2003). Researchers have attempted to investigate the impact of job stressors on work performance, but obtaining objective assessments of performance outcomes is problematic in almost all types of work (Sullivan & Bhagat, 1992). Work stressors have also been strongly associated with turnover intentions, defined as individuals' desire or willingness to leave their current organisation (Hom, Griffeth & Sellaro, 1984; Houkes, Janssen, De Jonge & Nijhuis, 2001). Leaving intentions are thought to be influenced by distal factors (such as the availability of alternative employment and labour market conditions) as well as more proximate factors (such as conflict with colleagues or managers) (Carsten & Spector, 1978; Mathieu & Zajac, 1990). A number of individual difference factors, such as job involvement and commitment, have also been found to predict intentions to leave (Bakker, Demerouti & Schaufeli, 2003)

The next section reviews the individual difference variables that have been investigated in the stress literature, together with the potential mechanisms by which they might influence the stressor-strain relationship

### **1.5.3 Individual difference variables in work stress**

The individual difference variables that are typically investigated in the work stress literature are shown in Table 1.1. As can be seen, a wide range of variables is included under this heading such as demographic factors (e.g. gender and age), dispositional variables (e.g. personality traits and coping styles) and environmental resources (such as social support from colleagues and supervisors). In general, more attention has been paid to personality characteristics, such as Type A and locus of control, than to investigating the impact of individual difference variables that are specific to the work environment. Over-commitment, a component of the effort-reward imbalance model discussed earlier in this chapter (Siegrist, 1996), is one work-related individual difference variable: another is

job involvement. Some of the individual difference factors that are included in this programme of study will be reviewed initially: these will then be discussed in greater depth in subsequent chapters of this thesis.

a) *Gender*

The evidence for gender differences in the nature and extent of stressors and strains is mixed. Some studies have highlighted a tendency for employed females to report higher levels of job strain and to perceive a different pattern of job characteristics as stressful (Wall *et al.*, 1997; Dollard, 2001; Travers, 2001). Furthermore, research by Frankenhaeuser and colleagues suggests that women (especially those with children) return to a physiological baseline level more slowly than their male counterparts after the working day (e.g. Lundberg & Frankenhaeuser, 1999). Other more large-scale studies, however, find no gender differences in the extent and nature of work stressors and strains, or in the magnitude of stressor-strain relationships (Miller, Greyling, Cooper, Lu, Sparks & Spector, 2000; Smith, Brice, Collins, Matthews & McNamara, 2000). There is some evidence that any gender differences in levels of perceived stress and strain that may be found initially tend to disappear when men and women are of similar occupational status (e.g. Emslie, Hunt & Macintyre, 1999). The degree to which gender is a significant moderator of the stress process is, however, still open to question (Sulsky & Smith, 2005). Gender differences in stressors and strains experienced by academic staff will be reviewed in Chapter 2.

b) *Job involvement*

Job involvement represents “a specific cognitive belief state of psychological identification” with a given *job*, insofar as the *job* is perceived as having “the potential to satisfy one’s salient needs and expectations” (Kanungo, 1982, p. 80). It is this cognitive emphasis, compared to the affective, which distinguishes the construct from job satisfaction (Brown, 1996). The polar opposite of job involvement is job alienation, which is defined as a state of powerlessness, meaninglessness, normlessness, isolation and self-estrangement (Kanungo, 1979). There is evidence in the literature that job involvement can have positive outcomes for the individual and the organisation. Job-involved individuals are more likely to describe their work as stimulating and more inclined to rate their work highly on variety, autonomy, task identity and feedback (Elloy, Everett & Flynn, 1995). Positive associations have also been found between job involvement and number of hours worked, amount of unpaid overtime and general effort put into work (Paterson & O’Driscoll, 1990). Moreover, a meta-analysis conducted by Brown (1996) found consistently strong relationships between job involvement and global job satisfaction, but weaker relationships were found with intentions to remain in the organisation. There is also some

evidence that a high level of involvement in work might protect employees from the negative impact of work stressors (Barling & Kryl, 1990).

A review of the literature suggests that job involvement might not necessarily have positive outcomes. Brown's meta-analysis (1996) found weak evidence that high levels of job involvement might be damaging to the wellbeing of employees, but other studies suggest that individuals who are "over-involved" in their work might be at greater risk of strain and work-life conflict (Frone & Major, 1988; Greenhaus, Parasuraman, Granrose, Rabinowitz & Beutell, 1989). More research is needed in order to obtain greater insight into the role played by work-related individual difference variables, such as job involvement, in the stressor-strain relationship.

#### *c) Social support*

Social support in a work context refers to the availability and quality of an employee's relationship with supervisors and co-workers, and the amount of positive consideration and task assistance received from them (Cohen & Wills, 1985). Other sources of support at work include the facilities available to workers to help them achieve a fair balance between their work and family responsibilities (Thomas & Ganster, 1995). There is evidence that social support, in general, has a beneficial effect on the wellbeing and satisfaction of employees (Greenglass, Fiksenbaum & Burke, 1996). The moderating role played by support at work in the relationship between stressors and strains has also been extensively examined. Tests of the buffering effects of social support have tended to yield contradictory findings (e.g. Beehr, 1995); however, a recent meta-analysis of 68 studies provides evidence that, under some circumstances, social support at work can mitigate the influence of perceived stressors and reduce the level of strain experienced (Viswesvaran, Sanchez & Fisher, 1999). Finding a moderating effect is thought to be dependent upon the goodness of fit between the type of stressor and the type of support provided (Cutrona & Russell, 1990). For example, perceptions of schedule flexibility provided by organisations might be expected to mitigate the negative impact of working hours on perceptions of work-life conflict.

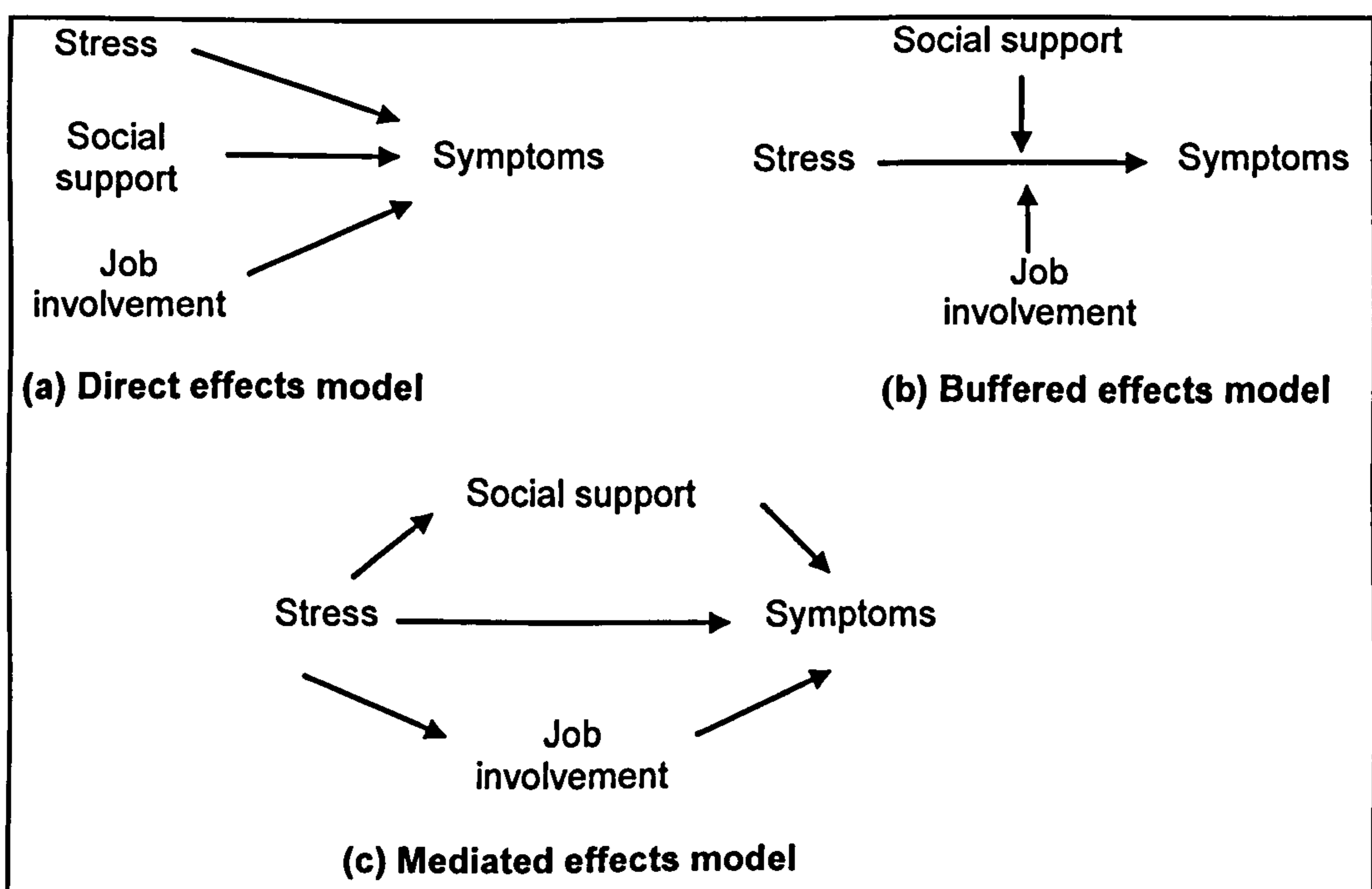
#### **1.5.4 Individual difference factors: potential mechanisms**

There are three main mechanisms by which individual difference factors can influence relationships between stressors and strains: direct effects, moderation and mediation (Edwards, Baglioni & Cooper, 1990). In order to illustrate these mechanisms, the models presented by Edwards *et al.* are shown in Fig.1.3 using job involvement and social support as examples.

- Direct or additive effects occur when the individual difference variables (in this case, social support and job involvement) have a *direct* effect on the level of strain experienced, regardless of the effects of a stressor: i.e. the models shown in (a) below suggest that social support and job involvement independently influence strain.
- Moderation is where an individual difference variable changes the strength of the relationship between two variables: the example provided in (b) below suggests that social support and job involvement may modify the relationship between stressors and strains.
- A variable may be considered a mediator to the extent to which it carries the influence of a given independent variable to a given dependent variable. The example shown in model (c) below suggests that job stressors might activate social support or job involvement which, in turn, leads to strain. It should be emphasised, however, that in order for individual difference factors to function as mediators, the stressor must be a plausible antecedent to the mediator, for example, a stressor cannot be preceded by a personality characteristic (Jones & Bright, 2001).

**Fig 1.3**

**Models of stress, social support, job involvement and symptoms (adapted from Edwards, Baglioni and Cooper, 1990)**



The next section will review the literature relating to the interface between the work and non-work domains. The models that have been proposed to explain the relationship

between work and family life will be briefly examined. Particular focus will be placed on work-life conflict and its predictors and outcomes.

### **1.5.5 The work-home interface**

#### *a) Models of work and home life*

A number of different models have been proposed in an attempt to elucidate the association between work and family life (see Kinman & Jones, 2001 for a review of the literature). The segmentation model (which was popular in the 1950s and 1960s) posits that work and family life are independent domains with no reciprocal influence. More recently, the “myth of separate worlds”, which conceptualises work and family life as separate spheres, has been exposed (Kanter, 1977, p. 1). The segmentation model, therefore, has little credibility amongst researchers in the field.

In contrast, the spillover hypothesis maintains that domain boundaries are permeable and that work and non-work experiences will be related. Spillover is typically depicted as a negative phenomenon, with stressful events experienced in the workplace adversely affecting the quality of family life or leisure activities. A similar conceptualisation to spillover, the resource drain model, specifies that the use of finite resources (time or energy) in one life domain reduces the availability of these resources in another life domain (Frone, 2003). A further model of the relationship between work and non-work life is based on the notion of compensation. This model hypothesises that work and non-work are negatively associated, whereby deficits in one domain (for example, dissatisfaction with work) might be compensated for by satisfaction gained from family life and personal interests.

It is generally acknowledged that some (or all) of the processes outlined above may operate concurrently and that employees will utilise a range of different strategies in an attempt to achieve an acceptable balance between work and home (Lambert, 1990; Frone, 2003). The strategies utilised will, to some extent, be dependent upon characteristics of the job, the family and individual preferences (Kinman & Jones, 2001). Some studies suggest that women tend to experience more problems balancing work and family demands than men, but the majority find no gender differences (Duxbury & Higgins, 1994; Haar & Spell, 2001; Frone, 2003).

#### *b) Work-life conflict*

Within the field of occupational health psychology the work-home interface is most commonly examined through a role conflict framework. Work-family conflict has been

defined as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role” (Greenhaus & Beutell, 1985, p. 77). To some extent, this definition reflects the resource drain hypothesis described above, in that time and energy resources are finite and that the fulfilment of multiple role demands is likely to result in a depletion of these scarce resources.

Although it is acknowledged that work-family conflict is likely to be bi-directional, research findings indicate that the family domain is more permeable than the work domain. This means that “work-to-family” conflict tends to be not only more frequent, but also potentially more damaging, than “family-to-work” conflict. This is illustrated in a study by Frone, Russell and Cooper (1992) who found that the prevalence rate for work-to-home conflict was almost three times higher than the rate for home-to-work conflict amongst both men and women. Furthermore, recent research conducted by Hammer, Saksvik, Nytro, Torvatn & Bayazit (2004) found that work-to-family conflict was significantly related to health symptoms, but family-to-work conflict was not. Consequently, the present programme of research will examine conflict uni-directionally: from the workplace into the non-work domain.

Research indicates that 85 percent of employees report some degree of day-to-day family responsibility (Bond, Galinsky & Swanberg, 1998); nonetheless, family life is only one aspect of life outside work. The term “work-life conflict” will be adopted in this thesis as it encompasses the needs of those without current family responsibilities as well as those “who just want to have a life beyond the workplace” (Lewis, 2003, p. 346). “Work” will be defined as all activities relating to paid employment, whereas “life” will be viewed as time when there are no commitments determined by work.

Conflict between work and family life may take several forms, but that derived from time devoted to the work role (known as time-based conflict) and that derived from the strains produced by this role (known as strain-based conflict) are thought to be of particular importance (Greenhaus & Beutell, 1985; Netemeyer, Boles & McMurrian, 1996). Several studies provide support for a relationship between job demands and work-life conflict, such that the more demands employees experience, the more time-based and/or strain-based conflict they tend to report (e.g. Higgins, Duxbury & Irving, 1992; Butler, Grzywacz, Bass & Linney, 2005). In turn, strong associations can be found in the literature between perceptions of work-life conflict and a number of negative outcomes including physical and psychological symptomatology, burnout, absenteeism and turnover intentions (for a

recent review see Eby, Casper, Lockwood, Bordeaux & Brinley, 2005). There is also some evidence that employees with higher levels of work-life conflict tend to report lower levels of job satisfaction, but research findings are equivocal (Bacharach, Bamberger & Conley, 1991; Kossek and Ozeki, 1998). A growing body of research also suggests that work-life conflict can have a negative impact on the wellbeing of others sharing the non-work environment such as marital partners and children (Jones & Fletcher, 1993; Galinsky, 1999; Crossfield, Kinman & Jones, 2005). Although there is clear evidence that work demands can have a negative impact on the non-work domain, several factors may moderate this association, such as job characteristics, family circumstances, working practices and personality variables (Frone, 2003).

Organisational support for work-life balance is likely to be a determining factor in the extent of conflict that employees experience between work and home. In 2000, the UK Government introduced a Work-Life Balance Campaign designed to raise the awareness of employers of the benefits in helping their employees achieve a better balance between work and other activities in their lives. Although lagging considerably behind many other members of the European community, the UK has recently introduced legislation promoting so-called "family friendly" policies. There is now a requirement for employers to consider seriously requests for flexible working arrangements proposed by individual employees who have caring responsibilities for young children. Some resistance to the notion of flexible working amongst employers in the UK is, however, apparent. The findings of a survey commissioned by the Department for Education and Employment suggest that, even though employers recognised that improved work-life balance brought benefits to their business, few had introduced formal policies on work-life balance (DfEE, 2000). Perhaps more seriously, research conducted by the Confederation of British Industry reported that more than one-quarter of the companies which responded indicated that flexible working requests had a negative impact on their business (CBI, 2005).

Work-life conflict, and ways by which this might be managed, is discussed further in the context of academic employees in Chapters 2 and 5 of this thesis.

## **1.6 Methodologies utilised in stress research**

This section introduces the different methods that are utilised in the field of stress research. Particular focus will be placed on evaluating cross-sectional survey methodology as this is utilised in the current programme of research. Strategies that can be adopted to minimise the various biases inherent in cross-sectional research will also be examined.

Several different types of research design have been adopted to examine relationships between workplace stressors and strains. Some studies, particularly those that adopt a transactional perspective, have utilised qualitative methodologies such as open-ended interviews, free-form descriptions and single case-studies (Newton & Keenan, 1985; Firth-Cozens (1992; Erera-Weatherley, 1996). Such methodology has the potential to yield rich data that can provide valuable insight into individual conceptualisations of workplace stress. Qualitative methodology is, however, unlikely to be helpful where a more nomothetic approach is necessary. Nonetheless, even in large quantitative studies, qualitative data has the potential to augment quantitative data by providing richer, more in-depth, information on employees' personal experiences of stressors and strains (Sulsky & Smith, 2005).

The majority of studies that examine relationships between workplace stressors and strains have adopted a cross-sectional design. Such methodology has advantages, as data can be collected from large numbers of employees, who are representative of the target population, and at a level of detail that would not be possible by other methods. Complex statistical analyses can be performed on the data obtained from such studies that may reveal trends and relationships between variables that would not be obvious from interviews or physiological indicators (which, for practical reasons, are almost exclusively restricted to small samples). These factors undoubtedly account for the continuing popularity of cross-sectional methodology in psychological research, particularly in organisational settings.

There are several problems with cross-sectional, self-report methodology. An understanding of the biases associated with self-report measures is of particular relevance when this method is used to assess all variables in a study, and correlational analysis of the data is conducted - a common feature of occupational stress research. Under such conditions, there is a potential response distortion, not only of each measure, but also of the correlations between them ("mono-method bias" or "method effect"; see Frese & Zapf, 1988; Spector & Brannick, 1995). A major concern is that it is not possible for correlational techniques to establish a causal relationship between stressors and strains. Furthermore, reverse causality may well apply. For example, employees with poor physical or psychological health may be more inclined to report high levels of work demands than employees who are experiencing good health rather than vice versa.

Where self-report measures are used to investigate variables that have some degree of "affective" overlap (such as stressors and strains) there is the risk of common method



variance which might inflate any relationships found. Campbell and Fiske (1959) have defined this as variance attributable to the method of measurement rather than by any “real” or “true” relationships between the variables or constructs of interest. Reviews of work stress research have generally found stronger relationships between self-reports of stressors and strains than any other type of measure, thus lending credibility to the effects of method variance (Jackson & Schuler, 1985). Other researchers have asserted, however, that the problem of method variance in stress research has been overstated. Jex and Beehr (1991) have argued that if the relationships between self-reported stressors and strains reflect predominantly method variance, then these relationships, regardless of the study variables or context, should always be large in magnitude. The available literature clearly indicates that this is not the case. Based on a review of the literature, Jex and Beehr (1991) concluded that “whilst method variance may be problematic in some cases, it is clearly not pervasive enough to use as a basis to dismiss all correlations between self-report measures” (p. 352). Spector (1987) has further maintained that there is little risk of common method variance if well-validated scales are used to measure stressors and strains, but it may well be more of a problem, however, with single items or poorly designed scales. Finally, it is interesting to note that method variance may infiltrate any other stress measurement procedure (Spector & Brannick, 1989), but self-report measures have primarily been the target for concern.

A related concern is that of overlap of item content. This is well illustrated in a study conducted by Jex *et al.* (1992) who examined the implications of the trend for questionnaire surveys to use items containing the words “stress” or “stressful”. Findings indicated that when study participants were asked about their stress at work, they tended to interpret “stress” as “strain”, not “stressor”. Given this confusion, Jex *et al.* recommend that researchers do not use the term “stress” in self-report scales. It has also been recommended that researchers should not inquire about the frequency or severity of job stressors, but simply ask people to rate the extent to which they experience specific demands (Wall, Jackson, Mullarkey & Parker, 1996). Such measures will be less dependent upon individual appraisal and, therefore, less prone to confounding with self-reports of strain. Researchers that adopt a more transactional perspective maintain, however, that individual appraisal of work stressors is fundamental and, due to the complex and interactive nature of stress, some confounding is inevitable (Lazarus & Folkman, 1984).

The existence of a third variable may also be responsible for an observed relationship between stressors and strains. A response bias from individuals who are prone to exaggerate the negative aspects of their job and their wellbeing and health might produce

a spurious correlation between reported stress at work and strain outcomes (Brief *et al.*, 1988). Negative affectivity can be defined as “a general personality trait reflecting individual differences in negative emotionality and self-concept, i.e., concentrating on negative aspects of everything and experiencing considerable distress in all situations” (Watson & Clarke, 1984, p.465). The extent to which negative affectivity inflates the relationship between stressors and strains is subject to considerable debate, and whether it should be controlled for in all work stress studies is hotly contested (Chen & Spector, 1991; Spector, Zapf, Chen & Frese, 2000). In general, negative affectivity is believed to have a stronger influence on the reporting of emotionally-laden reactions than more cognitive strains such as job satisfaction and leaving intentions (Barsky, Thoresen, Warren & Kaplan, 2004). It is therefore more likely to be a confounding variable where the assessment of job stressors relies solely on appraisal.

It is clear that employees may not necessarily be accurate (or truthful) in reporting job stressors and health symptoms. Concerns about the essential subjectivity of self-reported stressors and strains have been addressed by studies that obtain data from more “objective” sources such as peer and manager ratings, and job titles and descriptions. An ingenious study of air traffic controllers conducted by Repetti (1993) found that respondents perceived a higher level of demand and more health complaints on days where air traffic volume was high and visibility at the airport was poor. Such clear-cut objective markers of job demand are apparent in very few occupations, however, so the wider use of this technique to obtain data on job stressors is limited.

Some researchers have utilised the so-called “imputation technique” to gather information on job stressors; this involves national averages of job characteristics for a particular job title being assigned to individuals who have that job title. This technique is believed to result in data that is independent of a person’s cognitive and emotional processing (Karasek, Siegrist & Theorell, 1998). Objective measures of strains can also be obtained by using health records and physiological measures. There is some evidence to suggest that objectively-measured exposure to high strain jobs is related to objectively assessed health outcomes such as cardiovascular activity and sleeping difficulties (Schnall *et al.*, 1994).

Despite the attraction of objective measures, using them to obtain data on occupational stressors and strains is problematic for several reasons. Classifying individuals by their job title ignores heterogeneity of job characteristics within occupations (Karasek *et al.*, 1998). Moreover, as information on job titles was obtained from surveys conducted in the 1970s, classifications of stressful job characteristics based on such data will not reflect the

rapidly changing technological and organisational structure of work (Rau, 2004). Perhaps more fundamentally, however, utilising data obtained from job titles and descriptions assumes that jobs exist independently of human perceptions. In contrast to the risk of inflated effects produced by self-reports, objective measures of the work environment may actually underestimate associations between variables (Frese & Zapf, 1988), as they may fail to capture a conceptually subjective experience. Furthermore, “objective” observer ratings from managers and supervisors can measure manifest behaviour only and, although removing the risk of self-rater bias, are likely to introduce a new set of biases to the research (Frese & Zapf, 1988). Finally, there is a general lack of convergence (and frequently considerable divergence) between objective and subjective measures of stressors and strains (Ganster & Schaubroeck, 1991). Where convergence is found, studies have tended to utilise highly standardised data collection procedures with multiple assessments and modalities and control for numerous confounding variables (e.g. Ivancevich & Matteson, 1988).

It is evident that some degree of subjective assessment is necessary in order to establish the existence of stressors and strains. The techniques available for obtaining more objective measures of job stressors and strains are of limited value for obtaining insight into the social context of stress in a particular workplace, as they ignore the personal meaning of work situations and events to employees. The collective perceptions of several hundred people may not necessarily capture “objective” job features but are likely to correspond to some kind of shared reality (Cox & Ferguson, 1994; Jones & Bright, 2001). Many authors have maintained that personal perceptions of stressors can be as valid as objective indicators and play an important role in predicting stress-related ill health (e.g. Beehr & Newman, 1978; Daniels, 1999).

Few would dispute that some constructs are perceptual in nature and therefore are appropriately measured by self-report (e.g. Spector & Jex, 1998). The use of self-report scales to measure strains such as anxiety, depression and job dissatisfaction is generally considered to be acceptable since these are fundamentally subjective states (Jex *et al.*, 1997). Self-report questionnaires that investigate the physical health of employees may be viewed with more scepticism, as such measures do not necessarily capture “real” diseases that have been diagnosed by a physician. There is some evidence, however, that self-reported health symptoms correspond with actual morbidity (Jick, 1979; Taber, 1991). More specifically, a large-scale study conducted by the HSE (Jones *et al.*, 2003) that assessed the prevalence of work-related illness found a good degree of convergence between health assessments made by participants and those supplied by their general practitioners.

Some researchers have attempted to minimise the biases inherent in stress measurement by adopting a multi-method approach. A study on stress in psychiatric nursing conducted by Handy (1991) provides a good illustration of this approach. This study utilised a number of different qualitative and quantitative techniques to obtain both objective and subjective data, including observation, diaries, in-depth interviews and analysis of hospital records. Whilst a multi-method approach has undoubted advantages, Daniels (1999) has highlighted the difficulties involved in triangulating data from several different sources, especially in more complex jobs. Daniels argues that, as there is evidence that triangulation occurs in some circumstances only, "pursuing a strategy of triangulation as a matter of course would severely limit the scope of theory and practical application of work and wellbeing research" (p. 6).

Several different types of research methodology have been described and discussed in this chapter. Each method has strengths and weaknesses, and is more suitable for addressing some types of research questions than others. However, with the continued focus on perceptions as theoretically relevant concepts in stress research, self-report methodology continues to offer both practical and conceptual advantages to researchers in the field.

Cross-sectional self-report methodology will be utilised in this programme of research to examine the stressors and strains experienced by academic staff working in UK universities. It is argued that the disadvantages of such methodology are outweighed by the benefits in fulfilling the aims of this research. Furthermore, the choice of methodology is constrained by more pragmatic considerations. As this research programme aims to examine the stressors and strains experienced by an occupational group at a national level, it is clearly impractical to obtain representative data utilising other types of methodology.

Karasek *et al.* (1998) have recently maintained that, in order to understand the social context of stress in specific workplace settings, researchers should obtain: a) quantitative data on stressors and strains via validated scales and measures that are specific to a particular job or type of work; and b) qualitative data relating to employees' perceptions of their work and how this affects them. The current programme of research aims to follow Karasek's recommendations. Quantitative and qualitative data will be obtained relating to generic and job-specific stressors experienced by academic employees and the relationships between these factors and strain outcomes, such as psychological and physical symptomatology, job satisfaction and leaving intentions, will be assessed.

Kasl (1978) has suggested that, where self-report data is utilised, the researcher should make “strenuous attempts to operationalise conceptually distinct variables as separately and independently as possible” (p14). As discussed above, however, other researchers argue that an element of appraisal is necessary when investigating stressors and strains (Lazarus & Folkman, 1984). In an attempt to integrate these different perspectives, the current programme of research will examine the contribution made to strain outcomes by self-reported stressors that are more objectively measured (i.e. relatively independent of cognitive and emotional processing) and those that involve an element of subjective appraisal.

As this programme of study aims to investigate stressors and strains in a single occupation, the strengths and weaknesses of generic and job-specific measures of stressors are now discussed.

## **1.7 Measuring occupational stressors: general or specific?**

This section evaluates the merits of generic and occupationally specific measures of occupational stressors. The next chapter includes a more focused discussion of the measurement of job stressors in academic staff.

Two main approaches have generally been adopted to obtain data on occupational stressors using self-report methodology. Some researchers have developed occupation-specific questionnaires for use in particular types of job, whereas others have attempted to measure more general features of work that are relevant to any occupational setting. To some extent, employees are likely to experience similar stressors regardless of the context of their work. Factors such as time constraints, work overload, role ambiguity and low job control, for example, will be relevant to many occupational settings. Several generic measures have been developed based on various models of stress. These include the Job Diagnostic Survey (Hackman & Oldham, 1975), the Job Stress Survey (Spielberger & Vagg, 1999), the Stress Diagnostic Survey (Ivancevich & Matteson, 1976) and the Occupational Stress Inventory (Osipow & Spokane, 1981). These measures were developed in the USA and have been widely used there, but their applicability to work cultures in the UK has recently been challenged (Rick, Briner, Daniels, Perryman & Guppy, 2001)

In the UK, the Occupational Stress Indicator (OSI: Cooper, Sloan & Williams, 1988) is possibly the most widely used measure of workplace stress. This is a generic measure of stress that incorporates elements of the interactional and transactional models discussed

earlier in this chapter. The OSI identifies sources of pressure (i.e. experiences in the workplace) which cause stress effects (low job satisfaction and health symptoms) which are, in turn, moderated by various personality factors and coping strategies. Evidence for the psychometric properties of this measure has been provided by the authors (e.g. Robertson & Cooper, 1990), but the structure, validity and reliability of some of the scales has been challenged (Lyne *et al.*, 2000).

The OSI has been utilised to investigate the stress experienced by a diverse range of occupational groups: for example, teachers (Kirkaldy & Martin, 2000); politicians (Weinberg & Cooper, 2003); steelworkers (Shanfa, Sparks & Cooper, 1998) and police officers (Biggam, Power & MacDonald, 1997). A shorter version of the OSI, known as the ASSET, has recently been developed (Cartwright & Cooper, 2002). The ASSET has established norms from a database of responses from 9,188 people employed in a range of public and private sector organisations in the UK (Tytherleigh, Webb, Cooper & Ricketts, 2005).

Generic measures of stressors and strains, such as the OSI and the ASSET, have advantages. As extensive normative data is available, comparisons between occupations can be made, thus enabling a “league table” of the most stressful occupations to be established (Johnson, Cooper, Cartwright, Donald, Taylor & Millet, 2005). As generic measures, by their very nature, operate on the premise that employees will experience the same stressors irrespective of the working environment, it is assumed that steelworkers will encounter similar job stressors to teachers – only to a greater or lesser extent. However, such questionnaires have limitations as they can provide little insight into the more specific qualities of work activities that may have a significant impact on employees’ health and job satisfaction. Not surprisingly, there is evidence that the OSI may not adequately reflect the experience of all types of employee. A study that investigated the stressors experienced by different groups of healthcare employees found that the OSI failed to discern the features of work that hospital doctors found most stressful, such as antisocial working hours and on-call duties (Rees, 1995).

The important role played by the working environment in shaping the antecedents, experience and expression of occupational stress has long been emphasised by researchers in the field (Narayanan, Menon & Spector, 1999; Sparks & Cooper, 1999; Kirkaldy & Martin, 2000). Compared with studies that have adopted a generic approach to the measurement of job stressors, however, those that have utilised an occupationally specific approach are few. The paucity of this research is surprising as other research findings suggest that structural and cultural differences between occupational groups lead

to different perceptions of the work environment which, in turn, are likely to result in different reactions in employees (Bartz & Maloney, 1986; Bacharach & Bamberger, 1992; Fairbrother & Warn, 2003).

Researchers in the USA have tested the performance of occupationally specific versus generic models of stressors and strains. There is some evidence that job-specific models have a greater degree of specificity. A study of nurses and engineers conducted by Bacharach and Bamberger (1992) found that the more occupationally specific the model, the greater the overall degree of fit. More recently, Pousette and Hanse (2002) examined relationships between job characteristics, intervening variables and health outcomes in different occupational groups, using structural equation modelling. Again, occupation-specific models were found to be more plausible than those that were more generic. Pousette and Hanse observed some interesting differences between occupational groups in patterns of relationships between variables: most notably the path between job satisfaction and ill health was significant for white-collar workers, but not blue-collar or health care workers. On the other hand, white-collar employees were the only group where a significant relationship between workload and ill health was not observed.

The studies conducted by Bacharach and Bamberger, and Pousette and Hanse emphasise the importance of examining the work stress process in different occupational contexts in detail. Adopting a job-specific approach to the study of work stress provides richer, more detailed information which can inform the development of effective organisational interventions to reduce stressful job conditions and improve the health of employees. It should be emphasised, however, that both studies examined occupational differences in the strength of relationships between generic stressors (such as role conflict) and strains, rather than examining the nature and impact of more occupationally specific stressors. Both pairs of authors conclude by recommending that future researchers should adopt a job-specific approach to the study of stressors and strains, especially where little is known about the work-related wellbeing of the occupational group.

A recent review of work stressors commissioned by the HSE concluded that, as jobs contain “relatively unique kinds of hazards”, measures should be developed which are more specifically focused on particular organisations and jobs (Rick *et al.*, 2001, p. 82). Studies of various occupational groups (such as teachers, mental health professionals and nursing students) suggest that questionnaires that have been tailored to specific working environments are relatively reliable (Gray-Toft & Anderson, 1981; Fimian & Fastenau, 1990; Cushway, Tyler & Nolan, 1996; Haynes, Wall, Bolden, Stride and Rick,

1999; Deary, Watson & Hogston, 2003). There is some evidence that job-specific measures of job stressors have greater discriminant validity than those than more generic tools. For example, a study of teacher stress conducted by Van Der Doef and Maes (2002) found that a job-specific measure of work demands explained more variance than a generic measure in predicting burnout, psychosomatic symptoms and job satisfaction.

## **1.8 Aims of this research programme**

This programme of research adopts a job-specific approach to the examination of the work-related wellbeing experienced by academic employees in the UK. The overall objective is to systematically investigate the stressors and strains experienced by academic employees working in universities in the UK. As no previous research is available at a national level on this occupational group, the research questions adopted are fairly broad: “What are the job stressors experienced by academic employees in the UK?”; “Which features of work are the strongest predictors of strain for this occupational group?” and “How stable are these stressors and strains?” The research programme further aims to examine how the knowledge gained from the studies conducted might inform interventions to improve the wellbeing of academic employees.

The next chapter reviews the literature on the stressors and strains experienced by academic employees in the UK and other countries.



## **Chapter 2**

### **Stressors and strains experienced by academic employees: a literature review**

#### **2.1 Summary**

In order to provide a general background to this programme of study, this chapter reviews research that has examined the stressors and strains experienced by academic employees<sup>1</sup>. Studies that have been conducted in the university sector in North America, Australia, and New Zealand as well as the UK are included. The historical and contemporary context of academic work in the UK is described, and the wide-ranging changes that the sector faced up to 1998 (when the first study reported in this thesis was conducted) are discussed. The literature reviewed in this chapter provides the basis for the selection of job stressors and sources of change utilised in Study 1. In order to justify the job-specific approach utilised in this thesis, the relative merits of generic and job-specific measures of stressors initially discussed in Chapter 1 are revisited in the context of previous research conducted on academics. Finally, the aims of the first study in this programme of research are presented.

#### **2.2 Stress in higher education: an introduction**

Historically, universities have been perceived as “ivory towers”: institutions very distinct from industry and commerce. Tenure, and the flexibility and autonomy inherent in academic work were widely considered to protect employees from the working conditions associated with occupational stress such as job insecurity, low job control and a lack of person-environment fit (French *et al.*, 1982; Kahn *et al.*, 1964; Karasek & Theorell, 1990). Moreover, a culture of collegiality was thought to provide a protective and supportive framework that acted as a buffer in potentially stressful situations (Gmelch, Lovrich & Wilke, 1984). Perhaps unsurprisingly, early research found academic work to be highly satisfying and comparatively stress-free (Sales & House, 1971).

Working conditions for academics have changed considerably over the last decade. It has been argued that university lecturers and researchers currently experience similar pressures to professionals in any large organisation (Thorsen, 1996). Compared to other occupational groups, however, little research has focused on the job stressors experienced by academics. Even less is known about the extent of strain in the higher education sector, and how job stressors are related to the health, wellbeing and

satisfaction of employees. Most of what is known about stressors and strains in higher education is derived from studies conducted in North America, Australia and New Zealand. The information that is available on academics working in UK universities is generally derived from research projects conducted in single institutions. These studies suggest, however, that academics could be a vulnerable occupational group and are therefore worthy of more systematic investigation.

### **2.3 Aims of this review**

Studies conducted in North America, Australia and New Zealand that have investigated the stressors and/or strains experienced by academics will initially be reviewed. The research that has been conducted in the university sector in the UK will subsequently be examined. The research questions addressed by this literature review are as follows:

1. What are the main stressors perceived by academics?
2. What is known about the job-related strains experienced by academics?
3. Have the stressors and strains experienced by academics increased in recent years?
4. If academics work has become more stressful, what might be the reasons for this?

A further aim of this review is to guide the selection of the potential stressors to be utilised in Study 1 of this programme of research.

The lack of consensus inherent in the field of stress research was discussed in Chapter 1 of this thesis. In accordance with the findings of Jex *et al.* (1992), a review of the literature that has examined occupational stress in academic staff reveals that a number of different conceptualisations of the term “stress” have been utilised. Studies reviewed in this chapter have used the term variously to describe either an external stimulus from the environment, a response from the individual, or sometimes both meanings simultaneously. In order to avoid semantic and theoretical confusion, this chapter will follow recommendations made by Jones and Bright (2001): the term “stressors” will be utilised to apply to characteristics of the external environment, and the term “strains” used to describe any response of the individual to these stressors. The term “stress” will be employed where it is not possible to discern the meaning intended by the authors of a particular paper, and/or where participants have been asked direct questions (for example, when enquiring whether they perceive a low, moderate or severe level of stress at work).

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<sup>1</sup> Academics are members of staff at universities who undertake teaching, research, a combination of both functions, or who are responsible for staff undertaking such functions.

## **2.4 Research in North America**

The traditional image of academia as providing an occupation that is low in stress and high in satisfaction is reflected in the findings of a longitudinal study of 1,600 American academics that spanned three decades (Willie and Stecklein, 1982). Although work-related stress was not examined directly, 80 percent of respondents to this study indicated that they found their careers highly satisfying and, given the opportunity, would make the same career choice again. Levels of job satisfaction did not differ significantly between the first and second wave of data collection (i.e. 1956 and 1968) and only slightly decreased in the final wave (1980).

One of the first (and largest) studies of stress in academic staff was conducted by Gmelch *et al.* (1984) who surveyed more than 1,200 lecturers from 80 universities in the USA. On average, respondents estimated that 60 percent of the stress they experienced came from their work rather than other life domains. The main stressors identified were a combination of generic and job-specific factors: i.e. high self expectations; pressure to obtain money for research; insufficient time to keep abreast of developments in areas of expertise; inadequate salary; preparing manuscripts for publication; heavy workload; job demands interfering with personal life; unsatisfactory career advancement; frequent interruptions at work; and role conflict (p. 483). Considerable agreement across teaching and research disciplines was found relating to the perception of job stressors. Interestingly, however, Gmelch and colleagues indicated that respondents from what were classified as the “soft, pure, non-life” disciplines (such as history) were more stressed by lack of rewards and recognition, whereas those working in the “soft, pure, life” disciplines (such as psychology) and the “hard, applied, non-life” disciplines (such as engineering) found interactions with students to be the most stressful aspect of their work.

Subsequent studies that have been conducted in the university sector in North America have been almost exclusively restricted to single institutions; the stressors identified by Gmelch *et al.* are, however, recurring themes. These studies frequently highlight time and resource constraints and heavy workload as the most stressful features of academic work, but additional stressors reported include: poor faculty communication; inter-personal conflict; lack of human and technical support; role ambiguity and overload; finding time for research; too much paperwork; striving for publication; variability in demand through the academic year; frequent interruptions, keeping up with technology; and long working hours (both on and off campus) (Brown, Bond, Gerndt, Krager, Krantz, Lutkin & Prentice, 1986; Sorcinelli & Gregory, 1987; Goldenburg & Waddell, 1990; Blix, Cruise, Mitchell & Blix, 1994; Thorsen, 1996; Lease, 1999; Narayanan *et al.* 1999; Hogan, Carlson & Dua, 2002). Clearly, many of these stressors are specific to academic work.

Sixty-six percent of respondents to a survey conducted in an American university by Blix *et al.* (1994) indicated that they perceived “severe” levels of stress at work at least half of the time. In this study, “research-related activities” were cited as the most significant stressor (p. 162). This contradicts the findings of Gmelch *et al.* (1984) described above, where teaching was generally considered to be more stressful than research. The disparity in findings between the two studies could be due to the different populations sampled, or to increased pressure to conduct research in the ten-year period between the two studies. Blix *et al.* (1994) concluded their study by arguing that the degree of stress and professional disillusionment revealed had potentially serious consequences for the quality of higher education in North America. Self-reported stress was positively associated with perceptions of reduced productivity, and 15 percent of the lecturers surveyed indicated that they had seriously considered a change of career during the previous year due to stressful working conditions. A significantly higher proportion of female academics than males indicated that they wished to leave the sector.

## **2.5 Research in Australia and New Zealand**

In 1999, McInnis reported on a study of 2,609 academic staff from 15 Australian universities, and compared his findings with those obtained from a similar study conducted in 1992. Whereas the average level of job commitment reported by respondents remained generally high between 1992 and 1999, there was a significant decrease in job satisfaction and a significant increase in the proportion of workers who indicated that their jobs were a source of considerable stress. Working hours were generally believed to have increased in the intervening period, with 40 percent of the sample working in excess of 50 hours per week. Among the activities thought to contribute most to the extra workload were job specific stressors such as providing academic and pastoral support for students, seeking funds to support academic work and developing course materials for new technologies.

The Australian university sector has recently commissioned longitudinal research into occupational stress at a national level. The first phase of this programme involved organising focus groups in 15 Australian universities to investigate staff perceptions of occupational stress (Gillespie, Walsh, Winefield, Dua & Stough, 2001). Participants reported experiencing “moderate” to “very high” levels of work stress that tended to fluctuate throughout the year in response to varying workloads. Five main stressors were identified in this study: lack of human and technical resources; insufficient research funding; work overload; poor leadership and management; job insecurity; and lack of promotion, recognition and reward. With the exception of unsatisfactory management and

leadership, the stressors experienced by academics in Australia tend to reflect those reported by their counterparts in North America. The importance of reward and recognition to the wellbeing of Australian academics was also highlighted in a study conducted by Winter and Sarros (2002). Findings indicated that insufficient institutional recognition and reward systems were amongst the most stressful aspects of academic work and made the strongest contribution to lack of job motivation.

A study conducted by Boyd & Wylie (1994) sampled 500 academic staff from seven universities in New Zealand. Fifty percent of respondents indicated that their work was stressful “often” or “almost always”, and 46 percent expected the levels of stress they experienced to increase further in the near future. Eighty percent of respondents indicated that their workloads had increased in the previous academic year; this increased demand was thought to have resulted in higher levels of inter-personal conflict between colleagues and managers, less time for research and professional development, and decreasing standards of teaching and research.

## **2.6 Research in the UK**

Over 50 percent of UK lecturers and researchers who responded to a national survey of a range of different occupations reported that their jobs stressed them “all” or “most” of the time (Millward Brown, 1996). The results of this survey also provide evidence that academics may experience more intense work demands than members of other occupational groups. More than one-half of academics who responded to the survey (58 percent) blamed management for the stress they experienced, compared to an average of 47 percent for the 20 other occupational groups surveyed. One respondent in five who worked in the higher education sector admitted that they thought about leaving their jobs on a daily basis, whereas an additional 20 percent had such thoughts once a week on average.

Research findings suggest that many academics in the UK may be working long hours on a regular basis. A study conducted by Court (1996), examining academics’ use of time, involved more than 2,500 lecturers and researchers from the “traditional” university sector<sup>2</sup> keeping work diaries. Findings revealed an average working week of almost 55 hours during term time. This clearly exceeds the 48 hour limit stipulated by the Working Time Directive that was discussed in Chapter 1. Perhaps surprisingly, time spent on administrative duties was found to outrank what might be considered the “core” academic activities of teaching and research. Court also reported that almost half of respondents’

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<sup>2</sup> The “traditional” universities are those which were in existence before 1992; the “new” universities are those which were created primarily from the former polytechnic sector.

personal research and scholarship was conducted outside what might be considered “office hours” (i.e. 9am to 5pm, Monday to Friday). Research reviewed in Chapter 1 suggests that long working hours can have a negative impact on the health and wellbeing of employees (e.g. Sparks *et al.*, 1997). As yet, however, no research has examined relationships between working hours and strain experienced by academics working in UK universities.

Table 2.1 provides details of studies conducted in the UK that have examined the stressors experienced by UK lecturers and researchers. In general, these studies have obtained data from staff working in single institutions only (e.g. Daniels & Guppy, 1994b; Bradley & Eachus, 1995; Abouserie, 1996; Jackson & Hayday, 1997). The larger scale studies that have been conducted have either sampled university employees from a range of functions (e.g. Cross & Carroll, 1990), or sub-groups of academic employees such as psychology or social work lecturers (e.g. Hind & Doyle, 1996; Collins & Parry-Jones, 2000). Clearly, the findings of such studies cannot readily be extended to the wider population of academics working in the UK. This body of research will now be reviewed.

A study that investigated the extent and antecedents of workplace stress in seven UK universities, conducted by Cross & Carroll (1990), revealed that almost half of the respondents found their job stressful either “often” (38 percent) or “almost always” (11 percent); only three percent indicated that they “rarely” experienced job-related stress. More than three-quarters of respondents indicated that their jobs had become more stressful in recent years, whereas 62 percent expected the stress they experienced to continue to intensify. Furthermore, 48 percent of respondents reported that they found their jobs “less”, or “much less”, satisfying in recent years. As the sample comprised academic-related employees as well as lecturers and researchers, it is not possible to ascertain the main stressors of relevance to academics. Indeed, the stressors that were most commonly reported in this study could apply to most types of work: i.e. inadequate salary, absence of promotion prospects and role conflict. However, respondents also nominated “lack of public recognition of worth” to be a considerable stressor; the importance of adequate recognition highlighted in this study reflects the findings of research conducted in higher education settings in other countries.

As discussed in Chapter 1 of this thesis, role stressors have long been associated with employee strain (Kahn *et al.*, 1964). Based on research conducted in a university in Scotland, Fisher (1994) suggests that role overload and role conflict has become a

**Table 2.1  
Studies conducted in UK Universities highlighting the most significant stressors reported**

<b>Authors</b>	<b>Sample</b>	<b>Main stressors found</b>
Collins & Parry-Jones (2000)	322 academic staff in Social Work Departments nationally	Work overload; too much paperwork; role conflict; staff shortages
Doyle & Hind (1998)	582 female academic staff in Psychology Departments nationally	Heavy workload; lack of time to keep up to date; lack of preparation time; interpersonal conflict.
Doyle (1998)	30 female academics from one University (used qualitative data obtained from open-ended questions)	Excessive workload (mainly due to increased administrative duties); lack of admin. support; work interfering with personal life.
Jackson & Hayday (1997)	953 employees from one University in England	Rushed pace of work; lack of time to keep up to date; uncontrollable workload.
Abouserie (1996)	414 academic staff from one university in Wales	Conducting research; time pressures; relationships with others; admin & bureaucracy.
Bradley & Eachus (1995)	306 employees from one University in England	Factors intrinsic to the job; relationships with other people; career and achievement; organisational structure and climate
Daniels & Guppy (1994b)	221 employees from one university in England	Inadequate resources; work overload; uncaring organisation; inadequate salary.
Cross & Carroll (1990)	662 employees from seven UK Universities	Heavy workload; poor management; organisational structure and climate.

particularly salient stressor for academics, as their work encompasses many different, frequently conflicting, roles. Academics “are expected to teach, meet tutorial, laboratory, or seminar commitments, and at the same time carry out research, run experiments, obtain research funding, and write papers and books” (p.53). Additional roles to those listed above that are commonly performed by academics could also be enumerated: i.e. line manager, student counsellor (dealing with both academic and personal matters), external consultant, information technology specialist and administrator.

Two independent studies conducted in individual universities in England have highlighted a range of job stressors. As with Cross and Carroll’s study described above, however, both of these studies sampled employees from a wide range of functions, rather than academic staff only. Daniels & Guppy (1994b) found “feeling that the organisation does not care for its staff” and “inadequate resources” were the most frequently occurring stressors. Jackson and Hayday (1997) used a PE fit model (see Chapter 1) to examine the discrepancy between desired and perceived work-related features. Once more, the findings highlighted the central importance of feeling valued at work, although job security and “doing a worthwhile job” were also amongst the most desirable features nominated by respondents. Findings revealed that, whereas around 85 percent of the sample reported that they experienced a “good” degree of job security and 75 percent believed that they were doing a worthwhile job, less than one half of respondents felt valued by their employers.

As discussed in Section 2.4 above, two studies conducted in North America have yielded contradictory findings as to whether teaching or research are the most stressful aspects of academic work (Blix *et al.*, 1998; Gmelch *et al.*, 1984). Rather than a source of strain, studies conducted in educational settings in the UK suggest that involvement with students might be a protective feature. Strong positive correlations have been found between job satisfaction in schoolteachers and both involvement with their pupils, and perceptions of high levels of pupils’ motivation and participation (Kalekin-Fishman, 1986; Delle Fave & Massimini, 2003). Research in the post-compulsory sector of education has provided some support for this view, although studies that examine levels of satisfaction with specific aspects of academic work (such as teaching students and conducting research) are few. Only two such studies can be located and they yield similar findings. Forty percent of a sample of academics from a university in Wales maintained that conducting research was more stressful than teaching students (Abouserie, 1996). More specifically, Doyle and Hind (1998) found that pedagogic activities (along with other aspects of academic work involving contact with students) consistently obtained the lowest ratings of all potential stressors included in their study.



The features and potential outcomes of work-life conflict were discussed in Chapter 1. The potential for conflict between the demands of the job role and those emanating from the non-work domain has increased amongst employees in most sectors of the economy in the UK (Hurst & Richards, 2003; Lewis & Cooper, 2005). Until relatively recently, work-life balance has not been regarded as a major issue within higher education, possibly because academics have traditionally been perceived as having a high degree of flexibility and control over their working environment. Due to changes in the context and content of academic work, however, it could be argued that academics might be more likely than other professionals to experience problems in maintaining an effective work-life balance. Several reasons could be proposed to support this argument. Firstly, academic work is essentially “open-ended” and can never be completed (Austin & Pilat, 1990; Wortman, Biernat & Lang, 1991). Secondly, it has been shown above that the work of academic employees incorporates multiple roles with potentially competing demands (Fisher, 1994). Thirdly, although there is little direct evidence to support this, lecturers and researchers are likely to be highly involved in their jobs and intrinsically motivated by their work. In the words of Austin and Pilat (2000) academics regard their work “not just as a job, but as a central thread woven through all aspects of their lives, blurring the boundary between the personal and the professional” (p. 38). It could therefore be argued that the high levels of job involvement experienced by academics might compound any tendency towards work-life conflict. Finally, Lewis (2003) has indicated that “knowledge workers” (a category that clearly includes academics) might be particularly at risk of work-life conflict as their use of technology makes the boundaries between the workplace and the home more permeable.

Little systematic research has yet been conducted to examine the extent and impact of work-life conflict experienced by academics in the UK, or indeed in any other country. As the work-home interface is a major focus of the present programme of study, the available literature will now be reviewed.

## **2.7 Work-life conflict in academic employees**

Researchers in the USA have recently started to examine the impact of academic work on leisure and family life (see Jacobs & Winslow, 2004) but no findings, as yet, have been reported. In Australia, Winefield *et al.* (2003) found that the majority of academics surveyed reported conflict between work and home commitments. A study conducted by Bradley and Euchus (1995) in the UK compared the sources of stress experienced by 306 employees in an English university with norms from a range of professional groups using scales from the OSI (see Chapter 1). The authors reported that stress relating to the work-home interface was higher than the levels found for other occupational groups. As only just over one half of the sample constituted academic employees and the “work-home

interface” was narrowly conceptualised as “taking work home”, this study provides little insight into the nature and impact of work-life conflict in academic staff. Research conducted in a UK university by Doyle in 1998 examined the perceived outcomes of academic work on non-working life in a broader sense. One-third of a sample of 30 female academics from a single university indicated that their children and/or partners suffered as a result of the demands of their work, and 13 percent believed that their heavy workloads had contributed towards the breakdown of personal relationships.

The literature reviewed above provides some evidence that academic staff might experience conflict between the demands of their work and their home lives, and that this might have a negative impact on their wellbeing and that of their families. However, due to conceptual and sampling limitations the findings of these studies cannot easily be generalised to the wider population of academics in the UK.

## **2.8 Job satisfaction and psychological distress experienced by academic employees and their relationship with work stressors**

Chapter 1 reviewed some of the literature that has examined the wide-ranging impact that workplace stressors can have on the wellbeing of employees. As discussed, studies have frequently found inverse relationships between occupational stressors and both job satisfaction and psychological wellbeing (e.g. Daniels & Guppy, 1994). Some large-scale surveys conducted in the UK and in other countries have assessed levels of job satisfaction and psychological health experienced by academic employees. As yet, however, only two studies can be located that have examined relationships between work stressors and strain outcomes in higher education employees. The available research will now be reviewed.

### **2.8.1 Job satisfaction**

Two studies can be located that have compared the degree of job satisfaction experienced by academics with other professional groups. Job satisfaction profiles of 143 occupational groups in the UK, analysed by Rose (1999), placed “University and Polytechnic Teaching Professionals” in the bottom 25 percent. Bradley and Euchus (1995) also reported that the mean level of job satisfaction amongst employees of one UK university was considerably lower than norms from a range of other occupational groups. In both of these studies, job satisfaction was measured globally with a single item (see Chapter 1). More specific data relating to the nature of job satisfaction in this occupational group has been obtained from a study of academics from eight nations (Lacy & Sheehan, 1997). For the purposes of this study, the authors utilised a measure that encompassed general and job-specific aspects of job satisfaction. Findings indicated that academics

from the UK were ranked fifth overall, with less than 50 percent of respondents from this country being generally satisfied with their jobs. More specifically, UK academics rated relationships with colleagues as the most satisfying aspect of their work, whereas institutional management, salary, career development and prospects for promotion were considered to be the least satisfying.

Research conducted in North America and Australia suggests that, on average, academics appear to be enthusiastic about their work and obtain a significant degree of satisfaction and challenge from it, in spite of, in some cases, high levels of perceived stress (Jarrett & Winefield, 1995; Blix *et al.*, 1996). A similar pattern has been revealed in studies conducted in the UK. Although Doyle and Hind (1998) found long working hours and comparatively high levels of burnout amongst a sample of academic psychologists, 40 percent of the sample reported that their work was intrinsically motivating, enjoyable, and potentially very rewarding. Findings from a national survey of working conditions experienced by various occupational groups (conducted by a market research company, Millward Brown) in 1996 further highlights the complex nature of stressors, strains and rewards to be found in academic work. Lecturers and researchers not only reported the lowest levels of job satisfaction of all 20 occupational groups included in the survey, but also had the highest levels of enjoyment and interest in their work. In this survey, "job satisfaction" included perceptions of a wide range of factors such as job security, career prospects and availability of resources.

### **2.8.2 Psychological distress**

A review of the small number of studies available suggests that levels of psychological distress experienced by academics might be generally high. Two studies conducted in Australia (both using the General Health Questionnaire (GHQ-12: Goldberg & Williams, 1988) have examined the incidence of psychological symptomatology amongst university staff. Firstly Jarrett and Winefield (1995) found that the employees of one Australian university scored more highly on this measure than many other "highly stressed" occupational groups, including prison officers and teachers. Analysis revealed that forty-four percent of university employees included in the sample achieved "caseness" rates of psychological distress (suggestive of clinical symptoms of psychological disorder). As this study reported aggregate caseness rates only, it is not possible to discern the levels of psychological distress achieved by academic staff. A subsequent study of almost 9,000 university employees conducted by Winefield and colleagues provided more detailed information on the mental health of employees from academic grades: 43 percent of lecturers and researchers (comprising 45 percent of the total sample) were found to have achieved caseness levels on the GHQ-12 (Winefield, Gillespie, Stough, Dua,

Hapuarachchi, & Boyd, 2003). As relationships between job stressors and psychological distress were not examined in either of these studies, it is not possible to establish the features of work that predicted psychological distress.

Research findings further suggest that levels of psychological wellbeing in UK academics might also be low. An epidemiological study of suicide conducted in 1995 by Kelly, Charlton & Jenkins found that academics are at around 50 percent greater risk than the average worker. In a national survey of working conditions conducted by Millward Brown (1996), higher education lecturers and researchers reported the lowest levels of self-reported psychological health of all 20 occupations included. As Millward Brown used a measure of psychological health that was developed specifically for the study, however, comparisons cannot be made between their findings and studies of academics or other professional groups that have utilised standard scales.

Three studies can be located that have assessed levels of psychological distress in UK university employees using standard measures. In a sample of academic psychologists, Hind and Doyle (1998) found levels of burnout (see Chapter 1), comparable to those reported by members of the medical profession (generally considered to be a highly stressed group). The main focus of this study was on gender differences in job stressors and strain, however, and the job-related factors that predicted burnout were not examined. Bradley and Euchus (1995) also reported that levels of mental ill health (measured by the Occupational Stress Indicator) were higher in a sample of university employees than normative data. The main predictor of mental health was "stress from relationships". The findings of this study should be viewed with caution, however, as almost one-half of the sample was from non-academic grades. A further study conducted by Daniels and Guppy (1994b) reported that 38 percent of a sample of employees in a university in England achieved caseness levels of psychological distress as measured by the GHQ-12. The authors reported that what they termed "managerial" stressors and work overload were greater in respondents who were classified as "cases". As with the study conducted by Bradley and Euchus, however, it is not possible to generalise these findings to the wider population of academics in the UK as only 83 out of 221 respondents were academic staff.

The research reviewed above suggests that job satisfaction and psychological wellbeing experienced by academic employees in the UK might be low. Nonetheless, there is evidence that lecturers and researchers might experience a considerable degree of satisfaction from certain aspects of their work. More research is clearly needed on a national scale that examines levels of job satisfaction and psychological distress in

academic staff, and investigates the features of the working environment that predict strain in this occupational group. In order to accomplish this, a large sample of employees from the academic grades is required rather than a general sample of university employees. It is also necessary for a standard measure of psychological distress to be utilised in order to measure levels of psychological health in the sector, and facilitate comparisons with studies of academics from other countries (e.g. Winefield *et al.*, 2003) and other professional groups within the UK.

## **2.9 Gender differences in stressors and strains in academic employees**

It has been argued that universities are not intrinsically egalitarian in nature; they have been described as being “shrouded in masculine norms relating to the rational and competitive pursuit of knowledge” (Knights & Richards, 2003: p.50). If true, this might suggest that female academics will experience more stressors and strains than their male counterparts. The findings of studies that have examined gender differences in the stressors and strains experienced by academics are, however, mixed and inconclusive. Some find no gender differences (Carroll & Cross, 1990; Jarrett & Winefield, 1995; Abouserie, 1996; Winefield & Jarrett, 2001; Hogan *et al.* 2002), whereas others report that female lecturers and researchers perceive a more intense level of stressors and strains and lower levels of job satisfaction than their male counterparts (Blix *et al.*, 1994; Boyd & Wylie, 1994; Lacy & Sheehan, 1997; McInnis, 1999). According to Blix and her colleagues, female academics may experience poorer work-related wellbeing than males for two reasons: firstly, because they lack role models; and, secondly, because they experience higher levels of role conflict between work and home. In support of this argument, research conducted by Doyle and Hind (1998) found that women academics were more likely to work from home during evenings and weekends, and tended to perceive a higher degree of conflict between work and home than men.

Some research has investigated gender differences in the features of work that are perceived to be the most stressful by academic employees. Dua (1994) surveyed 2,250 university personnel and found that males reported more stress relating to their workloads than females, whereas females found work politics to be more stressful than their male counterparts. In this study, however, all categories of university employee were included. An early study conducted in North America by Gmelch, Wilke & Lovrich (1986) found that women academics were significantly more stressed than men by time constraints and a lack of professional identity. Doyle and Hind (1998), however, concluded that female lecturers and researchers generally experience the same pressures from their work as males. Nonetheless, the findings of their study indicated that female academics perceived

significantly more pressure arising from conflict between personal and departmental goals and finding time for teaching preparation.

Other studies suggest that poor salary and lack of public recognition may be more stressful for male academics, whereas job insecurity is more salient for their female counterparts (Cross and Carroll, 1990; Narayanan *et al.*, 1999). Analysis of staffing figures in the sector has revealed that female academics are not only considerably under-represented in promoted posts, but also more likely than men to be employed on fixed-term and fractional contracts (AUT, 2000). It is therefore unsurprising that women perceive higher levels of job insecurity. That salary is a more significant source of pressure for men is interesting in the light of research findings; in 1999, full-time male academics in the more traditional universities were paid, on average, over £4K a year more than their female counterparts (Bett, 1999).

In summary, evidence has been provided that academics are currently experiencing a considerable degree of pressure from their work. A number of job-specific and more generic features of academic work have been highlighted. Evidence has also been provided for comparatively low levels of job satisfaction and high levels of psychological distress in the sector. Clearly, universities no longer provide the low stress working environments that they once did. Potential reasons for this are discussed in the next section.

## **2.10 Why might stressors and strains in academic life have increased?**

The demands placed on academics in the UK increased rapidly during the 1980s and 1990s as a result of pressures brought about through a dramatic expansion in student numbers, increased demands for efficiency and accountability, the commercialisation of higher education and the move towards financial self-reliance for institutions. In 1990, there were 1.2 million students in higher education institutions; this represented an increase of 41 percent since 1980, whereas in the academic year 1996/97, the Higher Education Statistics Agency (HESA) reported that student numbers had risen further to 1.8 million (HESA, 1998). An examination of the growth in student:staff ratios over the three decades prior to 1998 (when the first study reported in this thesis was conducted) provides an objective measure of the increase in workload for academic staff. Ratios increased from 7:1 in the middle of the 1970s to 16:1 in 1998 (AUT, 1999). The increased ratio of staff to students has presented a considerable challenge for the sector. The increased workload implied by these changes is reflected in the perceptions of increased demand by academics mentioned earlier in this chapter (e.g. Hind & Doyle, 1996).

Increased participation has been paralleled by demands for greater accountability, efficiency and verifiable evidence of educational quality from bodies such as the funding councils, the Quality Assurance Agency and the National Audit Office. Universities have responded to these demands with strengthened, and often more centralised, quality assurance mechanisms, performance appraisal of lecturers, and more detailed and demanding financial reporting systems. There is evidence that the wide array of systems and procedures imposed externally by funding bodies and other stakeholders, and internally by institutions themselves in order to satisfy these requirements, is perceived as intrusive and demanding by the workforce (McNay, 1997).

With very few exceptions, pay levels within the higher education sector have become increasingly unattractive in comparison with other industries. Relative pay levels have gradually reduced over a number of decades. University teachers in 1928 earned 3.7 times the average salary of employees in manufacturing industries; by 1988 this ratio had dropped to 1.5 (Halsey, 1995). Since 1981, average full-time earnings in the UK have risen by 44 percent above the rate of inflation, whereas the pay for university staff has increased by just 5 percent in the “traditional” sector and 7 percent in “new” universities (AUT, 2004a).

There is also evidence that levels of job security experienced by lecturers and researchers working in the university sector in the UK have been eroded. Two types of job insecurity have been identified in the literature. Objective job insecurity (in which the employment contract is temporary, casual or short-term) and subjective or perceived insecurity (in which employees with permanent contracts are fearful of job loss) (De Witte, 1999). It is probable that both types of job insecurity are likely to be found amongst UK academics. A growing number of universities are offering voluntary redundancies and early retirement options to their staff and, at the time Study 1 was conducted, a high proportion of academic staff in the UK were employed in fixed-term posts (AUT, 1999). The negative impact of objective insecurity on the health of temporary and casual employees has been highlighted (e.g. Aronsson, Gustafsson & Dallner, 2002) and perceived job insecurity has been associated with strains such as psychological distress and physical symptomatology (Ferrie *et al.*, 1998).

Over the last decade, commentators on higher education in the UK have identified a move away from a culture of collegiality (which emphasises consensual decision-making, co-operation and shared values) towards a “managerialist”, bureaucratic, non-participative style of management, and the adoption of business/industrial values (Tapper, 1998). Fundamental contradictions exist between the professional and managerialist paradigms:

mainly because academics expect academic freedom, and a high degree of autonomy in structuring and performing their work (Brett, 1997). Although it is acknowledged that employees differ in their tendencies to prefer authority, and adherence to procedures and rules (Conner & Douglas, 2005), it has been argued that managerialism is likely to undermine the professional academic paradigm through “de-skilling” or “de-professionalisation” (Trow, 1993). Winter, Sarros and Tanewski (1998) further suggest that an academic working under managerialist conditions is likely to experience low morale, a crisis of professional identity and increased stress.

As yet, there is little research evidence to support the arguments of Trow and Winter *et al.* There is some reason to believe, however, that the new management styles in UK universities are not perceived in a positive light. In a national survey of work-related attitudes of 20 different occupational groups conducted by Millward Brown (1996), 58 percent of respondents working in higher education blamed poor management for the stress they experienced, compared to an average of 47 percent for the sample as a whole. Although the findings are limited to one university in the North of England, Jackson and Hayday (1997) found that the majority of their respondents believed that management had become too remote and too bureaucratic; further management problems revealed in this study included poor levels of communication and lack of staff consultation.

Perhaps more seriously, there is some evidence that workplace bullying is more likely to be experienced by teachers and lecturers than any other type of employee. Since 1996, callers from the education sector (including universities) have accounted for around 20 per cent of all enquiries to an internet-based anti-bullying advice service (<http://www.bullyonline.org>). Research conducted in the public and private sectors suggests that bullying at work is most likely to occur under conditions of work overload after major organisational change (Hoel & Cooper, 2000). Evidence has been provided in this chapter that UK universities might be currently experiencing the conditions under which bullying will thrive. There is, indeed, evidence from a series of studies by Lewis (1999) that bullying has become more prevalent in universities in this country. Increased pressures on management and poor managerial training were amongst the most common reasons expressed by participants for the increase in bullying in the sector.

## **2.11 Justification for research: a summary**

Some large-scale research has been conducted that examines the occupational stressors experienced by academics in the USA, Australia and New Zealand. As has been seen in this literature review, the majority of studies conducted in the university sector in the UK have been restricted to single institutions, and most do not focus exclusively on academic



employees. It is clear that further systematic research is required to gain greater insight into the specific nature of the stressors experienced by academics.

Although based on small, unrepresentative samples, research reviewed in this Chapter suggests that lecturers and researchers working in UK universities might be experiencing low levels of psychological health and job satisfaction. Potential reasons for this have been discussed; many of these may relate to the extensive changes that have been introduced in the sector during the past fifteen years. These changes are likely to have intensified job demands in general, and more job specific demands (such as those relating to teaching and conducting research) in particular. As demonstrated here, however, very little is yet known about the job characteristics and working conditions that predict psychological distress and job dissatisfaction in this occupational group. Furthermore, research findings from studies that have examined gender differences in the experience of stressors and strains in academics have been mixed and inconclusive. The next study aims to address these issues.

The final section in this chapter reviews the manner in which work stressors have been measured in academic staff in order to justify the approach adopted in this programme of research.

## **2.12 The measurement of stressors in academic staff**

Studies that have examined the stressors experienced by academic staff in the UK and other countries have utilised a range of different measures. On the whole, researchers have tended to favour generic questionnaires such as the Occupational Stress Inventory (Cross & Carroll, 1990; Bradley & Euchus, 1995), the Job Stress Survey (Hogan *et al.*, 2002) and the Job Diagnostic Survey (Doyle & Hind, 1998). Some studies (i.e. Thorsen, 1996; Winefield *et al.*, 2002), have amalgamated scales from various generic measures in order to measure job stressors. As most of the studies reviewed in this chapter have sampled university employees from different functions, rather than focusing wholly on academic staff, generic instruments are likely to have greater face validity. As discussed in Chapter 1, generic instruments are useful in isolating the broad-based job characteristics that employees find stressful and comparing these with norms from other occupational groups. They are not helpful, however, in assessing within-occupation variance, as they are not likely to correspond with more specific work experiences.

Some researchers have adapted instruments designed to measure stress in other occupational groups to be more relevant to a university environment. Abouserie (1996) adapted a generic scale "to render it more suitable to university employees" (p. 52).

Although full details of the items utilised are not provided in the paper (nor is the justification for including the various items) the author reveals that aspects of academic work such as demands from students, administration and bureaucracy were included. A study of stress amongst Dutch academics conducted by Taris, Schaufeli & Verhoeven (2001) adapted a measure of teacher stress for use among university staff. This measure comprised individual scales that assessed relationships with students and colleagues, teaching demands, and time pressures. This approach is more job-specific, and has the potential to provide greater insight into the work stressors experienced by academic staff. The validity of adapting existing questionnaires designed for a different purpose may, under some circumstances, be questionable. Collins and Parry-Jones (2000) assessed the job demands, supports and constraints experienced by a national sample of social work lecturers by adjusting a measure originally designed to be administered to professional social workers. It is doubtful whether a measure designed for professional practitioners can provide insight into the range of stressors experienced by university lecturers – even within the same professional domain.

In 1994, Daniels and Guppy conducted an exploratory study of stress experienced by employees in a single UK university. Job stressors were assessed by a 15-item scale developed by the authors. An examination of this measure, however, shows that it comprises broad-based job characteristics (such as work overload, underload and role ambiguity) that would be applicable to any workplace setting (p. 139). The results of this study provide some insight into the working conditions experienced by university staff in the UK in a general sense, but fail to reflect more occupationally specific demands faced by academic employees.

To the author's knowledge, only one study has used measures that were purposely developed to assess job stressors in academic staff. The Faculty Stress Index (Gmelch *et al.* (1984) requires respondents to rate the extent of pressure they experience from a range of work features. This measure was developed from a principal components factor analysis of a 45-item scale utilised in a study of 1,200 academics from 80 universities in North America (see Gmelch *et al.*, 1986 for details). Five distinct dimensions resulted from this analysis, some of which were specific to academic work: reward and recognition; time constraints; departmental influence; professional identity; and interaction with students. Whilst these findings are of some interest, it is unlikely that a measure designed to capture perceptions of working conditions in the American university sector in the early 1980s would reflect those faced by academics in the UK more than 20 years later.

The studies reviewed above have utilised a range of measures in order to examine the stressors experienced in university settings. Very few have adopted an occupationally specific approach: those that have done so have limitations. The first study presented in this thesis aims to examine the stressors experienced by academic staff in the UK and their relationship with strain. As no suitable measure was available to measure job stressors in this occupational group, the author constructed a questionnaire for the purposes of this study.

Cox and Ferguson (1994) have argued that developing new measures of occupational stressors can lead to wasted effort through continually “reinventing the wheel”, and result in an inability to generalise findings (p. 105). It was argued in Chapter 1 of this thesis, however, that occupationally-specific models and measures can provide more detailed information about the work activities in which people engage which may have a significant impact on health and job satisfaction (e.g. Bacharach & Bamberger, 1992). A job-specific approach to the investigation of work stress would appear particularly appropriate where (as with academic employees) little is known about the occupational group under investigation. The disadvantages of using such an approach are likely to be outweighed by the benefits of obtaining richer data that has a greater potential to inform policy and practice in the sector.

An aim of this literature review was to provide a basis for selection of job stressors to be measured in Study 1 of this research programme. Table 2.2 (below) summarises the main stressors highlighted in this review.

The next chapter describes a national study designed to provide insight into three issues emerging from the literature reviewed above, namely:

- the stressors and strains experienced by academic staff working in universities in the UK;
- the features of academic work that predict psychological distress and job dissatisfaction in this occupational group;
- whether any gender differences are apparent in the perception of stressors and strains amongst academic employees.

**Table 2.2**  
**A summary of potential job stressors highlighted in this literature review**

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Administrative demands  
Communication  
Conducting research/obtaining funding  
Control/decision latitude/personal influence  
Frequent interruptions  
Interpersonal conflict/lack of social support  
Job security  
Management styles  
New technology  
Professional identity  
Prospects for promotion and professional development  
Recognition and reward  
Resource constraints/lack of technical support  
Role ambiguity  
Salary  
Teaching/student contact  
Time constraints  
Working hours  
Work-life conflict  
Workload

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AS ORIGINAL**

## **Chapter 3**

### **A study of stressors and strains experienced by academic employees (Study 1)**

#### **3.1 Summary**

This chapter describes a national study, conducted in 1998 which was designed to provide some insight into the stressors and strains experienced by academic employees working in universities in the UK. The study aims to examine the features of academic work that predict psychological distress and job dissatisfaction in employees. Also explored is the possibility of gender differences in the perception of stressors and strains amongst this occupational group. Six hundred and fifty lecturers and researchers (69 percent male) completed a series of questionnaires that measured a range of demographic and work-related factors, working hours, job stressors, sources of change, psychological distress and job satisfaction.

A number of generic and more job-specific job stressors were revealed in the university sector. High levels of psychological distress and leaving intentions were found, but moderate levels of job satisfaction were also observed. In general, the extent and pace of change experienced in the sector was not viewed positively. In the five years prior to the study, respondents perceived considerable intensification in demand, less support from managers and colleagues, and a corresponding increase in working hours. Many respondents appeared to be working in excess of the maximum recently stipulated by the European Union. On average, academics who reported more job stressors and more negative perceptions of change, and who worked longer hours, experienced poorer psychological wellbeing and less job satisfaction. The main predictors of psychological distress were demands experienced at the work-home interface, poor management of change and reduced professional support. Job satisfaction was predicted primarily by professional constraints (in a negative direction), but student demands were found to contribute to the variance in a positive direction. With few exceptions, female academics were found to experience their work in a similar manner to their male counterparts.

These findings are then discussed in the context of previous studies conducted on this occupational group. Finally, based on the findings of the present study, several areas are identified for more in-depth examination in subsequent studies presented in this thesis.

## **3.2 Introduction**

As discussed in Chapter 2, there is some evidence that academic employees working in UK universities may be experiencing high levels of demand from their work. Based on a thorough review of the literature of studies conducted in the UK and other countries, a number of job stressors were highlighted that may be of relevance to this occupational group. Although little systematic research has yet been conducted in the UK, the research findings reviewed in the previous chapter suggest that academics' psychological wellbeing might be poor. Evidence was also provided that academics may be experiencing a considerable degree of dissatisfaction with their work in general, but that some aspects of academic work are sources of satisfaction. As yet, very few studies have attempted to isolate the features of work that predict strain (such as psychological distress and job dissatisfaction) in academic staff. As the majority of these studies have not used representative samples, their findings cannot easily be generalised to the wider population of academic staff in the UK.

As discussed in Chapter 2, working conditions for lecturers and researchers have changed considerably over the last few years. Research reviewed in Chapter 1 indicates that employees undergoing periods of change commonly report feelings of anxiety and insecurity, a lack of confidence in their abilities, and uncertainty about their future. In the current climate, any attempt to examine the stressors and strains experienced by academic staff in the UK should assess perceptions of the nature and extent of change and its impact on the wellbeing of employees.

The literature reviewed in Chapter 2 revealed that studies of gender differences in the perception of occupational stressors experienced by university employees have yielded mixed findings. Typically, however, previous research has sampled university employees from a wide range of functions. Consequently, little insight has been gained into whether female academics experience their work in a similar manner to males, or whether any gender differences exist in the perception of job stressors or in levels of psychological wellbeing and job satisfaction experienced by this occupational group.

## **3.3 Aims of study 1**

The first study in this programme of research is a preliminary examination of the stressors and strains experienced by a sample of lecturers and researchers employed in universities throughout the UK. This study aimed to isolate the job characteristics and working conditions that were most predictive of strain (i.e. psychological distress and job dissatisfaction) for this occupational group. The study also aimed to investigate the relationship between aspects of job-related change and strain. It is anticipated that

negative perceptions of change will contribute to employee strain over and above the predictive value of job stressors. Finally, whether any gender differences exist in the job stressors and strains experienced by academic staff in UK universities was also assessed.

The research questions addressed by this study were:

- ◆ What are the main work-related stressors experienced by UK academics?
- ◆ What are academics' perceptions of the recent changes that have been experienced in the sector?
- ◆ What are the job stressors and job-related changes that predict psychological distress and job satisfaction?
- ◆ Do any gender differences exist in the job-related stressors and strains perceived by academics?

An important objective of this initial study was to identify the most stressful job characteristics and working conditions experienced by academic staff in order to examine them in greater depth in subsequent studies utilising more complex models.

## **3.4 Method**

### **3.4.1 Sample**

The target sample comprised 2,000 lecturers and/or researchers employed within Universities in the UK. This sample was drawn at random from the membership database of the association that represents the largest proportion of university academic staff in the UK (The Association of University Teachers: AUT). At the time of this study, the AUT had just over 41,000 members. From the 2,000 questionnaires distributed, 782 were returned; this represents a response rate of 39 percent. Only the data from the 650 respondents who identified themselves as lecturers and/or researchers is included in this analysis. Full results are reported elsewhere (Kinman, 1998; Kinman & Jones, 2003).

### **3.4.2 Measures**

The questionnaire (which is presented in full in Appendix A) contained sections as follows:

#### *Background information and working hours*

Information was obtained regarding age, gender, grade and academic discipline. Respondents were asked to indicate their current employing institution, although this was optional to preserve the anonymity of those who feared that such detail might identify them. Also recorded were the type of contract (i.e. permanent, fixed term or casual) and



whether respondents were employed on a full-time or part-time basis. Respondents were also requested to indicate the average number of hours worked per week, and estimate the proportion of these worked outside normal “office” hours (i.e. 9 am to 5 pm Mondays to Fridays).

### *Job stressors*

This measure (and the measure of perceived change described in Section 3.4.3 below) was developed for the purposes of the present study based on a systematic review of the literature (see Chapter 2).

In order to provide a practical framework through which job stressors could be examined, care was taken to represent the features of the working environment described in Chapter 1 that are considered to be “psychosocial hazards” (Cox & Griffiths, 1996). These are: job content, workload/work pace, work schedule, interpersonal relationships, decision latitude/control, organisational culture and function, role in organisation, career development, and the home/work interface. Potential hazards were included that related to aspects of academic work as well as those that are more generic.

Participants were asked to indicate their level of agreement with 35 statements that assessed their perceptions of various aspects of work. The questionnaire included items that assessed: manageability of workload; availability of preparation time; demands from external bodies, managers and colleagues; and demands relating to administrative paperwork, students and research. It further assessed the availability of administrative and technical support and the quality of relationships with colleagues and students. Opportunities for promotion, training and personal development were examined, as was the perceived effectiveness of communication processes and appraisal systems, the degree of participation in decision-making and control over work content and quality. Demands relating to the work-home interface were also assessed. Further items examined perceptions of information overload and frequency of interruptions. Examples of statements are: “I am frequently interrupted at work”; “I do not have enough time to enable me to deal effectively with students’ problems/queries”; “my family suffers from the demands of my job” and “I lack the opportunity and support to undertake scholarly work”. Responses were requested on a five-point scale (1 = strongly disagree and 5 = strongly agree).

Principal components analysis of these items produced a five-factor solution explaining 47 percent of the variance. Scree plots were examined and factors with eigenvalues greater than 1 were accepted (Kaiser, 1960). Loadings of above .30 are often considered

acceptable if the sample size is at least 50; however, in order to obtain more reliable factors the more stringent strategy of accepting loadings of above .40 was used (Kline, 1994). Of the original 35 items in the work stressor scale, 29 loaded highly (0.40+) onto these factors. Loadings ranged from .43 to .73. Details of the factor analysis for the stressor sub-scales and the perceptions of change (described below) can be found in Appendix D. Sub-scales were named work-home demands, professional constraints, student demands, time demands and research demands.

Work-home demands explained the highest proportion of variance (23 percent) and consisted of nine items that included primarily time-based conflict, and also included the impact of work on family life and leisure (Cronbach's Alpha = .86); Professional constraints comprised eight items which included opportunities for promotion, participation in decision-making, effectiveness of communication and role clarity (Cronbach's Alpha = .83); Student demands consisted of three items relating to students performance and participation (Cronbach's Alpha = .75); Time demands comprised seven items including pace of work, administrative burden, time available for preparation and engagement with students, and level of interruptions experienced (Cronbach's Alpha = .79). The fifth factor, Research demands, consisted of two items relating to the opportunity and support for conducting research and satisfaction with research quality. This had a lower reliability than the other factors (Cronbach's Alpha = .59). Mean scores were computed across items for each factor, with a high score denoting a higher level of stressors.

#### *Perceptions of change*

Thirty-two items assessed respondents' perceptions of changes in their institutions, and in the university sector in general, in the five-year period before the study was conducted (i.e. from 1993 to 1998). As with job stressors above, all items were presented in the form of statements. Perceptions of changes at the sector level were examined: for example, "there have been too many changes implemented in too short a time", as well as changes within individual institutions, for example: "there are fewer resources available". Further items covered perceptions of change in more specific dimensions of the work experience of academics such as: job content; the availability of physical resources and social support; research and teaching; the status of academics; levels of autonomy; the work-home interface; and institutional and departmental management. Responses were requested on a five-point scale (1 = strongly disagree and 5 = strongly agree).

Principal components analysis of these items produced a four-factor solution explaining 45 percent of the variance. As with the job stressors sub-scales reported above, scree plots were examined, and factors with eigenvalues greater than 1 were accepted (Kaiser,

1960). Of the original 33 items in the perceptions of change scale, 24 loaded highly (0.40+) onto these factors. Loadings ranged from .47 to .66. Sub-scales related to change management, changes in levels of demand relating to research and quality assessment and reduced professional support and co-operation. Details of this analysis can be seen in Appendix D. The primary factor (in that it explained 27 percent of the variance) was named change management; this consisted of 13 items assessing for example attitudes relating to the extent and nature of changes in general, as well as more specific changes in management styles, and levels of autonomy, consultation and participation (Cronbach's Alpha = .89). Increased research-related demands comprised three items which assessed pressure to conduct and publish research, and to obtain funding (Cronbach's Alpha = .76). Increased quality-assessment demands consisted of five items which examined attitudes relating to performance indicators in general and teaching and research audits (Cronbach's Alpha = .77). Finally, reduced professional support and co-operation consisted of three items relating to changes in social support (Cronbach's Alpha = .74). For each factor, mean scores across items were computed with a high score denoting more negative perceptions of change.

An additional five items addressed primarily factual issues about changes that respondents might have recently experienced in the five years preceding the survey, for example: "Have there been redundancies or job cuts in your institution" and "Has your level of responsibility at work increased?" Response options were "Yes" or "No".

#### *Job Satisfaction*

A four-item scale was designed for the current study to assess levels of job satisfaction. Items examined features that could be considered integral to academic work (i.e. the degree of intellectual stimulation gained), as well as the extent of job motivation experienced. Items were presented in the form of statements accompanied by a five-point scale indicating strength of agreement. Examples included "My job is rewarding and worthwhile" and "I am recognised for my efforts". Mean scores across items were computed to give an index of job satisfaction (Cronbach's Alpha = .76). A high score denoted a high level of job satisfaction.

#### *Job insecurity*

Two single items were used to assess job insecurity. One item examined general perceptions of job security on a five point scale ranging from 1 = "strongly agree" to 5 = "strongly disagree". Respondents were also asked to indicate whether or not they had felt under threat of redundancy during the five-year period preceding the study. Response options for this item were "Yes" or "No".

### *Leaving intentions*

A single item asked respondents to indicate whether or not they had seriously considered leaving higher education (other than through retirement) over the previous five years. Response options for this item were “Yes” or “No”.

### *Psychological wellbeing*

The 12-item General Health Questionnaire (GHQ -12: Goldberg & Williams, 1988) assessed psychological wellbeing (see Appendix C). The GHQ-12 was originally designed for clinical samples in order to identify psychiatric disturbance of a non-psychotic nature. It is generally considered to be a reliable and valid measure for this purpose. Numerous studies have shown GHQ scores to be highly correlated with clinical diagnoses, and to predict the future use of mental health care (see Whaley, Morrison, Payne, Fritschi & Wall, 2005). The GHQ-12 has also become widely used in occupational settings as a measure of general distress and is considered to possess a high degree of discriminant validity for that purpose (e.g. Cook, Young, Taylor & Bedford, 1996). As this measure is commonly utilised in longitudinal panel studies (such as the UK General Household Survey), comparisons with the population as a whole as well as with other occupational groups can be made.

Responses to the 12 items are made on a fully-anchored four-point scale. An example of an item is “Have you recently felt under strain?” where responses range from “not at all” to “much more than usual”. Scoring is by the “Likert” method (where each item has a range of 0 to 3) and the GHQ “Caseness” method (where items are scored as 0 or 1) indicating an absence or presence of a symptom. For the purpose of the present study, means were calculated across items using the Likert method (Cronbach’s Alpha = .92). Prevalence estimations were assessed using the GHQ method. In keeping with current practice (see Mullarkey, Wall, Warr, Clegg & Stride, 1999) a threshold score of three or above was selected to indicate the presence of caseness levels of psychological distress. In both types of scoring, higher scores indicate higher levels of minor psychiatric morbidity.

### **3.4.3 Procedure**

Questionnaires were distributed by post during Spring, 1998. A covering letter explained the purpose of the research and provided the closing date for returns. Participation in the study was voluntary. Respondents were assured of their anonymity, and informed that any information they provided would remain confidential. A postage-paid envelope was included.

#### **3.4.4 Pilot study**

The questionnaire was piloted with a sample of 80 academics from two universities in the UK. The pilot study was conducted in order to ascertain that the items were understandable and to obtain feedback on whether the instrument captured major concerns. Only very minor adjustments were made to the wording as a result of the pilot.

#### **3.4.5 Methods of statistical analysis**

Statistical analyses were carried out using SPSS version 11. Missing data points were substituted with the mean of the variable but only where there were no more than 5 percent of data points missing for any particular variable. The data were screened by the procedure suggested by Tabachnick and Fidell (1996). Chi-square tests were utilised to test statistical significance of bivariate tabular analyses. One-way analyses of variance were utilised to examine mean differences and post hoc analyses conducted by the Bonferroni adjustment. Principal components factor analysis with varimax rotation was utilised in order to obtain the stressor and change sub-scales, whereas the Pearson Product Moment Correlation Coefficient was used to assess the bivariate relationships between these subscales and strain outcomes. Multiple linear regressions were used to test for associations between stressors, sources of change and strain outcomes. Internal reliability of scales was assessed using Cronbach's alpha.

### **3.5 Results**

#### **3.5.1 Demographic data and job details**

Of the 650 respondents, 69 percent were male. Analysis of staffing figures from the Higher Education Statistics Agency (HESA, 2000) confirmed that the gender balance of respondents to the present survey generally corresponded with that of the wider population of academic staff in the UK (which at the time of writing was 65 percent male). The majority of respondents were aged 41 to 50 years (37 percent) and 51 to 60 years (33 percent). As HESA figures for 1998 indicate a mean age of 41 years, the present sample appears to be somewhat older than the wider population of academic employees in the UK.

Sixty percent of the sample revealed their places of work, indicating that at least 75 universities in the UK were represented. Reflecting the union membership, respondents were mainly from the "traditional" university sector. A wide range of academic subject areas was represented in the sample. The single largest area was "Social, economic and political studies" with 16 percent of the overall sample in this category, followed by

“Subjects aligned to medicine” which accounted for 10 percent and “Humanities” which constituted 9 percent. The pattern of subject areas found in this study is broadly representative of the UK population of academics at the time of writing (HESA, 2000).

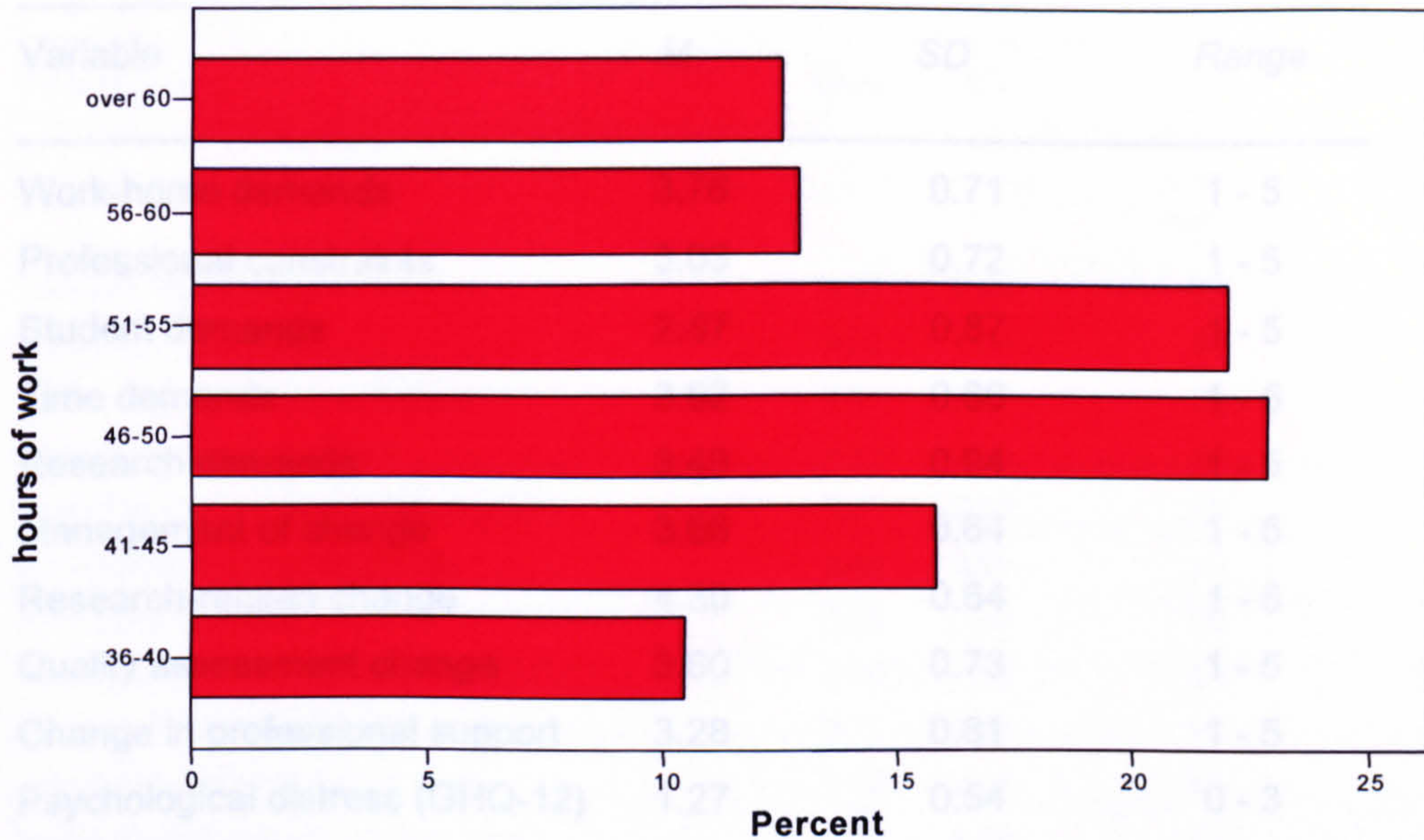
Sixty-eight percent of the sample reported at least 12 years service in higher education, and 40 percent had been working in the sector for over 20 years. On average, male respondents had longer service than females, both in their institutions and the sector as a whole. These differences were significant ( $\chi = 43.33, p <.001$  and  $\chi = 46.03, p <.001$  respectively). Eleven percent of respondents indicated that they were employed on a “research only” basis, and the remaining proportion identified themselves as “teaching and research”. A substantial majority was employed on a full-time basis (90 percent) and 80 percent had permanent contracts. Approximately twice as many women as men were employed on a fixed-term basis: this difference was significant ( $\chi = 24.71, p <.001$ ). Women were also twice as likely as men to identify themselves as part-time employees ( $\chi = 7.42, p <.01$ ).

### **3.5.2 Working hours**

The average number of hours worked during a typical term-time week by participants who indicated they are employed on a full-time basis is illustrated in Fig. 3.1. Seventy percent of employees who were employed on a full-time basis indicated that they worked in excess of 45 hours in a typical week, with 25 percent regularly working in more than 55 hours. On average, men had longer working weeks than women (male  $M = 49.92$  [ $SD = 7.56$ ]; female  $M = 48.26$  [ $SD = 7.71$ ]  $p < .05$ ) but this was explained by the fact that more females were employed on a part-time basis. When the average working hours of full-time employees only were examined, no gender differences were observed.

Respondents were asked to estimate the proportion of their total hours that they worked outside “office hours” (i.e. 9am to 5pm, Monday to Friday) in a typical week. Sixty-eight percent indicated that more than 20 percent of their work was done during evenings and weekends, whereas 11 percent estimated that over 30 percent of their work was undertaken during these times.

**Fig. 3.1**  
Average number of hours worked per week in term-time



### 3.5.3 Descriptive data: stressors and strains

Table 3.1 presents the descriptive statistics for the sub-scales relating to job stressors, perceptions of change and outcome variables. As can be seen, the highest mean scores were found in the stressor and change sub-scales measuring work-home demands, time demands, research related change and the management of change. The mean scores for job insecurity and psychological distress were moderately high, as was the mean for job satisfaction. The size of the standard deviations suggests that a considerable degree of variation exists between respondents in levels of job insecurity, student demands, research-related demands and change in professional support. Less variation can be seen in levels of work-home demands, professional constraints and time demands.

#### Job stressors

Table 3.2 ranks the individual job stressors in descending mean order; the level of agreement with each statement is also presented. As can be seen, the items with the highest mean scores overall related to frequent interruptions, too much administrative paperwork, and perceptions of a mismatch between organisational and personal priorities.

**Table 3.1**  
**Descriptive statistics for study variables**

Variable	<i>M</i>	<i>SD</i>	<i>Range</i>
Work-home demands	3.76	0.71	1 - 5
Professional constraints	3.03	0.72	1 - 5
Student demands	2.87	0.87	1 - 5
Time demands	3.82	0.66	1 - 5
Research demands	3.49	0.94	1 - 5
Management of change	3.66	0.64	1 - 5
Research-related change	4.30	0.64	1 - 5
Quality assessment change	3.60	0.73	1 - 5
Change in professional support	3.28	0.81	1 - 5
Psychological distress (GHQ-12)	1.27	0.54	0 - 3
Job satisfaction	3.53	0.41	1 - 5
Job insecurity	2.87	1.22	1 - 5

More generally, respondents perceived difficulty in coping with the volume of work and the diversity of tasks in the time available. A substantial proportion of the sample maintained that time constraints had an adverse impact on the quality of their work, and many indicated that the pace of their work was too rushed. Perceptions of poor communication, lack of administrative and technical support and few opportunities for training and development were also commonly reported. High levels of agreement were also found with a number of issues that related to more intrinsic aspects of academic work, such as information overload, conducting research, lecture preparation, and finding time to deal with students' problems. Almost one-half of the sample (46 percent) felt that the effort they put into their work went unrecognised in their institutions.

Items relating to students' participation, motivation and abilities were among the lowest rated stressors overall. Only seven percent of the sample agreed that they were unhappy with the quality of their relationships with their students. Furthermore, the mean ratings suggest that the majority of respondents perceive relatively high levels of control over how they use their time during the working day, are clear about their responsibilities, and are generally satisfied with the level of support they obtain from their colleagues.



**Table 3.2****Job stressors ranked in descending mean order of strength of agreement  
(n = 582-650)**

<b>Item stems</b>	<b>Mean</b>	<b>SD</b>	<b>% strongly agree/ agree</b>	<b>% strongly disagree/ disagree</b>
frequent interruptions	4.21	0.85	85	5
too much paperwork	4.02	1.04	74	9
personal priorities compromised	4.01	0.92	78	8
pace of work is too rushed	4.01	0.98	77	10
lack of time compromises work quality	3.97	0.92	79	10
job interferes with personal life	3.89	0.96	76	11
over commit myself	3.89	0.89	70	9
lack opportunity for scholarly work	3.76	1.05	68	16
lack administrative/technical support	3.73	1.18	68	22
experience information overload	3.72	0.99	63	13
social life suffers from job demands	3.71	1.06	68	17
family suffers from effects of job	3.64	1.09	62	18
insufficient time for hobbies/interests	3.58	1.16	73	8
performance compromised by lack of resources	3.57	1.08	60	20
no time to plan and organise work	3.57	0.99	61	19
communication at work is ineffective	3.56	1.06	56	20
not enough time to deal with students problems	3.51	1.03	55	20
no time to prepare for classes	3.48	1.02	62	25
lack opportunities for promotion	3.47	1.16	49	22
insufficient time to relax	3.41	1.15	53	28
workload is unmanageable	3.39	1.06	44	27
tutorial/lecture groups too big	3.35	1.18	49	29
lack recognition for effort	3.33	1.11	46	28
poor quality research output	3.24	1.16	48	33
annual appraisal unfair	3.08	1.15	34	37
lack opportunities for training and development	3.06	1.01	33	31
poor levels of student participation in classes	3.03	1.06	39	37
dissatisfied with influence over decision-making	2.96	1.14	35	44
lack opportunities to air personal opinions	2.94	1.09	34	42
lack support from colleagues	2.86	1.01	27	42
students poorly motivated	2.80	1.06	30	45
students poor abilities	2.77	1.04	27	45
can't cope with demands of job	2.56	0.89	15	59
responsibilities unclear	2.49	0.98	20	63
lack control over use of time	2.27	0.87	13	75
poor relationships with students	1.83	0.54	7	93

### *Perceptions of change*

Almost three-quarters of the sample (73 percent) maintained that their levels of responsibility had increased in the previous five years. The data obtained on the items assessing perceptions of change experienced by respondents during this period are presented in Table 3.3, in reverse mean order, together with the level of agreement with each item. As can be seen, almost three-quarters of the sample (72 percent) agreed or strongly agreed that too many changes had been implemented in their institutions in too short a time.

The change items that obtained the highest levels of agreement related to perceptions of increased pressure to increase research and/or consultancy activity, obtain research funding and to publish research findings. A high level of agreement was also found with items relating to increased levels of demand in general, and a considerable proportion of respondents (71 percent) indicated that their working hours had increased in the previous five years. Higher levels of bureaucracy, decreased professional independence, and an increase in non-participative management styles were frequently reported. Sixty-one percent of the sample indicated that the management of change had been ineffective. Negative perceptions of quality assessment procedures and reduced status of academic staff were also commonplace.

### *Psychological distress and job satisfaction*

Mean scores for psychological distress are shown in Table 3.1. Fifty-one percent of the sample achieved scores of three or above on the GHQ-12, whereas 32 percent scored six or above.

Seventy-three percent of the sample indicated that they found their jobs rewarding and worthwhile, and more than three-quarters (79 percent) maintained that they were intellectually stimulated by their work. Thirty-eight percent of academics, however, agreed or strongly agreed that they experienced difficulties in remaining motivated in their work.

**Table 3.3**

**Perceptions of changes during the preceding five year period ranked in descending mean order of strength of agreement (n = 582 - 650)**

<b>Item stems</b>	<b>Mean</b>	<b>SD</b>	<b>% strongly agree/ agree</b>	<b>% strongly disagree/ disagree</b>
pressure to publish increased	4.58	0.60	96	1
status of academic staff declined	4.29	0.79	86	3
more rules and procedures	4.21	0.75	88	3
more pressure to undertake research/consultancy	4.19	0.85	81	5
more pressure to obtain research funding	4.14	0.87	78	6
job more demanding	4.08	1.00	82	10
student numbers increased	4.05	0.99	76	9
institution more bureaucratic	4.02	0.91	78	9
work longer hours	4.00	0.92	71	9
too much emphasis on quality assessment	4.00	1.02	75	11
management less sensitive	3.99	0.85	73	3
more meetings to attend	3.96	0.90	76	7
too many changes in short time	3.96	1.02	72	11
external demands increased workload	3.94	0.95	71	8
fewer resources available	3.92	0.96	74	7
emphasis on performance indicators damaging	3.90	0.99	70	11
work encroaches more on private life	3.82	1.02	71	14
more tasks I consider unnecessary	3.82	0.97	70	12
management poorer understanding	3.77	1.06	60	11
less involvement in decision making	3.75	0.90	63	9
management of change ineffective	3.70	0.98	61	13
institution less efficient	3.64	0.97	56	12
atmosphere more competitive	3.63	0.97	62	15
changes mainly negative & undesirable	3.55	0.94	54	14
effects of RAE negative	3.48	1.06	52	21
number of senior managers increased	3.46	1.03	44	19
quality assessment negative effect on students	3.32	1.00	43	22
sense of participation/involvement decreased	3.27	0.99	42	23
quality assessment compromised independence	3.27	0.99	37	22
support from colleagues declined	3.22	1.01	44	28
more bullying and intimidation	3.14	1.16	40	33
less autonomy	3.14	1.05	39	33
colleagues less likely to share information	2.98	1.00	32	37

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### *Job security and leaving intentions*

More than one-half of the sample (51 percent) reported that there had been redundancies or job cuts in their institutions during the five-year period preceding the study. One respondent in five (20 percent) had felt under personal threat of redundancy during this time. Thirty-one percent reported that they felt insecure in their jobs. Forty-six percent of academics who responded to this study indicated that they had seriously considered leaving higher education over the last 12 months.

On average, academics who indicated that they felt insecure in their jobs had higher levels of psychological distress ( $M = 16.06$  [ $SD = 6.79$ ] versus  $M = 14.52$  [ $SD = 5.90$ ]  $F$  [1,531] = 7.04,  $p < .01$ ), but no significant differences were found in levels of job satisfaction reported by this group. Respondents who had seriously considered leaving the higher education sector tended to have scores on the GHQ-12 that were considerably higher than those who had not ( $M = 17.03$  [ $SD = 6.81$ ] versus  $M = 13.71$  [ $SD = 5.52$ ]  $F$  [1,598] = 38.57,  $p < .001$ ). Academics who expressed leaving intentions also had lower levels of job satisfaction ( $M = 14.34$  [ $SD = 1.76$ ] versus  $M = 13.88$  [ $SD = 1.63$ ]  $F$  [1,645] = 11.26,  $p < .01$ ).

Respondents who indicated that they wished to leave the sector perceived more work-home demands ( $M = 3.74$  [ $SD = 0.67$ ] versus  $M = 3.49$  [ $SD = 0.71$ ]  $F$  [1,603] = 29.70,  $p < .001$ ), greater professional constraints ( $M = 3.33$  [ $SD = 0.68$ ] versus  $M = 2.84$  [ $SD = 0.69$ ]  $F$  [1,603] = 76.43,  $p < .001$ ), more time demands ( $M = 3.94$  [ $SD = 0.66$ ] versus  $M = 3.72$  [ $SD = 0.65$ ]  $F$  [1,603] = 16.81,  $p < .001$ ) and more research demands ( $M = 3.67$  [ $SD = 0.95$ ] versus  $M = 3.35$  [ $SD = 0.92$ ]  $F$  [1,577] = 14.41,  $p < .001$ ). Leaving intentions were also associated with more negative perceptions of change on all factors: management of change ( $M = 3.83$  [ $SD = 0.59$ ] versus  $M = 3.52$  [ $SD = 0.65$ ]  $F$  [1,599] = 38.78,  $p < .001$ ), research-related change ( $M = 4.41$  [ $SD = 0.60$ ] versus  $M = 4.22$  [ $SD = 0.67$ ]  $F$  [1,595] = 12.09,  $p < .01$ ), quality-related change ( $M = 3.71$  [ $SD = 0.71$ ] versus  $M = 3.50$  [ $SD = 0.73$ ]  $F$  [1,596] = 12.21,  $p < .01$ ) and professional support ( $M = 3.45$  [ $SD = 0.80$ ] versus  $M = 3.12$  [ $SD = 0.79$ ]  $F$  [1,596] = 15.39,  $p < .001$ ).

### **3.5.4 Gender differences in stressors and strains**

There were no significant differences found between male and female academics in levels of psychological distress or job satisfaction. On average, however, females felt marginally less secure in their jobs than males (female  $M = 3.04$  [ $SD = 1.30$ ] versus male  $M = 2.78$  [ $SD = 1.17$ ]  $F$  [1,632] = 5.36,  $p = .04$ ). No significant gender differences were found in intentions to leave the profession.

No differences were found between male and female academics in the average number of hours worked per week during term-time, or in the extent of working during evenings and weekends. Few gender differences were found in the sub-scales that assessed work-related stressors and perceptions of change. On average, male academics reported higher levels of student-related demands (male  $M = 8.80$  [ $SD = 2.61$ ] versus female  $M = 7.67$  [ $SD = 2.48$ ]  $F [1,637] = 20.87, p < .001$ ). Women tended to report higher levels of demand relating to the work-home interface than men, but the mean difference was only marginally significant (male  $M = 3.51$  [ $SD = 0.73$ ] versus female  $M = 3.66$  [ $SD = 0.64$ ]  $F [1, 587] = 5.57, p = .04$ ). Women were also marginally more likely than men to report an increase in research-related demands (female  $M = 13.06$  [ $SD = 2.22$ ] versus male  $M = 12.63$  [ $SD = 2.18$ ]  $F [1,598] = 4.53, p < .05$ ). This might be explained by the fact that, as reported above, women were twice as likely as men to be in research-only posts. Indeed, when respondents employed in non-teaching positions were removed from the analysis the difference between the male and female means became non-significant.

### **3.5.5 Relationships between variables**

Pearson's correlations were used to examine relationships between working hours, job stressors and strains. Respondents who worked longer hours reported significantly more demands from the work-home interface ( $r = .37, p < .001$ ) and more time demands ( $r = .30, p < .001$ ). On average, academics who worked longer hours reported marginally higher levels of psychological distress ( $r = .10, p < .05$ ), but no significant relationship was observed between working hours and levels of job satisfaction.

A slightly different pattern was observed in the relationships between time spent working during evenings and weekends, and job stressors and strains. Academics who worked more frequently outside office hours tended to report higher levels of work-home demands ( $r = .32, p < .001$ ), more time demands ( $r = .26, p < .001$ ), more research demands ( $r = .09, p < .05$ ) and more professional constraints ( $r = .12, p < .01$ ). On average, respondents who worked more frequently during evenings and weekends had significantly higher levels of psychological distress ( $r = .14, p < .01$ ) and lower levels of job satisfaction ( $r = -.09, p < .05$ ).

With the exception of student demands, all work-related stressor and change scales were significantly related to psychological distress and job satisfaction in the expected direction. Correlation coefficients and significance levels can be seen in Table 3.4. Although some coefficients observed were reasonably high, they were below the criterion ( $r = .80$ ) to suggest multi-collinearity (Miles & Shevlin, 2001). As can be seen, academics who perceived more work-home demands, professional constraints, time-related demands and research-related demands, on average, reported higher levels of psychological distress

**Table 3.4**

**Correlations between job stressors, sources of change and outcome variables (n = 544 – 646)**

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Work-home demands	.00										
2. Professional constraints	.32***	.00									
3. Student demands	-.02	.09*	.00								
4. Time demands	.60***	.25***	.09*	.00							
5. Research demands	.39***	.28***	.09*	.43***	.00						
6. Change management	.35***	.52***	.16***	.36***	.31***	.00					
7. Increased research demands	.31***	.10*	.08*	.33***	.19***	.32***	.00				
8. Increased QA demands	.25***	.21***	.20***	.34***	.29***	.53***	.40***	.00			
9. Reduced prof. support	.30***	.47***	.14**	.26***	.22***	.44***	.28***	.21***	.00		
10. Job satisfaction	-.19***	-.38***	.04	-.15**	-.13**	-.23***	-.10*	-.08*	-.26***	.00	
11. Psychological distress	.49***	.37***	.04	.31***	.30***	.41***	.19***	.22***	.38***	-.25***	.00

One-tailed correlations. \*p < .05. \*\*p < .01. \*\*\*p < .001.

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and lower levels of job satisfaction. Furthermore, respondents who had more negative perceptions of change management, and who perceived greater demands relating to quality assessment and research activities, and reduced levels of professional support, tended to report more psychological health symptoms and less job satisfaction. Particularly strong positive relationships were observed between psychological distress and work-home demands, professional constraints, change management, and reduced professional support. With the exception of professional constraints, correlation coefficients between stressor and change factors and job satisfaction tended to be smaller in magnitude.

### **3.5.6 Predicting strain from job stressors and sources of change**

In order to determine the job stressors and sources of change that were the most significant predictors of psychological distress and job satisfaction, two hierarchical regression analyses were conducted. In the first step of each analysis, gender was entered in order to control for possible effects. In the second step, the five job stressor factors were entered, and in the third step the four job change factors were entered. The results are shown in Table 3.5.

#### *a) Predictors of psychological distress*

Gender, entered in the first step, was not significant. The job stressor factors entered in the second step together explained 34 percent of the variance in psychological distress scores. Examination of the betas indicated that only two stressor factors were significant predictors of this outcome: work-home demands and professional constraints. Work-home demands explained the bulk of the variance in psychological distress scores. When the change factors were entered in the third step, a further six percent of the variance was explained, with only change management and reduced professional support making a significant contribution. The final predictors in the model were work-home demands, professional constraints, management of change and reduced professional support which together accounted for 39 percent of the variance in psychological distress.

#### *b) Predictors of job satisfaction*

As with psychological distress, gender, entered in Step 1 was not significant. When the job stressor factors were entered into the regression equation in Step 2, 18 percent of the variance was explained in job satisfaction scores. Only two stressor factors were significant predictors of low levels of job satisfaction: professional constraints and student demands. An examination of the betas indicates that the strongest contribution was made by professional constraints. Interestingly, the beta value for student demands indicates a positive correlation unlike the contributions made by the other predictor variables which

are all in a negative direction. This suggests that respondents who report higher levels of demand from their students have higher levels of job satisfaction. The change factors entered in the third step accounted for no further variance. The final model comprised professional constraints and student demands, which accounted for 18 percent of the variance in job satisfaction scores.

**Table 3.5**

**Results of hierarchical multiple regression analyses predicting psychological distress and job satisfaction from stressor and change factors**

<i>Predictors</i>	<i>Psychological distress</i>	<i>Job satisfaction</i>
Gender	.05	-.01
Step 1 R <sup>2</sup>	.00	.00
Gender	-.02	.07
Work-home demands	.43***	-.03
Professional constraints	.24***	-.41***
Student demands	-.02	.12**
Time demands	.02	-.09
Research demands	.05	.08
Step 2 R <sup>2</sup> change	.34***	.18***
Gender	.01	.07
Work-home demands	.38***	-.01
Professional constraints	.07	-.38***
Student demands	-.05	.13**
Time demands	-.05	-.07
Research demands	.05	.07
Change management	.17**	-.01
Increased research demands	-.00	-.07
Increased QA demands	.08	.01
Reduced professional support	.16**	-.04
Step 3 R <sup>2</sup> change	.05***	.01

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

### **3.6 Discussion**

This study had several aims: to examine the work-related stressors experienced by academics working in universities in the UK; to assess their perceptions of recent changes in the sector; and to establish levels of psychological distress and job satisfaction in the sector. The study further aimed to examine relationships between job stressors, perceptions of change and strains, with a view to identifying the features of academic work that are the strongest predictors of psychological distress and job satisfaction. Finally, the extent to which female and male academics experience the same types of stressors and strains was assessed.

In accordance with the findings of research conducted in other countries, such as Australia and New Zealand (e.g. McInnis, 1999; Gillespie *et al*, 2001), academics working in universities in the UK perceived a general increase in job-related demands in the five years before the study was conducted. Almost one-half of lecturers and researchers who responded indicated that they could not cope with their current workloads. For many academics, the changes that have been introduced in the few years before the study was conducted have not only resulted in work overload, but also led to longer working hours – frequently during evenings and weekends. A considerable proportion of respondents indicated that they had seriously considered leaving the higher education sector. High levels of self-reported psychological distress were also revealed. Also highlighted were the specific features of the working environment that have particularly strong relationships with psychological distress and job dissatisfaction.

A number of stressors have been identified in this study that are of clear relevance to academic employees. Some, such as work overload, fast working pace, and lack of administrative support, are likely to be relevant to most professional groups (Sparks, Faragher & Cooper, 2001). The value of adopting a more occupationally specific approach to the investigation of job stressors has, however, been confirmed. Many of the stressors that were highly rated by respondents (such as conducting research, preparing for lectures and finding time for students queries) relate directly to academic work, whereas others (such as demands relating to administration and information management) have become an intrinsic part of the role of the academic. Furthermore, this study has revealed stressors that are features of the organisational climate of UK universities (such as poor communication and perceptions of poor management of change) as well as demands that relate to wider educational policy (such as complying with sector-wide quality assurance procedures).

The results of this study will now be examined in relation to research reviewed in Chapter 2 of this thesis. Firstly, the findings relating to working hours, job stressors and perceptions of change will be discussed. The implications of these factors for the psychological wellbeing and job satisfaction of academic staff will then be assessed. Issues emerging from this study that will be further examined in this programme of research will be highlighted.

### **3.6.1 Working hours**

A typical term-time working week for the sample as a whole was 49 hours; however, one respondent in four reported that they generally worked in excess of 55 hours. A considerable proportion of the academic staff employed in universities in the UK are evidently working in excess of the 48-hour weekly limit set by the European Union's working time directive. It should be noted that, as this study was conducted in the same year that the directive came into force (i.e. 1998), the higher education sector might not have had sufficient opportunity to introduce measures to reduce employees' working time in order to comply with this. The extent to which working hours in the sector remain stable over time will be examined later in this programme of research, as will the extent to which UK universities have complied with the EU working time directive subsequently.

In accordance with the findings of diary research conducted by Court (1996), a high proportion of respondents' work was done outside what might be considered to be "office hours" (i.e. 9am to 5pm, Monday to Friday). More than two academics out of three who responded to this study indicated that, on average, over 20 percent of their work was done during these times. Evidence has been provided here that lecturers and researchers are working long hours during evenings and weekends in order to meet the demands of their jobs.

In accordance with previous research (e.g. Sparks *et al*, 1997), respondents who worked longer hours tended to report higher levels of psychological distress. The findings of the present study suggest that working during evenings and weekends has particularly serious implications for psychological wellbeing. Frequent working during these times is also likely to have potentially serious consequences for work-life balance. This will be examined in the next study. Surprisingly, academics who worked longer hours during evenings and weekends had only marginally lower levels of job satisfaction. It could be argued that the aspects of job satisfaction measured in the present study (which were predominantly intrinsic features of academic work such as motivation and intellectual stimulation) may not readily be influenced by the number of hours of worked, whereas satisfaction with more extrinsic factors (such as pay and promotion prospects) might be so

influenced. This hypothesis will be examined in the next study using an expanded measure of job satisfaction that will encompass intrinsic, extrinsic and job-specific aspects of academic work.

### **3.6.2 Job stressors**

A range of job stressors was highlighted in this study. The statement “I experience frequent interruptions in my work” had the highest level of agreement overall. This factor was previously highlighted in research conducted on a sample of North American academics (Goldenburg & Waddell, 1990). Constant interruptions in the workplace are likely to have a negative impact on employees for several reasons. Firstly, as they require an investment of time on the part of the worker, interruptions will make a significant contribution to overall workload. Secondly, as focus has been diverted from the task in hand, interruptions are likely to have a detrimental impact on the quality of work achieved. Thirdly, there is evidence that interruptions at work can lead to anxiety, associated with heightened feelings of arousal and time pressure (Jett & George, 2003). Finally, frequent interruptions during the working day are likely to lead to academics taking work home in an attempt to meet the demands of their jobs. Working at home on a regular basis during evenings and weekends is likely to have negative implications for work-life balance as well as individual wellbeing. For academics, whose jobs frequently require extended periods of reflection, interruptions might be particularly problematic as they might impair the ability to reach an optimum level of involvement in the task being performed (Csikszentmihalyi & LeFevre, 1989). The extent and impact of interruptions to work experienced by academics, together with the measures taken to cope with them, will be examined in the next study.

The items included in the questionnaire relating to shortage of time and the increasing pace of work tended to obtain higher ratings than questions pertaining to other aspects of the job. The importance of time constraints to the wellbeing of academics found in the present study reflects findings from research conducted in university settings in other countries (e.g. Gmelch *et al*, 1984, 1986; Blix *et al*, 1994; Boyd & Wylie, 1994; McInnis, 1999). Unlike previous research, however, this study has highlighted strong positive relationships between perceptions of time demands and strain, in terms of psychological distress and job dissatisfaction.

Additional work-related demands (such as too much administrative paperwork), constraints upon effectiveness (such as inadequate administrative and technical support and poor levels of communication), conflict between personal and institutional and departmental priorities, and lack of opportunities for promotion were also commonplace.

Some of these issues have been previously identified in studies of academic stressors conducted in North America and Australia (e.g. Blix *et al.*, 1994; Hogan *et al.*, 2002). As well as their salience to academic staff in the UK, the fundamental importance of these features to the wellbeing of employees was highlighted here, as the job stressor factor “professional constraints” was found to be the primary predictor of job satisfaction.

Research conducted in the university sector in New Zealand by Boyd and Wylie (1994) concluded that increased workloads for academics had resulted in perceptions of declining standards of teaching and research. In the present study, respondents also frequently highlighted the deleterious impact of heavy and diverse workloads on their research output and teaching performance. Many indicated that they were unable to maintain good quality work across all role domains in the time available. Satisfying the increased demands for excellence in research was generally considered to be particularly problematic.

The pressure that striving for publication can exert has been recognised in previous research conducted in North America (e.g. Goldenberg & Waddell, 1990; Thorsen, 1996). The present study has provided further insight into this issue by examining demands relating to more specific aspects of research-related activities, as opposed to relying on more global perceptions. In general, respondents reported a considerable degree of pressure to undertake research, to publish findings and to increase their external consultancy activities. It was almost unanimously perceived that this pressure had increased dramatically in the five years preceding the study. The majority of academics who responded to this study, however, believed that they had insufficient opportunities and lacked the necessary support to comply with demands for high quality research and consultancy work.

Academics who reported experiencing more research-related demands tended to have higher levels of psychological distress and lower levels of job satisfaction. It is not surprising that lack of opportunity and support to conduct research is associated with strain in this occupational group. Following the introduction of the Research Assessment Exercise in the late 1980s, the research output of academics has been under greater internal and external scrutiny. Furthermore, academics are more likely to be employed, retained or promoted on this basis. The finding of the present study, that lecturers and researchers who reported more research demands tended to work more frequently during evenings and weekends, suggests that this has may have become a way of accommodating increased expectations for greater research activity. The working

practices adopted by academics in order to cope with the various demands of their work will be further examined in the next study.

Studies conducted in the UK and other countries provide conflicting evidence as to whether teaching or research is considered to be more stressful by academics (Blix *et al.*, 1994; Abouserie, 1996). In the present study, teaching students was generally considered to be less demanding than conducting research. Many respondents appeared to be satisfied with their relationships with students and with their students' competence and motivation. The factor that encompassed student demands was not significantly related to psychological distress; moreover, it appeared to make a positive contribution to academics' job satisfaction. These findings extend those of studies conducted with schoolteachers, suggesting that involvement with students can be a considerable source of satisfaction (Kalekin-Fishman, 1986).

Consistent with smaller-scale studies on stress amongst university employees conducted in the UK (e.g. Bradley & Euchus, 1995; Doyle & Hind, 1998), the present study provides strong evidence for the negative impact that job demands can have on the non-work domain. Findings suggest that few academics working in universities in the UK might have achieved a healthy work-life balance. Respondents commonly reported that they had little time for personal interests and a considerable proportion believed that their families suffered due to the demands of their work. The factor encompassing these and other stressors relating to the work-home interface was the primary predictor of psychological distress, accounting for 26 percent of the variance. Furthermore, academics who reported a higher degree of conflict between work and home also tended to have lower levels of job satisfaction.

It is not surprising that academic staff report difficulties in managing the work-home interface, as the findings of this study suggests that many academics spend a considerable amount of time working during evenings and weekends. Although not possible to establish from the measures utilised here, it is likely that at least some of these extra hours are spent working at home. These findings clearly highlight the relevance of the work-home interface to the health and wellbeing of academic employees. The features of academic work that are most likely to contribute towards perceptions of work-life conflict, and the strategies adopted by academics in an attempt to balance the demands of their work with family life and leisure are, as yet, unknown. A number of issues relating to the work-home interface highlighted in this Chapter will be examined in the next study in this programme of research.

### **3.6.3 Perceptions of change**

The majority of academics who responded to this study indicated that too many changes have taken place in the sector in too short a time span. Only just over one respondent in ten believed that these changes had resulted in their institutions becoming more efficient. These attitudes should be compared to those reported in Cross and Carroll's study conducted eight years prior to the present research, where one-third of their sample of employees from six universities in the UK believed that the changes recently introduced in the sector had *increased* the efficiency of their institutions (Cross & Carroll, 1990).

The results of the present study support general observations that the ethos of UK universities has become less collegial and more competitive (e.g. Trow, 1994). Although relationships with colleagues were not generally perceived to be problematic, many respondents maintained that their working environments had become more competitive over the last few years, and that levels of support had declined. The importance of good working relationships to the wellbeing of academic staff has previously been highlighted (Castillo & Cano, 2004). In the present study, perceptions of reduced levels of professional support were found to be significant predictors of psychological distress. This emphasises the importance of good working relationships to the wellbeing of academics. The next study will examine the role played by social support from different sources in the workplace in the health and job satisfaction of employees.

Early research conducted in universities concluded that the manner in which institutions were managed was not a source of stress (e.g. Gmelch *et al*, 1984). The findings of the present study, however, suggest that perceptions of unsatisfactory management practices might have become more commonplace in the higher education sector in the UK. Academics frequently indicated that the management of their institutions had become more remote and autocratic and that wider consultation and participation was not encouraged. Perhaps more seriously, a considerable degree of bullying and intimidatory management practice was revealed; two respondents out of every five maintained that bullying had become more commonplace in their institutions in the preceding five years. This finding supports research conducted in the higher education sector by Lewis during the same period (1999) which concluded that bullying behaviour in the HE sector had become more prevalent in recent years – mainly due to increased pressures on managers and poor managerial training. As with studies of other occupational groups (Gilbreath & Benson, 2004), the importance of sensitive and participative management styles to the wellbeing of academic employees has been highlighted in the present study. On average, academics who had more negative perceptions of the management of change had higher levels of psychological distress and lower levels of job satisfaction.



Changes relating to internal and external quality assurance procedures were perceived in a negative manner by many respondents. The results of this study support McNay's view (1997) that the workforce sees the increase in scrutiny associated with these procedures as unwelcome and stressful. The majority of respondents indicated that too much emphasis was placed on quality assurance in teaching and research. Demands for accountability and increasing reliance on external performance indicators were not generally viewed favourably, and the growing emphasis placed on quality assurance in teaching and research was thought by many to have had a negative impact on the student experience. Quality assessment demands were significantly and positively related to psychological distress and negatively related to job satisfaction. It is likely that this finding is attributable to the increased workload involved in complying with quality assurance procedures.

#### **3.6.4 Psychological distress**

The findings of this study suggest that levels of psychological wellbeing in academics working in UK universities might be poor. The degree of psychological distress found in this study is considerably higher than that reported by community samples (Taylor, Brice, Buck & Prentice-Lane, 1999) and the majority of other occupational groups (Mullarkey *et al.*, 1999). The level of caseness observed also exceeds those reported in a national study of Australian academics (Jarrett & Winefield, 1995) and the only study of university employees in the UK that has utilised the GHQ-12 (Daniels & Guppy, 1996b). Despite the high levels of stressors and negative perceptions of change revealed in the sector, such high levels of psychological distress are not easy to explain. There is evidence that the GHQ-12 has been found to be sensitive to organisational restructuring (Moyle, 1998); it is, therefore, possible that these findings are a short-term reaction to the intense and wide-ranging changes experienced in the higher education sector during the few years prior to the study being conducted. The stability of the psychological wellbeing in this occupational group over time will be re-examined in the next study.

#### **3.6.5 Job satisfaction and job involvement**

In spite of unusually high levels of psychological distress, the majority of academics who responded to this study maintained that they gained a great deal of satisfaction from some aspects of their work. Doyle and Hind (1998) found a similar pattern in a study of university lecturers in the UK, where many of their respondents indicated that they found their jobs intrinsically rewarding whilst simultaneously reporting high levels of burnout. Clearly, further research is needed that utilises more sensitive measures of job

satisfaction in order to investigate the complex nature of job satisfaction in academic settings.

The present study was limited by its failure to acknowledge the role played by individual differences in determining strain outcomes. It has been argued, however, that emphasising the role of individual differences in relation to workplace stress could reinforce a tendency to see stress as a personal weakness or failing, rather than a systematic problem of work design (Taylor, Repetti & Seeman, 1997). Nonetheless, insight into the role played by individual difference variables in the stressor-strain relationship might be useful under some circumstances. There is evidence in the literature that the psychological importance (or salience) of the job role may moderate relationships between job stressors and strains (Frone, Russell & Cooper, 1995). Job involvement representing “a cognitive or belief state of psychological identification with one’s present job” (Kanungo, 1982, p. 342) was briefly reviewed in Chapter 1. The findings of the present study, and others reviewed in Chapter 2, suggest that academics might be highly involved in their jobs. To the author’s knowledge, however, job involvement has not yet been explicitly assessed in studies of academic stress; furthermore, its moderating role in the relationship between stressors and strains has only rarely been examined. The next study aims to examine these issues.

### **3.6.6 Leaving intentions**

The findings of the present study suggest that, despite the evident satisfaction with some aspects of their work experienced by lecturers and researchers, a considerable proportion (46 percent) had seriously considered leaving academia in the five years prior to this study. The reasons why such a high number of academics wish to leave the sector cannot be directly ascertained from the present study. Analysis of the data revealed, however, that respondents who wished to leave had higher scores on all of the stressor and change factors, with the exception of student demands. In particular, those who indicated that they had seriously considered leaving the sector, on average, perceived more professional constraints, less professional support, and had a poorer experience of change management, than those who wished to remain. Due to the potentially serious implications for higher education in the UK, the extent of leaving intentions in the sector and the reasons provided for wishing to leave will be re-examined later in this thesis.

### **3.6.7 Job control, efforts and rewards and academic employees**

As discussed in Chapter 1 of this thesis, the job demand-control (JDC) model maintains that control at work protects employee wellbeing, even in the face of high levels of demand (Karasek & Theorell, 1990). Although the JDC model has been utilised in studies

of a number of different occupational groups, as yet, it has not been tested in research conducted on academic employees. Winefield (2000) has recently argued that this model would not be appropriate for lecturers and researchers due to the fundamental characteristics of academic work. Clearly, if one adopts the “traditional” view of academia where lecturers and researchers continue to enjoy high levels of autonomy, professional independence and support, one might indeed conclude that the JDC(S) model would not be a useful framework through which to examine stress in this occupational group. The findings of this study, however, question this perspective, as academic working conditions appear to have changed significantly.

Few respondents indicated that they lacked control over how they used their working time: this suggests that academics might experience relatively high levels of schedule flexibility. Low levels of autonomy in other aspects of work were, however, revealed. This was characterised by many academics reporting dissatisfaction with their level of influence over decision making, and with their opportunities to express their opinions. Furthermore, perceptions that compliance with quality assurance had compromised professional independence were commonplace; this clearly implies reduced levels of control over how the job is performed. Participants also generally reported high levels of demand that had increased in recent years. These findings suggest that the JDC model might, in fact, be an appropriate framework through which to examine the impact of job stressors in this occupational group, under current working conditions. Furthermore, the importance of social support at work to the wellbeing of academics found in the present study suggests that an expanded job demand-control-support model (discussed in Chapter 1) might explain even more variance in strain outcomes. The next study utilises this model in a sample of academic staff in order to examine its predictive value.

The findings of this study also suggest that another model of workplace stress which is less widely used than the JDC(S), the Effort-Reward Imbalance (ERI) model (Siegrist, 1996) might be appropriate to academic employees (see Chapter 1 for an overview of this model). Many academics who responded to this study maintained that they lacked recognition for their efforts at work, and felt less valued by their institutions than in recent years. Respondents were almost unanimous in indicating that the status of academic staff had recently declined. The importance of adequate recognition, respect and reward to the wellbeing of academic staff has been highlighted in previous research conducted in North American universities (e.g. Gmelch *et al.*, 1984; Castillo & Cano, 2004).

The present study clearly indicates that job demands lead to strain outcomes for academic employees. As discussed in Chapter 1 of this thesis, however, the effort-reward

imbalance (ERI) model maintains that it is not merely effort that results in strain, but an imbalance between the degree of effort that individuals believe that they put into their work and the rewards that they receive. A key component of the ERI model is over-commitment: this assesses the personal characteristic of excessive commitment to the job. It could be argued that over-commitment might be particularly relevant to academic employees. The importance of esteem rewards is explicitly recognised in the ERI model. The findings of the present study highlight strong perceptions amongst academics that they put a high degree of effort into their work but obtain a low level of reward. For several reasons, therefore, the ERI model may be an appropriate framework through which to further explore the relationship between stressors and strains in this occupational group.

The results of Study 1 suggest that both the JDACS and ERI models might successfully predict strain in academic staff. As discussed in Chapter 1, the potential value has been highlighted in devising a hybrid job stress model specific to particular working environments that comprises a wider range of factors relating to the individual and the working environment (Calnan *et al.*, 2000). There is some evidence that the more transactional nature of the ERI compliments the more static and objective nature of the JDACS model and, when combined, these models have potential to explain more variance in strain outcomes than each model independently (Bosma *et al.*, 1998; Siegrist *et al.*, 1998). As yet, however, very little research has been conducted in this area. The next study examines the contribution of this hybrid model to the prediction of strain outcomes in academic employees. This issue will be discussed further in Chapter 4 in the context of the present programme of research.

### **3.6.8 Gender differences**

This study also aimed to examine gender differences in the stressors and strains reported by academic employees in the UK. Previous research in the university sector in other countries has tended to find higher levels of stressors and strains, and lower levels of job satisfaction, in women academics (e.g. Blix *et al.*, 1994; McInnis, 1999). Very few gender differences in work stressors or perceptions of change in the sector were found, and male and female academics reported similar levels of psychological distress or job satisfaction. Some evidence was found to suggest that women academics may have greater problems in balancing the demands of work and home. Although no more likely to work at home during evenings and weekends, female respondents perceived slightly higher levels of demand from the work-home interface than their male counterparts. Gender differences in more specific aspects of work-life conflict will be further examined in the next study.

### **3.7 Conclusion**

This study has examined the stressors and strains experienced by academics working in the university sector in the UK. Many of the stressors revealed are unique to academic work. The job characteristics and working conditions that predict psychological distress and job dissatisfaction for this occupational group were also investigated. Particularly notable are the high levels of psychological distress and leaving intentions that were revealed in this study. Specific areas have been highlighted where further research might prove fruitful. The following studies will utilise a further sample of academic employees in order to examine the following issues:

- The predictive value of the JDACS and the ERI models (independently and combined) in explaining strain in this occupational group;
- the nature and extent of work-life conflict experienced by academics, the work-related factors that predict a poor work-life balance, and the strategies and working practices that academics utilise in order to cope with the demands of their jobs. The impact of these factors on employee wellbeing will also be assessed;
- the availability and impact of supportive features in UK universities that are designed to manage the work-related wellbeing of employees;
- the extent of job involvement experienced by academics, and its relationship with employee wellbeing and work-life balance;
- the extent to which job demands and working hours in the sector remain stable over time, together with the stability of psychological distress and leaving intentions.

Chapter 4 (Study 2a) provides demographic details of the sample and discusses the predictive validity of the JDACS and ERI models. Chapter 5 (Study 2b) is devoted to the examination of work-life conflict in academic staff. Chapter 6 (Study 3) compares key findings of the two studies (conducted in 1998 and 2004) in order to relating to stressors and strains over the six-year study period.

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## **Chapter 4**

### **The Job Demand, Control and Support and Effort-Reward Imbalance models as predictors of strain in UK academics (Study 2a)**

#### **4.1 Summary**

Based on the findings of Study 1, it was suggested that two models of job stress (namely the Job Demand-Control-Support [JDC(S)] and Effort-Reward Imbalance [ERI] models) might be particularly appropriate to the working conditions currently experienced by academic employees in the UK. The authors of the two models have recently suggested that there is considerable promise in studying their combined effects. The aims of this study are: a) to compare the predictive powers of the two models in explaining a number of different strain outcomes in this occupational group and; b) to identify whether a model which combines dimensions of the JDC(S) and the ERI performs more effectively than either model independently. The extent and impact of working hours in the sector is also revisited. Eight hundred and forty-four lecturers and researchers (59 per cent male) completed a number of questionnaires that assessed the elements of the JDC(S) and ERI models, number of hours worked, psychological and physical symptomatology, job satisfaction and leaving intentions.

In general, the components of the JDC(S) and ERI models were significantly associated with each outcome variable in the expected direction. Some evidence was found to support the job strain and iso-strain hypotheses of the JDC(S) model. Although an interaction between demands and control contributed to the incremental variance in physical symptoms, no further two-way or three-way interactions in predicting ill health, job dissatisfaction and leaving intentions were found. In terms of the ERI model, additive effects of high efforts and low rewards, and some evidence of a two-way interaction between these variables, were observed for all strain indicators. Over-commitment emerged as a significant predictor of health indicators and job satisfaction, but not leaving intentions. In general, a combined model (most notably job control, rewards and over-commitment) was the best predictor of psychological distress and job satisfaction. Components of the ERI model performed most effectively when predicting physical health outcomes. Job-related rewards was the sole predictor of turnover intentions, and the degree of variance explained was small. The findings are subsequently discussed with reference to previous research and the theoretical implications of a combined model of job stress examined.

## **4.2 Introduction**

The main features of the job demand-control-support (JDC[S]) model and the effort-reward imbalance (ERI) models were summarised in Chapter 1 of this thesis. Sections 4.2.1 to 4.2.3 below review the literature relating to these models in greater depth in the context of the present study.

### **4.2.1 The Job Demand-Control (Support) (JDC[S]) model**

The demand-control (JDC) model postulates that the greatest risk to physical and psychological health occurs when employees experience high workload demands combined with low levels of control in meeting those demands (Karasek & Theorell, 1990). The JDC model has been widely applied in epidemiological studies that investigate the causes of coronary heart disease and associated risk factors (Karasek & Theorell, 1990; Schnall *et al.*, 1994). It has also been used in studies of a number of different occupational groups to predict less serious health-related outcomes (such as psychological distress, psychosomatic symptoms and fatigue) and outcomes that are more organisationally relevant (such as job satisfaction and sickness absence) (Karasek and Theorell, 1990; Landsbergis, Schnall, Dietz, Friedman & Pickering, 1992; Dwyer & Ganster, 1991; Fox, Dwyer & Ganster, 1993; Cropley, Steptoe and Joeke, 1999; De Croon, Van Der Beek, Blonk & Frings-Dresen, 2000; Calnan *et al.*, 2001).

As outlined in Chapter 1, the JDC model predicts both main and interaction effects of work demands and control. According to the strain hypothesis, employees working in a high-strain job (where high demands and low control are combined) will experience the lowest levels of wellbeing (Karasek & Theorell, 1990). The buffer hypothesis maintains that job control can moderate the negative effects of high demands on employee wellbeing. Despite that the literature gives considerable support for the strain hypotheses, evidence in support of the predicted interactions is considerably less forthcoming (Van der Doef & Maes, 1999; Terry & Jimmieson, 1999).

Although the JDC model is one of the most widely used models of occupational stress, it has been criticised for several reasons. The manner in which the model conceptualises work demands and control has been questioned, as has its failure to consider other variables that may influence worker health and wellbeing. It has been argued that the predicted interaction between demands and control might be more readily found if the job characteristics that are included in the model are made more specific, and applied to particular workplace environments.



In Karasek's original conceptualisation, control was defined as a "composite of two empirically related, but theoretically distinct, constructs – the worker's authority to make decisions on the job (decision authority) and the breadth of skills utilised. Wall *et al.* (1990) subsequently extended this conceptualisation by distinguishing between three forms of control: *method control* (control over how the work is done); *timing control* (control over work timing); and *boundary control* (control over a range of peripheral work activities). When applied to a sample of employees in the manufacturing industry, the expanded measure of job control was found to moderate the relationship between demands and both job-related negative mood and job satisfaction, whereas no such effect was observed with Karasek's original measure. There is some evidence that utilising an even broader conceptualisation of control (encompassing employees' level of influence at the group, department or company levels, as well as the task, method and boundary levels) has the potential to explain more variance in strain outcomes (Landesbergis, *et al.*, 1995; Karasek *et al.*, 1998). Clearly, more idiosyncratic aspects of job control might further extend this taxonomy. For example the findings of Study 1 suggest that perceptions of "interference" by external quality assessment bodies have resulted in decreased levels of professional independence. Schedule flexibility (or the extent to which employees can work where and when they choose) also extends the notion of job control to the work-home interface.

In the JDC model, demands are conceptualised as work stressors arising from the physical and psychological nature of work: these might include high time pressure, intensive working pace, repetitiveness, or mentally challenging work (Karasek, 1979). The JDC model has been expanded to include a third factor: workplace social support. The job demand-control-support model (JDC(S); Johnson & Hall, 1988) posits that jobs that are characterised by high demands, low levels of control, and low levels of workplace support (known as iso-strain jobs) will be more likely to result in physical and psychological ill-health. The buffer hypothesis of this expanded model stipulates that social support can moderate the negative impact of high strain jobs on employee wellbeing. Support for the iso-strain hypotheses is fairly consistent but, as with the original JDC model discussed above, the predicted interaction between demand, control and support in predicting strain outcomes is infrequently found (Van der Doef & Maes, 1999; Jones & Fletcher, 2003). In general, there is more evidence in the literature for an additive model: i.e. when high demand and low control are combined with low workplace support, the risk of psychological and physical health symptoms increases. As social support is of clear relevance to the wellbeing of academics, this expanded JDC(S) model will be tested in the present study.

A review of the literature by Van der Doef and Maes (1999) highlights the importance to researchers of clearly discriminating between the job strain and buffer hypotheses of the JDC(S) model, as their practical implications differ considerably. These authors indicate that where evidence for the buffer hypothesis is found, stress management interventions could focus on increasing job control (and/or social support) without necessarily reducing job demands. However, where support for the job strain (or iso-strain) hypothesis is found, this strategy would be less effective if job demands were not simultaneously decreased. The present study will clearly differentiate between these different hypotheses with a view to making recommendations for interventions to improve wellbeing in academic employees. The JDC job-strain hypothesis will be supported where individual additive effects of job demands and job control are found, and the buffer hypotheses supported where a two-way interaction is observed. In terms of the JDC(S) model, the iso-strain hypothesis will be supported where the main effects of job demands, job control and social support are found, whereas evidence for a buffer hypotheses will be accepted where a multiplicative interaction effect of demands and control is complemented with a main effect or interaction with social support.

The present study will test the performance of the JDC(S) model in predicting several different types of strain: psychological distress, physical health symptoms, job satisfaction and turnover intentions. Some variation in the pattern of predictors of these strain outcomes might be expected. Although all components of the JDC(S) model are key to its performance, some studies find that they do not necessarily have equal weight in predicting different types of employee strain. For example, research conducted by De Jonge, (1995; cited in Tummers, Janssen, Landeweerd and Houkes, 2001) found that job satisfaction was mainly predicted by job control, whereas physical and psychological health symptoms were predicted by workload demands and social support. This issue is further complicated by a few studies finding relationships between components of the JDC(S) model and strain outcomes in the *opposite* direction than was anticipated. For example, whilst Beehr, Glaser, Canali and Wallway (2001) found positive associations between job demands and psychological distress, respondents with higher levels of demand tended to report fewer turnover intentions and more job satisfaction.

The JDC and JDC(S) models were originally conceptualised as “general” models: i.e. they were formulated to apply to a wide range of occupational groups (Karasek & Theorell, 1990). It has been argued previously in this thesis, however, that the demands faced by employees will to some extent be related to the specific characteristics of the job. The findings of Study 1 provide further evidence for this proposition. Some researchers have suggested that the failure of the JDC and JDC(S) models to consistently predict employee

strain is partially due to their failure to acknowledge the importance of stressors that are specific to different occupations (e.g. Payne & Fletcher, 1983; Soderfeldt, Soderfeldt, Muntaner, O'Campo, Warg & Ohlson, 1996). This implies that models that include more idiosyncratic job demands might be more successful in predicting strain outcomes. For example, Van der Doef and Maes (1999) maintain that, for teachers, demands relating to interactions with students, may be at least as important as overall workload. It has also been argued that more job-specific measures of demands are likely to be more successfully translated into practical recommendations to manage job-related stress (Jones *et al.*, 1998).

Numerous studies have tested the JDC and the JDC(S), but very few of these have assessed job-specific demands. Those that have done so have yielded mixed results. In line with the literature reviewed above, little evidence for interactions has been found, but job-specific demands have been fairly consistent predictors of strain outcomes. An early study of 148 schoolteachers conducted by Payne and Fletcher (1983) included a number of idiosyncratic demands related to the teaching role. Although significant positive relationships were found between these demands and self-reported anxiety and depression, little support was found for the hypothesised interaction between demands and job discretion in predicting strain outcomes. A more recent, larger-scale study of European schoolteachers that tested the JDC(S) model utilised a measure of occupationally specific and generic job demands (Verhoeven, Maes, Kraaij & Joekes, 2003). Demands, control and social support independently predicted emotional exhaustion and job dissatisfaction, and demands and control predicted somatic complaints but, as with Payne and Fletcher's findings, no significant interactions were found.

There is some evidence that the inclusion of job-specific demands might enhance the predictive ability of the JDC(S) model. Research conducted with a sample of employees from a large service organisation by Jones and Kinman (2002) found that job-specific stressors derived from interviews predicted a substantial proportion of additional variance in psychological wellbeing. A study of public service employees conducted by Noblet (2003) compared the degree of variance in strain outcomes predicted by generic work demands with that predicted by demands that were more job-specific. Generic job demands failed to account for any variance in psychological wellbeing and job satisfaction, but the additive effects of job control and support together predicted 27 percent of the variance in psychological wellbeing, and 49 percent of the variance in job satisfaction. When job-specific demands were entered into each equation, a further 10 percent of variance in psychological health and three percent in job satisfaction were

explained. Noblet's findings clearly indicate that idiosyncratic work demands should be incorporated into the JDC models when investigating the characteristics of work that contribute to the wellbeing of employees in particular occupational groups.

The study reported in this chapter will test the JDC(S) model in a sample of academic employees utilising a measure of generic and job-specific demands. Demands relating to teaching and research activity will be included as well as overall workload. There are several reasons why the JDC(S) model might be particularly appropriate for this occupational group; these relate to the characteristics of academic work and changes that have been experienced in the sector that were discussed earlier in this thesis. Literature reviewed in Chapter 2 suggested that academics have traditionally enjoyed a considerable degree of control over their work, combined with a generally high level of demand. According to Karasek's taxonomy of occupations, therefore, academics might be considered to have "active" jobs where high demands are accompanied by high control. Active jobs are not thought to result in strain as they allow employees the latitude necessary to develop protective coping behaviours (Karasek & Theorell, 1990). The findings of Study 1 suggest, however, that the high level of autonomy enjoyed by academics in the UK in recent years has been eroded, and job demands have increased as a result of widespread changes in working conditions. As a consequence, academic work might now be more likely to be characterised as a "high strain" job rather than an "active" job and therefore present an increased risk of ill health to employees.

The importance of social support at work to the wellbeing of lecturers and researchers was highlighted in Study 1, and other research reviewed in this thesis (Gmelch *et al.*, 1984; Lacy & Sheehan, 1997; Castillo & Cano, 2004). The results of Study 1, however, support general observations of a changing culture in academia that is more competitive and less collegial. Under such conditions, social support from colleagues and managers might be particularly salient in protecting academics from the negative impact of job demands. This suggests that the extended JDC(S) model might be a relevant framework through which to examine strain outcomes in academic employees.

To summarise, this study will test the JDC(S) model in a sample of academic staff working in UK universities. Additive effects and interactions between the components of the model and a number of strain outcomes (see Section 4.2.4 below) will be examined. In this study, demands will be conceptualised as "structural or psychological claims associated with role requirements, expectations and norms to which individuals must respond or adapt by exerting effort" (Voydanoff, 2004; p. 275). A number of generic and job specific demands obtained from Study 1 will be included. In line with recent recommendations

(Wall *et al.*, 1990; Karasek *et al.*, 1998), control will encompass method and boundary control and decision authority at job and departmental level. As support from a variety of sources in the workplace is likely to be beneficial for employees, social support from supervisors, managers and colleagues will be examined.

This study also aims to test the Effort-Reward Imbalance (ERI) model as a predictor of strain in UK academics. The features of the ERI model and its relevance to the occupational group under investigation will be discussed in the next section. The aims of this study in relation to this model will then be summarised.

#### **4.2.2 The Effort-Reward Imbalance (ERI) Model**

In the JDC(S) model an explicit focus is placed on situational characteristics of the workplace; little reference is made to personal perceptions or to individual differences. It has been argued that the meanings that employees ascribe to their experiences, and the socio-cultural factors that shape them, should be acknowledged in models of work stress (Lazarus, 1999; Calnan *et al.*, 2000; Fletcher, 2003). Siegrist (1996) has attempted to address this issue in his effort-reward imbalance (ERI) model of work stress. The features of this model were briefly discussed in Chapter 1. The ERI model is based on the premise that it is not merely job-related effort (or demand) that results in strain, but an imbalance between the efforts that employees believe that they put into their work and the rewards that they receive. In this model, a distinction is made between extrinsic effort (i.e. situational factors that make work more demanding) and intrinsic effort (or over-commitment). Rewards are distributed to employees by three “transmitter” systems: money (adequate salary), esteem (respect and support), and security/career opportunities (promotion prospects, job security and status consistency) (Siegrist, 1996). Unmet reward expectancies following effort are likely to provoke strong emotional reactions.

Compared with the JDC(S) model, relatively few studies have been conducted on the adverse health effects of effort-reward imbalance. The research that is available tends to adopt an epidemiological approach to the prediction of serious health outcomes such as coronary heart disease (e.g. Kuper, Singh-Manoux, Siegrist & Marmot, 2002); Siegrist, Starke, Chandola, Godin, Marmot & Niedhammer, 2004). The potential impact of lack of reciprocity (i.e. jobs that combine high effort and low rewards) on employee wellbeing more generally has been highlighted in research conducted by Van Vegchel, De Jonge, Meijer and Hamers (2001). In this study, the risk of health symptoms was between six and nine times higher for employees who reported high efforts and low rewards than other groups. Research has also found that an imbalance between efforts and rewards (calculated by a ratio of efforts to rewards) increases the risk of physical symptoms,

psychological distress and emotional exhaustion over and above that associated with efforts and rewards separately (Peter *et al.*, 1998; Pikhart, Bobak, Siegrist, Pajak, Rywik, Kyshegyi, Gostautas, Skodova & Marmot, 2001; Niedhammer, Tek, Starke & Siegrist, 2004). However, whilst there is general support for the main effects of efforts and rewards on employee strain, not all studies find evidence for the predictive ability of effort-reward imbalance (e.g. Siegrist, Peter, Cremer & Seidel; 1997; Kudielka, Von Kanel, Gander & Fischer, 2004).

Although studies have tested the performance of the ERI model in predicting employee health, as yet little is known about its relationship with more organisationally relevant outcomes such as leaving intentions and job dissatisfaction. Only two such studies can be located, but their findings suggest that perceptions of high efforts and low rewards at work might also predict these types of strain – at least in health-care workers. A recent study of European nurses found that intentions to leave the profession rose as the perceived imbalance between job-related efforts and rewards widened (Hasselhorn, Widerszal-Bazyl & Radkiewicz, 2003). Research conducted by Van Vegchel *et al.* (2001) found that the risk of job dissatisfaction was eight times higher for health-care employees who reported high efforts and low rewards. Whilst these results are promising, the sample utilised in the latter study was small ( $n = 167$ ) and comprised mainly female employees (92 percent) who worked on a part-time basis only. Clearly, relationships should be examined between the ERI, leaving intentions and job satisfaction in a more demographically diverse working population.

As discussed above, the ERI model distinguishes between extrinsic and intrinsic effort. Intrinsic effort (known as over-commitment) is the person-specific component of the model; it refers to a "...set of attitudes, behaviours and emotions reflecting excessive striving, in combination with an underlying motivation to seek esteem and approval" (Siegrist, 2001, p.55). Over-commitment is believed to work in two ways: a) direct effects, where over-committed employees would be more likely to experience low levels of wellbeing than their less committed counterparts; b) indirect effects, where the negative impact of an effort-reward imbalance on employee wellbeing is stronger in over-committed workers compared with those who are less committed (Siegrist, 1996). According to Siegrist, an employee who is highly over-committed will respond in an inflexible way to work situations of high effort and low reward, and will therefore be more stressed and disease-prone than a person in the same situation who is less committed.

There is some support in the literature for the main effects hypothesis of over-commitment, in that employees who are more over-committed tend to report more

physical and psychological health symptoms (Van Vegchel, De Jonge, Bosma & Schaufeli, 2005). As yet, however, the more indirect role played by over-commitment in the job stress process has been little examined, and the available research has yielded inconsistent findings. De Jonge *et al.* (2000) found some evidence that the negative impact of effort-reward imbalance on employee wellbeing was stronger in over-committed employees. A moderating effect of over-commitment on physical symptoms was also found by Van Vegchel *et al.* (2001), but the interactions were in the opposite direction to what was expected (i.e. over-committed employees who reported low efforts and high rewards had an *elevated* rather than a reduced risk for physical symptoms). Moreover, findings from the Whitehall II study indicated that over-commitment independently increased the risk of ill health symptoms, but little evidence was found that conditions of effort-reward imbalance were more damaging for over-committed employees (Kuper *et al.*, 2005). It should be noted, however, that in the latter study, over-commitment was measured by a single item that assessed the degree of preoccupation with work, rather than the six-item scale recommended by Siegrist (1996). Many other studies that have tested the ERI model have also used proxy measures, thus making it difficult to synthesise research findings in the field.

Siegrist (2001) has maintained that between 10 percent and 40 percent of the workforce experience some degree of effort-reward imbalance. As with the JDC(S) model discussed above, the findings of Study 1 suggest that the ERI model might be an appropriate framework through which to examine relationships between stressors and strains in academic employees. The extrinsic effort dimension of the ERI model assesses interruptions and disturbances in the workplace, working overtime and perceptions of increased demand (Siegrist, 2001): all of these issues were highlighted as considerable stressors in Study 1 reported in this thesis. The findings of that study also emphasised the importance of professional recognition and respect to the wellbeing of lecturers and researchers. Esteem rewards are fundamental components of the ERI model.

To summarise, there is evidence to suggest that a co-manifestation of indicators of high effort and low reward is a consistent predictor of employee health status. Its relationship with outcomes such as job satisfaction and leaving intentions is, however, considerably less clear. Furthermore, there is some evidence that over-commitment is a risk factor for employee wellbeing. As over-commitment is a crucial aspect of the ERI model, it is surprising that research examining its more indirect role in the relationship between ERI and employee strain is so scarce. The next study reported in this thesis tests several predictions relating to the ERI model in a sample of academic staff; these predictions are derived from Siegrist (2001) and Van Vegchel *et al.*, 2005), namely:

- Efforts and rewards independently predict strain;
- An imbalance between high extrinsic effort and low reward increases the risk of strain over and above the risks associated with each component independently;
- Overcommitted people are at increased risk of strain;
- High over-commitment increases the risk of strain over and above that accounted for by high efforts and low rewards (i.e. an additive effect of over-commitment);
- High efforts in combination with a high level of over-commitment leads to the highest risk to employee wellbeing.

This study will examine the performance of the ERI model in predicting a broader range of strain outcomes than previous research in the field: i.e. job satisfaction and leaving intentions will be examined, as well as psychological and physical health. Care will be taken to utilise Siegrist's recommended measures of ERI rather than proxies, but the original measure of job-related rewards contains items that have the potential to overlap with measures of job satisfaction. As such an overlap is likely to artificially inflate relationships between these variables, this study will assess esteem and status rewards only. As argued above, these capture an important aspect of reward in the higher education sector.

The majority of studies that have tested the ERI model have been conducted in the field of social epidemiology. Most have utilised categories or ratios in order to calculate high/low effort, high/low reward and/or develop an index of effort-reward imbalance: a common practice in epidemiological research. A review of the literature on the ERI model recently published by Van Vegchel and colleagues (2005) has highlighted the risks involved in dichotomising continuous variables, as the cut-off point for categorisation is arbitrary and important variance might be lost. These authors recommend that future research in organisational settings should utilise continuous variables and employ hierarchical regression analyses in order to test the predictions of the ERI model. They maintain that utilising an interaction term (rather than the commonly used ratio term) to assess effort-reward imbalance is more likely to yield significant effects. The next study follows these recommendations.

### **3.2.2.1 The Demand-Control (Support) and the Effort-Reward Imbalance Models combined**

This study examines the JDC(S) and ERI models, both independently and combined, as predictors of strain in academic employees. These models have some similarities in that they both predict that strain arises as a consequence of an imbalance between the



employee and his or her working environment. Some conceptual overlap can also be found between the dimensions of demand and extrinsic effort. There are, however, several important differences between the two models. Firstly, and perhaps most fundamentally, by assessing the degree of distress that employees perceive relating to the absence or presence of different types of efforts and rewards, the ERI model adopts a more transactional framework than the JDC(S). Secondly, the JDC(S) identifies personal control (and sometimes social support) as the key modifier(s) of the impact of workplace demands on employee strain. In the ERI, however, the reward structure of work is the main moderating factor. Thirdly, the JDC(S) is restricted to the extrinsic or situational aspects of the psychosocial work environment, whereas the ERI distinguishes between situational (i.e. extrinsic effort) and personal characteristics (i.e. over-commitment). Moreover, components of the ERI model (pay, career opportunities and job security) are linked to more distant macro-economic conditions, whilst the major focus of the JDC(S) is at the level of the individual workplace. It has been argued that occupational rewards might have become a more meaningful source of strain to employees than job control due to reduced job security and status and a general increase in flexibility and self-regulation (De Jonge, Bosma, Peter & Siegrist, 2000).

It is of theoretical and practical interest to examine whether the two models explain strain outcomes in a comparable manner, or whether the ERI exerts relatively stronger effects as it obtains more subjective appraisals of broader features of the working environment than the more objective and structural JDC(S). As the two models emphasise different elements of the psychosocial work environment in different ways, there is considerable promise in studying their combined effects (Karasek *et al.*, 1998). As yet, few attempts have been made to examine these issues, but the studies that have been conducted will now be reviewed.

The Whitehall II study examined the performance of components of the JDC(S) and ERI models in predicting coronary heart disease (Bosma *et al.*, 1998). Findings indicated that effort-reward imbalance and low job control were independently associated with more than a two-fold risk of new cases of heart disease, but neither high demands nor an interaction between demands and control predicted disease outcomes. Although this was an interesting first attempt at comparing the contributions of the two models to the incidence of disease, some limitations in their measurement are apparent. Proxy measures of ERI were utilised that did not adequately reflect its breadth; the impact of intrinsic but not extrinsic efforts was examined, and reward was narrowly conceptualised as poor promotion prospects and a “blocked” career.

A study conducted by De Jonge *et al.*, (2000) examined the independent contributions made by the ERI and JDC models to the prediction of less serious health symptoms and job satisfaction. Findings indicated that employees who reported high job demands and low job control had an elevated risk of strain. Odds ratios of strain outcomes were also significantly higher in employees who reported high efforts and low rewards. Furthermore, in line with the model's predictions, over-committed employees had greater risks of poor wellbeing due to a high effort-reward imbalance than their less committed counterparts. When levels of relative risk were compared, findings indicated that high extrinsic efforts and low rewards were stronger predictors of strain outcomes than low job control. Again, however, De Jonge *et al.* utilised proxy measures of some aspects of the ERI only and over-commitment was assessed by a single item. The authors recommended that future research compare the predictive effects of both models using Siegrist's original measures of ERI.

Ostry, Kelly, Demers, Mustard and Herzman (2003) compared the predictive validity of elements of the JDC and ERI models, both independently and combined, in a sample of 3,000 Canadian sawmill workers. This study included the effort and rewards components of the ERI and the job control dimension of the JDC, but job demands and job commitment were not assessed. Findings suggested that a combined model might indeed perform more effectively as efforts, rewards and job control together explained five percent and 17 percent more variance in self-reported health status than the ERI variables and job control independently. A study recently conducted in Belgium by Godin and Kittel (2004) examined the predictive validity of the full JDC(S) model (i.e. job demands, control and support) in combination with the effort-reward imbalance and over-commitment components of the ERI model. Findings indicated that self-reported health symptoms and absenteeism were best predicted by elements of both models: more specifically, by an imbalance between efforts and rewards, low control and support, and high over-commitment.

To the author's knowledge, only one study has previously examined the combined impact of all components of the JDC(S) and ERI models on employee wellbeing. A survey of more than 1,000 UK general practitioners conducted by Calnan *et al.* (2000) found a combined model to be a stronger predictor of psychological wellbeing and job satisfaction than the models independently. Interestingly, a different pattern of predictors was found for each outcome variable. Psychological distress was best predicted by over-commitment, effort and job control, but job demands, social support and rewards made no significant contribution to the variance. Job satisfaction was explained by a model

comprising job control, rewards and social support, but not job demands, extrinsic effort and over-commitment.

#### **4.2.3 Aims of study**

This study aims to assess the predictive value of the JDC(S) and ERI models as predictors of strain amongst lecturers and researchers working in UK universities. It further aims to compare the relative contributions made by the two models in explaining strain outcomes. Also assessed is whether a “hybrid” model that combines the components of the JDC(S) and ERI performs more effectively than either model independently. More specifically:

- The main and interaction effects of the components of the JDC(S) model (i.e. job demands, control and support) will be examined in predicting employee strain. A measure of job specific and generic demands will be utilised;
- A number of predictions relating to the ERI model will be tested: the main effects hypothesis (where efforts and rewards are independently related to strain; the extrinsic ERI hypothesis (where an imbalance between effort and reward increases the risk of strain over and above the risks associated with each component independently); relationships between over-commitment and strain; the over-commitment hypothesis (where a high level of over-commitment increases the risk of strain outcomes) and the interaction hypothesis (where high efforts in combination with high over-commitment leads to the greatest risk to employee wellbeing);
- The predictive value of the JDC(S) and ERI models will be compared by examining the proportion of variance in each strain outcome explained by each;
- Whether a model that combines the components of both models performs more effectively than either model independently will be assessed.

A wider range of strain outcomes will be operationalised in the present study than was included in Study 1. Outcome measures will be psychological distress, physical health symptoms, job satisfaction and leaving intentions. As there is evidence that chronic job stressors can have a negative impact on physical health (see Chapter 1) a measure of physical symptoms will also be included. Moreover, a broader conceptualisation of job satisfaction will be utilised than in the first study; this encompasses: a) intrinsic and extrinsic elements; and b) general and job-specific sources.

The number of hours worked per week and the proportion of hours worked during evenings and weekends will also be assessed. The extent and impact of working hours will be

discussed in the present chapter, and in Chapter 5, in the context of work-life conflict. The stability of working hours in the sector over time will be examined in Chapter 5.

## **4.3 Method**

### **4.3.1 Sample**

As in Study 1, data was obtained from a postal survey. Potential participants were drawn at random from the membership database of the Association of University Teachers: AUT). The sample comprised 5,000 academic and academic-related staff employed within universities in the UK. Participation in the study was voluntary and anonymous. The overall response rate was 22 percent; however, only the data from the 844 respondents who identified themselves as lecturers and/or researchers is included in this analysis. Full results are reported elsewhere (Kinman & Jones, 2004).

### **4.3.2 Measures**

The respondents completed a self-report questionnaire, a copy of which can be found in Appendix A.

#### *Background information and working hours*

Information was obtained relating to age, gender, grade and academic discipline. Respondents were invited to indicate their current employing institution although this was optional to preserve anonymity. Also recorded were whether respondents were employed on a permanent, fixed term or casual contract, and whether they were employed on a full-time or part-time basis. Respondents were also asked to indicate the average number of hours worked per week, and estimate the proportion of these worked outside normal "office" hours (i.e. 9 am to 5 pm Mondays to Fridays).

#### *Job demands*

A seven-item scale assessed generic demands (such as the manageability of workload and role ambiguity) and more job-specific demands (such as those relating to teaching and conducting research). All items were presented as statements, for example: "my workload is manageable" and "my lecture/tutorial groups are too big". These items were obtained from Study 1. Responses were requested on a five-point scale ranging from 1 = strongly disagree to 5 = strongly agree, although a further "not relevant" option was offered. Mean scores across items were computed, with a high score denoting a high level of job demands (Cronbach's Alpha = 0.72).

### *Job control*

A six-item scale based on Wall *et al.* (1990) examined aspects of control. Items assessed task, method and boundary control, personal influence and decision authority. As with job demands (described above), all items were presented as statements. Examples of items are: "I have a choice in deciding what I do at work" and "I have a choice in deciding how I do my job". Responses were requested on a five-point scale ranging from 1 = strongly disagree to 5 = strongly agree, although a further "not relevant" option was again offered. Mean scores were taken across items with a high score representing higher levels of job control (Cronbach's Alpha = 0.79).

### *Workplace social support*

Three items assessed perceptions of support from colleagues, line managers and senior managers. All items were presented as statements, for example: "I am happy with the level of support I obtain from my colleagues". Responses were requested on a five-point scale ranging from 1 = strongly disagree, to 5 = strongly agree, with a further "not relevant" option offered. Mean scores were computed across items with higher scores denoting higher levels of social support (Cronbach's Alpha = 0.79).

### *Effort Reward Imbalance*

The Effort-Reward Imbalance questionnaire (ERI) designed by Siegrist (1996) was used to measure extrinsic effort and over-commitment. The internal consistency and factor structure of this measure have been deemed satisfactory (Siegrist *et al.*, 2003). The six-item scale developed by Siegrist (1996) was used in its entirety to measure extrinsic efforts; an example of an item related to workload is provided below. The measure of rewards was adapted for the purposes of the present study. A 7-item scale examined predominantly esteem-related rewards such as: "Considering all of my efforts and achievements, I receive the respect and prestige I deserve at work". In both scales, items assess not only the existence of efforts and rewards, but also the extent to which employees are distressed by their efforts and lack of rewards. An example of item presentation is shown below:

I have constant time pressure due to a heavy work load	
Disagree .....	
Agree .....	.....
	I am not at all distressed
	I am somewhat distressed
	I am distressed
	I am very distressed

Effort and reward items are scored on a six-point scale as indicated above. Reward items were reverse scored. For both scales, mean scores were computed across items, with higher scores representing greater extrinsic effort and more job-related rewards. (Cronbach's Alpha: efforts = 0.82; rewards = 0.86).

Siegrist's six-item measure was used to assess over-commitment (1996). An example of an item is: "People who are close to me say I sacrifice too much for my job". Responses are on a four-point scale ranging from 1 = "strongly disagree" to 4 = "strongly agree". Mean scores across items were computed with a high score denoting more over-commitment. (Cronbach's Alpha = 0.81).

#### *Job satisfaction*

A 14-item scale measured job satisfaction. Ten items were used that were adapted from the Warr, Cook and Wall (1979) measure of job satisfaction: these assessed levels of satisfaction with extrinsic aspects of work (e.g. hours of work) as well as more intrinsic factors (e.g. the work itself). A further four items designed for this study measured levels of satisfaction with core aspects of academic work, such as teaching, research and academic freedom. Responses were invited on a seven-point scale ranging from 1= "I'm extremely dissatisfied" to 7= "I'm extremely satisfied". (Cronbach's Alpha: 0.87). Mean scores were computed across items with higher scores representing higher levels of job satisfaction.

#### *Job security*

A single item was used to assess job insecurity. Respondents were also asked to indicate whether or not they had felt under threat of redundancy during the five-year period preceding the study. Response options for this item were "Yes" or "No".

#### *Leaving intentions*

A single item asked respondents to indicate whether or not they had seriously considered leaving higher education (other than through retirement) over the last five years. Response options for this item were "Yes" or "No".

#### *Psychological wellbeing*

As in study 1, the 12-item General Health Questionnaire (GHQ-12: Goldberg & Williams, 1988) was used to measure psychological wellbeing (See Appendix C). An example of an item is: "Have you recently felt under strain?" where responses are requested on a four-point range from "not at all" to "much more than usual". This measure can be scored in two ways: a) the "Likert" method where each item has a range of 0 to 3; and b) the GHQ

“caseness”) method (where each item is scored as 0 or 1, indicating the absence or presence of a symptom). This study utilises both forms of scoring. In the Likert method, mean scores across items are computed with higher scores denoting higher levels of psychological distress (Cronbach’s Alpha = 0.92). As in Study 1, a threshold score of three or above was selected to indicate the presence of caseness levels of psychological distress.

#### *Physical symptoms*

This was measured by the Physical Symptoms Inventory (PSI: Spector & Jex, 1998) which measures the occurrence of physical health symptoms over the preceding 30 days (e.g., headaches, loss of appetite, sleeping difficulties and fatigue). Respondents are asked to indicate on an 18-item list whether or not they experienced each symptom and, if they had experienced this symptom, whether or not they consulted a doctor. Three scores can be computed: the number of symptoms for which a doctor was not consulted, the number of symptoms for which a doctor was consulted, and a total which is the sum of both scores. For the purposes of the present study, scores were summed to create an index, with higher scores denoting poorer physical health.

#### **4.3.3 Procedure**

Questionnaires were distributed by post during Spring, 2004. A covering letter explained the purpose of the research, assured respondents of their anonymity and informed them that any details they provided would remain confidential. A postage paid envelope was included in which to return completed questionnaires.

#### **4.3.4 Methods of statistical analysis**

Statistical analyses were carried out using SPSS version 11. Missing data points were substituted with the mean of the variable but only where there were no more than 5 percent of data points missing for any particular variable. The data were screened by the procedure suggested by Tabachnick and Fidell (1996). Chi-square tests were utilised to test statistical significance of bivariate tabular analyses. One-way analyses of variance were utilised to examine mean differences and post hoc analyses conducted by the Bonferroni adjustment. The Pearson Product Moment Correlation Coefficient was used to assess the bivariate relationships between the JDC(S) and ERI components, working hours and strain outcomes. Hierarchical multiple regression analysis was used to test for associations between the components of these models and outcome variables. The procedures utilised for testing the JDC(S) and ERI models, both independently and combined, are described in the results section below.

## **4.4 Results**

### **4.4.1 Demographic data and job details**

Of the 844 respondents, 59 percent were male. Analysis of staffing figures from the Higher Education Statistics Agency (HESA, 2004) confirmed that the gender balance of respondents to the present survey corresponded with that of the wider population of academic staff in the UK at the time the research was conducted. The majority of respondents were aged 45-49 years (18 percent) and 50-54 years (19 percent). Forty-four percent of the sample was over 50. HESA figures indicate that, at the time of the survey, 28 percent of academics in the UK were aged 50 and above. As with Study 1, therefore, the present sample is somewhat older than the wider population of academic employees.

Ninety-one percent of the sample revealed their places of work, indicating that at least 99 universities in the UK were represented; as with Study 1, respondents were mainly from the traditional sector. A wide range of academic subject areas was represented in the sample. The single largest area was "Science, Engineering and Technology" with 33 percent of the overall sample in this category, followed by "Social Studies" which accounted for 22 percent of the sample and "Arts and Humanities" which constituted 21 percent.

Reflecting the wider population of academics in the UK, the majority of participants (77 percent) identified their job roles as "teaching and research". Thirteen percent indicated that they were employed on a "teaching only" and 10 percent a "research only" basis. Ninety percent of the sample were employed on a full-time basis and the majority (80 percent) had permanent contracts.

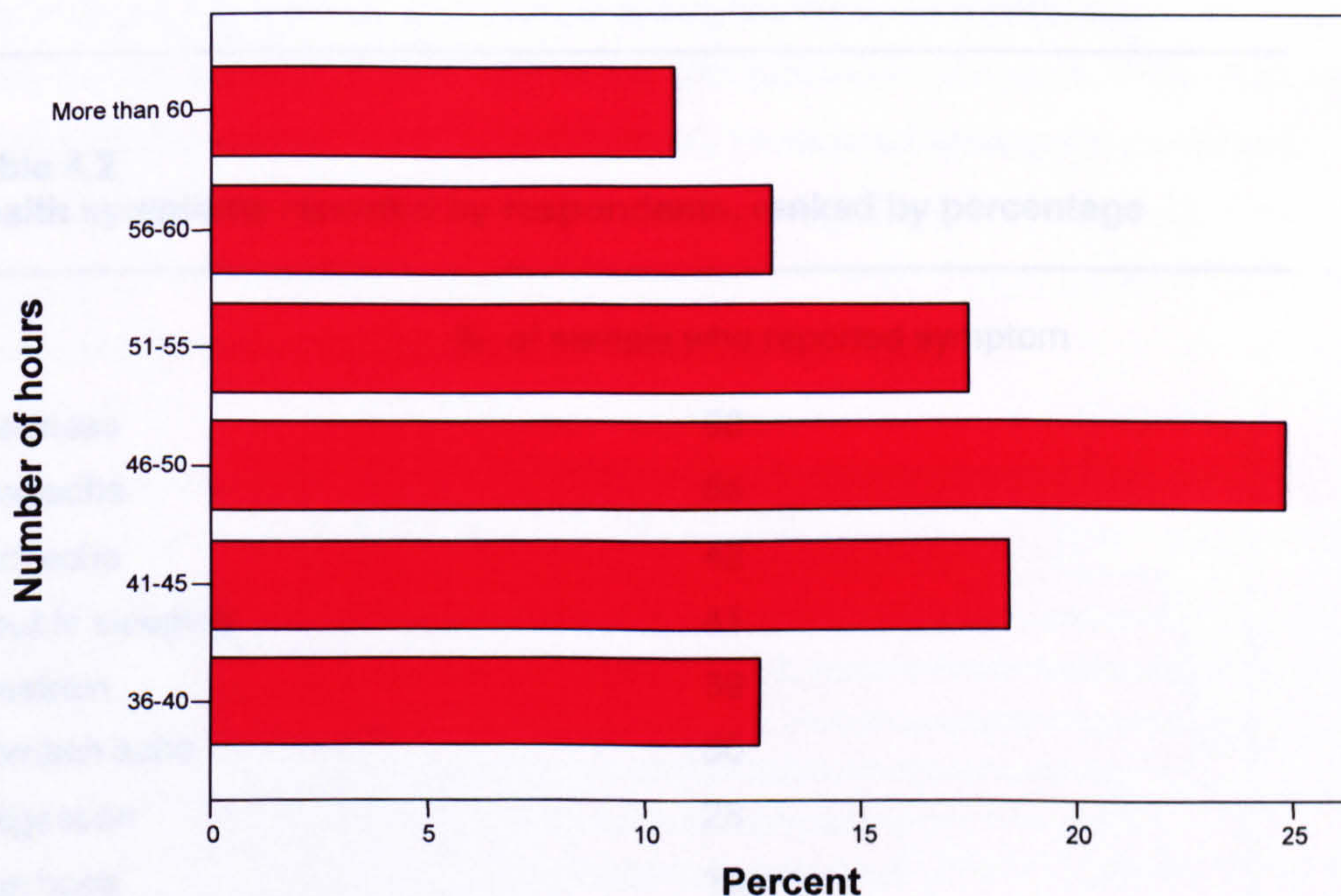
Gender differences were found in modes of employment. Women were more likely than men to identify themselves as part-time employees (17 percent compared with 5 percent): this difference was significant ( $\chi = 33.17, p <.001$ ). Furthermore, a significantly higher proportion of females than males were on fixed-term contracts (24 percent compared with 16 percent;  $\chi = 7.81, p <.01$ ). Seventy percent of the sample had been employed in higher education in the UK for at least 10 years, and 36 percent for 20 years or more. Fifty-three percent had been working in their current institutions for 10 years or more. On average, males had significantly longer service in their institutions and the sector as a whole than females ( $\chi = 45.40, p <.001$  and  $\chi = 45.08, p <.001$  respectively).



#### 4.4.2 Working hours

The average number of hours worked during a typical term-time week by participants who indicated they are employed on a full-time basis is illustrated in Fig. 4.1. As can be seen, many respondents are working in excess of the EU working time directive of 48 hours per week. Twenty-four percent of the sample indicated that they generally worked more than 50 hours, whereas 11 percent reported working in excess of 55 hours. Respondents were asked to estimate the proportion of hours that they worked outside “office hours” (i.e. 9 am to 5 pm during weekdays, and during weekends). Forty percent of the sample maintained that between 11 and 20 percent of their work was done during these times, with 16 percent regularly undertaking over 30 percent of their overall workload during these times.

**Fig. 4.1: Average number of hours worked per week in term-time**



#### 4.4.3 Descriptive statistics

Descriptive statistics for the components of the JDC(S) and ERI models and outcome variables are presented in Table 4.1. As can be seen, in terms of the JDC(S) components, the mean scores for job demands and job control are fairly high, and the mean level of social support is moderate. For the ERI variables, on average, levels of extrinsic efforts and rewards are moderate and over-commitment is high. Whilst the mean score for the GHQ-12 is not excessively high, 49 percent of the sample achieved caseness levels of psychological distress as measured by the GHQ-12, whereas 30 percent scored six or above.

**Table 4.1**  
**Descriptive statistics for components of the JDC(S) and ERI models and outcome variables**

Variable	<i>M</i>	<i>SD</i>	<i>Range</i>
Job demands	3.33	0.74	1 - 5
Job control	3.62	0.82	1 - 5
Social support	2.85	0.91	1 - 5
Job efforts	2.50	0.80	1 - 5
Job rewards	2.40	0.71	1 - 5
Over-commitment	2.76	0.57	1 - 4
Psychological distress (GHQ-12)	1.22	0.53	0 - 3
Physical symptoms	4.77	3.05	0 - 16
Job satisfaction	4.40	0.99	1 - 7

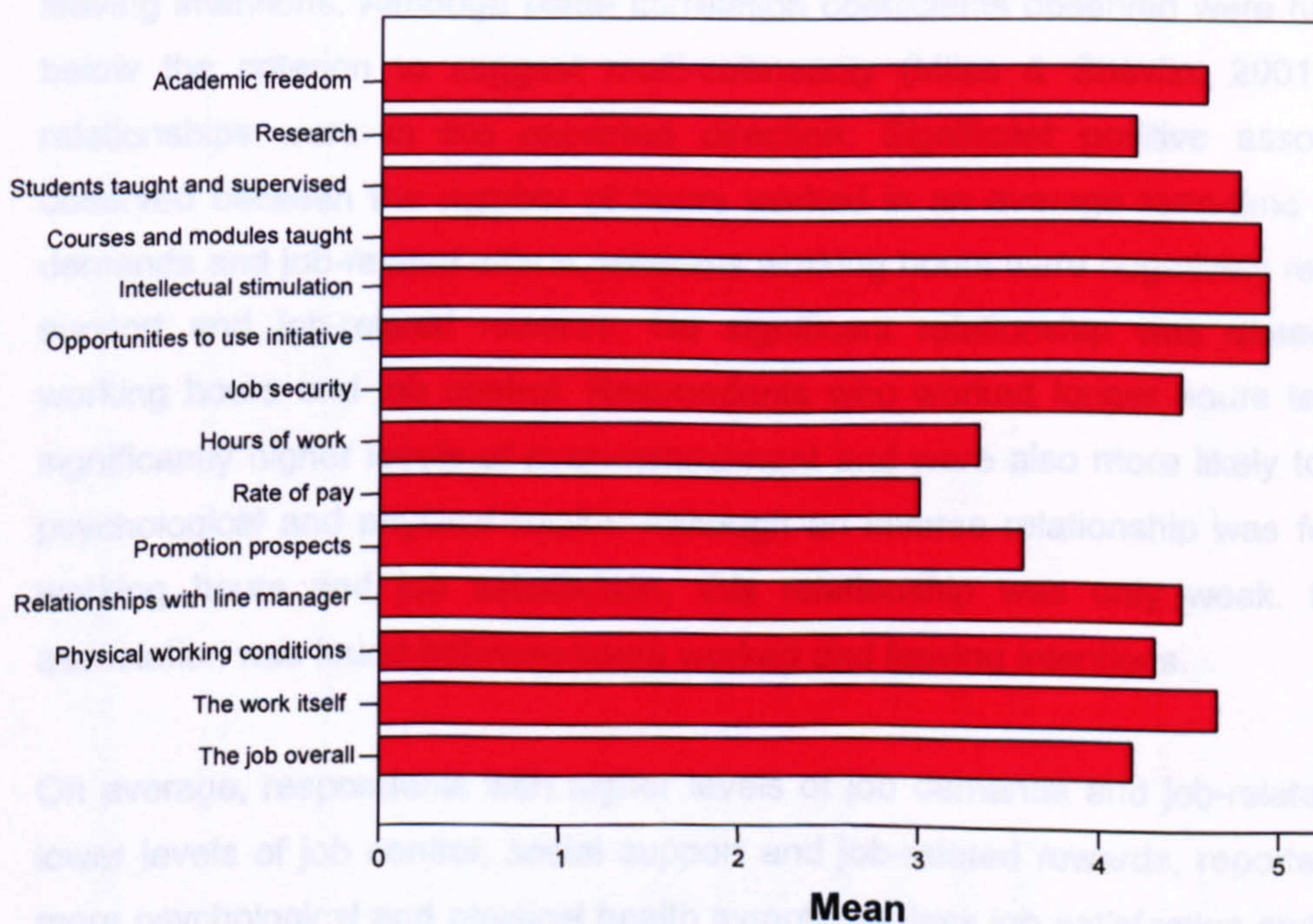
**Table 4.2**  
**Health symptoms reported by respondents, ranked by percentage**

	% of sample who reported symptom
Tiredness	80
Headache	55
Backache	42
Trouble sleeping	41
Eyestrain	39
Stomach ache	30
Indigestion	28
Diarrhoea	19
Dizziness	19
Heart pounding	19
Infection	18
Skin rash	18
Short of breath	13
Constipation	11
Loss of appetite	10
Stomach cramps	9
Chest pain	8
Fever	6

A fairly high level of minor physical symptoms was found, with only eight percent of respondents claiming to have experienced none of these symptoms during the preceding 30 days. Table 4.2 shows the percentage of respondents who reported having experienced each symptom over this period. As can be seen, 80 percent of respondents reported experiencing tiredness, 56 percent headaches and 41 percent insomnia. Fewer respondents reported experiencing more serious symptoms such as chest pain and fever.

A broader measure of job satisfaction was utilised in the present study than in Study 1. In order to illustrate the pattern of the components of job satisfaction experienced by academic staff, Fig. 4.2 provides mean scores for each item. As can be seen, respondents were at least moderately satisfied with intrinsic factors such as their academic freedom, the students they teach and supervise, the modules and courses they teach, the intellectual stimulation they receive from their work and their opportunities to use initiative. On average, lower levels of satisfaction were reported with more extrinsic factors such as hours of work, rate of pay and promotion prospects. Forty-eight percent of respondents indicated that they had seriously considered leaving the profession.

**Fig. 4.2**  
**Mean scores for job satisfaction (1 = low and 7 = high)**



Twenty-six percent of the sample had felt under personal threat of redundancy during the previous five-year period. Those who felt insecure in their jobs, on average, reported higher levels of psychological distress ( $M = 17.36$  [ $SD = 6.81$ ] versus  $M = 13.70$  [ $SD =$

5.77]  $F [2,717] = 26.66, p < .001$ ), more physical symptoms ( $M = 5.78 [SD = .3.21]$  versus  $M = 4.45 [SD = 3.21]$   $F [2,826] = 15.56, p < .001$ ), and less job satisfaction ( $M = 49.88 [SD = 13.53]$  versus  $M = 61.70 [SD = 13.43]$   $F [2,672] = 60.80, p < .001$ ),

No gender differences were found in levels of psychological distress. Female academics were significantly more likely than their male counterparts to report several health symptoms, most notably headaches and tiredness ( $\chi = 7.64, p < .01$  and  $\chi = 6.90, p < .05$  respectively). Some gender differences in mean scores on the scales utilised in this study were found. With one exception, however, these differences were only marginally significant. On average, male academics reported slightly higher levels of job control and job satisfaction than females (*job control*: male  $M = 22.07 [SD = 4.42]$  versus female  $M = 21.44 [SD = 4.31]$   $F [1,830] = 4.07, p = < .04$ ; *job satisfaction*: male  $M = 59.43 [SD = 14.08]$  versus female  $M = 57.42 [SD = 14.57]$   $F [1,786] = 1.024, p = < .05$ ). Females were significantly more likely than males to report turnover intentions ( $\chi = 10.9, p < .01$ ).

#### **4.4.4 Relationships between variables**

Table 4.3 shows details of the Pearson's correlations between the components of the JDC(S) and ERI models, working hours, psychological health, physical symptoms, job satisfaction and

leaving intentions. Although some correlation coefficients observed were high, they were below the criterion to suggest multi-collinearity (Miles & Shevlin, 2001). In general, relationships were in the expected direction. Significant positive associations were observed between the number of hours worked in an average term-time week and job demands and job-related efforts, whereas working hours were negatively related to social support and job-related rewards. No significant relationship was observed between working hours and job control. Respondents who worked longer hours tended to have significantly higher levels of over-commitment and were also more likely to be in poorer psychological and physical health. Although an inverse relationship was found between working hours and job satisfaction, this relationship was only weak. No significant association was found between hours worked and leaving intentions.

On average, respondents with higher levels of job demands and job-related efforts, and lower levels of job control, social support and job-related rewards, reported significantly more psychological and physical health symptoms, less job satisfaction and more leaving intentions. Respondents who were more over-committed to their work were, on average, significantly less psychologically and physically healthy, less satisfied with their work and more likely to express leaving intentions.

**Table 4.3**  
**Correlations between JDC(S) and ERI components and outcome variables**

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Working hours	.00										
2. Job demands	.29***	.00									
3. Job control	.03	-.43***	.00								
4. Social support	-.11**	-.47***	.49***	.00							
5. Job-related efforts	.35***	.58***	-.31***	-.38***	.00						
6. Job-related rewards	-.07*	-.27***	.31***	.38***	-.39***	.00					
7. Over-commitment	.34***	.45***	-.23***	-.29***	.57***	-.30***	.00				
8. Psychological distress	.14***	.36***	-.42***	-.36***	.51***	-.34***	.15***	.00			
9. Physical symptoms	.15***	.30***	-.23***	-.22***	.40***	.22***	.44***	.46***	.00		
10. Job satisfaction	-.08*	-.37***	.66***	.53***	-.45***	.43***	-.33***	-.51***	-.32***	.00	
11. Leaving intentions	.03	.14***	-.23***	-.26***	.24***	-.26***	.20***	.29***	.20***	-.37***	.00

One-tailed correlations: \*p < .05; \*\*p < .01; \*\*\*p < .001.

#### 4.4.5 Testing the JDC(S) and ERI models

##### *The JDC(S) model*

Hierarchical multiple regression analyses were undertaken in which the dimensions of the JDC(S) model were regressed on psychological distress, physical symptoms, job satisfaction and leaving intentions. The regression analyses were performed with forced entry of the variables. In order to reduce the likelihood of multicollinearity, scores for the predictor variables were centred by subtracting the mean score for each variable from each score for that variable (Aitken & West, 1991). For each outcome variable, the independent variables were entered into the equation in four different steps. At the first step, gender was entered to control for its effects. At the second step, job demands, job control and social support were entered simultaneously in order to examine their main effects. At the third step, the two-way interaction terms (demands x control, demands x social support, control x social support) were entered. In the fourth and final step, the three-way interaction term (demands x control x support) was entered. Table 4.4 presents the results of these analyses. The findings are discussed below in relation to each outcome variable.

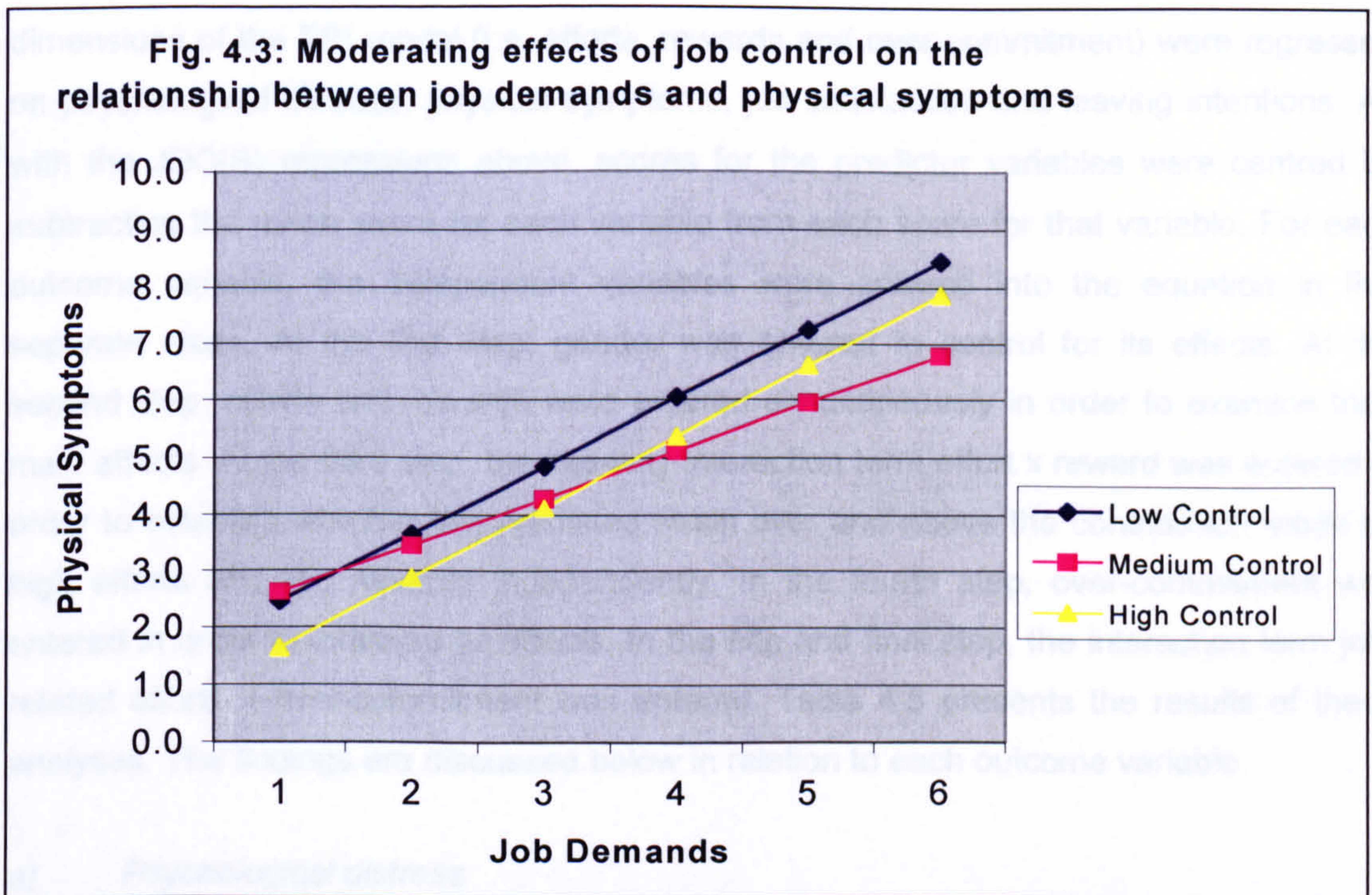
##### a) *Psychological distress*

The main effects of job demands, control and support were the best predictors of psychological distress. The more demands and the less control and support were perceived, the higher the level of psychological symptoms. Together these three variables accounted for 22 percent of the variance in scores on the GHQ-12. The higher beta value for control suggested that this variable made the greatest contribution to the explained variance. As additive effects were found for all three components of the JDC(S) model, evidence is found to support the iso-strain hypothesis (Johnson & Hall, 1988). No significant two-way or three-way interactions were found.

##### b) *Physical symptoms*

Physical symptoms were best explained by the main effects of demands and control, and a two-way interaction between demands and control. Social support did not emerge as a significant predictor. This model explained a total of 10 percent of the variance in self-reported physical symptoms. The beta values suggest that both demands and control accounted for a similar proportion of the incremental variance. The strong main effects of job demands and job control observed support the JDC job-strain hypothesis. A significant two-way interaction was found between job demands and control that accounted for a further one percent of the variance. This interaction is plotted in Fig. 4.3. As can be seen,

high job demands coupled with both low and high job control exhibited the most negative outcomes for physical symptoms. No significant three-way interaction between job demands, support and control in the prediction of physical symptoms was observed.



*c) Job satisfaction*

The main effects of job control and support emerged as the best predictor of job satisfaction, accounting for 48 percent of the variance. Job demands were not a significant predictor. An examination of the betas indicates that job control made the strongest contribution to the explained variance in job satisfaction. No significant two-way or three-way interactions were found.

*d) Leaving intentions*

The main effects of job control and support best explained leaving intentions, together accounting for 9 percent of the variance. Job demands made no contribution to the explained variance. No significant two-way or three-way interactions were found.

**Effort-reward imbalance model**

This study aimed to examine several predictions relating to the ERI model. Firstly, that efforts and rewards independently predict strain; secondly, that an interaction between effort and reward increases the risk of strain over and above the risks associated with each component independently; thirdly, that over-commitment is directly related to strain; fourthly, that over-commitment increases the risk of strain over and above that accounted

for by high efforts and low rewards; finally, that high efforts in combination with a high level of over-commitment leads to the greatest risk to employee wellbeing.

A series of hierarchical multiple regression analyses were undertaken in which the dimensions of the ERI model (i.e. efforts, rewards and over-commitment) were regressed on psychological distress, physical symptoms, job satisfaction and leaving intentions. As with the JDC(S) regressions above, scores for the predictor variables were centred by subtracting the mean score for each variable from each score for that variable. For each outcome variable, the independent variables were entered into the equation in five separate steps. At the first step, gender was entered to control for its effects. At the second step, efforts and rewards were entered simultaneously in order to examine their main effects. At the third step, the two-way interaction term effort x reward was entered in order to establish whether this predicted strain over and above the contribution made by high efforts and low rewards independently. In the fourth step, over-commitment was entered in order to examine its effects. In the fifth and final step, the interaction term job-related efforts x over-commitment was entered. Table 4.5 presents the results of these analyses. The findings are discussed below in relation to each outcome variable.

*a) Psychological distress*

The main effects of efforts, rewards and over-commitment and an interaction between efforts and rewards best explained psychological distress. Efforts and rewards accounted for 35 percent of the variance. High efforts and low rewards resulted in higher levels of psychological distress. The two-way interaction between efforts and rewards was statistically significant and contributed a further .07 per cent to the variance. A main effect of over-commitment was found in that it added a further 7 percent to the explained variance. No significant two-way interaction was found between job-related efforts and over-commitment. The total variance explained by the model was 43 percent.

*b) Physical symptoms*

Physical symptoms were best explained by the main effects of efforts, rewards and over-commitment. Efforts and rewards together explained 18 percent of the variance in psychological distress. An examination of the betas, however, suggests that job-related effort was the primary predictor of this outcome. The two-way interaction between efforts and rewards introduced in the third step made a contribution to the incremental variance. The main effect of over-commitment added a further five percent of the variance in physical symptoms. No evidence was provided for a two-way interaction between efforts and over-commitment. The total variance accounted for in physical symptoms by the model was 24 percent.



**Table 4.4**  
**Results of hierarchical multiple regression analyses for components of the JDC(S) model (standardised beta values)**

Predictors	Psychological distress	Physical symptoms	Job satisfaction	Leaving intentions
Gender	.00	.04	.00	-.10**
<b>Step 1 R<sup>2</sup></b>	.00	.00	.00	.01**
Gender	-.02	.03	.01	-.07*
Demands	.17***	.18***	-.09	.04
Control	-.29***	-.15***	.51***	-.12**
Support	-.13**	-.06	.22***	-.18***
<b>Step 2 R<sup>2</sup> change</b>	.22***	.09***	.48***	.09***
Gender	-.02	.02	.02	-.07
Demands	.11	.05	.06	-.07
Control	-.25*	-.27**	.53***	-.15
Support	-.16	-.06	.23**	-.01
DemandsXControl	-.01	.16*	-.11	.17
DemandsXSupport	.09	.03	-.11	-.07
ControlXSupport	-.08	-.02	.14	-.35
<b>Step 3 R<sup>2</sup> change</b>	.00	.01*	.00	.00
Gender	-.02	.02	.02	-.06
Demands	.11	.05	-.07	-.06
Control	-.25*	-.27**	.54***	-.14
Support	-.18	-.05	.23**	.03
DemandsXControl	.04	.15*	-.13	.06
DemandsXSupport	.16	.02	-.13	-.19
ControlXSupport	.01	-.04	.11	-.17
DemandsXControlXSupport	-.16	.03	.05	.32
<b>Step 3 R<sup>2</sup> change</b>	.00	.00	.00	.00
<b>Total R<sup>2</sup></b>	.22	.10	.48	.09

p < .05; \*\*p < .01; \*\*\*p < .001.

**Table 4.5**  
**Results of hierarchical multiple regression analyses for components of the ERI model (standardised beta values)**

<b>Predictors</b>	<b>Psychological distress</b>	<b>Physical symptoms</b>	<b>Job satisfaction</b>	<b>Leaving intentions</b>
Gender	.00	.04	.01	.09**
<b>Step 1 R<sup>2</sup></b>	.00	.00	.00	.01**
Gender	-.03	.02	.05	.07*
Efforts	.31***	.30***	-.22***	.11**
Rewards	-.38***	-.19***	.54***	-.29***
<b>Step 2 R<sup>2</sup> change</b>	.35***	.18***	.47***	.12***
Gender	-.03	.02	.05	.06
Efforts	.03	.01	-.02	.25*
Rewards	-.63***	-.44***	.73***	-.61***
EffortsXRewards	.29**	.29**	-.20*	-.37**
<b>Step 3 R<sup>2</sup> change</b>	.01**	.01**	.00*	.01**
Gender	-.04	.01	.05	.06
Efforts	-.04	-.03	-.01	-.26*
Rewards	-.52***	-.32**	.70***	-.60***
EffortsXRewards	.19	.19	-.18	.36**
Over-commitment	.31***	.28***	-.07*	.03
<b>Step 4 R<sup>2</sup> change</b>	.07***	.05***	.00*	.00
Gender	-.04	.01	.05	.06
Efforts	-.16	.35	-.20	-.59*
Rewards	-.54***	-.24*	.66***	-.67***
EffortsXRewards	.23*	.09	-.13	.45**
Over-commitment	.26*	.46***	-.16	-.11
EffortsXOver-commitment	.14	-.41	.20	.35
<b>Step 5 R<sup>2</sup> change</b>	.00	.00	.00	.00
<b>Total R<sup>2</sup></b>	.43	.24	.47	.14

p < .05; \*\*p < .01; \*\*\*p < .001.

c) *Job satisfaction*

Job satisfaction was best explained by job-related efforts and rewards which together accounted for 47 percent of the variance; higher rewards and lower efforts resulted in higher levels of job satisfaction. The two-way interactions between efforts and rewards and the contribution made by over-commitment, although statistically significant, accounted for a low proportion of variance (.04 per cent respectively). No evidence was provided for a two-way interaction between efforts and over-commitment.

d) *Leaving intentions*

Leaving intentions were best explained by gender, job-related efforts and rewards and an interaction between efforts and rewards. Gender, efforts and rewards independently explained 13 percent of the variance in leaving intentions and the two-way interaction between these variables accounted for a further one percent. Neither over-commitment, nor its interactions with job-related efforts, were significant predictors of leaving intentions.

#### **4.4.6 The relative contributions of the JDC(S) and ERI models to strain outcomes**

The results of the regression analyses for the JDC(S) and the ERI models (shown in Tables 4.3 and 4.4) were examined in order to compare the amount of variance each model explained in each outcome variable. In terms of health-related outcomes, components of the ERI model were stronger predictors than those of the JDC(S) models. The main effects of efforts, rewards and over-commitment and a two-way interaction between efforts and rewards together accounted for 43 percent of the variance in psychological distress, compared with the components of the JDC(S) model which only explained 22 percent. For physical symptoms, the main effects of efforts, rewards and over-commitment and a two-way interaction between efforts and rewards explained 24 percent of the variance, whereas job demands and control (and a two-way interaction between these) accounted for only 10 percent.

In terms of job-related strains, the main effects of the components of the JDC(S) model (most notably job control) accounted for 48 percent of the variance in job satisfaction, whereas efforts and rewards together accounted for a similar proportion (47 percent). Finally, efforts and rewards, and an interaction between these variables, predicted a higher proportion of the variance in leaving intentions (14 percent) than job control and support (9 percent).

#### **4.4.7 The JDC(S) and ERI models combined**

A final series of hierarchical regression analyses were computed in order to examine whether a model that combines the components of the JDC(S) and ERI models was a stronger predictor of the different strain outcomes than either model individually. In order to simplify this process, the interactions tested for each model were dropped from this analysis.

For each outcome variable, the independent variables were entered into the equation in four different steps. At the first step, gender was entered to control for its effects. At the second step, the JDC(S) variables demands, control and support was entered. In the third step, the ERI variables efforts and rewards were entered to examine whether they explained any further incremental variance. In the fourth and final step, over-commitment was entered to test whether this individual difference variable had any additional explanatory power. Table 4.6 presents the results of these analyses. The findings are discussed below in relation to each outcome variable.

##### *a) Psychological distress*

Demands, control and support initially accounted for 23 percent of the variance in psychological distress, with each variable making a significant contribution. When efforts and rewards were added in step 3, a further 14 percent of the variance was accounted for, with both variables adding to the incremental variance. When efforts and rewards were introduced, job control was the only component of the JDC(S) model that remained significant. The addition of over-commitment in Step 4 added a further 7 percent to the variance in self-reported psychological distress. The significant predictors in the final model were job control, efforts, rewards and over-commitment. At 44 percent, the variance accounted for in psychological distress by this combined model exceeds that explained by the JDC(S) model and is slightly higher than the ERI model when tested independently.

##### *b) Physical symptoms*

The JDC(S) variables entered in Step 2 together accounted for 10 percent of the variance in physical symptoms, with only demands and control being significant predictors. When efforts and rewards were entered in the third step, a further 8 percent of the incremental variance was explained, and the contribution made by demands and control became non-significant. The inclusion of over-commitment in Step 4 added a further 5 percent of variance. The combined model accounted for a total of 24 percent of the variance in physical symptoms. The predictors in the final model were the ERI variables only: i.e. efforts, rewards and over-commitment.

*c) Job satisfaction*

The components of the JDC(S) models entered in Step 2 initially accounted for 56 percent of the overall variance in job satisfaction. When efforts and rewards were added in Step 3, an additional 4 percent of variance was accounted for; the contribution made by job demands, control and support remained significant but betas were reduced. Over-commitment, entered in Step 4, made a statistically significant contribution to the incremental variance in job satisfaction scores but the proportion was small (.03 percent). The predictors in the final model were demands, control, support, rewards, and over-commitment, which together explained 60 percent of the variance in job satisfaction. This combined model exceeds considerably the variance accounted for by either the JDC(S) or the ERI models independently.

*d) Leaving intentions*

Gender, introduced in Step 1, accounted for 1 percent of variance in leaving intentions. When the three components of the JDC(S) model were entered in Step 2, they accounted for 10 percent of the variance, with job control and support (but not demands) making significant contributions. When efforts and rewards were entered into the equation in Step 3, a further 3 percent was explained by rewards only. The entry of efforts and rewards made the contributions of control and support non-significant. Over-commitment, entered in Step 4, failed to account for any significant incremental variance in leaving intentions. In the final model, only job-related rewards remained a significant predictor of leaving intentions, explaining a total of 14 percent of the variance. This exceeded the variance explained by the JDC(S) model independently, but was slightly lower than that accounted for by the ERI variables.

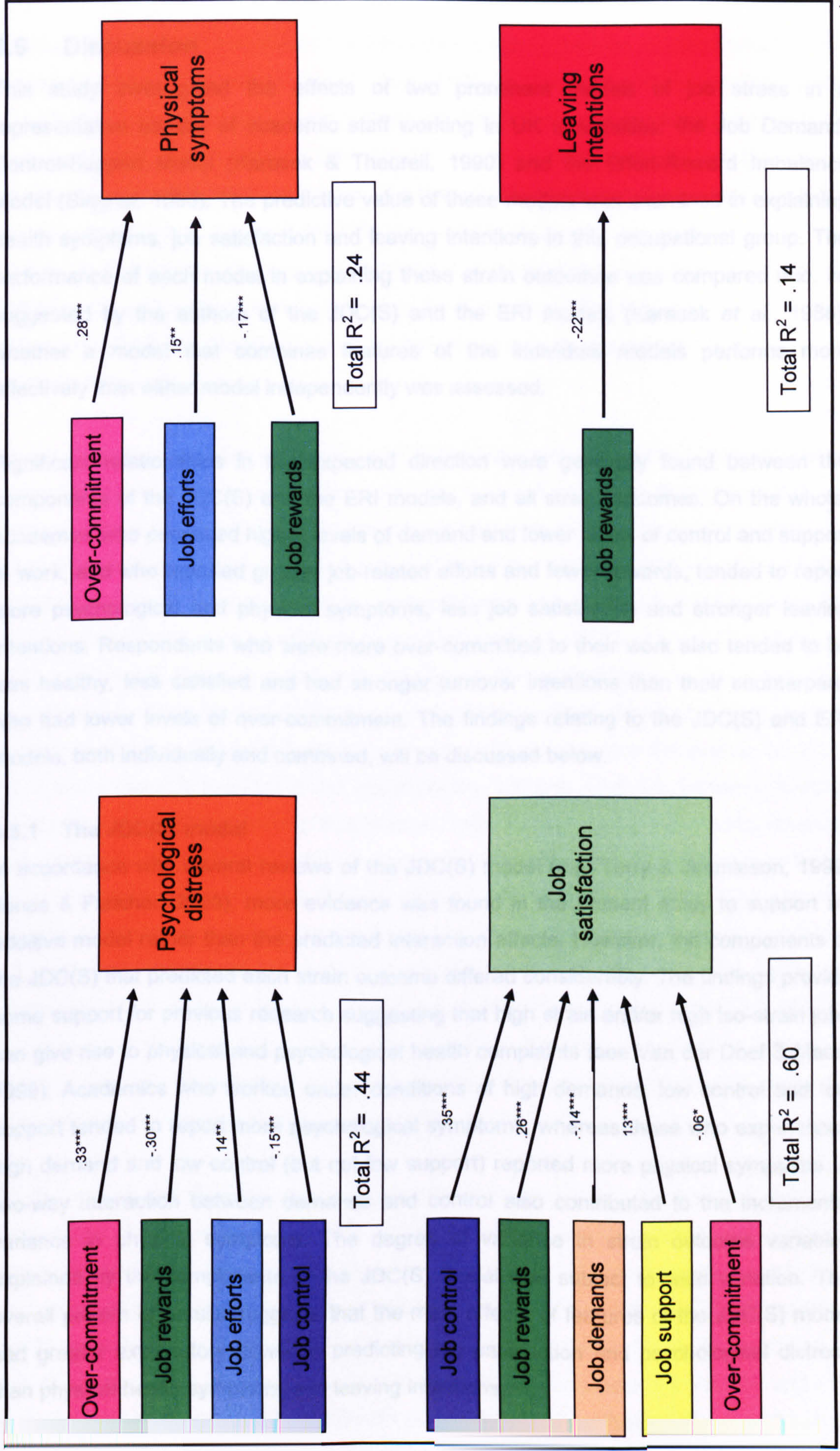
Fig. 4.6 summarises the components of the JDC(S) and ERI models that were significant predictors of each outcome variable. Standardised beta weights and details of the total variance accounted for by each model are also provided.

**Table 4.6**  
**Results of hierarchical multiple regression analyses for the JDC(S) and ERI models combined**  
**(standardised beta values)**

<i>Predictors</i>	<i>Psychological distress</i>	<i>Physical symptoms</i>	<i>Job satisfaction</i>	<i>Leaving intentions</i>
Gender	.00	.04	.01	.09*
<i>Step 1 R<sup>2</sup></i>	.00	.00	.00	.01**
Gender	-.03	.02	.06	.07
Demands	.18***	.22***	-.20***	.06
Control	-.27***	-.10*	.44***	-.09*
Support	-.14**	-.07	.26***	-.21***
<i>Step 2 R<sup>2</sup> change</i>	.23***	.10***	.56***	.10***
Gender	-.03	.02	.05	.06
Demands	.02	.07	-.15***	.01
Control	-.14***	-.02	.35***	-.02
Support	.06	.07	.13***	-.09
Efforts	.29***	.27***	-.08*	.07
Rewards	-.35***	-.21***	.26***	-.23***
<i>Step 3 R<sup>2</sup> change</i>	.14***	.08***	.04***	.03***
Gender	-.04	.02	.05	.06
Demands	-.03	.02	-.14***	.01
Control	-.15***	-.04	.35***	-.03
Support	.04	.06	.13***	-.09
Efforts	.14**	.15**	-.05	.05
Rewards	-.30***	-.17***	.26***	-.22***
Over-commitment	.33***	.28***	-.07*	.05
<i>Step 4 R<sup>2</sup> change</i>	.07***	.05***	.00*	.00
<i>Total R<sup>2</sup></i>	.44	.24	.60	.14

p < .05; \*\*p < .01; \*\*\*p < .001.

**Fig. 4.6**  
**The components of the JDC(S) and ERI models that predict outcome variables**  
**(showing standardised beta values in final models and total R<sup>2</sup>)**



## **4.5 Discussion**

This study investigated the effects of two prominent models of job stress in a representative sample of academic staff working in UK universities: the Job Demand-Control-Support Model (Karasek & Theorell, 1990) and the Effort-Reward Imbalance Model (Siegrist, 1996). The predictive value of these models was examined in explaining health symptoms, job satisfaction and leaving intentions in this occupational group. The performance of each model in explaining these strain outcomes was compared and, as suggested by the authors of the JDC(S) and the ERI models (Karasek *et al.*, 1988), whether a model that combines features of the individual models performs more effectively than either model independently was assessed.

Significant relationships in the expected direction were generally found between the components of the JDC(S) and the ERI models, and all strain outcomes. On the whole, academics who perceived higher levels of demand and lower levels of control and support at work, and who reported greater job-related efforts and fewer rewards, tended to report more psychological and physical symptoms, less job satisfaction and stronger leaving intentions. Respondents who were more over-committed to their work also tended to be less healthy, less satisfied and had stronger turnover intentions than their counterparts who had lower levels of over-commitment. The findings relating to the JDC(S) and ERI models, both individually and combined, will be discussed below.

### **4.5.1 The JDC(S) model**

In accordance with several reviews of the JDC(S) model (e.g. Terry & Jimmieson, 1999; Jones & Fletcher, 2003), more evidence was found in the present study to support an additive model rather than the predicted interaction effects. However, the components of the JDC(S) that predicted each strain outcome differed considerably. The findings provide some support for previous research suggesting that high strain and/or high iso-strain jobs can give rise to physical and psychological health complaints (see Van der Doef & Maes, 1999). Academics who worked under conditions of high demands, low control and low support tended to report more psychological symptoms, whereas those who experienced high demand and low control (but not low support) reported more physical symptoms. A two-way interaction between demands and control also contributed to the incremental variance in physical symptoms. The degree of variance in strain outcome variables explained by the components of the JDC(S) model was subject to wide variation. The overall pattern of results suggests that the main effects of features of the JDC(S) model had greater explanatory power in predicting job satisfaction and psychological distress than physical health symptoms and leaving intentions.



Previous research that has utilised the JDC(S) model as a predictor of job satisfaction has yielded mixed findings (Van der Doef & Maes, 1999). In the present study, academics with lower levels of control and social support at work (but not more job demands) tended to be more dissatisfied with their jobs. The extent to which the JDC(S) model predicts leaving intentions has rarely been investigated. The findings of the present study suggest that the variables that predict turnover intentions in academic employees are similar to those that predict job satisfaction. On average, lecturers and researchers with higher levels of job control and social support were less inclined to wish to leave the higher education sector. Unlike job satisfaction, however, these job features explained a relatively low proportion of variance only.

The importance of autonomy in predicting wellbeing in academic staff has been discussed previously in this thesis, and has been confirmed by the findings of the present study. Although the mean level of job control was moderately high for the sample as a whole, low levels of autonomy were key determinants of physical and psychological ill health and also contributed towards leaving intentions. In accordance with studies that have tested the JDC(S) model in other occupational groups (Calnan *et al.*, 2000; Van der Doef & Maes, 2002), autonomy made a particularly strong positive contribution to job satisfaction experienced by lecturers and researchers. The relevance of job demands to the health of academics was also highlighted, as those who found their jobs more demanding tended to report more physical symptoms and psychological distress. That job demands failed to predict job satisfaction or leaving intentions is, however, surprising as previous research conducted with teachers has found job demands to be consistent predictors of low levels of job satisfaction (e.g. Griva & Joeke, 2003; Verhoeven *et al.*, 2003). The two-way interaction observed between demands and control in predicting physical symptoms suggests that enhancing job control would be helpful in promoting the health of employees, but in order to increase overall levels of wellbeing in the sector, the need to simultaneously decrease demands is also apparent. The risk of increasing control is, however, highlighted as higher levels of autonomy also seemed to be a risk factor for physical health in the face of high job demands.

On the whole, the findings of this study are in accordance with research that has emphasised the beneficial effects of social support at work on employee wellbeing (Greenglass *et al.*, 1996). With the exception of physical symptoms, social support from colleagues and managers made a significant independent contribution to all outcome variables. Some support was found for Johnson and Hall's (1998) iso-strain hypothesis in that academics who simultaneously experienced high demands, low control and low support tended to have the lowest levels of psychological wellbeing. The hypothesised

three-way interaction between demands, control and support was not observed in this study. As mean levels of social support perceived by academic staff were found to be fairly low, it could be argued that they might be insufficient to offset any demand and lack of autonomy they experience.

#### **4.5.2 The ERI model**

This study found that job-related efforts and rewards predicted all strain outcomes; the main effects hypothesis of the ERI model is therefore supported. In parallel with the findings of previous research that has tested this model (e.g. Van Vegchel *et al.*, 2001), academics who indicated that they put more effort into their work and received fewer rewards tended to report higher levels of physical and psychological ill health. Job-related effort was the primary predictor of physical symptoms, but efforts and rewards made similar contributions to the total variance explained in psychological distress. Knowledge of the ERI model has been extended in this study by the finding that high effort and low reward were significant predictors of job dissatisfaction and leaving intentions, as well as health-related outcomes. In particular, the importance of recognition and professional respect from colleagues and managers to the job satisfaction and retention of academic staff has been highlighted, as esteem-related reward was the primary predictor of these outcomes.

The ERI model asserts that it is not merely job-related effort or a dearth of rewards that results in strain, but an *imbalance* between the efforts that employees believe that they put into their jobs and the rewards that they receive (Siegrist, 1996). Some studies have found that a high ratio of efforts in relation to rewards is independently associated with negative outcomes (Kuper *et al.*, 2002; Hasselhorn *et al.*, 2003). There is also some evidence to suggest that this increases the risk of strain over and above that associated with efforts and rewards independently (e.g. Peter *et al.*, 1998; Van Vegchel *et al.*, 2005). In the present study, although some evidence was found that a combination of high efforts and low rewards increased the risk of strain beyond mere additive effects, in most cases the extra variance accounted for was modest. Nonetheless, these results do have some theoretical value (Aiken & West, 1991) and suggest that increasing rewards in the university sector might go some way towards promoting the wellbeing of academic employees.

The role played by over-commitment in the health and wellbeing of academic employees was also examined. In accordance with previous findings (Kuper *et al.*, 2005; Van Vegchel *et al.*, 2005), respondents who were more over-committed to their work tended to report more health symptoms; they also perceived less job satisfaction and expressed stronger

leaving intentions. Furthermore, as predicted by the model, over-commitment was also found to account for additional variance over and above that explained by efforts and rewards in physical and psychological symptoms, but no such effect was found for job satisfaction or leaving intentions. This suggests that the cognitive, emotional and motivational pattern that constitutes over-commitment (i.e. excessive striving combined with a strong motivation to seek esteem and approval) might be more likely to contribute towards health complaints in academics than outcomes that are related to the target of commitment: i.e. the work setting itself.

A further hypothesis relating to the ERI model posits that over-committed employees who report greater effort will experience higher levels of strain (Siegrist, 2001). There is some evidence in the literature to support this prediction, but results are not consistent (Bakker *et al.*, 2000; Van Vegchel *et al.*, 2001). It has been argued by Van Vegchel *et al.* (2005) that these conflicting results might be due to a tendency to measure over-commitment inconsistently via proxy measures or single-item scales. Although the present study utilised the original 6-item over-commitment scale developed by Siegrist (1996), no evidence was found for an interaction between over-commitment and job-related efforts in predicting strain outcomes in academic employees. This suggests that over-commitment may be a more independent risk factor for employee wellbeing and may not necessarily exacerbate the negative impact of job effort

#### **4.5.3 The models compared and combined**

This study compared the performance of the JDC(S) and the ERI models in predicting health and wellbeing in academic employees. Findings indicated that the main effects of the ERI model (i.e. efforts, rewards and over-commitment) predicted considerably more variance in health symptoms and leaving intentions than the JDC(S) model. The disparity in explanatory power between the two models was particularly evident when predicting psychological distress, where the variance accounted for by the ERI was almost twice as much as that explained by the JDC(S). A strong association between efforts and rewards and psychological distress was, however, anticipated due to the element of “stress appraisal” contained in the measure (this issue is discussed further below). Nonetheless, the importance of elements of the JDC(S) to the wellbeing of academic employees was also highlighted. Job control was found to be a significant predictor of psychological distress, and control and support accounted for a higher proportion of variance in job satisfaction than efforts, rewards and over-commitment combined.

Several researchers in the field of occupational health psychology have recommended that the elements of the JDC and the ERI models should be combined in an attempt to enhance their predictive power (e.g. Karasek *et al.*, 1998; Benavides, Benach & Muntaner, 2002). As yet, however, few attempts have been made to do so. The results of the present study suggest that these models in combination have some potential to provide greater insight into variations in the health and wellbeing of employees. The enhanced predictive power of this combined model of work stress for some outcome variables is likely to be due to the fact that it incorporates personal characteristics and perceptual factors as well as more objective features of the working environment such as job control and social support.

The components of the JDC and ERI models that were the strongest predictors of strain outcomes in the present study are somewhat different to those found in the few previous studies that were reviewed earlier in this Chapter. An examination of the findings for each study suggests that the same pattern of variables predicts each strain outcome. A large-scale survey of employees in “unstable” workplaces conducted by Godin and Kittell (2004) found that a combination of efforts, rewards, control and support predicted psychosomatic symptoms, chronic fatigue and depression. Research conducted by De Jonge *et al.* (2000) found that efforts and rewards (and to a lesser extent demands and control) predicted psychological and physical health complaints and job dissatisfaction. In the present study, a different pattern of variables was found to predict each strain outcome. In general, the components of the ERI model had a more powerful effect on health outcomes than any of the JDC(S) variables, but this is counter-balanced by the finding that the ERI variables were less robust predictors of job satisfaction.

Psychological distress was best explained by elements of both models (i.e. job efforts and rewards, job control and over-commitment), whereas physical symptoms were predicted by the ERI components only. Over-commitment made a particularly strong contribution to the explained variance in both psychological and physical health symptoms. In terms of job satisfaction, elements of the JDC(S) and ERI models (with the exception of job efforts) contributed to the high degree of variance (60 percent) that was accounted for. Job-related control made a particularly strong contribution to satisfaction with work. The only significant predictor of leaving intentions was job-related rewards.

Overall, this study indicates that a combined model is an effective predictor of psychological distress and job satisfaction in a sample of academic staff, whereas the ERI model (or aspects of this) performs more efficiently in terms of physical health outcomes and leaving intentions. The disparity between the findings of the present study with those

of research conducted by Godin and Kittel and De Jonge *et al.* reported above, suggests it may be necessary to develop hybrid models of job stress that are, to some extent, specific to the job context and to the type of outcome measure examined.

To summarise, the above findings suggest that academics whose reward expectancies are not fully met, who are over-committed to their jobs, and who have lower levels of autonomy at work, on average, are less psychologically and physically healthy, and less satisfied with their jobs. The finding that job rewards was the sole predictor (in the variables tested) of leaving intentions further highlights the importance of adequate reward structures to academics and to the university sector as a whole. The degree of variance accounted for in leaving intentions was, however, small in comparison to other strain outcomes suggesting that intentions to leave are likely to be influenced by factors other than unmet reward expectancies. Further reasons why academics wish to leave the higher education sector will be examined in Chapter 5.

The core dimension of the JDC(S) model is the degree of control that employees perceive over their working environment, whereas the key feature of the ERI model is job-related rewards (Karasek *et al.*, 1998). As job control is arguably a less subjective job characteristic than efforts (which involve appraisal of subjective feelings), it was anticipated that its contribution to strain outcomes might be negligible in a combined model. The fundamental and continued importance of job control to the work stress process even in the face of high efforts and low rewards has, however, been confirmed by the findings of this study (De Jonge *et al.*, 2000).

A key question emerging from the findings of this study is not so much why rewards and control have such a strong influence on strain, but why job demands and job-related efforts have so little. When the JDC(S) and ERI models were examined individually, with very few exceptions, the main effects of job demands and efforts were significant predictors of all strain outcomes. When tested simultaneously, however, job-related efforts failed to predict job satisfaction and leaving intentions. Furthermore, with the exception of job satisfaction, job demands did not emerge as a significant predictor of any outcome variable. This is surprising, as the literature suggests that the inclusion of job-specific demands might enhance their predictive validity (Van der Doef & Maes, 1999; Noblet, 2005). A number of points could be made regarding these findings (which will be discussed in greater depth in Chapter 7). The contribution of job-related efforts to health symptoms clearly highlights the importance of workload and other demands to the work stress process. The superiority of job-related efforts over job demands in predicting psychological distress and physical symptoms suggests that the effort that academic

employees believe they put into their work may only damage their health if the level of effort exceeds their abilities to cope: i.e. if it is perceived to be distressing. In terms of job satisfaction and leaving intentions, the demands involved in academic work appear to be of less importance than the other features of work included in this study, such as job control and adequate rewards. Indeed, evidence was provided in Study 1 that some types of demand (i.e. those relating to students) might even enhance their satisfaction with work.

The weakness of social support in predicting strain in the combined model is not easy to interpret. The importance of social support to the wellbeing of academics has been highlighted previously in this thesis. When the JDC(S) model was tested independently, social support had a significant main effect on all strain outcomes with the exception of physical symptoms. When the JDC and ERI models were combined, social support explained variance in job satisfaction only. One potential explanation for these findings is that perceptions of low control, low rewards and a tendency towards over-commitment might be a greater threat to the wellbeing of academics than a lack of workplace support. Alternatively, the lack of explanatory power of social support might be attributed to the way that the concept was operationalised in this study. A general construct of workplace support was utilised that reflected three sources: i.e. from colleagues, line managers and senior managers. Although research suggests that support from these sources has a beneficial effect on the wellbeing and satisfaction of employees (Greenglass *et al.* 1996), the “fit” between the type of support provided and the nature of the job demand may be a key determinant of strain outcomes (Cutrona & Russell, 1990).

The risk of common method variance in inflating relationships between some of the independent and dependent variables utilised in this study is acknowledged. As the effort and reward measures assess perceived distress relating to specific features of work, a strong positive relationship between these variables and self-reported psychological distress was expected. Although several studies have tested efforts and rewards as predictors of psychological distress, with the exception of Von Vegchel *et al.* (2005), the risk of conceptual overlap between these variables has not been acknowledged. However, the strength of the correlations between job-related efforts and rewards and psychological distress was not excessively high. Indeed, the relationship between psychological distress and job control (a more objective feature of work) was similar in strength to that observed with job-related efforts. A study of general practitioners conducted by Calnan *et al.* (2000) (that also utilised Siegrist’s original measures to examine perceptions of efforts and rewards and the GHQ-12 to assess psychological health) also found the magnitude of correlations between these variables to be moderate.

A tentative explanation for these findings is that efforts and rewards assess distress that is directly related to specific aspects of work, whereas the GHQ-12 measures context-free psychological distress (manifested by, for example, sleeping difficulties, depression and anxiety). Although job-specific distress, when chronic, is likely to influence wellbeing that is more broadly focused, to some extent they are independent affective domains (Warr, 1999). Nonetheless, the strong associations observed in this study between efforts, rewards and psychological distress should be interpreted with caution. The associations found between the ERI components and physical symptoms, job satisfaction and leaving intentions are less likely to be inflated by common method variance, as such outcomes are less reliant on subjective appraisal of distress.

The findings of the present study suggest a number of possible interventions to increase wellbeing in academic staff that could be implemented. These will be discussed in Chapter 7

#### **4.6 Conclusion**

This study has tested the contribution made by two prominent models of job stress to the health, job satisfaction and turnover intentions of academic employees. Findings suggest that a model that combines dimensions of both models might predict more variance in some types of strain in this occupational group, although the pattern of predictors of each outcome was subject to considerable variation. Features of the working environment, subjective rewards from work, and a tendency towards over-commitment made particularly strong contributions to strain indicators. The practical implications of the findings of this study for the development of interventions to improve wellbeing in this occupational group will be discussed in Chapter 7, together with the findings of the other studies that comprise this thesis.

The next study examines data relating to work-life conflict experienced by academic employees.

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## **Chapter 5**

### **The nature, predictors and outcomes of work-life conflict in academic employees in the UK (Study 2b)**

#### **5.1 Summary**

This study aims to provide further insight into work-life conflict experienced by academic employees. Several issues emerging from Study 1 are investigated through the analysis of quantitative and qualitative data obtained from a sample of lecturers and researchers working in UK universities. The nature and extent of work-life conflict in the sector (both time-based and strain-based) is examined, and its relationship with employee health, job satisfaction and leaving intentions is assessed. Also investigated in this chapter are the working practices and strategies utilised by academics in an attempt to balance the demands of their work with their home lives, and the supportive features provided by UK universities to assist them in achieving work-life balance. The implications for work-life conflict and employee wellbeing of these strategies and supportive features are also examined. The extent to which academic employees are involved in their jobs is investigated, together with the implications of higher levels of involvement for work-life balance and general wellbeing. Relationships between over-commitment (discussed in Chapter 4) and work-life conflict are also assessed in this chapter.

Several regression models are tested in order to establish: a) the main predictors of work-life conflict; b) if a number of “protective” features (i.e. schedule flexibility, social support and organisational support for work-life balance) and individual differences (job involvement and over-commitment) moderate relationships between job demands and work-life conflict; c) whether schedule flexibility is a greater threat to work-life balance for academics with higher levels of job involvement and over-commitment.

On the whole, levels of work-life conflict were found to be fairly high. Academics who reported more work-life conflict tended to find their work more demanding; they also reported higher levels of all types of strain than those with a better work-life balance. Boundaries between work and home were generally weak and, for most respondents, the two domains were highly integrated. Although academics with clearer boundaries and less integration between work and home tended to have lower levels of strain, the degree of work-life integration that was deemed acceptable varied considerably. Most respondents indicated, however, that they had not achieved a balance that met their needs or those of their families. On average, levels of strain rose as the discrepancy between actual and ideal levels of work-life integration widened. Levels of job involvement and over-commitment were generally high, and these variables were positively associated with

work-life conflict and other strain outcomes. Hierarchical regression analysis revealed that a model combining job demands, working practices, supportive features of the working environment, and individual differences predicted a considerable proportion of the variance (65 percent) in perceived work-life conflict.

The strategies utilised by academics to manage the work-home interface varied considerably. The majority of academics appear to work at home at least occasionally - frequently in an attempt to balance the demands of work with family life - and a wide range of work-related tasks is undertaken there. No evidence was found that levels of work-life conflict or other strain outcomes were higher amongst academics who regularly worked in the home environment than those who worked there only rarely. However, the degree of fit between actual and ideal levels of working at home did predict most strain outcomes.

The mean level of schedule flexibility observed in this study was fairly high, but its availability to academic staff appeared to be inconsistent across institutions and not subject to formal university policies. The provision of greater schedule flexibility by employers was generally considered to be helpful in balancing the demands of work and home. Considerable dissatisfaction was, however, revealed with the wider range of supportive features provided by UK universities to help their employees achieve an acceptable work-life balance. No evidence was found that schedule flexibility or other types of organisational support for work-life balance protected academics from the negative impact of high job demands on their personal lives. Furthermore, neither working practices, nor the individual difference variables job involvement and over-commitment moderated the relationships between job demands and work-life balance. Some evidence was provided that schedule flexibility might be less beneficial for the work-life balance of academics who are more involved in, and over-committed to, their work.

The practical implications of these findings for the development of interventions to improve wellbeing in this occupational group will be discussed in Chapter 7.

## **5.2 Introduction**

Chapter 1 introduced the study of the work-home interface. It provided an overview of the models that have been developed to elucidate the association between work and other life domains (see Kinman & Jones, 2001). Particular focus was placed on the nature, predictors and outcomes of work-life conflict as this is of relevance to the current programme of study. Work-life conflict is discussed in greater depth in the present chapter. Firstly, a rationale for studying work-life conflict in academic employees is provided, drawing on the results of Study 1 presented in this thesis. The concept of work-life conflict is then discussed, and the findings of previous studies that have examined its predictors and potential outcomes are reviewed. Research that has focused on the impact of integration and segmentation between work and home roles is subsequently examined in greater detail. Literature that has investigated the strategies utilised by employees to achieve a work-life balance is then examined, with particular focus placed on working in the home environment. This section concludes by presenting the aims of this study.

### **5.2.1 Work-life conflict in academic employees**

The potential for conflict between the work and non-work domains has increased amongst employees in most sectors of the economy (Lewis & Cooper, 2005). There is evidence, however, that work-life conflict can be expressed differently according to organisational context (Hyman, Scholarios & Baldry, 2004). The findings of Study 1 reported in this thesis, and other research reviewed earlier therein, highlight several reasons why academics might experience particular problems in maintaining an effective work-life balance. Study 1 (see Chapter 3) provided evidence levels of demand have increased considerably over the last decade in the UK university sector, a factor which might have led to a greater likelihood of conflict between work demands, and family life and leisure activities. The high level of interruptions that many academics experience during their working day (also revealed in this study) might contribute towards work-life conflict by increasing the likelihood of work demands “spilling over” into the home environment. Evidence was also provided in Study 1 that many academics regularly work during evenings and weekends; for obvious reasons, this practice is likely to impinge on family life and leisure.

Studies reviewed in Chapter 2 provide further evidence to suggest that work-life conflict might be high amongst academic employees. Academic work incorporates a wide range of roles, each with potentially competing demands, which might compound the risk of conflict between roles relating to work and home (Fisher, 1994). Furthermore, academic work is essentially “open-ended” and highly “portable”; it has been argued that these

characteristics increase the likelihood that work overload will disrupt family life (Nieva, 1984; Austin & Pilat, 1990). Finally, Lewis (2003) has maintained that a high degree of engagement in work might result in blurred boundaries between work and home. The findings of Study 1 and other research on academic employees suggest that this occupational group might be particularly at risk due to a tendency towards high job involvement suggested by the high levels of intrinsic satisfaction observed.

The importance of work-life balance to the wellbeing of academic employees was also highlighted in Study 1. Stressors relating to the work-home interface were the strongest predictors of psychological distress, and also significantly related to job dissatisfaction. In order to inform the development of individual and organisational strategies to more effectively manage the work-home interface in the university sector, and potentially increase wellbeing in the sector, greater insight is needed relating to the extent, predictors and outcomes of work-life conflict experienced by employees. This study aims to examine these issues in a sample of lecturers and researchers working in UK universities.

The next section describes the two different types of work-life conflict; the following section reviews literature that has examined relationships between work-life conflict, work features and strain outcomes.

### **5.2.2 Work-life conflict: concepts**

As discussed in Chapter 1, two types of work-life conflict (i.e. time-based conflict and strain-based conflict) are considered to be of particular importance to the wellbeing of employees (Greenhaus & Beutell, 1985; Netemeyer *et al.*, 1996). Time-based conflict occurs when the time spent in one role (i.e. engaging in work activities) reduces the amount of time that is available for other activities (i.e. engaging in family or leisure). Research findings suggest that work overload frequently results in perceptions of time-based conflict between home and work (Barnett & Hyde, 2001). This could take a number of different forms: firstly, staying at work longer to finish a project; secondly, taking work home in the evenings and weekends and thirdly, being physically present with family but preoccupied with work issues. Strain-based conflict occurs when strain engendered in the workplace is imported into the non-work domain. For example, job demands may increase employees' negative emotions and levels of fatigue which might then be transferred into negative affect, attitudes and behaviours in the non-work domain (see Kinman & Jones, 2001). For these reasons, employees who experience strain-based conflict might find it difficult to meet non-work responsibilities, participate fully in family life and/or leisure activities or engage in satisfying personal relationships (Greenhaus *et al.*, 2001). Both time-based and strain-based conflict will be examined in the present study.

### **5.2.3 Antecedents and outcomes of work-life conflict**

A body of research has attempted to identify the job characteristics that might affect the likelihood of conflict occurring between the work and home domains. Several studies have found significant relationships between job demands and both time-based and strain-based work-life conflict, such that the more demand employees experience the more conflict they tend to report (e.g. Higgins *et al.*, 1992; Butler *et al.*, 2005). Heavy workload, in particular, has been associated with work-life conflict. For example, a study conducted by Rystedt, Johansson and Edwards (1998) investigated links between the workload of bus drivers and their wellbeing over a period of 18 months. Increased workload was strongly associated with a range of negative outcomes associated with work-life conflict such as problems unwinding after work and spillover of work fatigue.

The number of hours spent working is frequently considered to be an objective indicator of work-life conflict, as time spent working will result in less time being available for participation in other roles (e.g. Grzywacz & Marks, 2000; Voydanoff, 2004). Nonetheless, although positive relationships between the number of hours devoted to work and perceptions of work-life conflict have been observed, a review of the literature indicates that the correlation coefficients between these variables are frequently low (Guest, 2001; Eby *et al.*, 2005). The findings of a recent study conducted by Gareis, Barnett and Brennan (2004) suggest that the timing of work may be a key moderator of the relationship between working hours and work-life conflict. These authors found that time spent working during evenings and weekends was more likely to result in perceptions of work-life conflict than time worked during conventional "office hours".

There is strong evidence that regular respite from work (such as engaging in relaxation and leisure, and reconnecting with family and friends) fosters regeneration, reduced strain and enhanced health when the individual is back in the workplace (Westman & Eden, 1997; Meijman & Mulder, 1998). The importance of respite from work for the wellbeing of employees was highlighted in the findings of Study 1. More than one-half of the academics who responded indicated that they regularly worked during evenings and weekends; on average, these respondents had significantly higher levels of psychological distress and lower levels of job dissatisfaction. The implications of working outside office hours for work-life conflict and employee wellbeing will be further examined in the present study.

Strong associations can be found in the literature between perceptions of work-life conflict and a range of negative outcomes, including physical and psychological symptomatology, substance abuse, absenteeism and turnover intentions (Frone, Russell & Cooper, 1997; Eby *et al.*, 2005). Work-life conflict has also been found to be predictive of family dissatisfaction or distress, family-related absenteeism and impaired family-related role performance (Frone, 2003). Some studies suggest that employees with higher levels of work-life conflict report lower levels of job satisfaction, but research findings are equivocal, with some studies finding no significant relationship (Bacharach, Bamberger & Conley, 1991; Kossek & Ozeki, 1998).

Of considerable relevance to the examination of the nature and impact of work-life conflict is the extent to which work and home roles are integrated and the strength of boundaries between the two domains. The relevant research will be considered in the next section.

#### **5.2.4 Integration between work and other life roles**

An overview of the main models of relationships between work and family life was provided in Chapter 1. The present study draws on a relatively new approach to this field of research which is known as border theory (Clark, 2000). Border theory is of considerable relevance to the study of work-life conflict as it examines how boundaries between the work and home domains are developed, negotiated and maintained. According to this theory, employees are daily “border crossers” as they move backwards and forwards between the home and work domains. These borders are not, however, physical, but psychological boundaries between roles associated with work and home.

Border theory suggests that the boundaries between roles can be conceptualised and measured in terms of their flexibility and permeability. Flexibility refers to the extent to which a role can be “enacted in various settings and at various times”, whereas permeability represents the degree to which an individual can be “physically located in one role’s domain but psychologically and/or behaviourally involved in another role” (Ashforth, Kreiner & Fugate, 2000, p. 474). When the boundary between two role domains is flexible and permeable these domains could be considered as integrated, whereas if the boundary between two role domains is inflexible and impermeable they could be considered to be segmented. Ashforth *et al.* (2000) maintain that any two roles (for example, work and family/leisure roles) can be placed along a continuum that ranges from high segmentation to high integration.

There is evidence that employees who lack clear physical and psychological boundaries between their work and home roles report more work-life conflict and role confusion than

those whose roles are more segmented (Ashforth *et al.*, 2000; Desrochers, Lehoux, Halpern & Riggio, 2004). A high level of integration between work and home has also been found to have a deleterious impact on the psychological and physical wellbeing of employees (Frone, 2003). Other studies, however, conclude that a high degree of synergy between work and home roles is not inherently damaging, and might even be beneficial (Fothergill, 1994; Greenhaus & Parasuraman, 1999).

Whether it is desirable (or indeed possible) for employees to compartmentalise “work” and “non-work” into distinct, non-overlapping domains is questionable. Based on data obtained from a series of ethnographic interviews, Nippert-Eng (1996) argued that when boundaries are highly segmented they are “thickened”, as discrete schedules and behaviours are contained in each domain. This suggests that, under conditions of high segmentation, transitions between work and family domains would require greater effort (and increase perceptions of work-life conflict), whereas a moderate degree of integration between these domains might facilitate role transitions (and reduce perceptions of work-life conflict). There is some evidence to support this argument. A study conducted in 1983 by Gray examined professional women’s views about their work and non-work roles and how they coped with conflicts between them. Only 16 percent of Gray’s respondents indicated that they preferred to keep their job and family roles entirely separate; attempts to achieve total segmentation were generally associated with dissatisfaction with both work and family life.

A recent review of the literature indicates that neither integration nor segmentation have uniformly positive implications for employee wellbeing and family life (Sullivan & Lewis, 2006). The degree of synergy between the roles is likely to be dependent upon the characteristics of the job, the employee’s needs and preferences, and those of his or her family. The extent to which employees *favour* integration or separation will be dependent upon a combination of environmental features and individual differences. In some circumstances, a high degree of segmentation between work and home might facilitate work-life balance, whereas in others a high degree of synergy might make it easier for an employee to manage the demands of each role domain. A need has recently been identified for researchers to examine employees’ preferences for managing work and family boundaries, the extent to which these are achieved, and the impact of achievement or non-achievement on wellbeing (Tetrick & Buffardi, 2006).

The notion of personal-environment “fit” might be helpful in examining the extent to which *actual* and *ideal* levels of work-life integration might influence perceptions of work-life conflict and wellbeing. The PE fit model of work stress (French *et al.*, 1982) was briefly

reviewed in Chapter 1 of this thesis. It posits that strain will occur when there is a mismatch between the demands and resources inherent in a particular working environment, and the skills, needs and behavioural styles of the individual. As yet, however, despite its clear relevance to the work-home interface, few studies have utilised the notion of PE fit in this context. One exception is a study conducted by Edwards and Rothbard (1999) who found that perceptions of a "good fit" between individual preferences for integration between the work and home domains and employees' actual experiences predicted satisfaction with work and family.

The present study will examine the degree to which academics perceive clear boundaries between work and home and the extent to which the two domains are integrated. It is anticipated that academics will experience a high degree of integration between their work and home roles, for the reasons enumerated earlier in this chapter. The implications for the wellbeing of employees of integration and segmentation will also be assessed. Furthermore, in response to Tetrick and Bufardi's (2006) proposition outlined above, the concept of "fit" will be utilised by examining: firstly, the degree to which academic employees are able to actualise their "ideal" strategies for managing the work-home interface; and secondly, the impact of any discrepancy between respondents' present and ideal levels of work-life integration on wellbeing. In line with PE fit theory and the research examined above, it is anticipated that academics with a poorer fit will perceive more work-life conflict, poorer health, less job satisfaction and stronger leaving intentions.

The impact of a poor fit between the extent to which academics currently work at home and the extent to which they wish to do so will also be assessed in this study. Working at home is discussed below in the context of strategies utilised by employees to reduce work-life conflict.

### **5.2.5 Strategies used to reduce work-life conflict**

Under employment and domestic pressures, compounded by high-cost childcare, employees face the need to develop strategies to manage the two domains of work and home. Little is yet known about the strategies utilised by workers to manage work-life boundaries, or the extent to which these strategies are effective in reducing work-life conflict. This study aims to examine these issues in a sample of academic employees. Particular focus will be placed on working at home, as this has become a particularly common method by which employees attempt to manage the work-home interface. Recent statistics suggest that just over one quarter of the workforce in the UK now perform some of their work at home (Felstead, Jewson, Phizacklea & Walters, 2000), and there is evidence that the practice has become increasingly attractive to employees



(Standen, Daniels & Lamond, 1999). Felstead, Jewson & Walters (2005) describe the popular portrayal of working at home as "...facilitating uninterrupted productivity and family harmony" (p. 98). As yet, however, how it might actually impact on the work-life balance and wellbeing of employees has been little examined.

The available research on the benefits of working in the home environment tends to yield contradictory findings. Some studies suggest that the impact of schedule flexibility inherent in home working has a beneficial impact on family life, whereas others highlight the risk of blurred boundaries between work and family life. There is some evidence that working at home can improve work-life balance (and consequently increase wellbeing) by reducing some of the difficulties employees experience in maintaining multiple roles across domains (Ahrentzen, 1990; Hill, Hawkins & Miller, 1996). Research conducted by Lundberg and Lindfors (2002) also suggests that cardiovascular arousal might be generally lower amongst white-collar employees when they work at home than in their offices. As discussed above, however, there is a risk that highly integrated work-family arrangements could result in a blurring of the physical and psychological boundaries between work and home (Desrochers, Hilton & Larwood, 2005). This suggests that working at home on a frequent basis might not have a uniformly positive impact on work-life balance and individual wellbeing.

Little is known about the extent to which academics work at home, the type of work that they do there, and the reasons why they work in their home environment rather than in their institutions. These issues will be examined in the present study by through the analysis of qualitative data. The impact of working at home on work-life balance and wellbeing will also be investigated. As with work-life integration, discussed above, the degree of fit between academics' work at home, and the extent to which they wish to work there, will be assessed, together with the impact of any discrepancy found on strain outcomes. It is anticipated that academics with a poorer fit will report a higher degree of strain.

Working at home is one strategy that could be utilised to manage the work-home interface. Recent research suggests, however, that the manner in which employees manage their work-life boundaries is subject to considerable diversity (Sullivan & Lewis, 2006). Kossek and Lambert (2004) maintain that the type of boundary management strategies employees utilise (and are considered adaptive by them) are partly shaped by the structure of the jobs they do, and partly by individual differences. The present study aims to examine the range of practices adopted by academic staff. As a wide degree of

variation in strategies is expected, qualitative methodology is utilised in an attempt to capture the diversity in individual responses (Neuendorf, 2002).

The next section discusses several variables that have the potential to moderate the relationship between job demands and perceptions of work-life conflict.

### **5.2.6 Moderators of the relationship between job demands and work-life conflict**

Two recent reviews of the literature have argued that models of work-life conflict would be enriched by the inclusion of individual difference variables such as propensity for work involvement (Eby *et al.*, 2005; Tetrick & Buffardi, 2006). Factors such as job involvement and over-commitment might predispose employees to experience work-life conflict, and/or exacerbate or alleviate the negative impact of demands on the work-home interface. It has also been proposed that certain resources derived from an employee's work role might increase the competence and capabilities of individuals to perform across domains (Voydanoff, 2004). Features of the working environment, such as social support, schedule flexibility and family-friendly policies, might reduce the likelihood of work-life conflict occurring even under conditions of high demand. These issues will now be discussed.

#### *a) Job involvement*

The concept of job involvement was introduced in Chapter 1 of this thesis. There is some evidence that employees who are more involved in their jobs allocate more time to work and are more reluctant to disengage from it physically and psychologically (Greenhaus & Beutell, 1985; Taris *et al.*, 2005). Thus, job involvement might have the potential to cause, or intensify, work-life conflict. Research that has examined relationships between job involvement and perceptions of work-life conflict has, however, yielded mixed findings. Some studies suggest that employees who are more involved in their work report more conflict between work and family (Frone & Rice, 1987; Adams, King & King, 1996; Greenhaus *et al.*, 2001), whereas others find no significant association between the two variables (Frone *et al.*, 1992). It is also possible that employees with higher levels of job involvement might *wish* for little separation between their work and home. Under such conditions, job involvement might result in more synergy between the work and home roles, but lower levels of perceived work-life conflict and other types of strain.

#### *b) Over-commitment*

Over-commitment was discussed in detail in the context of the Effort-Reward Imbalance model tested in Study 2a. It is defined as "a set of attitudes, behaviours and emotions that reflect excessive striving in combination with a strong desire of being approved and esteemed" (Siegrist, 2001, p. 55). Study 2a found over-commitment to be a significant

predictor of physical and psychological health symptoms in a sample of academic employees. It is possible that individuals who are more over-committed to their jobs might be more likely to experience work-life conflict. Furthermore, a tendency towards over-commitment might exacerbate relationships between job demands and work-life conflict. To the author's knowledge, however, relationships between over-commitment and work-life conflict have not yet been examined.

Relationships between job involvement and over-commitment and work-life conflict will be examined in this study. Whether or not job involvement and over-commitment moderate the relationship between work demands and work-life conflict will also be assessed. Furthermore, associations between these two individual difference variables and preferences for work-life integration will be examined.

*c) Social support*

The importance of social support to the health and job satisfaction of academic staff has been highlighted in the research presented earlier in this thesis. It could be argued that social support might also mitigate any negative impact of job demands on the work-home interface experienced by academic staff. Whilst some studies have found inverse relationships between perceptions of workplace support and work-life conflict (Burke, 1988; Grzywacz & Marks, 2000), little is yet known about whether or not this support buffers the negative impact of job demands on work-life conflict. Only one such study can be located, and its findings are somewhat unexpected. Ray and Miller (1994) found a reverse buffering effect, whereby support from colleagues and managers exacerbated rather than minimised the degree of work-life conflict perceived. Clearly, it is necessary to further examine the role of social support in the context of the work-home interface.

*d) Schedule flexibility*

The findings of the studies presented in this thesis so far have highlighted the relevance of job control to the health and wellbeing of academic employees. It is recognised that rigid work scheduling with low levels of timing control may undermine individual wellbeing and family functioning (Haas, 1999). Kossek and Lambert (2004) have recently proposed that control over where, when and how an employee works may be the most critical predictor of work-life conflict. Schedule flexibility (or the ability to adapt working hours to meet personal and/or family needs) may increase the ability of employees to cope with the competing demands of the work and non-work domains (Sullivan & Lewis, 2006). There is some evidence that employees who work flexibly report less stress, are more committed to their employers, and have fewer absences (Ala-Mursula, Vahtera & Kivimaki, 2002; Halpern, 2005). The majority of studies conducted in this area, however, tend to compare

levels of strain reported by flexible workers with those who work conventional hours. Studies that examine whether *perceived* schedule flexibility (rather than that which is objectively defined) reduces perceptions of work-life conflict are few. In the only study that can be located, Major, Klein and Ehrhart (2002) found no evidence that schedule flexibility buffered the relationship between working hours and perceived conflict between work and home.

Under certain conditions, schedule flexibility might actually increase rather than reduce the likelihood of work-life conflict. Any flexibility in working schedules may not necessarily be channelled into leisure or family time. High levels of schedule flexibility could result in a lack of structure imposed by formal working hours, where employees “choose” to work longer and harder in order to fulfil the demands placed upon them (Kossek, 2003). Interestingly, in 1997, a working group of British University Vice-Chancellors and Principals noted the risk that flexibility might become a contributory factor to overwork, stress and job insecurity (Commission on University Career Opportunity, 1997). There is some evidence to support this proposition but little is yet known. A study that compared the degree of work-life balance experienced by employees working under conditions of low and high schedule flexibility found that the latter group reported significantly more work-life conflict (Hill *et al.*, 2003). The findings suggest that a certain amount of schedule flexibility may be useful for integrating work with other activities, but too much might create difficulties by blurring the boundaries between the work and home domains. More research is clearly needed to establish the conditions under which schedule flexibility might have positive or negative outcomes for the wellbeing of employees. Schedule flexibility may be particularly likely to threaten the work-life balance of employees who are more involved in their work and more over-committed to it. These issues are examined in this study in the context of UK universities.

e) *Work-family policies*

Schedule flexibility is only one of a number of possible options that organisations could provide to help their employees achieve an acceptable work-life balance. There is evidence that schedule flexibility is more likely to be made available to “high value” workers (Hyman, Scholarious & Baldry, 2004). In the UK, a number of “family friendly” working arrangements have been made available to some employees: options include part-time work, shift work, job-sharing, term-time contracts, flexitime, compressed working week, reduced hours and annualised hours (Kodz, Harper & Dench, 2002). Moreover, from 2003, parents, adopters and guardians of children aged under six (or disabled children under 18) have the legal right to ask their employers to adapt their working hours

to suit their family responsibilities and also to request to work from home. There is, however, no automatic right for employees to have their requests granted.

A strong business case for the implementation of work-life balance policies has been highlighted by research conducted by the Department for Trade and Industry (DTI, 2003). According to this survey, the benefits to organisations include increased productivity, reduced overheads, improved recruitment and retention and lower levels of absenteeism. A review of the literature indicates, however, that the ramifications of work-life balance policies for “softer” outcomes such as employee wellbeing and family functioning have been less frequently examined (Kossek & Ozeki, 1998; Eby *et al.*, 2005). Although there is some evidence that the availability of such policies is related to lower levels of work-life conflict and higher levels of job satisfaction (e.g. Allen, 2001; Haar & Spell, 2001), other studies fail to find such positive outcomes (e.g. Frone & Yardley, 1996; Kossek & Ozeki, 1998). As with schedule flexibility, discussed above, few studies have examined the moderating role of organisational support for work-life balance on employee wellbeing.

It is apparent that formal and informal organisational accommodation to domestic demands differs according to sector (Hyman *et al.*, 2004). Very little is known about the availability of support for work-life balance in UK universities or the type of support provided. Recent research funded by the UK Higher Education Funding Council (Scott *et al.*, 2003) suggests that, unlike other occupational groups, very few formal flexible working policies are offered to academics, and the majority of universities are not considering introducing such policies - at least in the short-term. Where formal policies were available in UK universities, Scott *et al.* found that they were more likely to apply to administrative or support staff. The present study aims to examine the type of resources offered by UK universities to help their employees maintain work-life balance, and the implications of these features for employee wellbeing and work-life balance.

### **5.2.7 Aims of study**

This study aims to examine a number of issues relating to work-life conflict experienced by academic employees:

- Inter-relationships between job demands, working practices (working during evenings and weekends, working at home and the extent of work-life integration and boundaries), supportive features of the work environment (social support, schedule flexibility and organisational support for work-life balance), individual differences (job involvement and over-commitment) and perceptions of work-life conflict and strain outcomes (i.e. psychological and physical symptoms, job satisfaction and leaving

intentions). The features of the working environment, working practices and individual difference variables that predict work-life conflict in academics will also be assessed.

- The extent of work-life integration experienced by academics, together with the impact of any discrepancy between actual and ideal levels of integration on employee wellbeing. Practices relating to working at home will also be examined, together with the implications for wellbeing of any discrepancy between actual and ideal levels of this practice.
- Whether specific working practices, supportive features of the working environment, or individual differences buffer the relationship between job demands and perceptions of work-life conflict.

Responses to a number of open-ended questions relating to work-life conflict experienced by academic employees are analysed in this study. Issues examined relate to working at home, the personal strategies utilised by academics to minimise work-life conflict, and the supportive features provided by universities to help their employees balance the demands of their work and home lives.

Given the uneven distribution of household responsibilities between dual-career couples (Jones, 2003), it is commonly believed that working women may experience more work-family conflict than their spouses. Some research has supported this notion (Carlson *et al.*, 1995). A review of the literature conducted by Frone (2003) has however concluded that no compelling evidence exists for gender differences in the extent of work-life conflict, or the strength of relationships between such conflict and strains. Study 1 found that male and female academics reported similar levels of stressors relating to the work-home interface, but women tended to work during evenings and weekends more frequently than their male counterparts. Although the present study does not explicitly aim to examine gender differences amongst academic staff, an initial assessment of whether males and females experience the work-home interface in a similar manner will be conducted.

## **5.3 Method**

### **5.3.1 Sample**

The comprised 844 lecturers and researchers working in universities in the UK. Full details of the sample utilised were provided in Chapter 4 (Section 4.3).

### **5.3.2 Measures**

A description of the measures utilised to obtain demographic and background information can be found in Chapter 4 (Section 4.3). Full details of the measures used to assess

working hours, job demands and over-commitment can also be found there, as can details of all outcome measures (i.e. physical health symptoms, psychological distress, job satisfaction and leaving intentions). The work-life conflict measures utilised in the study are described below.

#### *Work-life conflict*

Work-life conflict was measured by Netemeyer, Boles and McMurrian's (1996) 5-item scale. This measure assesses time-based and strain-based conflict. Examples of items are: "the demands of my work interfere with my life outside work" and "my job produces strain that makes it difficult to fulfil other duties (e.g. family, social, community etc.)". A further two items were included to assess levels of withdrawal from family and friends and irritability at home due to work demands. Responses were on a seven-point scale (1 = "strongly disagree" to 7 = "strongly agree"). Mean scores across items were computed with higher scores denoting higher levels of work-life conflict (Cronbach's Alpha = 0.92).

#### *Work-life integration and working at home*

A series of separate items examined issues relating to work-life boundaries and integration. These were all designed for the purposes of the present research. One item examined the extent to which employees had a clear boundary between their working lives and their home lives. Responses were requested on a four-point scale where 1 represented "not at all" and 4 represented "very much so". High scores represented clearer boundaries between the work and home domains. Another item assessed the extent to which respondents perceived their home and work lives to be integrated, with a further item examining the extent to which they would like the two domains to be integrated. Both items were assessed on a nine-point scale where 1 denoted total separation and 9 denoted total integration. Thus, high scores represented greater integration and less separation between work and home. In order to establish an index of "fit" between ideal and actual levels of integration between work and home lives, the discrepancy between these two scores was calculated. High scores represented a greater discrepancy between actual and ideal levels of work-life integration.

Respondents were asked to estimate: a) the percentage of their work they did at home during an average term-time week; and b) the percentage of their work they would wish to do at home. As with work-life integration above, an index of fit was established by calculating the discrepancy between actual and ideal levels of working at home. High scores represented a greater discrepancy between actual and ideal levels of working at home.

Two open-ended questions asked respondents to indicate: a) the type of work they were most likely to do at home; and b) why they did this work at home rather than their employing institution.

#### *Frequency of interruptions*

Two single items asked respondents to indicate the extent to which they were able to work without interruption: a) in their institutions and b) at home. Responses were invited on a five-point scale ranging from “Never” to “Always”. Higher scores on both items represented a lower frequency of interruptions.

#### *Schedule flexibility*

A three-item scale examined the extent to which working schedules meet respondents' own needs and the needs of their families. An example of an item is: “How well does your working schedule and the degree of flexibility in this schedule, meet your own needs”. Responses were requested on a four-point scale where 1 represented “not at all” and 4 represented “very much so”. Mean scores were computed across items with high scores representing more schedule flexibility (Cronbach's Alpha = 0.87). A further item assessed employers expectations in terms of “visibility” in the workplace where 1 represented high expectations of employees to be in their institutions on a 9 – 5 basis Monday to Friday, and 5 represented more employee autonomy over where work is done. High scores, therefore, denoted lower expectations of visibility in the workplace.

#### *Employer support for work-life balance*

Two items measured the level of support provided by employers to aid work-life balance in their employees. Responses were requested on a four-point scale where 1 represented no support and 4 represented high support. Mean scores were taken across items; higher scores represented more work-life balance support. (Cronbach's Alpha = 0.86).

Further items assessed levels of awareness of flexible working options, occupational health services and stress management training. The extent to which employees could discuss stress-related problems in an open way with line managers and colleagues was also examined. Response options for these items were “Yes” or “No” or “Don't know”.

An open-ended question asked respondents to describe any benefit or working condition provided by their employer that is designed to help them balance work and non-work demands.



### *Job involvement*

A five-item measure of job involvement was used, based on Kanungo (1982). This conceptualises job involvement and alienation as opposite ends of the same continuum. An example of an item is as follows: "The most important things that happen to me involve my job". Responses range from 1 = "strongly disagree" to 5 = "strongly agree". Mean scores were computed across items with high scores representing more job involvement and lower scores more alienation (Cronbach's Alpha = 0.82).

### **5.3.3 Procedure**

The procedure for this study is as described in Chapter 4.

### **5.3.4 Methods of analysis**

Methods of analysis of the statistical data are as described in previous chapters. The qualitative data obtained from the open-ended questions was analysed by utilising thematic content analysis. As recommended by Neuendorf (2002), individual questions were used as the basic unit of analysis (or main theme areas) and categories and sub-categories were developed from each theme. To ensure reliability, a proportion of the data (c. 15 percent) was analysed by another researcher: an acceptable level of concordance was achieved ( $K = .78$ ). For the type of work done at home, descriptive statistics (based on the frequency of key terms) are used in order to produce a quantitative component to the analysis. For the other open-ended questions, however, the main themes emerging from the data are described rather than nominally enumerated in order to preserve the richness of this data, and representative quotes are provided by way of illustration.

## **5.4 Results**

### **5.4.1 Descriptive data**

#### *The main study variables*

Full details of the demographic characteristics of the sample can be found in Chapter 4. Descriptive data for the variables examined in this study are presented in Table 5.1 below. Levels of job demands, working hours, social support, over-commitment and all strain outcomes were discussed in Chapter 4, as were any gender differences relating to these variables. The mean level of work-life conflict was moderately high, but the standard deviation highlights some variation amongst the sample. Similarly, whilst levels of schedule flexibility were moderate, the standard deviation was extremely high. These, and the other work-life conflict variables, will be discussed individually below.

As can be seen from Table 5.1, a moderately high level of job involvement was found amongst the sample, with a mean score that exceeded 3.5 on a five-point scale. Very little evidence of alienation from work was observed, with less than 9 percent scoring a total of 12 or under (close to the mid-point of the possible range). Further analysis of this data revealed that 85 percent of academics were “very much personally involved with their jobs” and 41 percent indicating that most of their interests are centred on their work.

**Table 5.1**  
**Descriptive statistics for study variables**

Variable	<i>M</i>	<i>SD</i>	<i>Range</i>
Work-life conflict	4.55	1.41	1-7
Boundaries between work and home	2.18	0.92	1 - 4
Current level of work-life integration	5.87	2.14	1 - 9
Ideal level of work-life integration	3.52	2.07	1 - 9
Current level of working at home (%)	24.70	17.19	1 - 100
Ideal level of working at home (%)	30.24	19.34	1 - 100
Schedule flexibility	2.71	2.56	1 - 4
Employer support for work-life balance	1.72	0.74	1 - 5
Job demands	3.33	0.74	1 - 5
Social support	2.85	0.91	1 - 5
Job involvement	3.50	0.72	1 - 5
Over-commitment	2.76	0.57	1 - 4
Psychological distress (GHQ-12)	1.22	0.53	0 - 3
Physical symptoms	4.77	3.05	0 - 16
Job satisfaction	4.40	0.99	1 - 7

MANOVA revealed no significant differences between male and female academics in any of the work-life conflict variables, or in levels of job involvement. Although a trend was observed for males to prefer less integration between the work and non-work domains, the difference between means did not reach significance ( $p=.052$ ).

#### *Work-life conflict*

Table 5.2 shows the scores of each item in the work-life conflict scale, in descending mean order. Levels of agreement to each statement are also provided. As can be seen, respondents expressed at least moderate levels of agreement with all statements, but the standard deviations highlight some variation in response to each item. The strongest

agreement was found with items relating to work demands interfering with life outside work, with plans for non-work activities and with the accomplishment of tasks that were not related to work. Levels of strain-based conflict were also moderately high and a considerable proportion of the sample maintained that the demands of their work resulted in their being irritable at home, and made them withdraw from family and friends.

**Table 5.2**  
**Descriptive statistics for work-life conflict items (in descending order of agreement with 1 = strongly disagree and 7 = strongly agree)**

Variable	<i>M</i>	<i>SD</i>	% strongly agree*
Things I want to do in my life outside work don't get done	4.91	1.64	41
The demands of my work interfere with my life outside work	4.86	1.67	40
Due to work-related duties, I have to make changes to my plans for non-work activities	4.81	1.65	37
The amount of time my job takes up makes it difficult to fulfil other responsibilities	4.68	1.64	34
My job produces strain that makes it difficult to fulfil other duties	4.48	1.69	30
Due to the demands of my work, I am irritable at home	4.20	1.75	35
Due to the demands of my work, I withdraw from family and friends	3.90	1.85	23

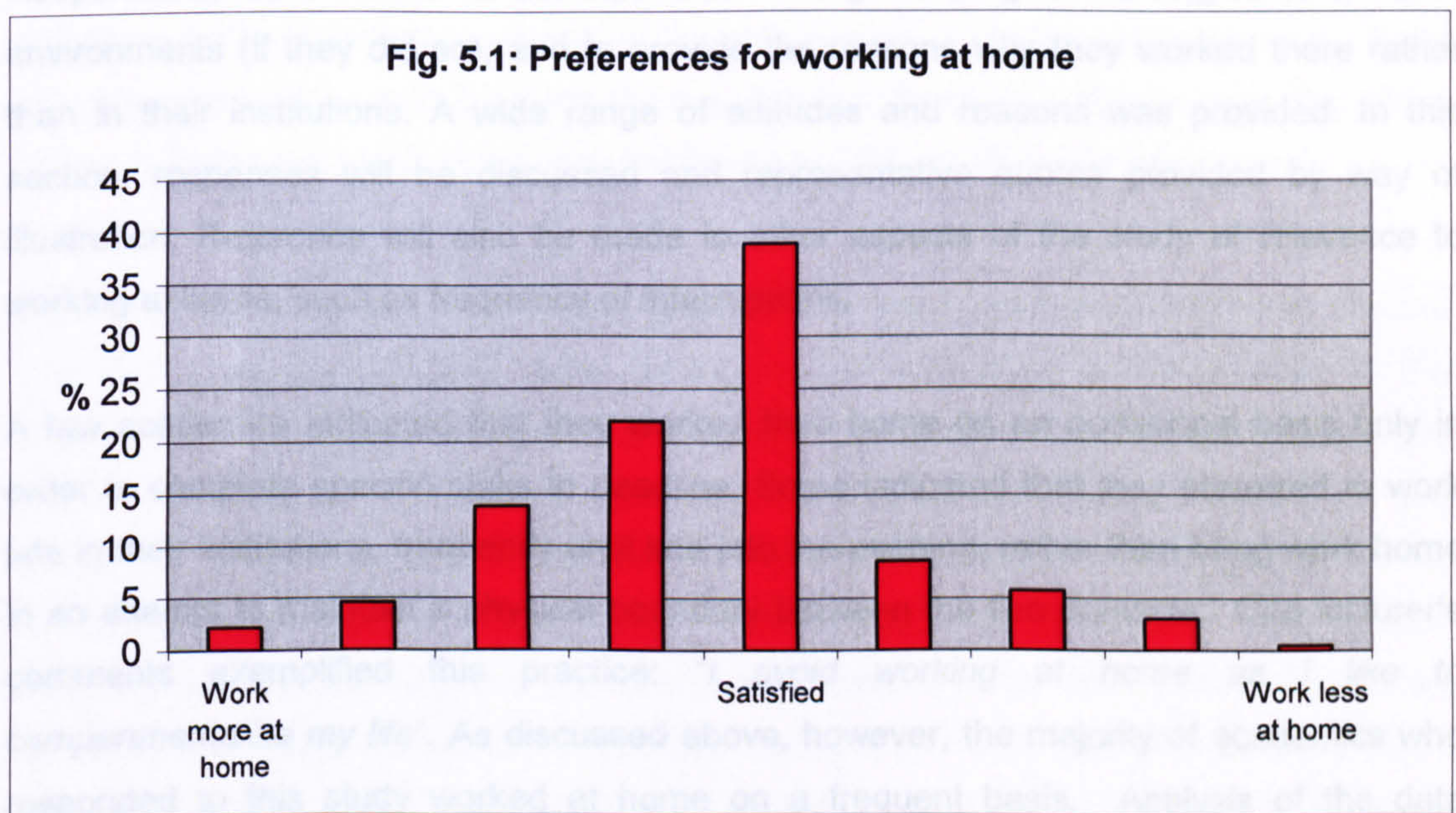
\*These figures relate to the proportion of respondents who scored 6 or 7 on a seven-point scale

### *Working at home*

Respondents were asked to estimate the proportion of their total workload they did at home during term time. The proportion for the sample as a whole averaged 25 percent, but the standard deviation of 17 percent, however, indicates that there was considerable variation between respondents in this practice. Analysis of the data revealed that more than one-quarter of the sample do at least 30 percent of their work, and over one respondent in ten (13 percent) in excess of 40 percent of their total workload at home. Only 11 percent reported that they rarely worked at home (i.e. less than 5 percent of their overall workload).

In response to a further question, academics indicated that they would like to do an average of 30 percent of their work in their home environment, although, again, the

standard deviation of 19 percent highlights some variation. Fig. 5.1 illustrates the level of congruence between the proportion of their workload respondents currently do at home and the proportion they would wish to do. Thirty-nine percent of the sample were happy with their current working practices, but a greater proportion (43 percent) would like to work more at home than they do at present. Almost one respondent in five (19 percent) would like to work less frequently in their home environment. The difference between respondents' actual and ideal levels of working at home was calculated and four categories were computed based on the quartiles (i.e. high, moderate, low and no discrepancy). A series of one-way ANOVAs indicated that respondents with a greater discrepancy reported more work-life conflict: ( $F [3,583] = 5.05, p < .001$ ). Furthermore, levels of strain rose as the discrepancy between present and ideal levels of working at home widened (psychological distress:  $F [3,504] = 2.77, p < .01$ ; job dissatisfaction:  $F [3,487] = 3.92, p < .001$ ). No significant differences were found between groups in levels of physical symptoms or leaving intentions.



Respondents were asked to provide details the type of work they were most likely to do at home. Table 5.3 presents this qualitative data as percentages of total statements made relating to “core” academic activities. As can be seen, a broad range of work-related tasks is undertaken in the home environment. Analysis of the data revealed that writing, reading and marking are particularly likely to be done at home, together with activities relating to research (such as planning, preparing grant applications, conducting literature searches, analysing data and writing for publication). Respondents also frequently indicated that they spent time at home reflecting on work problems, or updating themselves in their field of study.

**Table 5:3**  
**The type of work most likely to be done at home by academics**  
**(% of total activities provided)**

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	%
Reading	18
Marking	19
Writing	26
Lecture preparation	10
Research activities	15
Administration	7
Other	5

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Respondents were invited to describe their feelings relating to working in their home environments (if they did so), and to provide the reasons why they worked there rather than in their institutions. A wide range of attitudes and reasons was provided. In this section, responses will be discussed and representative quotes provided by way of illustration. Reference will also be made to other aspects of the study of relevance to working at home, such as frequency of interruptions.

A few academics indicated that they worked from home on an occasional basis only in order to complete specific tasks to deadline. Some indicated that they preferred to work late in their institutions, frequently until late into the evening, rather than bring work home in an attempt to maintain a physical boundary between the two domains. One lecturer's comments exemplified this practice: *"I avoid working at home as I like to compartmentalise my life"*. As discussed above, however, the majority of academics who responded to this study worked at home on a frequent basis. Analysis of the data provided by these respondents revealed that they work from home for two main reasons. Firstly, because their institutions do not provide an environment that allows them to do their work effectively, many academics work from home during normal office hours. This practice appears to be dependent upon the degree of schedule flexibility provided by institutions, and the approval of individual line managers. Secondly, academics work at home during evenings and weekends, in addition to working during normal office hours, to enable them to fulfil the demands of their jobs. These issues will now be discussed in greater depth.

In general, academics experience a considerable degree of interruption when trying to work in their institutions. Sixty-four percent of the sample maintained that they were “never” or “rarely” able to work without interruption in their places of work; only 11 percent indicated that they could “frequently” or “always” do so. In terms of working at home, a considerable majority (77 percent) could work there without interruption “frequently” or “always”. Few (8 percent) indicated that they could “never” or “rarely” work without interruption at home. On average, academics who experienced more frequent interruptions at work reported more physical and psychological health symptoms (both  $r = .19, p < .001$ ) and lower levels of job satisfaction ( $r = -.17, p < .001$ ).

In explaining why they worked in their home environments, many academics commented on the level of interruptions that they experienced when attempting to work in their institutions. Some respondents reported that they worked in shared or open-plan offices that were not conducive to concentration or privacy. One lecturer and researcher revealed that he worked in an office that accommodated approximately 80 staff, and described the difficulties he experienced in attempting to work in such a disruptive environment. Others, with more physical barriers between them and their colleagues, indicated that their offices had poor sound insulation that allowed noise from adjacent offices to filter through.

Expanding upon the quantitative data described above, respondents frequently revealed that they were considerably more productive when working at home than in their institutions, as they were not disturbed by competing demands from students, colleagues and administrators. Academics commonly maintained that, when working in their institutions, they could only deliver lectures, attend meetings and tutorials and perform basic administrative duties. Other tasks that are fundamental to academic work (typically those that require creativity and sustained concentration) were, often exclusively, done at home. As one respondent commented: *“(My home) is the only place I have quality time to think and avoid being interrupted and distracted by endless demands, enquiries, telephone calls, e-mails etc.”*

A significant positive correlation was found between the level of interruptions respondents experienced in their work environment and the extent to which they worked during evenings and weekends ( $r = .11, p < .01$ ). Analysis of the qualitative data provided greater insight into this relationship. Many academics revealed that they frequently worked at home during evenings and weekends as a way of coping with the volume of work and the diversity of tasks required of them. Some indicated that their institutions had introduced an “open door” policy where students’ queries were expected to take priority over other work deadlines; this meant that they were forced to work outside office hours in order to meet

the demands of other aspects of their job. Other respondents remarked that evenings and weekends were the only times available for marking, lecture preparation and research as such work could not be fitted into normal office hours. This is illustrated by one senior lecturer's comment: *"When one's workload is 25 percent greater than the normal working week there is little option but to work evenings and weekends"*.

Academics frequently indicated that they worked from home in an attempt to integrate the demands of the work and their family lives. For some, working at home helped them "juggle" the demands of work and home and other commitments more successfully – particularly when working during evenings and weekends. The comments of two lecturers illustrated this practice: *"At least I am home even though I am still working" and "I work at home rather than in my institution so that the family sees me occasionally: It also means that I get my dinner before 10 pm!"*. Others, however, saw working at home to be disruptive to family life and leisure. For example: *"I shut myself away in my office to work most evenings; I might as well not be at home in as I don't see much of my husband and children"*.

A number of academics revealed that they had obtained equipment, sometimes at their own expense, to enable them to work more efficiently at home. Some observed that they had better computers and communication facilities at home than they did at their institutions and that this added to the attraction of working at home. Reading work e-mails at home was generally considered by academics to be a way of maintaining contact with their institutions that allowed them to work more effectively from home. Other respondents, however, remarked that they had resisted installing a networked computer and/or internet or fax facilities at home in an attempt to maintain a firmer boundary between the work and non-work domains - despite performing other aspects of their jobs at home.

#### *Work-home boundaries and integration*

One respondent in ten maintained that the boundary between their working life and their home life was very clear, with a further 23 percent indicating that it was fairly clear. One-quarter of the sample, however, perceived no boundary between work and home, and 42 percent had only a weak boundary between the two domains. Considerable variation was found amongst academics in the degree of integration they experienced between their work and home lives. Eight percent reported that they kept the two domains virtually separate (scoring 1 or 2 on a 9 point scale, with 1 representing total separation and 9 representing total integration). The majority of the sample, however, perceived some degree of integration between their work and home lives (63 percent scored 5 or above).

Almost one respondent in four (23 percent) indicated that, for them, the work and home domains were virtually indistinct (scoring 8 or 9). When asked to describe their ideal situation, almost one-half (47 percent) wished for a moderate degree of integration between their work and home lives (scoring between 3 and 7). A considerable proportion (39 percent), however, expressed a desire for their work and home lives to be completely separate (scoring 1 or 2).

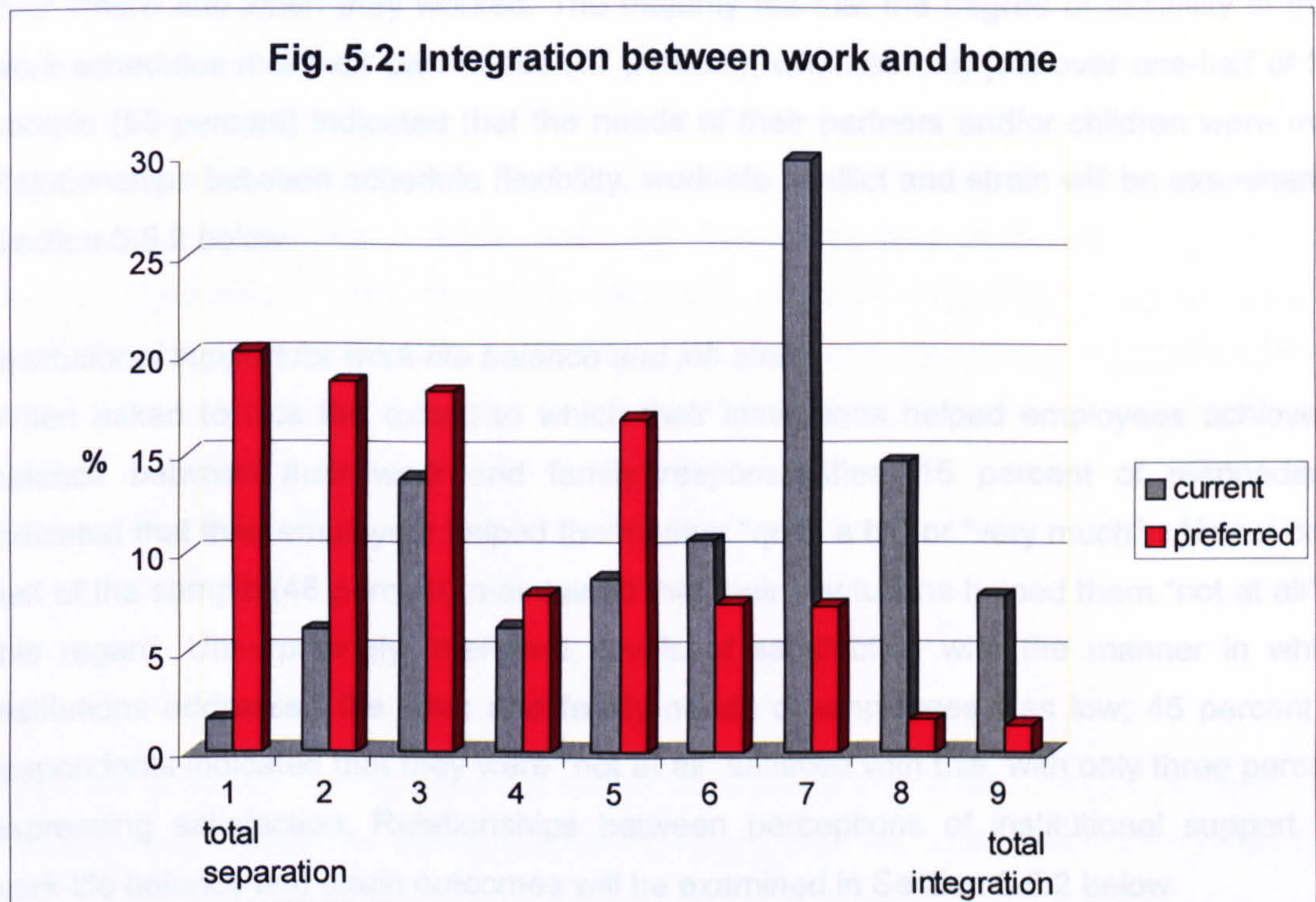


Fig. 5.2 illustrates the extent of integration between work and home currently experienced by academics together with their ideal levels. For just over one-third of the sample (34 percent), the degree of integration they currently experienced was ideal (or almost so). A considerable proportion, however, (42 percent) reported a discrepancy of at least three points (on a 9 point scale) between their present and ideal levels of work-home integration, whereas for 18 percent the discrepancy was five points or more. The difference between respondents' actual and ideal levels of integration between work and home was calculated and four categories were computed based on the quartiles (i.e. high, moderate, low and no discrepancy). A series of one-way ANOVAs indicated that respondents with a greater integration discrepancy also reported more work-life conflict: ( $F [3,745] = 73.94, p < .001$ ). Furthermore, levels of strain rose as the discrepancy between present and ideal levels of work-life integration widened (physical symptoms:  $F [3,746] = 18.86, p < .001$ ; psychological distress:  $F [3,644] = 37.63, p < .001$ ; job



dissatisfaction:  $F [3,604] = 37.84, p < .001$ ). No significant differences were found between groups in leaving intentions.

#### *Schedule flexibility*

Eighty-five percent of academics maintained that they had at least some latitude over where and when they worked, with 40 percent reporting a considerable degree of control over this. Only two percent of the sample indicated that they had no control whatsoever over where and when they worked. The majority felt that the degree of flexibility in their work schedules met their own needs (67 percent), whereas only just over one-half of the sample (55 percent) indicated that the needs of their partners and/or children were met. Relationships between schedule flexibility, work-life conflict and strain will be examined in Section 5.5.2 below.

#### *Institutional support for work-life balance and job stress*

When asked to rate the extent to which their institutions helped employees achieve a balance between their work and family responsibilities, 15 percent of respondents indicated that their employers helped them either “quite a bit” or “very much”. Almost one-half of the sample (48 percent) maintained that their institutions helped them “not at all” in this regard. Unsurprisingly, therefore, levels of satisfaction with the manner in which institutions addressed the work and family needs of employees was low; 45 percent of respondents indicated that they were “not at all” satisfied with this, with only three percent expressing satisfaction. Relationships between perceptions of institutional support for work-life balance and strain outcomes will be examined in Section 5.5.2 below.

Few respondents were aware of the legal right to request flexible working by parents, adopters and guardians of young children. Eleven percent indicated that their employers had informed them of this, 47 percent reported they had not, and 43 percent were uncertain. Chi-square analysis revealed no significant differences in the levels of awareness of these rights of academics with young children and those without.

Considerable uncertainty was revealed relating to the services that are available to academics to help them manage job-related stress. Almost one-half of the sample (48 percent) was unsure whether stress management training was available in their institutions, compared with 37 percent who said it was. The same proportion also indicated uncertainty as to whether or not a stress “help-line” or confidential counselling service was available to them (48 percent), with 38 percent saying such services were available and 14 percent indicating they were not. Fifty-eight percent of respondents

indicated that occupational health services were available in their institutions, 10 percent indicated that they were not, and almost one-third (32 percent) were unsure.

Respondents were asked whether they felt able to discuss stress related problems in an open manner with line managers and their colleagues. A larger proportion of the sample revealed that they would not feel able to talk about stress with their managers (48 percent) than those who indicated that they could do this (31 percent), whereas 21 percent were unsure. Fifty-six percent of respondents reported that they could openly discuss stress-related problems with their colleagues, 29 percent could not, and 16 percent were uncertain. A series of one-way ANOVAs indicated that academics who were able openly to discuss work-life balance and stress-related issues with managers and colleagues had lower levels of all types of strain outcomes than those who could not do so, or were unsure. Discussions with managers (work-life conflict:  $F [2,829] = 52.40, p < .001$ ; psychological distress:  $F [2,720] = 40.50, p < .001$ ; physical symptoms:  $F [2,832] = 39.19, p < .001$ ; job satisfaction:  $F [2,832] = 11.03, p < .001$ ); Discussions with colleagues (work-life conflict:  $F [2,830] = 21.46, p < .001$ ; psychological distress:  $F [2,722] = 20.58, p < .001$ ; physical symptoms:  $F [2,833] = 20.09, p < .001$ ; job satisfaction:  $F [2,679] = 32.36, p < .001$ ); leaving intentions  $F [2,833] = 10.81, p < .001$ .

#### **5.4.2 Relationships between main study variables**

Table 5.4 presents the Pearson correlation coefficients and levels of significance for the relationships between job demands, working hours, work-life conflict variables and strains. Although some of the coefficients observed between predictor variables were high, they were below the criterion to suggest multi-collinearity (Miles & Shevlin, 2001). Work-life conflict was positively related to job demands and number of hours worked during evenings and weekends, and negatively related to social support. On average, academics who reported more conflict between their work and home lives perceived weaker boundaries between work and home and more integration between the two domains. Work-life conflict was significantly associated with all strain outcomes, with positive relationships observed with physical and psychological health symptoms and leaving intentions, and negative relationships observed with job satisfaction. Respondents who perceived higher levels of work-life conflict tended to report less schedule flexibility and organisational support for work-life balance. Furthermore, strong negative associations were observed between both schedule flexibility and organisational support for work-life balance and all types of strain.

As discussed in Chapter 4, academics who worked more frequently outside “office hours” reported more physical and psychological symptoms and marginally lower levels of job

**Table 5.4**  
**Correlations between job demands, working practices, work-life conflict and strains**

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Job demands	.00																
2. Working hours (evenings/weekends)	.16***	.00															
3. Work-life conflict	.56***	.30***	.00														
4. Work-home boundary strength	-.30***	-.38***	-.51***	.00													
5. Work-life integration	.23***	.40***	.45***	-.72***	.00												
6. Work-life integration fit	.33***	.24***	.43***	-.47***	.55***	.00											
7. Working at home	-.04	.33***	.06*	-.26***	.33***	.08*	.00										
8. Working at home fit	.18**	.14**	.15**	.06	.00	.14**	-.08	.00									
9. Schedule flexibility	-.43***	-.18***	-.51***	.35***	-.25***	-.41***	.08*	-.10	.00								
10. Social support	-.47***	-.09**	-.39***	.19***	-.13***	-.21***	-.03	-.17**	.32***	.00							
11. Employer support for work/life balance	-.36***	-.15***	-.40***	.29***	-.22***	-.31***	-.02	.07	.39***	.37***	.00						
12. Job involvement	.06*	.19***	.30***	-.29***	.36***	.07	.01	-.01	-.06*	-.01	-.09**	.00					
13. Over-commitment	.45***	.27***	.72***	-.46***	.42***	.42***	.04	.10	-.42***	-.29***	-.35***	.38***	.00				
14. Psychological distress	.36***	.11**	.49***	-.29***	.24***	.35***	.07*	.21**	-.31***	-.36***	-.27***	.15***	.53***	.00			
15. Physical symptoms	.30***	.07*	.44***	-.23***	.16***	.24***	-.03	.07	-.24***	-.22***	-.19***	.15***	.44***	.46***	.00		
16. Job satisfaction	-.53***	-.13**	-.47***	.27***	-.15**	-.31***	-.08*	-.15**	.59***	.59**	.35***	.10**	-.38***	-.56***	-.34***	.00	
17. Leaving intentions	.21***	.02	.23***	-.10**	.07*	.19***	-.03	.05	-.29***	-.29***	-.13***	-.08*	.20***	.29***	.20***	-.37***	.00

One-tailed correlations: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

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satisfaction. Respondents who regularly worked during evenings and weekends, on average, had weaker boundaries and more integration between work and home and also perceived more conflict between these domains. The strongly significant positive relationship between time spent working during evenings and weekends and frequency of working at home suggests that academics are more likely to work in their home environments outside office hours than in their institutions.

Academics who regularly worked at home were no more likely to report physical and psychological symptoms, job dissatisfaction and leaving intentions than those who worked there only rarely. Although respondents who worked more frequently in their home environments tended to have weaker boundaries and more integration between the work and home domains, working at home was not significantly associated with perceptions of work-life conflict. On average, academics who perceived clearer boundaries and more separation between work and home reported fewer psychological and physical health symptoms, more job satisfaction and less leaving intentions.

Finally, respondents who were more involved in their work tended to report marginally more job-related demands than those who were less involved in their work. Strong positive relationships were observed between job involvement and hours spent working during evenings and weekends, but no significant associations were found between job involvement and working at home. Academics with higher levels of involvement tended to perceive weaker boundaries and greater integration between work and home, and more conflict between the two domains; they also tended to report lower levels of schedule flexibility and less institutional support for work-life balance. Strong positive associations were found between job involvement and psychological and physical symptomatology. Nonetheless, academics who were more involved in their jobs tended to perceive more job satisfaction and weaker leaving intentions than their counterparts who were less involved in their work.

As discussed in Chapter 4, significant positive relationships were observed between over-commitment, job demands and all strain outcomes. In terms of work-life conflict variables, as can be seen in Table 5.4, academics who were more over-committed to their jobs tended to work more frequently outside office hours, perceive weaker boundaries and more integration between work and home, and report higher levels of work-life conflict. They also perceived lower levels of schedule flexibility and organisational support for work-life balance. However, over-committed employees were no more likely to work at home than those who were less over-committed to their jobs.

Further correlational analysis (not shown in Table 5.4) showed that respondents who were more involved in their jobs tended to desire more integration between their work and home lives ( $r = .31$ ,  $p < 0.001$ ), but no significant relationships were observed with levels of over-commitment.

### **5.4.3 Predictors of work-life conflict**

In order to examine the main predictors of work-life conflict, a hierarchical multiple regression equation was computed. The independent variables were entered into the equation in five different steps. At the first step, gender was entered to control for its potential effects. Job demands were entered at the second step. At the third step, working practices were entered into the equation: i.e. hours worked during evenings and weekends, work-home boundary strength and work-life integration fit. In the fourth step, a number of supportive features provided by the organisation were entered: i.e. social support, schedule flexibility and employers' support for work-life balance. In the fourth and final step, the individual difference variables job involvement and over-commitment were added.

Gender, which was entered in step 1, was not a significant predictor of work-life conflict. Job demands entered in step 2 explained 31 percent of the variance. When the variables relating to working practices were added in step 3, a further 12 percent of variance in work-life conflict was accounted for. The strength of boundaries between work and non-work life was the strongest predictor in this step, but work-life integration fit and hours worked during evenings and weekends also contributed to the incremental variance. The organisational support variables introduced in Step 4 added an additional 8 percent to the explained variance in work-life conflict. Although all variables contributed to this variance, an examination of the betas indicated that schedule flexibility made the strongest contribution. When job involvement and over-commitment were entered in Step 5, an additional 14 percent of the variance was accounted for. Only over-commitment made a significant contribution to the incremental variance. In the final model, the significant predictors of work-life conflict were job demands, work-life boundary strength, schedule flexibility, social support, employers' support for work-life balance and over-commitment. The total variance explained by the model was 64 percent. Work demands, schedule flexibility, boundary strength and over-commitment made the strongest overall contributions to the incremental variance. Table 5.5 provides details of the final model with only significant predictors included.

**Table 5.5**  
**Hierarchical multiple regression analyses predicting work-life conflict**  
**(final model)**

<i>Predictors</i>	<i>Standardised beta values</i>
Demands	.18***
Work-home boundary	-.13***
Schedule flexibility	-.16***
Social support	-.10**
Employers support for work-life balance	-.08*
Over-commitment	.13***
<b>Total R<sup>2</sup></b>	<b>.64***</b>

#### **5.4.4 Moderators of the relationship between job demands and work-life conflict**

Whether “protective” features (i.e. schedule flexibility, social support, and organisational support for work-life balance) and individual differences (i.e. job involvement and over-commitment) moderated relationships between job demands and perceptions of work-life conflict was examined through hierarchical moderation regression analysis. Please refer to Chapter 3 of this thesis for details of the statistical procedure utilised in this study.

Interaction terms were computed to examine the role played by each of the potential moderators (i.e. job demands was multiplied in turn with schedule flexibility, social support, organisational support for work-life balance, job involvement and over-commitment). A series of hierarchical regression equations was then computed. In each equation, the predictor variable and the potential moderator were entered in Step 1 and the interaction term was entered in Step 2. As no gender differences were observed in the work-life conflict variables, this was not controlled for in the moderation analyses. A significant moderating effect would be demonstrated if, after controlling for the predictor and potential moderator, the interaction term accounted for significant incremental variance.

Little evidence for buffering effects was found for social support, organisational support, job involvement or over-commitment. A trend was observed for schedule flexibility to buffer the

impact of job demands on work-life conflict, but the additional variance accounted for by the interaction failed to reach an acceptable level of significance ( $p = .06$ ).

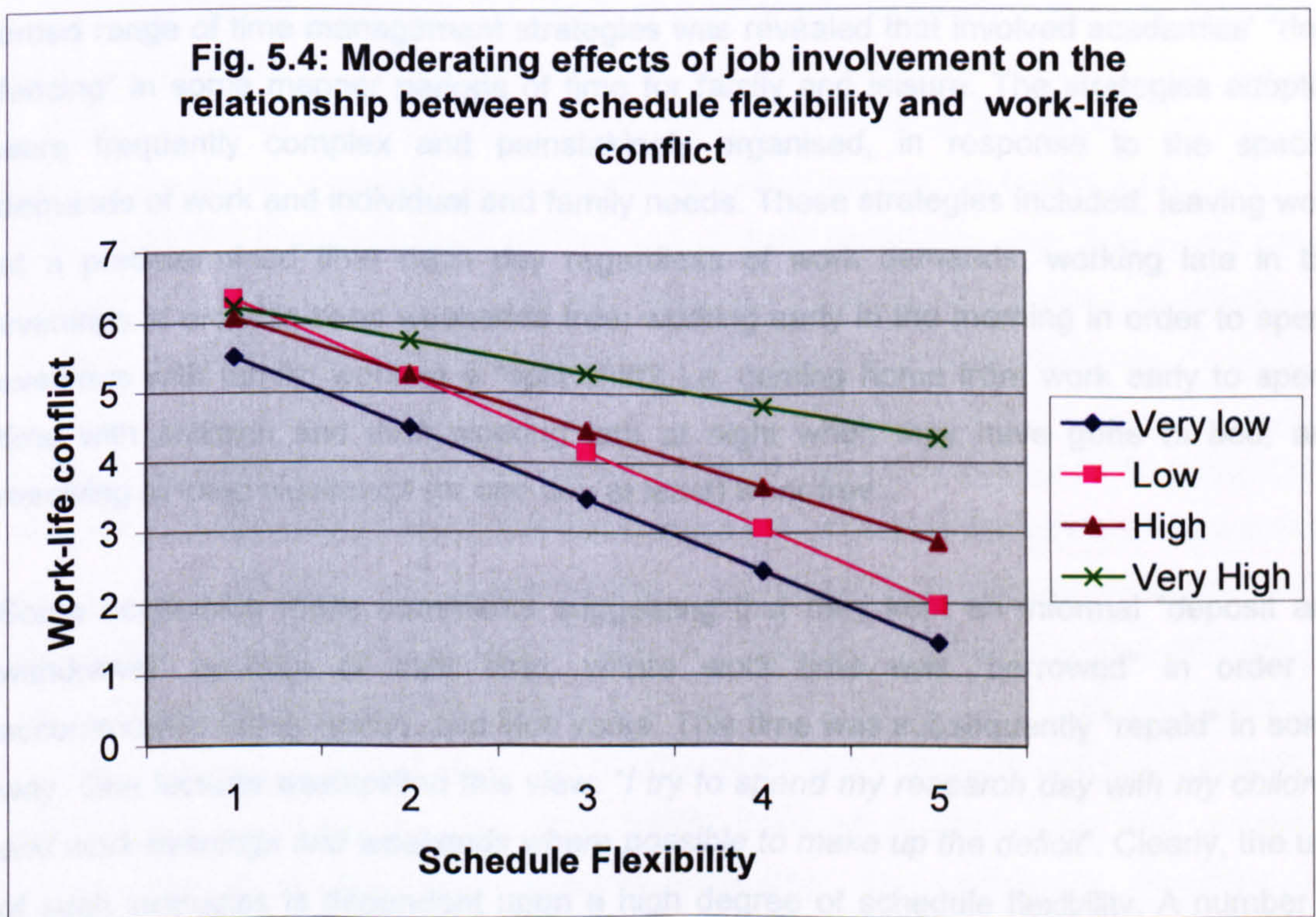
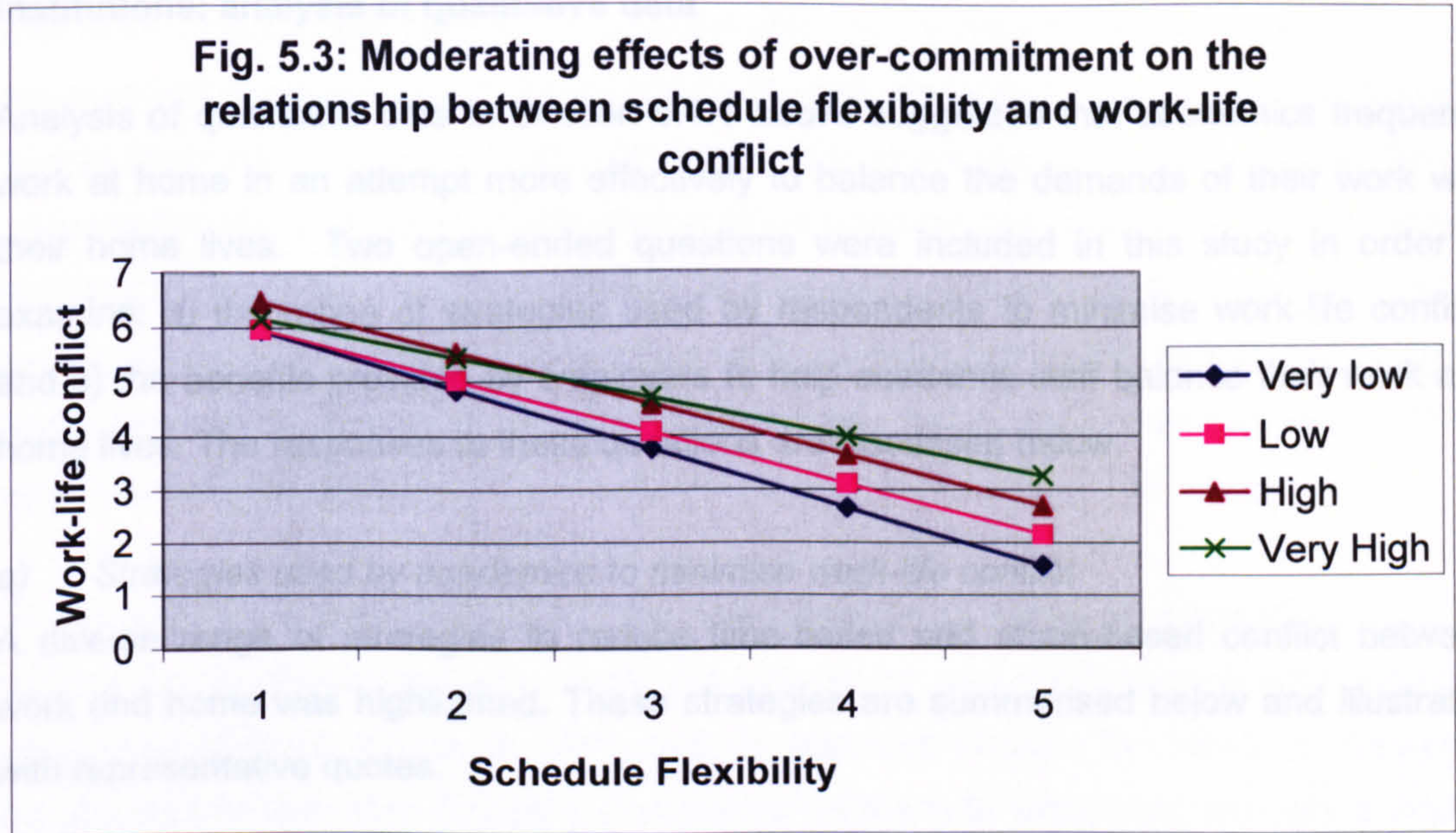
#### 5.4.5 Moderators of the relationship between schedule flexibility and work-life conflict

This study also examined whether job involvement or over-commitment moderated the relationship between schedule flexibility and work-life conflict. A further series of moderated regression analyses was conducted. The results demonstrated that both individual difference variables buffered the effects of schedule flexibility on work-life conflict. Details of the procedure for moderation analyses are provided in Table 5.6. To determine the nature of the interaction, interactions were plotted between schedule flexibility and both over-commitment and job involvement (see Figs. 5.3 and 5.4 respectively). As can be seen, under conditions of very high job involvement or over-commitment, schedule flexibility appeared to be less beneficial for work-life balance.

**Table 5.6**  
Moderated regressions of work-life conflict on schedule flexibility and job involvement/over-commitment

Criterion/ordered predictors	R <sup>2</sup> change	$\beta$
<i>Schedule flexibility X over-commitment</i>		
1. Schedule flexibility (A)		-.26***
Over-commitment (B)	.57***	.61***
2. A X B	.01**	.34***
<b>Total R<sup>2</sup></b>	<b>.58</b>	
<i>Schedule flexibility X job involvement</i>		
3. Schedule flexibility (A)		-.49***
Job involvement (B)	.33***	.27***
4. A X B	.01**	.43**
<b>Total R<sup>2</sup></b>	<b>.34</b>	





#### **5.4.6 Strategies used to reduce work-life conflict, and the support provided by institutions: analysis of qualitative data**

Analysis of qualitative data in Section 5.4.1 above suggested that academics frequently work at home in an attempt more effectively to balance the demands of their work with their home lives. Two open-ended questions were included in this study in order to examine: a) the range of strategies used by respondents to minimise work-life conflict; and b) the benefits provided by employers to help academic staff balance their work and home lives. The responses to these questions are discussed below.

##### *a) Strategies used by academics to minimise work-life conflict*

A diverse range of strategies to reduce time-based and strain-based conflict between work and home was highlighted. These strategies are summarised below and illustrated with representative quotes.

In order to find time for family life and leisure in the face of considerable work demands, respondents emphasised the need for forward planning and effective time management. A broad range of time management strategies was revealed that involved academics' "ring-fencing" in some manner periods of time for family and leisure. The strategies adopted were frequently complex and painstakingly organised, in response to the specific demands of work and individual and family needs. These strategies included: leaving work at a predetermined time each day regardless of work demands; working late in the evenings in order to keep weekends free; working early in the morning in order to spend evenings with family; working a "split shift": i.e. coming home from work early to spend time with children and then working late at night when they have gone to bed; and resolving to keep weekends (or one day at least) work-free.

Some academics made comments suggesting that they kept an informal "deposit and withdrawal" account of their time, where work time was "borrowed" in order to accommodate family needs, and vice versa. This time was subsequently "repaid" in some way. One lecturer exemplified this view: *"I try to spend my research day with my children and work evenings and weekends where possible to make up the deficit"*. Clearly, the use of such strategies is dependent upon a high degree of schedule flexibility. A number of respondents indicated that they tried to integrate family and work activities in an attempt to satisfy the demands from both domains. One senior academic indicated that she had become extremely adept at *"trying to spot synergistic opportunities"* where work and family/leisure activities could be combined. Another revealed that she involved her children in her research projects in order to maximise *"family time"*.

Time management strategies were frequently planned and negotiated with family members. One lecturer reported: *"I sit down with my partner at the start of each term and we plan which evenings and weekends I will work and which I will devote to spending quality time with my family"*. Although many academics identified the need for forward planning in order to achieve an effective work-life balance, they also highlighted a frequent need to re-negotiate plans in response to changing work and family circumstances. In particular, parents of young children frequently commented on the fact that unexpected family incidents, such as a sick child, could throw their meticulously planned arrangements into disarray.

In terms of work-to-family conflict, the inconsistency in levels of demand through the academic year, having to cover for absent colleagues, and responding to work initiatives were also thought to create difficulties in planning ahead. Respondents frequently commented on the difficulties they experienced in trying to keep even one day a week a *"work free zone"* in the face of heavy and unpredictable work demands. Some remarked on the personal cost of trying to conserve time for family and leisure; for example: *"I make every effort to keep weekends free from work although this means I regularly work for 12 hours on a weekday"*. Some respondents with teaching roles remarked that the increase in student numbers had resulted in more evening lectures being timetabled. This extended the working day considerably, especially if there were work commitments early in the day. Others referred to expectations on the part of their institutions that they would attend recruitment events during evenings and weekends. Clearly, the options to develop an effective work-life balance will be seriously constrained under such conditions.

Although academics frequently revealed that they wished to spend more of their time involved in family life and leisure activities, there was a general recognition that academic work is *"not a 9 to 5 job"*. In highlighting a considerable degree of variation in what constituted an *"acceptable"* degree of work-life integration, these responses reflected the quantitative data discussed in Section 5.5.1 earlier in this chapter. Some respondents asserted that they *chose* to work long hours and wished their work and home lives to be highly integrated because they were highly involved in their work and enjoyed it considerably (especially their research activities). One academic illustrated this perspective: *"I don't see conflict between work and home because I don't make a big distinction between my working and non-working life - and I don't want to either"*. Another maintained that any conflict she experienced was self-generated: *"I pressure myself rather than my managers pressurising me - I choose to work long hours and work during evenings, weekends and holidays"*.

Some academics desire a high degree of integration between work and home, again reflecting the quantitative data discussed above, whereas others prefer a fairly clear physical and/or psychological boundary between the two domains. One lecturer exemplified this view: *"Priority for my attention is work during 'normal' working hours and home during other times"*. The strategies utilised by academics to stop the demands of their work from intruding into their home lives varied considerably. Some indicated that they refused to attend evening meetings and open days held during weekends. Others maintained that they refused to provide their employers and colleagues with home phone numbers, and/or switched off mobile phones during evenings and weekends.

Respondents reported that they tried to lessen their workloads by refusing to take on additional work tasks, failing to meet non-urgent deadlines and decreasing their personal standards of performance. One senior lecturer wrote: *"Recently I have adopted an 'it can't be done' strategy because the workload is so great. Something has to be left out and I don't want it to be my family"*. Another academic revealed: *"I try to say 'no' more often to new work and let the quality of some of what I do decline"*. However, lecturers and researchers with permanent contracts might have more scope to restrict their work activities than their counterparts who are employed on a fixed-term basis. Several respondents employed on a temporary basis maintained that their options for maintaining an acceptable work-life balance were limited as their positions were too insecure to even consider refusing extra work.

Although attempts were frequently made to restrict work demands and reduce personal standards in an attempt to preserve work-life balance, some academics maintained that such practices were antithetical to the workplace culture and likely to jeopardise career prospects. Several comments made by respondents highlight these issues: *"I always put my children first when they require it even if I suffer professionally from doing this"*. And: *"I manage to obtain a (work-life) balance by being very firm with myself, but in doing so I am going against the norm in my office which creates this awful stress and tension for me"*. Also: *"I have sacrificed my promotion prospects as the only time I could do research is during evenings and weekends and I am not prepared to spend so much time working."* The costs to self-esteem, professional identity, and relationships with colleagues of refusing to do work tasks, and putting in what might be considered a "second-rate" performance were also highlighted. Academics involved in teaching and supervision also commented upon the guilt engendered by not fulfilling their perceived obligations to their students.

In general, the strategies discussed above reflect time-based conflict between work and home. Academics also frequently disclosed personal experiences of strain-based conflict. These respondents described the difficulties they experienced in trying to cope with the worry and anxiety engendered by work demands when engaging in family and leisure activities. One lecturer commented: *"I try to switch off as much as possible but work nags away; you always feel like you should be doing more. You know that work is piling up waiting for you so you can't enjoy doing other things."* As a way of reducing strain-based conflict, some respondents revealed that they had been forced to distance themselves psychologically from their work and/or become more cynical about it. For example: *"I am improving my work-life balance simply by being driven on a daily basis further towards just not caring any more about what happens at work. I still do my job, but I am feeling increasingly detached from it"*. And: *"The only way to avoid conflict is not to care about what is happening to the state of current HE policy; not to care about students or education, and play the research game for your own self interest"*. Another researcher remarked upon the necessity of reducing her psychological involvement in work: *"Due to ill health I have recently begun to detach myself emotionally from work so I don't carry problems home with me"*. Similar to the strategies utilised to manage time-based conflict (discussed above), however, the professional and personal costs of reducing psychological engagement in work were highlighted.

A number of respondents indicated that they were able to discuss with their managers ways by which their work-life balance might be improved. Some revealed, however, that they felt unable to broach the subject with their line manager as he or she had a similarly poor (or even worse) work-life balance. Conversely, respondents from the management grades indicated that they attempted to reduce the work-life conflict they experienced by delegating tasks and responsibilities. The risks to colleagues' wellbeing and work-life balance in "off-loading" work were, however, recognised and a number of managers revealed that they resisted this practice wherever possible, even at the expense of taking on extra work themselves.

Academics referred to the negative impact of work demands on their personal relationships. One senior lecturer commented: *"Although over the years I have become better at estimating the amount of time I will have free from work, I often disappoint family and friends when they realise how little time there is left for them"*. Some respondents revealed that their partners actively disapproved of their workloads, and the fact that they had little time or energy left to participate in family life or leisure activities was a subject of some contention. One female academic commented on the impact of her job on her relationship with her partner: *"A lot of my weekend and holidays is spent sleeping. My*

*husband gets a bit fed up about my constant tiredness*". Another senior academic revealed the method he utilised to cope with his partner's disapproval: *"In order to meet deadlines I work secretly at night once my wife has gone to sleep and first thing in the morning before she wakes"*.

Although respondents commented on the negative impact of their jobs on family life, they also remarked upon the high level of support that they obtained from their families when faced with work difficulties. The need for family and friends to understand the heavy and often unpredictable nature of academic work, and the strain that it can engender, was emphasised. For those who were married or cohabiting, a good level of communication between partners was considered to be an important factor in developing an effective work-life balance. Some academics revealed that they were able to reduce both time-based and strain-based conflict by "talking things through" with their partners. Others, however, identified the risk that frequent discussions with family about work matters might pose. A number of respondents (most notably those with partners who were also working in higher education) revealed that they had agreed with their partners to restrict discussions about work during evenings, weekends or holidays. For example: *"My partner is an academic and we carry out research together – we have an 'at home' agreement on how long is spent discussing work issues"*. Some indicated that they avoided discussing negative aspects of work with their family and focused on *"positive or neutral factors"* only.

The value of spending quality time with partners and friends as a way of maximising work-life balance was highlighted. Academics also utilised many other strategies in order to establish a balance between work and home. These included exercise, hobbies, holidays and weekends away, counselling and alternative therapies. A number of respondents revealed that they used less adaptive methods in an attempt to "manage" the demands of their work and home roles, such as drinking alcohol, denial or other avoidance coping mechanisms. Some academics also remarked that they reduced the number of hours that they slept, whilst several revealed that, in desperation, they had taken sick leave in order to give themselves *"a breathing space"* to catch up with work demands. In an attempt to gain an acceptable balance between their work and home lives, a few respondents also reported that they had formally reduced their contracted hours. The financial costs of this practice were, however, highlighted. One female researcher indicated that moving to a 0.6 position during the previous academic year had resulted in greater flexibility and a better work-life balance - although she still did what would be considered a full-time job, and had to suffer the financial consequences of moving to a fractional post.

Despite making serious attempts to develop a work-life balance that meets their needs and those of their families, a number of academics revealed that they were unable to accomplish this. Some expressed the optimistic belief that, although unable to achieve an acceptable work-life balance under present conditions, they might be able to accomplish this eventually. Perhaps more pessimistically, a few older respondents remarked that they had given up trying to achieve a balance between their work demands and their home lives, and anticipated redressing the balance during their retirement. The risks to personal relationships and individual wellbeing over time of a failure to achieve work-life balance were, however, recognised.

*b) Benefits provided by employers to minimise work-life conflict*

Respondents were asked to describe any benefit or working condition provided by their institutions to help them balance their work and non-work lives. The most commonly cited benefit was flexibility: i.e. the ability to work flexible hours, and work from home during office hours. Some respondents indicated that the flexibility they experienced compensated, to some degree, for the heavy demands of their jobs: for example, *"I really appreciate the flexible hours academic life permits despite the time pressures and stress."*

Few universities appear to have formal policies regarding flexible working for academic staff, although some respondents indicated that their institutions were considering adopting them for certain categories of employee. A considerable degree of "informal" flexibility was revealed in the analysis of responses to this question, with some academics being able to work where and when they wished provided teaching commitments and work deadlines were met. Other respondents indicated, however, that they were able to work from home infrequently. Several respondents reported that their universities had introduced "visibility" policies, where academic staff were expected to be present during normal office hours. One lecturer who worked under such conditions commented: *"I can ask my line manager if I can work at home if any particular project comes up, but I try to minimise these requests because I am expected to be in work from 9 – 5"*. Some academics mentioned that, although they were expected to be available in their places of work during normal office hours, there was no official policy for time off in lieu if they worked during evenings and weekends or had holidays disrupted by work demands. However, these respondents also mentioned that, even if some form of time compensation was available, it would not be easy to avail themselves of this due to pressures of work.

Analysis of responses to this item suggests that the ability to work flexibly is not determined at an institutional level but is, to a large extent, dependent upon individual line

managers' policies. Some academics observed that, even within the same department in their universities, different work groups had different attitudes towards this practice. The remarks of several respondents highlighted a negative attitude towards working at home in their institutions, as employees who worked flexibly or who worked from home were often considered by their line managers to be slacking. Nonetheless, respondents also referred to line managers *"who appreciate that life outside work needs attention"*. In particular, institutions and individual line managers were frequently perceived as being responsive to the needs of academic staff with young children. Many practices were highlighted, such as sympathetic timetabling for parents, flexible working hours to accommodate childcare, and a relaxed and supportive approach to children's illnesses and other domestic emergencies. Several respondents revealed that their institutions provided them with benefits such as childcare vouchers and details of local play-schemes and babysitters to help them during school holiday periods.

Some strong opinions were expressed about colleagues with children having "unfair" advantages over those who were child-free. In general, these respondents maintained that employees were just as likely to experience difficulties in supporting other family members as they would young children. One academic commented thus: *"Work-life balance should not only be aimed at those with children. I have different types of dependants (elderly parents and disabled partner) but no provision for these is ever given consideration and I never get special treatment"*.

As well as flexible working and working at home, other facilities provided by universities to help academic employees with work-life balance were highlighted. Sports and gym facilities were mentioned in this regard. Some respondents indicated that their institutions offered stress management training that was designed to help them achieve a more effective work-life balance. A number of academics indicated that their institutions had provided them with facilities such as networked computers, e-mail access and IT support to enable them to work from home. Observations were made by some respondents, however, that many of the facilities provided by institutions, ostensibly to assist them in achieving work-life balance, merely made it easier for them to work longer hours. More specifically, although flexible working was generally seen to be desirable, some ambivalence was expressed about its benefits in managing the work-home interface. One lecturer exemplified this view: *"In theory I can work flexible hours, but this is not true in reality due to the type of work I do and my workload – to me, working flexibly means working longer and harder!"*



Some academics maintained that their institutions did nothing to help them balance the demands of their work and non-work lives: for example, *"I am not aware of any such benefit or condition. The culture in my institution is of working hard and not acknowledging that this is done at the expense of extremely long working hours."* Emphasising the need for sector-wide change, one academic wrote: *"Higher education employers must create a culture where a proper work-life balance is regarded as desirable and an aid to productivity rather than an obstacle"*.

## **5.5 Discussion**

The findings of this study indicate that, on the whole, academic staff employed in UK universities perceive a fairly high degree of time-based and strain-based conflict between work and home which is strongly related to a number of different negative outcomes. Evidence has been found that the work-life conflict experienced by academics is attributable to a number of factors. The intense and diverse demands currently experienced in the sector, together with a propensity for high levels of commitment to work, were found to make a strong contribution to work-life conflict. The findings further suggest that the risk of work-life conflict in the sector is likely to be compounded by specific working practices that have arisen in response to high levels of work demands and perceptions of poor organisational support.

In accordance with the findings of Gareis *et al.* (2004), this study provides evidence that the timing of work is a crucial factor in predicting its interference with family and leisure roles. Academics who regularly worked during evenings and weekends tended to experience more conflict between work and family life. This time-based conflict was particularly characterised by work demands interfering with family responsibilities and plans for leisure activities. Although the qualitative data suggests that some employees put considerable effort into developing strategies to manage time-based conflict, the heavy and inconsistent demands inherent in academic work can sometimes challenge even the most elaborate plans. The risk to individual wellbeing of working long hours was also highlighted; academics who worked more frequently outside office hours tended to report less job satisfaction and more psychological and physical health symptoms. It should be emphasised, however, that the strong positive relationship observed between working during evenings and weekends and job involvement, suggests that some academics work long hours through choice due to high levels of engagement in their jobs. This observation was supported by the qualitative data.

As well as time-based conflict, evidence was provided that academic staff commonly experience a moderate degree of strain-based conflict between work and home. This was particularly characterised by respondents being preoccupied with work issues when outside the workplace, experiencing anxiety and guilt relating to unfulfilled work tasks, being irritable with or withdrawing from family and friends, and experiencing difficulties in relaxing. Previous research has found that all of these factors are likely to impair the ability of employees to meet non-work responsibilities and participate fully in family life and leisure activities (Greenhaus *et al.*, 2000). In accordance with the findings of research conducted on a small sample of academics by Doyle (1998), the qualitative data obtained in this study also highlighted considerable friction in personal relationships as a result of the demands of academic work.

Consistent with previous research findings highlighting relationships between specific job features and work-life conflict (e.g. Butler *et al.*, 2005; Voydanoff, 2004), this study found work demands and lack of social support from colleagues and managers to be amongst the most important predictors of work-life conflict. The findings also provide some initial support for Kossek and Lambert's (2004) prediction that lack of control over where, when, and how an employee works may be one of the most critical predictors of work-life conflict. This implies that the ability to adapt working hours to meet personal and/or family needs may help employees to cope with the competing demands of the work and non-work domains. The protective role played by schedule flexibility and social support in the relationship between job demands and perceptions of work-life conflict will be discussed later in this section.

A review of the literature highlights strong associations between work-life conflict and employee strain (e.g. Eby *et al.*, 2004). The present study found that academic employees who reported more conflict between their work and home lives tended to be less physically and psychologically healthy, more dissatisfied with their jobs and more likely to express leaving intentions than those who reported lower levels of conflict. Although the risk of common method variance artificially inflating the association between work-life conflict and psychological distress should be recognised, in the present study this risk is minimal. The measure of work-life conflict utilised (based on Netemeyer *et al.*, 1996) not only assesses strain-based conflict, but also examines time-based conflict – which is considerably less likely to tap into the affective domain. Moreover, the correlation coefficient found between the scores for psychological distress and work-life conflict is similar to that observed with physical symptomatology and, in neither case, are they high enough to indicate multi-collinearity.

The findings of this study have provided some evidence to support Tetrick and Bufardi's (2006) proposition that models of work-life conflict might be enriched by the inclusion of individual difference factors. Some insight was provided into the role played by job involvement and over-commitment in the wellbeing of employees in general, and to work-life balance in particular. Levels of job involvement found amongst academic employees were generally high, with many showing signs of over-involvement; very little evidence of alienation from the job role was observed. In accordance with the findings of Greenhaus *et al.* (1989), respondents who were more involved in their jobs tended to report more psychological and physical symptoms than those with lower levels of involvement.

As a signifier of engagement with the work role (Brown, 1998), job involvement is of clear relevance to the work-home interface. The findings of the present study suggest, however, that the role played by job involvement in this context might be complex, and that the risks might be exacerbated by the nature of academic work. Significant positive relationships were found between job involvement and perceptions of conflict between work and home. Furthermore, in accordance with the findings of Greenhaus and Beutell (1985), academics who were more involved in their work tended to perceive weaker boundaries and more integration between work and home. Interestingly, however, evidence was found that respondents with higher levels of job involvement tended to *prefer* more integration between the two domains. The findings that academics who were more involved in their work experienced more job satisfaction, and were less likely to consider leaving the profession, suggest that they continue to enjoy their work regardless of its likely negative impact on their health and family life.

The literature on the implications of over-commitment for employee wellbeing has been supported and extended by the findings of this research. Strong negative relationships between over-commitment and both health and job satisfaction were observed in Study 2a, but its relevance to the work-home interface has now also been highlighted. As was the case with job involvement, academics who were more over-committed to their jobs perceived weaker boundaries and less segmentation between their work and home lives. Perhaps more importantly, over-commitment emerged as one of the most significant predictors of work-life conflict. Contrary to expectations, neither job involvement nor over-commitment moderated the relationship between job demands and work-life conflict. It is possible that academics who are highly involved in their work and/or over-committed to it perceive their job roles to be more salient than their family roles, regardless of the level of demand they experience. Nonetheless, the fact that they report higher levels of work-life conflict suggests that academic employees who are more involved and over-committed might perceive the impact of these tendencies to be a cause for concern. The clear

relevance of job involvement and over-commitment to the wellbeing of academic employees, and the paucity of research in this area in general, strongly suggests that the role played by these individual difference variables in the work-home interface should be further examined.

For many academics who responded to this study, the boundaries between their work and home lives were highly permeable, and the two domains were highly integrated. Those with weaker boundaries and less segmentation between work and home tended to perceive more conflict between their work and home lives. Indeed, the strength of the boundaries between work and home emerged as a significant independent predictor of conflict between the two life domains. Furthermore, in accordance with previous research findings (e.g. Desrochers *et al.*, 2004), the importance of clear boundaries between work and home to the general wellbeing of respondents was highlighted, as academics with less separation tended to report more health symptoms and find their jobs less satisfying than those whose work and home roles were more segmented.

In response to proposals made by Tetrick and Buffardi (2006), this study also examined the extent of “fit” between academics’ present and ideal levels of work-home integration, and how any discrepancy found was related to perceptions of work-life conflict. As anticipated, the level of integration between the two domains that is deemed acceptable by employees was subject to considerable variation. In accordance with studies of other professional groups (such as Gray, 1983; Lewis, 2003), few academics wished for total segmentation between their work and home lives. Nonetheless, the majority of respondents do not appear to have a work-life balance that is congruent with their own needs or those of their families.

The importance of achieving congruence is underlined by the finding that the closer the fit between present and ideal levels of work-life integration the healthier and more satisfied the employee. Whereas the degree of fit between present and ideal levels of work-life integration failed to emerge as a significant predictor of work-life conflict, in most cases, the correlation coefficients between work-life integration fit and strain outcomes were generally of a higher magnitude than those observed with the extent of integration only. Clearly, the concept of fit is likely to be useful in developing organisational interventions where employees are supported in their aims to achieve congruence between their current and ideal levels of work-life integration. Such interventions are likely to be more effective than more generic work-life balance programmes. This issue will be discussed further in Chapter 7 of this thesis.

Analysis of the qualitative data obtained in this study revealed that academics utilise a wide range of strategies in order to manage conflict between their work and family roles. In order to minimise time-based conflict, a number of respondents indicated that they endeavoured to place time restrictions on their work, with a varying degree of success. Some academics (most notably those with young children) maintained that the time-management strategies they had developed were frequently insufficiently robust to accommodate unpredictable demands related to their work or home roles. Under such circumstances, the need to rely heavily on the understanding and accommodation of partners, family and friends (and even colleagues and line managers) was emphasised.

Evidence was provided that academics frequently cope with strain-based conflict (and to some extent time-based conflict) by attempting to distance themselves psychologically and physically from their work. Although such strategies might eventually lead to improved employee wellbeing (Bernier, 1998), emotional and behavioural distancing from work might not necessarily have positive outcomes for academic employees. Psychological distancing could lead to feelings of alienation from the work role and reduced levels of involvement that, in turn, might eventually result in lower levels of personal accomplishment, lower self-esteem and reduced levels of job satisfaction. The qualitative data obtained in this study also highlighted the risk to academics' career progression and professional identity in attempting to regulate working time and engagement in work in a working culture where a high degree of commitment appears to be the norm.

The findings of this study reveal that academic employees frequently work from home and that a wide range of tasks is done there. Some variation was apparent, however, in the extent to which academics are permitted to work from home during normal office hours. A minority of respondents indicated that their line managers permitted them to work from home only rarely, whereas others could generally work where and when they chose. On the whole, lecturers and researchers wished to work from home more frequently: this appears to be mainly because they believe that the frequent interruptions, noise and lack of privacy that they experience when attempting to work in their institutions has a deleterious impact on their job performance. Although it has not been possible to discern the impact of disruptive working conditions on performance in the present study, there is some evidence in the literature to support this notion. Experimental and field research conducted by Banbury and Berry (1998; 2005) indicates that background noise at work considerably impairs levels of concentration and performance on a range of cognitive tasks; employees do not appear to habituate to such working conditions.

As discussed above, many academic employees work during evenings and weekends on a regular basis. Some respondents indicated that they preferred to work in their institutions outside office hours to complete unfinished work in an attempt to maintain a physical boundary between the work and home domains. The majority of academics who responded to this study, however, attempted to accommodate to the competing demands of work and home by taking work home to do during evenings and weekends. For some, this was a way of spending time with their families whilst simultaneously meeting professional deadlines.

It has been argued that working in the home environment on a frequent basis might make it more difficult for an employee physically and mentally to disengage from work, thus increasing the potential to experience work-life conflict and other forms of strain (Sullivan & Lewis, 2006). The findings of the present study provide little evidence, however, for a wholly negative impact on wellbeing of working at home. Although academics who regularly worked at home tended to report weaker boundaries and more integration between their work and home roles, the conflict they perceived between the two domains was not significantly higher than for those who worked at home only rarely. The value of examining the work-home interface through a person-environment fit framework was further emphasised in this study with regard to the impact of working at home. Academics who indicated that the degree to which they worked in their home environment was more congruent with their needs tended to perceive lower levels of work-life conflict, less psychological distress and more job satisfaction. As with work-life integration discussed above, these findings suggest that organisational policy relating to schedule flexibility and home working should recognise the importance of individual preferences and family needs. This will be discussed further in Chapter 7.

Previous research findings relating to the impact of organisational work-life balance practices and policies on the work-home interface are generally mixed and inconclusive (Kossek & Ozeki, 1998; Allen, 2001). In particular, in the present study it was anticipated that schedule flexibility might enhance the ability of employees to cope with the competing demands of the work and non-work domains. No evidence was found, however, that schedule flexibility, social support, or employer support for work-life balance protected academics from the negative impact of job demands on their home lives. These findings suggest that the supportive features available to employees might be insufficient to offset the adverse consequences of the heavy demands inherent in academic work. Few respondents indicated that their employers provided them with any formal benefits to help them maintain a suitable work-life balance. Where such benefits were provided, levels of satisfaction with these were extremely low. Nonetheless, academics who perceived

greater support from their institutions, on average, reported significantly lower levels of conflict between work and home and other forms of strain. This suggests that a working environment that supports employees in developing better work-life balance is likely to improve employee wellbeing and job satisfaction and reduce staff turnover.

The findings of this study indicate that few universities provide formalised flexible working policies to their academic staff. Nonetheless, many academic employees in the UK appear to work flexibly in a more informal manner. The benefits of this type of schedule flexibility have been highlighted here, in that academics with more control over where and when they worked tended to perceive less work-life conflict and report lower levels of all strain outcomes. Responses to the open-ended questions also suggested that, for many academics, flexibility over where and when their work is done is generally seen as one of the most positive features of academic life. The impact of schedule flexibility on employee wellbeing is not, however, uniformly positive. The risk that high flexibility can further blur the boundaries between work and home (and therefore compound the negative effects of job demand on the work-home interface) has been recognised in the literature (Hill *et al.*, 1996). In the present study, comments made by a number of respondents raised some doubts over the extent to which formal and informal flexible working practices were beneficial to work-life balance. Evidence was also provided here that schedule flexibility might be a less positive feature for employees who are more over-committed to their jobs and who are more involved in them. Future research should examine the impact on the work-home interface of a lack of structure imposed by formal working hours, where certain types of employee might choose to work harder and longer in response to the demands placed upon them.

Levels of awareness of occupational health services, stress management training, and any other supportive features that are available to academic staff were low. Clearly, services designed to help employees manage their occupational wellbeing should be publicised more effectively within UK universities. Although almost one-half of respondents indicated that stress management and counselling facilities were available to them, few had actually utilised these services. Reasons for the low uptake of supportive services provided by universities in the UK cannot be established from this study. It is likely, however, that the extent to which issues relating to occupational stress and work-life balance are perceived to be stigmatised by managers and colleagues may be a determining factor in whether or not employees seek help (Chew-Graham, Rogers & Yasin, 2003). The level of reluctance expressed by respondents in this study about openly discussing stress-related problems and work-life balance difficulties suggests that such stigmatisation might be widespread in the university sector in the UK. Clearly, some work

may need to be done in the sector in creating a culture where open discussions relating to employees' needs could be undertaken.

## **5.6 Conclusion**

This chapter provided insight into a number of issues relating to academics' experiences of the work-life interface. In general, a fairly high level of conflict between work and home was revealed which was associated with poor health, low job satisfaction and intentions to leave the university sector. The main predictors of conflict between the work and home domains were a combination of features of the workplace (i.e. job demands and schedule flexibility), individual working practices (i.e. boundary strength between work and home) and individual difference factors (i.e. over-commitment)

Wide variation was found amongst academics in their opinions as to what constitutes an acceptable work-life balance. The qualitative data reported in this chapter also highlights some variation in the working practices and strategies that are adopted by employees in order to balance the demands of their work roles with their family lives. Findings suggest that certain practices, such as working during evenings and weekends and low segmentation between the work and home domains are particularly threatening to work-life balance. The value of utilising a person-environment fit approach to examining the nature and outcomes of work-life conflict was identified here. This national study is a first step towards gaining further understanding of the work-home interface in lecturers and researchers working in UK universities. The practical implications of the findings for the development of interventions to enhance work-life balance in the higher education sector will be discussed in Chapter 7.

The study reported in the next chapter introduces a longitudinal element to this programme of research. Comparisons are made between some of the key stressors and strains found in the two previous studies that were conducted six years apart. The levels of psychological distress reported by UK academics in the two studies are compared and comparisons are also made with a range of normative data. The next study also considers the extent to which the higher education sector in the UK meets minimum HSE standards for the management of job stressors amongst employees.



## **Chapter 6**

### **Stressors and strains experienced by UK academics: some comparative data (1998 and 2004) (Study 3)**

#### **6.1 Summary**

The next study introduces a longitudinal element to this programme of research. Key findings of the two national studies of academic employees previously reported in this thesis are compared. Study 1 (conducted in 1998) is used as a benchmark in order to examine the stability over time of working hours, specific work demands and levels of psychological distress reported by academics in Study 2 (conducted in 2004). The stability of leaving intentions over time is also assessed, and reasons provided for wishing to leave the higher education sector examined. This study also assesses the extent to which UK universities are meeting minimum Health and Safety at Work standards for the management of job stressors amongst their academic staff. Comparisons are also made between the levels of psychological distress reported by academics working in British universities and normative data obtained from most other occupational groups and the general population in the UK. The results of this study indicate little change in the levels of the majority of stressors experienced over the six-year period. Furthermore, the high levels of psychological distress observed in the sector in 1998 are undiminished and exceed those of other professional groups and the population generally. Evidence was found that several of the Health and Safety at Work standards, most notably those relating to work demands and social support, were not met. The results of this study are discussed, but their implications for individual employees and the higher education sector as a whole are examined in depth in Chapter 7.

#### **6.2 Introduction: The university sector in the UK, 1998 to 2004**

The first study presented in this thesis was conducted following a period of intense and wide-ranging change in the UK university sector. The results of Study 1 provided evidence that these changes had resulted in longer working hours, an increased level of demand, reduced control and support, greater conflict between work and home life, and higher levels of job insecurity for academic employees. A considerable proportion of the 1998 sample indicated that they had seriously considered leaving higher education. Although little systematic research has been conducted in the university sector in the UK since Study 1, there is some evidence that the pace of change has continued. The next section examines the changes that have taken place in the sector during the period from 1998 to 2004 when Study 2 was conducted. Research that has been conducted during this period

that is of relevance to this programme of research is reviewed. The aims of this study and the methodology are subsequently presented.

Since 1998, the higher education sector in the UK has experienced continued change, further challenging the resources of universities and increasing the demands placed upon their academic staff. Student numbers have continued to rise: the average student to staff ratio rose from 16:1 in 1998 to 21:1 in 2004 (HESA, 2004; AUT, 2005). The sector has moved further away from a culture of collegiality towards a “neo-liberalist” model which challenges the traditional conceptualisations of higher learning and academic autonomy. Some commentators have argued that the UK Government has increasingly exposed universities to market forces whereby academics are viewed as “knowledge workers” and educational outcomes as economic goods (Callinicos, 2005).

The pressure on academics to boost funding through entrepreneurial activities and forge links with business and industry has increased. Universities are being forced to compete more fiercely for students and research grants. Market-led policies have demanded regular curriculum redesign, extensive domestic and overseas marketing to boost recruitment, diversification of modes of delivery, and increasingly skilled classroom performance. A more diverse student population holding an increasingly “consumer oriented” approach to their studies is likely to have exacerbated these demands (Anderson, Johnson & Saha, 2002; Chandler, Barry & Clark, 2002; Bareham, 2004). The higher education sector has also moved towards providing their services over a wider range of hours and for a higher proportion of the working year. Moreover, research conducted in the period leading up to a previous Research Assessment Exercise (RAE) suggests that the forthcoming RAE (in 2008) is likely to intensify pressures placed on their staff by universities (McNay, 1997).

Research findings from various sources suggests that employment in the higher education sector in the UK has become less secure since 1998, as universities respond to over-supply of places in subjects that have lost favour in an increasingly volatile student market. A survey conducted in 2004 by the British Broadcasting Company (BBC) found that one in five UK universities had closed departments during 2003-2004, or indicated that they planned to do so in the forthcoming academic year (BBC, 2004). As well as more frequently offering voluntary redundancy and early retirement to staff, a growing number of universities are resorting to compulsory redundancy (Woodward, 2002). In anticipation of the forthcoming RAE, some institutions are making redundant those academic staff deemed “research inactive” or moving them to lower status posts usually involving more demanding teaching and/or administrative workloads (AUT, 2005). Universities are more

frequently engaging in mergers and acquisitions, which are also likely to increase perceptions of job insecurity in the sector.

Academic pay continues to be low relative to other highly qualified jobs in the UK (Metcalf, Rolfe, Stevens & Weale, 2005). Fixed-term contracts for academic staff have become more prevalent: a factor likely to have increased perceptions of job insecurity. Recent figures published by the Higher Education Statistics Agency indicate that around 50 percent of academics are currently employed in fixed-term posts (HESA, 2004). More specifically, it has been estimated that nine out of every ten researchers in UK universities are employed other than on permanent, full-time contracts (AUT, 2004b). The higher education sector currently employs 11 percent of all fixed-term contract employees in the UK: this is the largest concentration of any occupational group in this country with the exception of the hospitality industry (AUT, 2001).

Perhaps unsurprisingly given current working conditions, research conducted by the Universities and Colleges Employers Association revealed that difficulties in the recruitment and retention of academic staff had increased three-fold since 1998 (UCEA, 2002). The subject areas most badly affected were those such as computing and business, where higher rates of pay are available in other industries. A more recent study has concluded that such difficulties continue to exist in the university sector, further highlighting slow replacement of staff, a tendency to downgrade vacant posts, and a perceived decline in the quality of applicants, especially at senior levels (Metcalf *et al.*, 2005). The international competition for highly skilled academics has never been more competitive (Hugo, 2005). There is also a concern that the sector faces a “retirement bulge”, as academics from the 1960s expansion in the sector reach retirement.

There is evidence that academics continue to experience high levels of demand from their jobs. A report recently published by the Trades Union Congress (TUC, 2005) compiled from UK statistics, found that academic employees and teachers are more likely than any other occupational group surveyed to do unpaid overtime – on average in excess of 11 hours extra work each week. In 2002, the Higher Education Funding Council (HEFCE) commissioned a study of occupational stress in employees in UK higher education institutions. This research aimed to provide benchmarks to facilitate inter-institutional comparisons of stressors and strains experienced by university employees, and enable comparisons to be made with norms from other professional groups. A stratified random sample of all categories of staff working in several UK universities completed the ASSET questionnaire (Cartwright & Cooper, 2002). As noted in Chapter 1 of this thesis, the ASSET questionnaire assesses the perceived “stressfulness” of various features of work

and levels of psychological and physical symptoms. Preliminary analysis of the data indicated that job insecurity was the highest source of stress overall, across all categories of employee (Tytherleigh, Webb, Cooper & Ricketts, 2005). Furthermore, in comparison with other occupational norms, university employees were found to report significantly more stress relating to work relationships, control, resources and communication.

The results of the HEFCE project reflect some of those found in Study 1 of the current programme of study. However, a meaningful comparison between the findings of these studies cannot easily be made for two main reasons. Firstly, as discussed in Chapter 1, the ASSET questionnaire assesses generic aspects of work only. Consequently demands relating to “core” academic roles, such as conducting research and teaching students, were not examined. Secondly, the majority of participants in the HEFCE study were employed in academic-related, clerical and domestic roles: only just over one-third of respondents (35 percent) were academic staff. As only aggregate data from this study has been published (Tytherleigh, 2003), it is not possible to establish the stressors and strains specific to respondents from the academic grades.

Evidence has been provided above to suggest that academic work might have become even more demanding in the period since Study 1 was conducted in 1998. If this indeed the case, it would be expected that the high levels of self-reported stressors and strains found in Study 2 would have increased still further. Alternatively, the workforce might not perceive greater demands relating to their work, or they might have become acculturated to changes in the context and content of academic work. This would suggest that perceptions of stressors and strains by in the sector would remain stable in 2004 or possibly reduce.

### **6.3 Aims of this study**

This study compares levels of a number of key job stressors reported by the academic staff who responded to the 1998 and the 2004 surveys. Generic job stressors are considered (such as levels of demand and support and opportunities for promotion, training and development), as well as those that are more specific to academic work (such as pressure to conduct research, opportunities for scholarly activity and perceptions of quality assurance procedures). Whether the pace and extent of change in the sector has alleviated or intensified over time is examined. Levels of job insecurity and leaving intentions reported in the two studies are also compared. As retention of academic employees has become a serious concern in the sector, participants to the later study who expressed leaving intentions were asked to provide the reasons for this.

The stability of working hours in the sector over the six-year period is also examined in this study. The findings of Study 1 indicated that a considerable proportion of lecturers and researchers in UK universities were working in excess of the 48-hour weekly limit set by the European Union's working time directive. However, as this study was conducted in 1998 (the same year that the directive came into effect), the sector might not have had sufficient opportunity to introduce measures to reduce working time. This study uses the 1998 findings relating to working hours and time spent working during evenings and weekends as a benchmark in order to examine any changes in overall working hours in the university sector in the UK.

This study also compares the levels of psychological distress reported by UK academics in 1998 and 2004 in order to examine the stability of this measure over time. The studies reported so far in this thesis suggest that levels of psychological wellbeing in this occupational group may be poor. Little is known, however, about how academics compare with other populations. The measure of psychological distress utilised (the GHQ-12: Goldberg & Williams, 1988) is commonly utilised in studies of occupational stress and normative data is available from a wide range of occupational groups (Mullarkey *et al.*, 1999). As the measure is also used in longitudinal panel research (most notably the British Household Panel Survey), comparisons with the general population can also be made.

As discussed in Chapter 1, the UK Health and Safety Executive (HSE) has developed a set of management standards (or benchmarks) for measuring employers' performance in preventing work-related stress. Following extensive consultation with occupational psychologists and industry, the HSE has selected a number of job stressors that are considered relevant to the majority of UK employees (McKay *et al.*, 2004). Cut-off points have been set for these stressors, indicating that organisations will achieve the minimum standard only if a specified percentage of employees indicate that they are satisfied with the way these elements of work activity are managed. Although not yet legally binding, it is envisaged that these benchmarks will make it easier for the HSE to enforce change following investigations into stress-related health and safety offences. Many organisations in the UK have adopted these standards as a framework through which to assess the wellbeing of their employees (HSE, 2005). Little is known, however, about the extent to which the higher education sector in the UK meets these minimum standards. This study attempts to shed light on this issue. Areas where comparisons will be made with HSE benchmarks are job demand, job control, job support, bullying behaviour and role ambiguity.

## **6.4 Methodology**

### **6.4.1 Sample**

The sample for the 1998 study comprised 650 academics working in universities in the UK. For the 2004 study, the sample consisted of 844 respondents. Full demographic details of these samples can be found in Chapters 3 and 5.

### **6.4.2 Measures**

The measures utilised in this study can be seen in Appendices A and B.

#### *Job stressors.*

Comparisons were made between mean levels of 12 individual job stressors reported by respondents at the two points in time. The stressors selected were amongst those that were most highly rated in the two previous studies (see Chapters 3 and 5 for further details). Items examined perceptions of the manageability of workload, administrative demands, social support, opportunities for promotion, training and development, perceptions of communication, role ambiguity and job control. A number of stressors that were more job-specific, such as demands relating to teaching and student contact, were included.

A further eight items assessed respondents' perceptions of changes in their institutions (or in higher education in general) in the five-year periods leading up to each study. These items were mostly specific to academic work; they assessed perceptions of change in the status of that work, as well as changes relating to pressure to obtain research funding, to conduct research and to publish. Perceived changes in levels of support from managers and attitudes towards quality assessment procedures were also included. All of the above 18 items were presented in the form of statements, and responses were requested on a five-point scale (1 = strongly disagree and 5 = strongly agree). Mean levels were calculated for each item from both the 1998 and 2004 studies for comparison purposes.

Three further individual items were included in order to compare the proportion of respondents in the two studies whose levels of responsibility had increased during the preceding five year period, who felt under personal threat of redundancy, and who wished to leave the higher education sector. The response options for each item were "yes", "no" or "don't know". Respondents who indicated that they were seriously considering leaving the sector were invited to provide the reasons for this intention. This data was analysed by utilising thematic content analysis (Neuendorf, 2002) and a number of categories were

developed. As with the qualitative data presented in Chapter 5, a proportion of the data (c. 15 percent) was analysed by another researcher: an acceptable level of concordance was achieved ( $K = .81$ ).

#### *Working hours.*

Respondents in both studies were asked to indicate the average number of hours worked per week during term time, and estimate the proportion of these hours that were worked outside normal “office hours” (i.e. 9am to 5pm, Mondays to Fridays).

#### *Psychological distress.*

Levels of psychological distress were compared across the two samples by examining scores on the GHQ-12 (Goldberg & Williams, 1988). Full details of this measure and how it is scored can be found in Chapter 3 of this thesis (see Appendix B for the full questionnaire). For the purposes of the present study, the mean scores were calculated in order to compare the findings of the 1998 and 2004 studies. In order to facilitate comparisons with other occupational groups and the general population, the GHQ “caseness” method was used to estimate prevalence levels (indicating the presence and absence of a symptom). As recommended, a threshold score of three or above was used to indicate the presence of caseness levels of psychological distress (Mullarkey *et al.*, 1999)

#### *HSE Benchmarks.*

Data obtained from five individual items from the 2004 study were used to compare levels of key stressors reported by academic employees with the benchmarks recommended by the HSE (HSE, 2005). These items assessed levels of job demand, job control, social support, bullying behaviour and role ambiguity, but were not identical to the items recommended by the HSE. Most notably, the benchmarks for social support at work examines support in a global sense; in order to obtain more sensitive data relating to how levels of support from different workplace sources compare with the minimum standards, the present study examined support from colleagues, line managers and senior managers separately. Table 6.3 (which provides comparative data – see Section 6.5.6 below) presents details of the HSE items and those used in the present research. Responses were requested on a five-point scale (1 = strongly disagree and 5 = strongly agree). In order to facilitate comparisons with HSE benchmarks, the proportion of respondents in Study 2 who agreed or strongly agreed with each statement was calculated.

It should be emphasised that the items utilised in the present research were not identical to those recommended by the HSE (2005). Consequently, comparisons made between the findings of this research and their suggested benchmarks can only be approximate.

### 6.4.3 Procedure

The procedure for this study was as described in Chapters 3 and 4.

### 6.4.4 Approaches to statistical analysis

The quantitative and qualitative data were analysed according to the procedures described in previous chapters.

## 6.5 Results

### 6.5.1 Job demands, job insecurity and leaving intentions

Table 6.1 shows the percentage of the sample in the two studies that agreed or strongly agreed with the three dichotomous items relating to responsibility, threat of redundancy and intentions to leave. Chi-square tests were used to examine whether any differences found were statistically significant. A slightly lower proportion of respondents in the 1998 study (73 percent) than in 2004 study (75 percent) maintained that their level of responsibility had increased during the preceding five-year period. Although this suggests a two percent rise, this difference failed to reach statistical significance ( $\chi = 3.39, p = .06$ ). Nonetheless, these findings indicate that some three-quarters of respondents continue to perceive increasing levels of responsibility.

**Table 6.1**  
**Comparisons between levels of agreement with statements in 1998 and 2004**

	% agree				<i>p</i>
	1998	( <i>n</i> )	2004	( <i>n</i> )	
Level of responsibility increased	73	640	75	829	ns
Felt under threat of redundancy	19	630	26	829	***
Seriously considered leaving sector	44	642	48	826	ns

\*\*\* significant at the .001 level

Perceptions of job insecurity in the sector appear to have intensified significantly in the six-year period: 26 percent of respondents to the more recent study indicated feeling under personal threat of redundancy compared with 19 percent of those surveyed in 1998



( $\chi = 12.20, p < .001$ ). Almost one-half of the respondents to the 2004 study (48 percent) indicated that they had seriously considered leaving the university sector in the preceding five-year period, a greater proportion than the 44 percent so reporting in 1998. Although this difference failed to reach statistical significance ( $\chi = 3.49, p = .06$ ), it remains the case that almost one-half of respondents have seriously considered leaving the higher education sector.

Content analysis of the qualitative data revealed that the most commonly expressed reasons for wishing to leave higher education were:

- Job insecurity
- Job stress
- Work overload and conflicting job roles
- Poor management and increased bureaucracy
- Demands related to quality assurance procedures
- Poor prospects for promotion
- Poor pay
- Lack of respect and recognition for effort
- Long working hours
- Poor work-life balance

Responses indicated that many academics wished to leave higher education because of pay levels that were not commensurate with their levels of responsibility, the heavy demands made upon them, and the degree of stress they experienced from their jobs. Participants frequently highlighted considerable inequity between higher education and industry and private consultancy, in terms of salary and promotion prospects. Opinions were commonly expressed that working life outside the sector was less demanding and more rewarding. The change of culture in the sector towards a more commercial orientation was often nominated by respondents as a reason to leave. The negative impact of work on employee health and family life was also commonly cited. Some respondents commented that they had no wish to leave higher education personally, but were increasingly finding that capable and highly valued colleagues were leaving or retiring early due to the demands of the job and a wish to regain a more acceptable balance between work and family life.

### **6.5.2 Job stressors and sources of change**

Table 6.2 shows the mean scores for each of the job stressors in both 1998 and 2004 studies; *F* values and the level of statistical significance of any difference found are also

provided. As can be seen, in many cases, mean scores changed little over the six-year period. For example, no statistically significant differences were found between studies in overall levels of satisfaction with influence over decision-making, and with opportunities for promotion and training and development. In some cases, mean scores showed some improvement, although that improvement was commonly a small reduction in an already negative response. Satisfaction with support from colleagues was found to be significantly higher in 2004 than in 1998. Furthermore, levels of role clarity appear to have increased generally in the sector and perceptions of heavy administrative burdens reduced.

**Table 6.2**  
**Comparisons between means for 1998 and 2004 samples of stressors**

	Mean (SD) 1998	Mean (SD) 2004	F	p
Workload is manageable	3.39 (1.06)	2.84 (1.16)	85.8	***
Too much admin paperwork	4.02 (1.04)	3.88 (1.16)	5.4	*
Lack opportunities for promotion	3.47 (1.16)	3.52 (1.26)	0.6	ns
Good opportunities for training and development	3.06 (1.01)	2.97 (1.14)	2.6	ns
Communication is effective	3.56 (1.06)	2.39 (1.17)	381.7	***
My responsibilities are clear	2.49 (0.96)	3.56 (1.10)	360.4	***
Satisfied with influence over decisions	2.96 (1.14)	2.85 (1.29)	2.9	ns
Happy with support from colleagues	2.96 (1.01)	3.38 (1.14)	80.0	***
Lack time for students problems or queries	3.51 (1.03)	3.59 (1.16)	1.7	ns
Enough time to prepare for classes	3.48 (1.02)	2.68 (1.12)	173.0	***
Ample opportunity/support for scholarly work	3.76 (1.05)	2.16 (1.14)	698.1	***
Happy with research quality	3.24 (1.16)	2.86 (1.22)	34.3	***
Status of academic staff declined	4.29 (0.79)	4.15 (0.90)	8.1	**
More pressure to research	4.19 (0.85)	4.13 (0.94)	8.1	ns
More pressure to publish	4.58 (0.60)	4.43 (0.79)	15.0	***
More pressure for research funding	4.14 (0.87)	4.25 (0.94)	5.6	*
Management more sensitive to staff needs	3.99 (0.85)	1.93 (0.88)	1956.3	***
Too much emphasis on QA	4.00 (1.02)	4.28 (0.98)	26.0	***
QA fair representation of work	2.95 (1.08)	2.97 (1.11)	0.2	ns
QA compromised independence	3.27 (0.99)	2.97 (1.11)	2.5	ns

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\* significant at the .05 level; \*\* significant at the .01 level; \*\*\* significant at the .001 level

The degree of pressure to publish research findings perceived by academics was also significantly lower in 2004 than in 1998. This, however, remained one of the highest rated stressors.

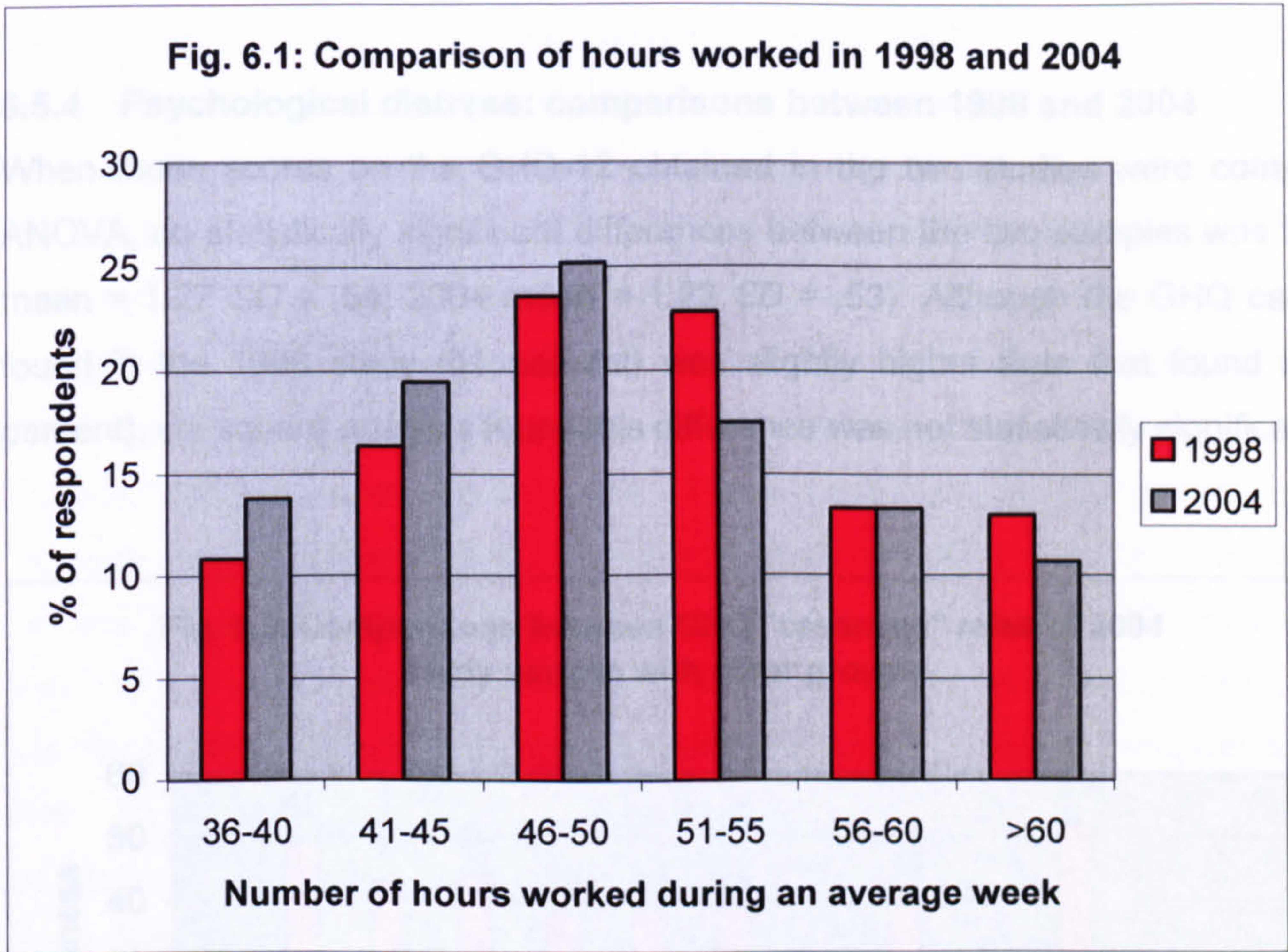
Some stressor items received more negative ratings in 2004 than in 1998. In general, academics who responded to the later study were significantly less likely to find their workloads manageable, communications within their institutions to be effective, and their managers to be responsive to their needs. Furthermore, a significantly higher proportion of respondents in 2004 than in the earlier study reported an increase in pressure to obtain research funding, but also a decrease in opportunities and support to undertake research. Levels of satisfaction with the quality of personal research were significantly lower in 2004 than in 1998. Perceptions of quality assessment procedures were also generally more negative in 2004 than those expressed in 1998.

### **6.5.3 Working hours**

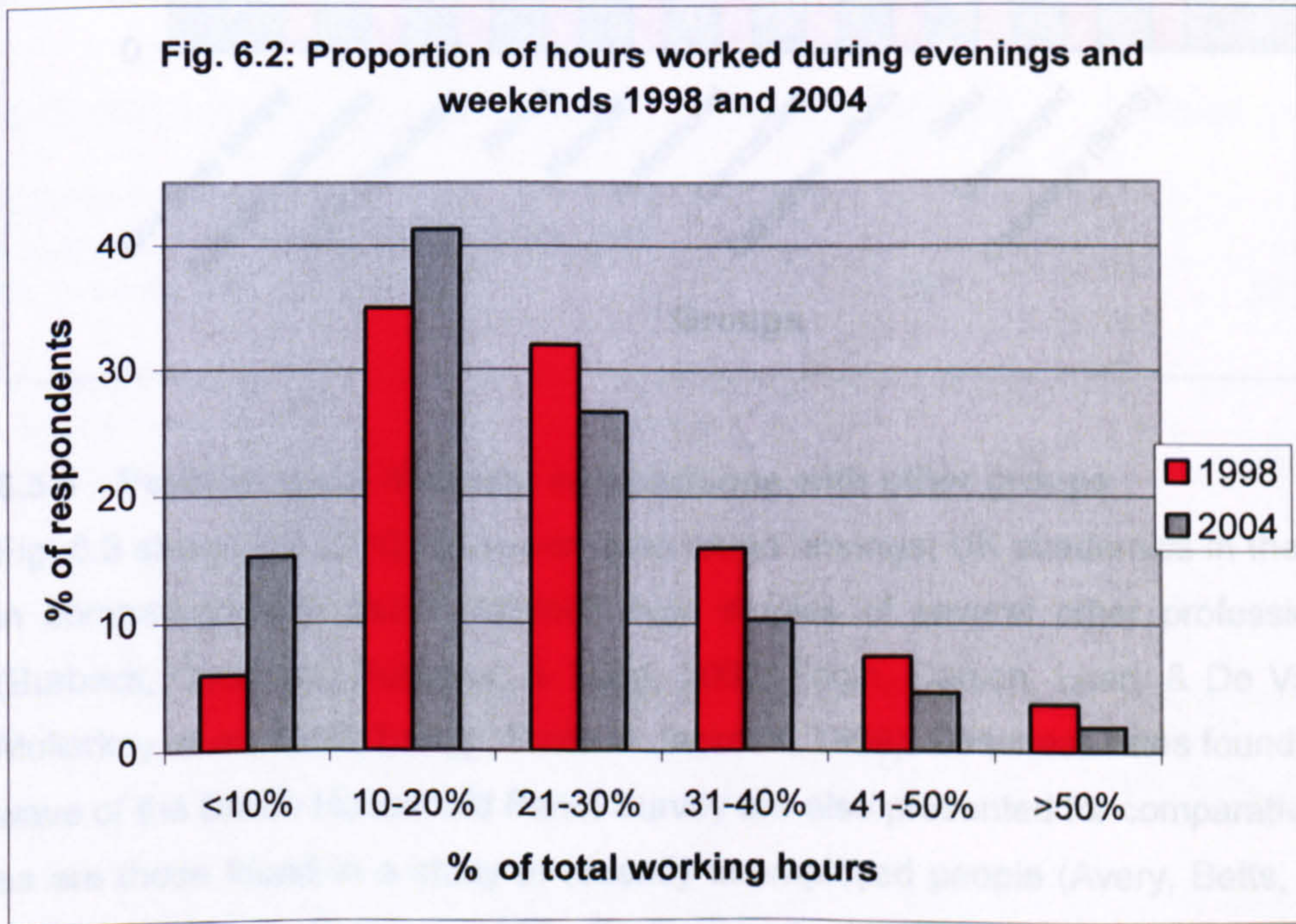
Fig. 6.1 compares the number of hours worked per week reported by respondents in the 1998 and 2004 studies. When comparing these findings, there is some indication that the average weekly working time for academics may have reduced. In the earlier study, 73 percent of the sample worked 46 hours or more in a typical term-time week, compared with 67 percent in the more recent study. Forty-seven percent of the 1998 sample and 41 percent of the 2004 sample reported that they generally worked in excess of 50 hours per week.

Respondents were asked to estimate the time that they spent working outside "office hours" (i.e. 9am to 5pm during weekdays and weekends). Fig. 6.2 compares the data obtained from the 1998 and 2004 studies. Fifty-nine percent of respondents in 1998 estimated that they undertook more than one-fifth of their overall work outside normal office hours, whereas 43 percent indicated this in 2004. In the earlier study, 11 percent of academics regularly undertook over 40 percent of their work during evenings and weekends, compared with six percent in the later study. This suggests that academics may be working slightly fewer hours during evenings and weekends, although this practice still appears widespread in the sector.

**Fig. 6.1: Comparison of hours worked in 1998 and 2004**



**Fig. 6.2: Proportion of hours worked during evenings and weekends 1998 and 2004**

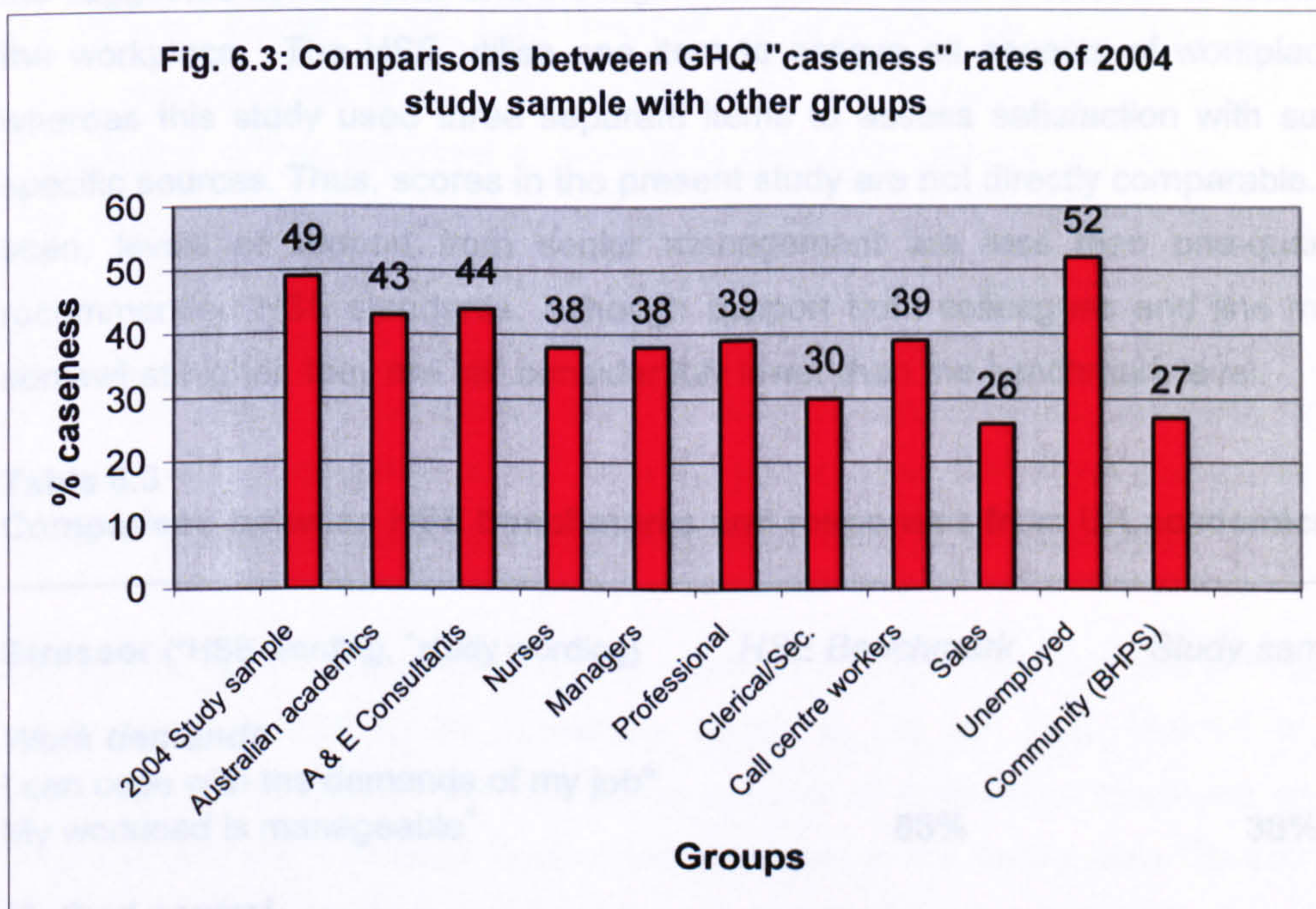


### 6.5.4 Psychological distress: comparisons with HSE Benchmarks

This study aimed to consider the extent to which the higher education sector in the UK is meeting the relevant HSE benchmarks for specific work stressors. Table 6.3 presents the data. As can be seen, the mean scores on the GHQ-12 are generally higher than those found in the HSE survey.

### 6.5.4 Psychological distress: comparisons between 1998 and 2004

When mean scores on the GHQ-12 obtained in the two studies were compared using ANOVA, no statistically significant differences between the two samples was found (1998 mean = 1.27 SD = .54; 2004 mean = 1.22 SD = .53). Although the GHQ caseness rate found in the 1998 study (51 percent) was slightly higher than that found in 2004 (49 percent), chi square analysis found this difference was not statistically significant.



### 6.5.5 Psychological distress: comparisons with other groups

Fig. 6.3 shows the GHQ caseness rates found amongst UK academics in the 2004 study in comparison with those obtained from studies of several other professional groups (Burbeck, Coomber, Robinson & Todd, 2002; Fagin, Carson, Leary & De Villiers, 1996; Mullarkey *et al.*, 1999; Sprigg, Smith & Jackson, 1999). Caseness rates found in the latest wave of the British Household Panel Survey are also presented for comparative purposes, as are those found in a study of recently unemployed people (Avery, Betts, Whittington, Heron, Wilson & Reeves, 1998; Taylor *et al.*, 2004). As can be seen, the level of psychological distress found amongst UK academics is somewhat higher than that found in studies of other occupational groups and the general population, and only slightly below that of the unemployed. The caseness level is also high in comparison with a recent survey of over 8,000 Australian academics conducted by Winefield *et al.* (2003).

### 6.5.6 Job stressors: comparisons with HSE Benchmarks

This study aimed to consider the extent to which the higher education sector in the UK is meeting the minimum HSE benchmarks for specific work stressors. Table 6.3 presents this comparative data utilising responses to the relevant items from the 2004 data. As can be seen, the benchmark minimum concerning bullying has been exceeded, and that relating to role clarity has been met. Levels of method control reported by academics are, however, somewhat lower than the stipulated level. Furthermore, the HSE recommends that at least 85 percent of employees should state that they are able to cope with the demands of their jobs; only 38 percent of academics that responded to this survey indicated that they were able to do this. There is also considerable discrepancy between the suggested benchmarks and the higher education sector in relation to social support in the workplace. The HSE utilise one item to assess all aspects of workplace support, whereas this study used three separate items to assess satisfaction with support from specific sources. Thus, scores in the present study are not directly comparable. As can be seen, levels of support from senior management are less than one-quarter of the recommended HSE standards. Although support from colleagues and line managers is somewhat higher, they are still considerably lower than the benchmark level.

**Table 6.3**  
**Comparison between HSE benchmarks and responses from UK academics**

<b>Stressor</b> (*HSE wording, †study wording)	<i>HSE Benchmark</i>	<i>Study sample</i>
<b>Work demands</b>		
I can cope with the demands of my job* My workload is manageable <sup>†</sup>	85%	38%
<b>Method control</b>		
I have an adequate say over work methods* I have a choice in deciding how I do my job <sup>†</sup>	85%	74%
<b>Social support</b>		
I get an adequate support from colleagues and superiors*		
I am happy with the level of support I obtain from <sup>†</sup>	85%	55% colleagues; 48% line managers 19% senior managers
<b>Bullying</b>		
I am not subjected to unacceptable behaviour such as bullying*		
I am not subjected to unacceptable behaviours (e.g. bullying) at work <sup>†</sup>	65%	68%
<b>Role ambiguity</b>		
I have a clear understanding of my roles and responsibilities**	65%	65%

## **6.6 Discussion**

The first study of this programme of research was conducted in 1998 following a period of profound change in the university sector in the UK. Perhaps unsurprisingly, therefore, lecturers and researchers who responded to this study tended to report increased demand from many job-related sources, high levels of psychological distress and strong leaving intentions. The findings of Study 2 conducted in 2004 suggest that, six years on, academic employees perceive little improvement in many of the stressors and strains that they experience.

A similar proportion of respondents in 2004 as in 1998 (e.g. approximately 75 percent of the sample) indicated that their levels of responsibility had increased in the five year period preceding the study. This is likely to be a function of the continued high rate of change and further increases in student to staff ratios referred to earlier in this chapter. This study also provides evidence that perceptions of job insecurity in the sector have intensified over the six-year period; more than one respondent in four reported felt under threat of redundancy in 2004 compared with around one respondent in five in 1998. This proportion should be compared with the level of perceived job insecurity amongst the general working population in the UK in the period from 1998 to 2004 which has remained stable at around 12 percent (see <http://www.iser.essex.ac.uk/ulsc/bhps>).

The results of this study support other research findings indicating that job insecurity has become widespread in the university sector in the UK (e.g. Metcalf *et al.*, 2005; Tytherleigh *et al.*, 2005). The rise in the number of academics employed on temporary contracts and the increased level of redundancies in the sector (see Chapter 1) may go some way towards explaining the increase in job insecurity found here. Large-scale studies conducted on a number of different occupational groups have found job insecurity to be a significant predictor of psychological distress (e.g. Ferrie *et al.*, 1998). Study 1 (see Chapter 3) found that academics who expressed leaving intentions tended to report higher levels of psychological distress. It is probable, therefore, that the high levels of job insecurity found in the higher education sector at the two points in time make a strong contribution to the chronically low levels of psychological health found in the sector.

A considerable proportion of respondents to both the 1998 and the 2004 study (48 and 52 percent respectively) indicated that they had seriously considered leaving academia. Leaving intentions were found to have increased significantly in the six-year period. The high level of leaving intentions revealed in this research does not appear to be a short-term reaction to recently imposed change, but a chronic problem facing UK universities.

Clearly, the extent of actual turnover behaviour in the higher education sector cannot be established by the findings of this study. The findings of other research suggests, however, that turnover intentions are likely to eventually result in turnover behaviour for a high proportion of employees (Morrell, Loan-Clarke & Wilkinson, 2001). As studies reviewed earlier in this chapter indicate that the sector is currently experiencing problems with recruitment as well as retention (Metcalf *et al.*, 2005), remedial action is required to maintain student to staff ratios even at their current high levels. The present study has highlighted a number of areas where intervention might decrease turnover in the sector. Respondents highlighted a number of reasons for wishing to leave, including high workloads, job stress, job insecurity, bureaucracy, long working hours and poor work-life balance, and a lack of confidence in the strategic direction that higher education is taking in the UK.

The cost of long working hours to individual wellbeing and family life has been highlighted previously in this thesis. The findings of the present study suggest, however, that working hours have not been further extended since 1998 and may have reduced for some academics. Nonetheless, working during evenings and weekends continues to be widespread in the sector and around one-half of UK lecturers and researchers appear to be currently working in excess of the 48-hour weekly limit set by the European Union's working time directive. The proportion of academics working more than the recommended limit should be compared with the 11 percent reported in a recent study of UK employees commissioned by the Department of Trade and Industry (Kodz, Davis, Lain, Strebler, Rick, Bates, Cummings & Meager, 2003). These findings indicate that the university sector has not yet responded adequately to the EU directive.

This study relied on respondents' estimates of hours worked during an "average" week. There is some reason to be sceptical of individuals' self-reports of their time at work. Respondents who claim to work long hours might exaggerate the amount of time they spend on the job due to miscalculations, social desirability, ambiguities in what constitutes "work", and an increase in work intensity which might mistakenly be perceived as an increase in actual duration (Robinson & Bostrom, 1994; Jacobs, 1998). Nonetheless, studies tend to find high correlations between individual self-reports of working hours and company records, thus providing a basis for confidence in standard self-report measures (Rodgers, Brown & Duncan, 1993). Future research might, however, utilise daily diaries as these have the potential to provide more detailed data on the extent of hours worked in the sector over time and the type of tasks performed (see Court, 1996).



Some aspects of work received more negative ratings in 2004 than in 1998. In general, academics who responded to the more recent survey were significantly less likely to rate communication in their organisations as being effective and to indicate that management were responsive to their needs. Moreover, respondents to the more recent study were more likely to report increased pressure to undertake research, but less likely to indicate that they had the opportunity and support necessary to do this. Perhaps as a consequence, levels of satisfaction with the quality of personal research output were found to have declined since the 1998 survey. Clearly, under current working conditions in the sector, where research performance is critical to advancement, the strain experienced by academic staff is likely to be compounded.

Differences were observed between the findings of the 1998 and 2004 studies that suggest a move in a more positive direction. Overall, levels of role clarity and perceptions of support from colleagues appear to have increased in the six-year period, and perceptions of the demands of administrative paperwork have slightly decreased. Although a greater proportion of respondents in 2004 than 1998 indicated that there was too much emphasis on quality assurance procedures in the sector, perceptions of the fairness of these and the extent to which they may compromise professional independence have remained generally stable during the six-year period. The finding that the degree of pressure to publish research findings was significantly lower in 2004 than in 1998 might be explained by the fact that the RAE was more proximate in the earlier study.

Although levels of several stressors discussed above have not worsened through time, and in some cases may appear to have diminished, academics' perceptions of many facets of their work remain strongly negative. For example, whereas a smaller percentage of respondents in 2004 felt that there was increased pressure to publish, it was still the case that a considerable majority (90 percent) of the sample perceived an increase in pressure. Similarly, whilst a smaller proportion of academics in the 2004 survey than in 1998 felt that the status of academic staff had worsened, more than three-quarters of the sample reported such decline, suggesting that the perceived status of academics has continued to deteriorate.

The high level of self-reported psychological distress present in UK academics has remained unchanged in the period from 1998 to 2004. The apparent stability of psychological poor health in the university sector, despite the worsening of some job stressors, might be partially explained by an alleviation of other demands noted above. At around 50 percent, the caseness rate found amongst academic staff is considerably higher than that found in most other occupational groups; they also compare unfavourably

with the rate reported in a national study of Australian academics conducted by Winefield *et al.* (2003). Furthermore, academic employees in British universities remain twice as likely as the general population to experience low-level psychological disturbance. Data from the BHPS suggests that, during the period between the two studies, caseness levels of psychological distress amongst employed people in the UK have remained fairly consistent at around 22 percent of the population<sup>1</sup>. The levels of psychological distress found in this research programme, and the method by which these were obtained, will be critically discussed in the next chapter.

The present study examined the extent to which the UK university sector complied with minimum levels of key job stressors recommended by the HSE. Results suggest that the benchmarks for job ambiguity and bullying at work have been achieved and the minimum acceptable level for job control was almost met. However, the degree of discrepancy between benchmarks for job demands and support found in this study gives cause for concern. The proportion of respondents who indicated that they could cope with the demands of their jobs is less than half of the minimum HSE benchmark. Moreover, the minimum standards for social support in the workplace are far from being achieved. The HSE benchmark for social support encompasses support from all sources in the workplace. It is possible that an employee might feel generally well supported by his or her colleagues, but poorly supported by supervisors and/or managers. In differentiating between different sources of support at work, this study has gained greater insight into perceptions of social support in the sector and how they might compare with HSE minimum standards. Whilst the minimum levels of support from each of the three sources were not achieved, it should be noted that support from senior managers is less than one-quarter of the benchmark minimum. Perceptions of support from colleagues and immediate supervisors are somewhat higher, but still fall far short of minimum acceptable standards.

The HSE management standards were developed following extensive public consultation (Mackay *et al.*, 2004). The benchmarks were designed to provide a basic framework through which organisations can compare current states with some required or desired state that is objectively defined. No expert knowledge of the field of occupational health psychology is deemed necessary for organisations to utilise this approach to the management of work-related stress; the HSE provides extensive guidance to employers on how to administer the measure, analyse the data, and interpret and communicate the findings (Cousins, Mackay, Clarke, Kelly, Kelly & McKaig, 2004). The job stressors that are included (i.e. demands, control, support, roles, relationships and change) are

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<sup>1</sup> See <http://www.iser.essex.ac.uk/ulsc/bhps>.

considered the “most critical predictors” of employee wellbeing (Mackay *et al.*, 2004, p. 101). The HSE framework can be criticised, however, as it fails to recognise the importance of other job stressors, such as work-life conflict, lack of promotion prospects and role conflict, as predictors of strain in organisational settings.

The HSE framework has additional shortcomings. It has been noted that some of the required states are very general and vaguely defined (Cousins *et al.*, 2004). In the HSE taxonomy, the six stressors have different “cut-off” points for establishing levels of risk. According to Mackay *et al.* the minimum standard for stressors relating to job content (i.e. demands, control and support) is set at 85 percent as there is strong evidence linking them to health outcomes, whereas the specified percentage for stressors concerned with job context (such as roles, relationships and change) has been set at 65 percent as there is less evidence for their relationships with strain outcomes. Nonetheless, the cut-off points do appear to be fairly arbitrarily defined, and cannot be justified either empirically or morally. It is of some concern that the implications of the HSE standards are that it is acceptable for more than one-third of the workforce to lack a clear understanding of their roles and responsibilities or, perhaps more importantly, to be subjected to bullying behaviour.

Despite these shortcomings, the HSE standards provide a clear, practical framework through which to monitor and manage work-related stress. Challenges lie ahead, however, in realising the potential benefits of a voluntary performance standard for the management of work-related stress, and in designing incentives to encourage employers to adopt the measurement programme. For the reasons explored earlier in this thesis, it is likely that, at least in the short term, secondary and tertiary stress management strategies will continue to be favoured over the structural organisational change implicated in adopting the HSE management standards approach.

## **6.7 Conclusion**

This study utilised benchmarks from several different sources in order to examine levels of stressors and strains experienced by academic staff working in UK universities. Whilst specific participants from the earlier study were not followed up in the 2004 study, the size of the samples, the number of British universities represented and the fact that the samples from both studies were broadly representative of employees in the sector, suggest that valid comparisons can be made.

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Findings indicated that the stressors and strains experienced by academics failed to improve significantly in the period from 1998 to 2004, and that academics' perceptions of many facets of their work remained strongly negative. The very poor level of psychological wellbeing found amongst academics remained stable and was found to be higher than studies of other occupational groups and the general working population in the UK. This study also examined the extent to which the university sector complied with minimum levels of key job stressors recommended by the UK Health and Safety Executive. Findings revealed that the minimum recommended standards for some job stressors were not achieved.

The final chapter of this thesis comprises a general discussion of the findings of this programme of research. The conceptual and methodological limitations of the studies contained in this thesis will be examined. The implications of the findings for the wellbeing of individual academics and the higher education sector as a whole will be explored. How the findings of this research programme might inform interventions to improve the wellbeing of lecturers and researchers working in British universities will be assessed. Finally, the next chapter will consider issues emerging from the findings of this programme of research where further research might prove fruitful.

## **Chapter 7**

### **Discussion and conclusions**

#### **7.1 Summary**

The objective of this programme of research was to systematically examine the stressors and strains experienced by lecturers and researchers working in universities in the UK. In view of the limitations of previous research in the field, the studies contained in this thesis aimed to address the broad questions: “What are the job stressors experienced by academic employees in the UK?”; “Which features of work are the strongest predictors of strain for this occupational group?”; and “How stable are these stressors and strains over time?” Furthermore, the research programme sought to consider the implications of its findings for individual academics and the university sector in the UK as a whole, and the ways by which the knowledge gained could be translated into interventions that might improve the wellbeing, job satisfaction and retention of employees. A comparison of the stressors and strains experienced by academic staff with other occupational groups, or the extent to which the sector complied with HSE minimum standards for the management of workplace stress was not an explicit aim of this research. Nonetheless, items were included that facilitated such comparisons, thus providing further insight into levels of wellbeing in UK universities and how interventions might be more precisely targeted to improve employee wellbeing in the sector.

This final chapter initially summarises the findings of the research studies that comprise this thesis. The levels of strain in the university sector in the UK that were identified in these studies over time are examined. The main job stressors that have emerged are then examined, and the features of academic work that are the strongest predictors of strain discussed. Particular focus is placed on: a) the performance of the two theoretical frameworks that were tested (i.e. the JDC[S] and ERI models) in predicting strain outcomes for academic employees; and b) issues relating to the work-home interface in this occupational group. The implications of these findings for the wellbeing of individual employees and the UK university sector are subsequently considered. How the findings of this programme of research could be utilised to develop interventions to improve the wellbeing of academic staff is then explored in the light of growing concerns about recruitment and retention in British universities. The strengths and limitations of the studies presented in this thesis in achieving the aims of this research programme are then addressed. The chapter concludes by discussing several issues emerging from this research programme, and highlighting directions for further research. Specific areas

where further research might be fruitful are also introduced at relevant points throughout this chapter.

## **7.2 Summary of the findings of this programme of research**

### **7.2.1 Study 1**

Study 1 (Chapter 3) comprised an investigation of the stressors experienced by a large sample of academic staff working in UK universities. It further examined relationships between the main stressors observed, and psychological wellbeing and job satisfaction. A range of more generic job stressors (such as a fast pace of work, and poor communication) was highlighted in this study, as well as those that were more specific to academic work (such as quality assurance demands, and pressure to conduct research and to publish). A considerable proportion of respondents appeared to be working in excess of the EU working time directive that had recently been introduced at the time the study was conducted (i.e. 1998). Levels of job insecurity and leaving intentions in the sector were found to be high. Although an unusually high level of self-reported psychological distress was also revealed, many academics who responded to this study indicated that they were deeply involved in their work and a considerable degree of intrinsic job satisfaction was highlighted. Regression analyses revealed that constraints on individual effectiveness, and the intense and wide-ranging changes experienced in the higher education sector in the UK (most notably perceptions of reduced levels of autonomy, support and job-related rewards), made significant contributions to the variance in strain outcomes. By far the most significant predictors of psychological distress, however, were demands relating to the work-home interface.

As intended, Study 1 highlighted several areas where further investigation was likely to provide greater insight into the work-related wellbeing of academic employees. Two models of job stress were identified as being of potential relevance to the working conditions of this occupational group: the job demand-control-support (JDC[S]) and the effort-reward imbalance (ERI) models. Due to the salience of the work-home interface as a predictor of strain in Study 1, and the paucity of research in this area, the nature, antecedents and outcomes of work-life conflict experienced by academic staff were also thought to warrant further examination. Greater insight into the extent of job involvement experienced by academic employees, and its relationship with wellbeing and work-life conflict, were also deemed worthy of consideration. Finally, the high level of psychological distress and the extent of leaving intentions revealed in Study 1 were also deemed worthy of revisiting to examine their stability over time.

### **7.2.2 Study 2a**

Study 2a (Chapter 4) tested the predictive validity of the JDC(S) and ERI models (both independently and combined) in explaining strain outcomes in academic employees. In recognition of the importance of work context in predicting strain, a measure of job demands was utilised that included some the job-specific and generic aspects of academic work identified in Study 1. The strain indicators operationalised in Study 1 (i.e. psychological distress and intrinsic job satisfaction) were broadened in Study 2a. A measure of somatic symptoms was included to facilitate an examination of the extent and predictors of physical ill health amongst academic employees. As the findings of Study 1 suggested that the job satisfaction experienced by lecturers and researchers might be multi-dimensional, an extended measure of job satisfaction was also utilised which encompassed: a) general and job specific sources; and b) intrinsic and extrinsic components.

The components of the JDC(S) and ERI models were significantly associated with each outcome variable in the anticipated direction. The components of the models that predicted each strain indicator were, however, subject to variation, as was the extent of variance explained. Some evidence was found to support the job strain and iso-strain hypotheses of the JDC(S) model. Although an interaction between demands and control contributed to the incremental variance in self-reported physical symptoms, no further two-way or three-way interactions in predicting strain outcomes were observed. In terms of the ERI model, additive effects of high efforts and low rewards, and some evidence of a two-way interaction between these variables, were observed for all strain indicators. Over-commitment emerged as a significant predictor of health indicators and job satisfaction, but not leaving intentions. A model of job stress that comprised elements of the JDC(S) and ERI models was found to perform more effectively in explaining some types of strain than either model independently. In general, a combined model (most notably job control, rewards and over-commitment) was the best predictor of psychological distress, whereas a combination of job demands, control, support, rewards and over-commitment accounted for the greatest proportion of variance in job satisfaction. In predicting physical health symptoms, components of the ERI model performed most effectively. Job-related rewards was the sole predictor of turnover intentions, and the degree of variance explained was small in comparison to other strain outcomes.

### **7.2.3 Study 2b**

Study 2b (Chapter 5) utilised quantitative and qualitative data to investigate a range of issues relating to work-life balance experienced by academic employees. This study utilised the same sample as Study 2a. Several models were tested to examine



relationships between features of the workplace, working practices and preferences, work-life conflict and strain indicators. As anticipated, strong positive associations were found between work-life conflict and psychological and physical ill health, job dissatisfaction and turnover intentions. A model that combined job demands, working practices, supportive features of the working environment and individual difference factors predicted a considerable proportion of the variance (64 percent) in perceived conflict between work and home. Job demands, schedule flexibility, work-home boundary strength, and over-commitment made the strongest contributions to the explained variance. Although the overall level of job involvement found amongst academic employees was high, it did not emerge as a significant predictor of work-life conflict. No evidence was found that either job involvement or over-commitment moderated the relationship between job demands and work-life conflict.

Analysis of the qualitative data obtained in this study highlighted considerable variation in the strategies utilised by academics to minimise conflict between their work and home lives. Many of these strategies involved a great deal of effort and ingenuity on the part of employees. Although some strategies appeared to help academics achieve an acceptable work-life balance, others had potentially negative consequences for family life and/or career prospects. Working at home was found to be commonplace. Some work at home in order to more effectively balance the demands of their jobs with those of family life. Others do so as the physical and psychosocial working conditions in their institutions are not conducive to concentration, creativity and optimum performance.

Many academics appear to work at home regularly during evenings and weekends as a way of coping with heavy and often unpredictable work demands. Unsurprisingly, boundaries between work and home were found to be generally weak, and the two domains highly integrated. The extent of integration deemed acceptable was subject to considerable variation, but most respondents had not achieved a work-life balance that met their personal needs or those of their families. Levels of strain rose as the discrepancy between present and ideal levels of work-life integration widened, and employees also appeared to benefit from clearer boundaries between the work and home domains.

The level of support provided by universities to assist their employees achieve their work-life balance needs was almost universally perceived to be poor. Some evidence of stigmatisation was revealed regarding open discussion of work-life balance issues and the related topic of occupational stress. Levels of awareness of formal flexible working options were comparatively low, but many academics reported a considerable degree of informal

schedule flexibility: this was positively related to health, job satisfaction and negatively related to turnover intentions. Contrary to expectations, no evidence was found that schedule flexibility, or other supportive features of the working environment assessed in this study, protected academics from the negative impact of job demands on personal life. However, the positive relationship between schedule flexibility and perceptions of work-life conflict was generally stronger for employees who were less involved in their jobs and less over-committed to them. This implies that control over where and when work is done might be less beneficial for academics with higher levels of job involvement and over-commitment.

#### **7.2.4 Study 3**

Study 3 (Chapter 6) utilised benchmarks from several different sources to examine levels of stressors and strains experienced by academic staff working in universities in the UK. A longitudinal element to this programme of research was introduced whereby key findings of Study 1 (conducted in 1998) were compared with those of Study 2 (conducted in 2004) in order to establish the stability over time of working hours, a number of specific work demands, and levels of psychological distress. Findings revealed that the stressors and strains experienced by academics had not improved significantly in the period from 1998 to 2004. Evidence was found that working during evenings and weekends continued to be widespread in the sector. Whilst working hours had not been further extended since Study 1 was conducted in 1998, a considerable proportion of respondents to Study 2 were still regularly working in excess of the European Union's working time directive six years on.

Although levels of several stressors were not found to have worsened through time, and in some cases appeared to have diminished, academics' perceptions of many facets of their work remained strongly negative in the 2004 study. Evidence was found that mean levels of some stressors in the sector (such as levels of responsibility, research demands, and poor communication) had increased further in the six-year period between the studies. Perceptions of job insecurity amongst academic employees also intensified between 1998 and 2004 and intentions to leave the higher education sector increased. Analysis of the qualitative data obtained from the respondents to the more recent study revealed that academics wished to leave the sector for several reasons, including high workloads, long working hours, job insecurity, low rewards, and poor work-life balance. The very poor level of psychological wellbeing found amongst academics in 1998 remained stable in 2004. The overall level of psychological health in the university sector was found to be lower than studies of other occupational groups and the general working population in the UK.

Study 3 also examined the extent to which the university sector complied with minimum levels of key job stressors recommended by the UK Health and Safety Executive. Whilst standards were achieved for some job stressors (such as role clarity and bullying behaviours), the large discrepancy between the findings reported in this thesis and benchmarks for job demands and social support (particularly by managers) gave cause for concern.

### **7.3 The wellbeing of academic employees: health, job satisfaction and leaving intentions**

Insight was provided by this research programme into the extent of physical and psychological symptomatology and job dissatisfaction experienced by academic employees in UK universities. Knowledge was also gained about the extent of turnover intentions in the sector, as well as the job-related factors that predicted such intentions. Although a considerable proportion of respondents reported experiencing minor somatic health symptoms in the previous twelve-month period, levels were no greater than levels reported in studies of other occupational groups (see Spector & Jex, 1998 for norms). One of the most striking findings presented in this thesis is the chronically high level of psychological distress reported by academics working in UK universities. Unlike physical symptoms, the incidence of psychological ill health found amongst academic employees compared unfavourably with other professional groups (see Mullarkey *et al.*, 1999) and twice as high as population norms (Taylor *et al.*, 2004). That levels of GHQ caseness amongst lecturers and researchers were only slightly lower than those reported by a sample of the recently unemployed (Avery *et al.*, 1998), further underlines the low level of psychological health in the university sector in the UK. The finding that levels did not significantly improve in the period between 1998 and 2004 indicates that the degree of psychological distress observed amongst academic employees in the earlier study was not merely a short-term reaction to recently imposed change, but a chronic problem that requires attention. Issues relating to the high levels of psychological wellbeing observed will be considered further later in this chapter.

In spite of the increased demands placed on academic staff and the chronically high levels of psychological distress revealed in the sector, Study 1 concluded that employees were at least moderately satisfied with certain aspects of their work. Study 2 examined the job satisfaction experienced by academics in a more systematic manner, and also assessed the related phenomenon of job involvement. The expanded measure of job satisfaction utilised in the later study (which encompassed generic and job-specific facets, as well as intrinsic and extrinsic features) provided greater insight into the nature and outcomes of job satisfaction in the sector than has previously been accomplished.

Findings revealed that satisfaction with more extrinsic factors (such as hours of work, rate of pay and promotion prospects) was generally low, whereas satisfaction with the more intrinsic and job-specific aspects of academic work (such as courses taught, relationships with students, and academic freedom) was considerably higher.

Based on the findings of a study conducted in the UK university sector, Doyle and Hind (1998) argued that academic employees will tolerate relatively low extrinsic rewards in exchange for other types of reward such as security of employment, satisfaction from teaching and research, opportunities for professional growth, and academic freedom. The research presented in this thesis provides strong evidence that, on the whole, UK academics gain considerable satisfaction from intrinsic elements of their work, and are highly involved in their jobs. The overall level of dissatisfaction in the sector is, however, underlined by almost one-half of the samples of Studies 1 and 2 indicating that they had seriously considered leaving the sector. Although not directly examined in the present research, it could be argued that the imbalance between the demands of academic work and the rewards obtained has widened over the last decade; under such conditions, satisfaction gained from teaching and research may no longer be sufficient to discourage some employees from considering alternative forms of employment. The finding that a perceived lack of job-related rewards was the sole predictor of leaving intentions (of the potential predictors tested) supports this notion.

Turnover intentions are believed to result from a psychological state of alienation from the job, the organisation, or both (Brown, 1996). Job involvement is generally considered to be the antithesis of job alienation (Kanungo, 1982). This perspective assumes that employees who identify strongly with their work are unlikely to wish to leave it. However, the high levels of both job involvement and leaving intentions found in the present research, and the lack of a significant relationship between these two variables, casts doubt on this viewpoint. Evidence has been provided that the individual difference variable over-commitment is more strongly related to leaving intentions than job involvement, and may pose a greater risk to the wellbeing and work-life balance of academic employees (see Study 2b).

Turnover intentions will eventually result in turnover behaviour for many employees (Morrell *et al.*, 2001). The extent to which these intentions are translated into actual behaviour in the university sector cannot, however, be established by the findings presented in this thesis. The factors that predict actual turnover in academic employees are worthy of future examination, as are the respective roles played by job satisfaction, job-related rewards, job involvement, and over-commitment in this relationship. The

implications of the high levels of turnover intentions found in the present research and issues relating to job involvement and over-commitment are discussed later in this Chapter.

## **7.4 Job stressors and their relationship with strains**

### **7.4.1 Working hours**

Evidence was found in Study 1 (conducted in 1998) that many academics employed in UK universities were working in excess of the 48 hour limit that had recently been recommended by the European Working Hours Directive. Study 2, conducted six years later, concluded that average working hours in the sector had reduced only slightly. Almost one-half of respondents in the later study exceeded the maximum stipulated by the Working Time Directive. Although, at the time of writing, this directive had not been enforced in the UK it is anticipated that sanctions will be introduced in the future against organisations that contravene its regulations<sup>1</sup>.

Both Studies 1 and 2 found that academic employees frequently work during evenings and weekends as a way of coping with the demands of their jobs. Moreover, many appear unable to engage in activities relating to research and professional updating during normal “office” hours. The validity of employees’ self-reports of working time was critically evaluated in Chapter 6 of this thesis. A somewhat different issue relating to working hours has been raised by Hochschild (1997), who has commented that employees commonly choose to work long hours whilst simultaneously complaining about it. Analysis of the qualitative data obtained in Study 2 revealed that some academics do, indeed, work long hours through personal choice, due to high levels of engagement in their jobs. Nonetheless, the finding that health symptoms and job dissatisfaction rose as working hours increased implies that this practice constitutes a risk for wellbeing. The strong association observed between working outside office hours and perceptions of work-life conflict also highlights the negative impact of this practice on the non-work domain. Several studies have highlighted the positive impact of a regular respite from job demands on psychological health and job performance (Westman & Eden, 1997; Fritz & Sonnentag, 2005). The potential benefits for organisations in providing working conditions where employees are given the opportunity to engage fully in family life and leisure activities during evenings and weekends are, therefore, clear.

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<sup>1</sup> At the time of writing, workers in the UK can agree with their employer that the 48-hour average maximum working week will not apply. In May, 2005 MEPs voted to phase out this provision.

The quantitative and qualitative research reported in this thesis suggests that some aspects of academic work, such as student contact and engaging in research activities, might make a positive contribution towards the wellbeing of employees. Future research could examine whether the type of work done by academics, and the level of involvement achieved in this work, moderates the relationship between working hours and strain outcomes. For lecturers and researchers, working long hours on a task where a state of “flow” is maintained, with minimal interruptions, might mitigate the ill effects of work demands, or even potentially enhance individual wellbeing and job satisfaction. The positive impact of flow (i.e. a deep state of focus that occurs when people engage in challenging tasks that require intense concentration and commitment) has been established (Csikszentmihalyi & LeFevre, 1989). Little is known, however, about the implications of flow experiences for the wellbeing of employees, or their job satisfaction. As a state of flow could be seen to be a pre-requisite for much academic work, the antecedents and outcomes of flow experiences in lecturers and researchers (and the implications of working conditions where these experiences cannot be maintained) should be investigated.

#### **7.4.2 Job stressors**

Several job stressors of relevance to academic employees were highlighted in Study 1. Included were stressors likely to be found in many types of job (such as workload, time demands, and promotion prospects), as well as those that were more specific to academic work (such as information overload, the demands of the teaching role, and pressure to conduct research). In particular, negative perceptions were expressed relating to the pace and extent of change that had been recently introduced in the university sector in the UK. Academics who reported more job stressors and more negative perceptions of change tended to be in poorer psychological health, experience less job satisfaction and express stronger leaving intentions.

Previous studies have found that interruptions are ubiquitous in organisational life (Jett & George, 2000). Their relevance to the wellbeing of academic employees has been established by the findings of this research programme. In Study 1 “frequent interruptions at work” was the most commonly endorsed stressor; this issue was subsequently examined in greater depth in Study 2. As discussed above, it is evident that much academic work requires intense concentration and creativity; for many employees, however, the opportunities for extended periods of uninterrupted reflection appear to be constrained. Although working during evenings and weekends might threaten individual wellbeing and work-life balance, this may be the only option available to many employees to fulfil the demands of their jobs.

Only just over one respondent in ten reported that they could work without interruption when in their institutions. Evidence was found that some universities in the UK are introducing open-plan office layouts for their academic staff. Although designed to promote flexibility and conserve space, this practice may compound the already high level of interruption experienced by many academic employees. The negative implications of frequent interruptions and office noise for job performance has been highlighted in several studies; there is little evidence that employees habituate to this (Jett & George, 2003; Banbury & Berry, 2005). Further research on the impact of interruptions on the performance of academic staff might lead to a greater recognition by employers of how current working conditions might have a negative impact on research and teaching output and pastoral care. Such research might also provide insight into how the physical working environment in UK universities could be designed to maximise employee satisfaction and job performance.

A considerable degree of job insecurity amongst academic employees has been highlighted in this research programme; this was found to have intensified significantly in the period from 1998 to 2004. This insecurity is likely to be due to several factors such as uncertainty in response to continued structural change, and the introduction of compulsory redundancies in some UK universities. The increased use of temporary contracts in the sector (AUT, 2004b) will also have contributed to the rise in perceived job insecurity amongst employees. It should be noted, however, that as a considerable majority of the samples utilised in Studies 1 and 2 (i.e. around 80 percent) were employed on a permanent basis, the true extent of job insecurity in the sector might be much greater than that reported in this thesis. A number of studies have identified job insecurity as a significant precursor of psychological ill health (Ferrie *et al.*, 1998). In accordance with this body of research, strong relationships were found in Studies 1 and 2 between perceptions of job insecurity and psychological distress. The chronically high level of job insecurity found in the present research are, therefore, likely to have contributed towards the chronically high degree of psychological distress also observed.

An important aim of this research was to investigate the job stressors inherent in academic work that predicted strain outcomes. The superiority of a more job-specific approach to the study of work stress has been confirmed, where initial research is conducted to establish the stressors and models that might be of potential relevance in particular occupational settings. Although a number of generic job demands, such as workload and work-life conflict, were initially highlighted in Study 1 as predictors of strain, the more in-depth examination of these factors undertaken in Study 2 revealed the unique

features of academic work that underlie such demands. Strong relationships were also found in Study 1 between a range of more job-specific demands, such as pressure to undertake high quality research, and strain outcomes. Furthermore, demands from students contributed to the incremental variance observed in job satisfaction – but this association was in a positive rather than a negative direction. In accordance with research on schoolteachers (Kalekin-Fishman, 1986), this finding suggests that engagement with students might benefit employees in the university sector. Nonetheless, it is unlikely that involvement with students is invariably positive: where demands are perceived to be excessive, interruptions are frequent, and/or the time available to interact is constrained, student contact might be more likely to lead to strain than satisfaction. Where engagement with students is perceived to be positive, however, academics might be protected from the negative impact of other types of job demand on wellbeing. This should be examined in future research.

Study 1 found that various constraints upon professional effectiveness, perceptions of poor change management, and reduced levels of professional support all contributed towards the low levels of psychological wellbeing reported by academic employees. By far the strongest predictors of psychological distress found, however, were perceptions of work demands interfering with home life and other personal priorities. Based on these findings (and those of other studies reviewed in this thesis) it was argued that certain demands inherent in academic work, and the behaviours adopted to cope with these demands, might increase the vulnerability of academic employees to work-life conflict. Studies 2a and 2b examined the features of the working environment that predicted strain indicators in academic employees in a more focused manner, selected models and variables of particular relevance to the wellbeing of this occupational group. In Study 2a, the performance of the JDC(S) and the ERI models of job stress were tested (both separately and combined) in predicting psychological distress, physical symptoms, job satisfaction and leaving intentions. Study 2b investigated issues relating to the interface between work and home in greater depth. The findings of these studies, and their implications, will now be discussed.

In general, the results of Study 2a support suggestions made by the instigators of the JDC(S) and ERI models that there is considerable promise in studying their combined effects (Karasek *et al.*, 1998). Evidence is provided in this thesis that a model that incorporated dimensions of both frameworks performed more effectively in predicting psychological distress and job satisfaction than either model independently. The enhanced power of a combined model is likely to be due to the fact that it incorporates



personal characteristics and perceptual factors, as well as features of the working environment that are somewhat more objective.

The elements of the JDC(S) and ERI models that explained each strain outcome (and the strength of the predictive power of these elements) were found to vary considerably. In the present research, the pattern of variables that predicted each outcome was somewhat different to those observed in the few studies of other occupational groups that have tested a combined model (e.g. Godin & Kittell, 2004). The need to adopt a job-specific approach to the development of models of stress for different occupational groups is, therefore, further underlined. In the present occupational context, evidence was found that academics whose reward expectancies are unmet, who are more over-committed to their jobs, and who perceive lower levels of autonomy, are less psychologically healthy and less satisfied with their jobs. A combination of job-specific and general job demands also emerged as a significant predictor of job satisfaction, a finding that reiterates the importance of including demands specific to the work context. The components of the ERI model emerged as the better predictor of physical health symptoms, suggesting that high efforts and low rewards in combination with over-commitment are likely to result in poor physical health. It should be noted that over-commitment, the individual difference component of the ERI model, made a particularly strong contribution to the explained variance in both psychological and physical strain indicators. Its relationship with work-life conflict will be considered later in this chapter.

The importance of adequate reward and recognition to the wellbeing of academics has been highlighted throughout this thesis. In Study 2a, job-related rewards made strong contributions towards psychological distress, job satisfaction and physical symptoms, and were the sole predictor of leaving intentions. Although the fulfilment of reward expectancies was found to be important for the retention of employees, other features of work will clearly influence academics' turnover intentions. Analysis of the qualitative data undertaken in Study 3 provided greater insight into the wider range of factors that influence intentions to leave. Factors such as job insecurity, work overload, poor management, demands for quality assurance reporting, lack of promotion prospects, professional "interference", long working hours, and poor work-life balance were frequently nominated as reasons for wishing to leave the sector. These themes closely corresponded with the stressors emerging from the quantitative analysis of the data reported in this thesis, thus providing some evidence for methodological triangulation. It is, however, acknowledged that respondents might have been primed by the items contained in the earlier sections of the questionnaire before indicating their reasons for wishing to leave. Future research might examine the relative weight of the factors emerging from this

research as predictors of leaving intentions, as well as actual leaving behaviour, in academic staff.

This thesis concludes that job control, in several manifestations, is a prerequisite for the wellbeing and job satisfaction of academic employees. Whilst academics might have traditionally enjoyed a high degree of control over their work (Gmelch *et al.*, 1984), the majority of respondents to Study 1 reported decreased levels of autonomy (as well as increased levels of demand) in the preceding five-year period. Academics who perceived less control over their work tended to be more psychologically distressed and less satisfied with their jobs than their counterparts who indicated that their levels of autonomy had not reduced. In Study 2a, job control was found to be the primary predictor of job satisfaction and a secondary predictor of psychological distress; evidence was also provided to support the additive effects of low job control (with high demands) on physical and psychological symptoms. It could be argued that the perceived erosion of a much valued job feature, such as job control, would be particularly likely to result in strain. The impact over time of perceptions of *increased* demands and *decreased* control on strain outcomes on the wellbeing of respondents could not, however, be established. Future research should incorporate these perceptions into models of job stress in order to assess the impact of changes in levels of demand and control, together with changes perceived in other work features such as levels of support.

Job demands and job-related efforts contributed towards strain outcomes when the JDC(S) and ERI models were tested independently (Study 2a). However, when the combined models were tested, at best, demands or efforts emerged as a secondary predictor of strain. This is surprising, as the measure of demands encompassed job-specific features of the working environment as well as more generic factors. One conclusion that can be reached is that a lack of job-related rewards, low autonomy, and/or high over-commitment are considerably more powerful contributors to wellbeing than the demands that were operationalised in this study. A similar explanation might be provided for the poor performance of social support in predicting strain outcomes. This might also be due to the fact that an aggregate measure of social support from supervisors, managers and colleagues was utilised. Although such an approach is consistent with that of other studies, subsequent analysis of the social support data (shown in Study 3) revealed that levels of satisfaction with support from these different sources varied considerably. In order to obtain greater insight into the contribution made by social support to the wellbeing of academic employees, future research might distinguish more clearly between the support obtained from colleagues and managers when testing models of job stress.

Some evidence of a two-way interaction between demands and control was observed in predicting physical health symptoms. In accordance with other research findings, however, no evidence was found that either job control or social support moderated the relationship between job demands and other strain outcomes. A review of the literature conducted by Van der Doef and Maes (1999) concludes that an interaction is more likely to be found where job demands and control are conceptualised at a comparable level of specificity. Future studies might measure demands relating to job-specific aspects of academic work, such as research activities and curriculum delivery, whilst simultaneously assessing levels of control over these features. The extent to which the social support available to academic employees matches the demands of their work could also be examined (Cutrona & Russell, 1990). Such an approach might improve the explanatory and predictive power of models of stress in this occupational group.

#### **7.4.3 The work-home interface and strain**

The findings of this research programme highlight the importance of an acceptable balance between work and home lives for the health, job satisfaction and retention of academic employees. For several reasons, however, many employees experience considerable difficulties in achieving and maintaining a balance that meets their needs and those of their families. The work-life conflict experienced by academics clearly poses a threat to family functioning as well as individual wellbeing. It does not merely stem from the predicament of having too much to do in too little time: a considerable degree of strain-based conflict was also observed characterised by preoccupation with work issues, anxiety engendered by work deadlines, and irritability with, and withdrawal from, family and friends. The implications of these findings for the quality of interpersonal relationships is clear, especially as many academics seem to rely heavily on family support to cope with the demands of their work.

Several factors were found to contribute towards work-life conflict observed amongst academic employees. The heavy and frequently conflicting demands that many employees experience from their jobs will exert a negative impact on home life and leisure activities via time- and strain-based conflict. The findings of this research suggests that some of the strategies adopted by academics to cope with the demands of their work (such as working during evenings and weekends, and blurring the boundaries between work and home) might exacerbate the risk of work-life conflict. The “open-ended” nature of academic work, the “portability” of many core work activities, and advances in information technology, mean that working at home outside working hours is perhaps too easily accomplished. Under such circumstances, rather than being a refuge from work

and associated with essential respite and regeneration, the home environment could be perceived to be an extension of the workplace with all the concomitant pressures.

The strong inclination towards over-involvement in the work role found amongst respondents to Study 2 also has negative implications for work-life balance. Research recently conducted in North American universities has found strong positive relationships between research productivity and the number of hours spent working (Jacobs & Winslow, 2004). It is possible that a tendency towards over-involvement in work, combined with perceived success in one's field of study, might reinforce the tendency for academics to work long hours and, as a consequence, threaten work-life balance. This research programme has extended the knowledge of the negative impact of over-commitment (the person-specific component of the ERI model) to the work-home interface. Over-commitment, or "a set of attitudes, behaviours and emotions that reflect excessive striving in combination with a strong desire of being approved and esteemed" (Siegrist, 2001, p. 55) was found to be one of the strongest predictors of work-life conflict. The implications of over-commitment for other strain outcomes will be discussed later in this chapter, and suggestions for how this might be managed will be explored.

Previous research that has examined the impact of integration and segmentation between work and family roles has yielded mixed findings (Sullivan & Lewis, 2006). The value of examining the work-home interface through a person-environment fit framework was confirmed by the findings of Study 2b; further insight was provided into the implications of work-life integration for the wellbeing of employees. The degree of integration academics experience between their work and home lives was subject to some variation, as was the degree to which employees *wish* the two domains to be integrated. In accordance with research conducted in the financial sector by Lewis (2003), few respondents desired complete segmentation between work and home – nonetheless, a substantial majority wished for more separation than they currently experienced. On the whole, respondents with clearer boundaries between their work and home lives reported fewer health symptoms and more job satisfaction, and appeared to have achieved a more acceptable work-life balance. The qualitative data presented in this thesis is consistent with the border theory proposed by Clark (2000). Good examples of border permeability and flexibility were provided by respondents; evidence was also provided that employees actively negotiate (and re-negotiate) the domains of work and home in an attempt to find an optimum level of integration, and an acceptable boundary, in the face of changing demands emanating from both spheres of life.

The findings presented in this thesis suggest that universities that support their employees in establishing and maintaining a balance between their work and non-work lives might improve employees' psychological and physical health, employee retention and, arguably, employees' performance. The majority of respondents to Study 2b, however, maintained that their institutions made few attempts to help them achieve an acceptable work-life balance. Less than one respondent in five was aware that employees with young children had the legal entitlement to request flexible working hours. This proportion should be compared with that recently reported in a study commissioned by the Department of Trade and Industry where nearly 65 percent of the UK workforce were found to be aware of their statutory rights (DTI, 2003). The fact that parents of young children were no more likely to be aware of flexible working options gives serious cause for concern.

Knowledge of stress management and counselling facilities provided by UK universities was also found to be low. It is clear that the services currently available to help employees to manage work-related stress and achieve a healthy work-life balance should be made more visible. Many respondents indicated, however, that these issues went unrecognised in their institutions. Perhaps more seriously, analysis of the quantitative and qualitative data obtained in Study 2b suggests that open discussion of stress and work-life conflict might be stigmatised in some institutions. This stigma is particularly characterised by the finding that almost one-half of the respondents to Study 2b felt unable to discuss such issues with their line managers.

Some respondents maintained that schedule flexibility and the ability to work from home were benefits provided by their employers to help them to balance the demands of work and home. However, strong evidence was found that the schedule flexibility in UK universities is more likely to be subject to informal arrangements than formal institutional policy, and there is much disparity in its availability to academic employees. Some lecturers and researchers are able to work where and when they wish provided students are taught, meetings are attended, and/or research is published, whereas others are dependent upon the vagaries of individual departmental or line managers. Such an inconsistent approach to the management of working time is unlikely to contribute towards a harmonious, co-operative and supportive working environment, as it might result in feelings of inequity and resentment by employees who have less autonomy over their work scheduling.

Some evidence was found from the qualitative research obtained in Study 2 that "visibility" policies might be becoming more common in UK universities, where academic employees are expected to be available during formal office hours. In the light of the findings of this

research programme, the introduction of such policies need to be carefully considered; as they might be antithetical to the high degree of schedule flexibility that academics expect from their work. Moreover, under present conditions (where many academics are unable to achieve the level of concentration required to work effectively in their institutions) increased expectations of employee visibility during office hours are likely to result in more frequent working during evenings and weekends in order to fulfil the demands of the job. This practice might not only engender further conflict between academics' work and family roles, but also compound the strain some employees are already experiencing. If greater visibility in the workplace is required, it seems necessary for institutions to provide their academic staff with access to a quiet working environment with minimal interruptions for at least part of the day.

#### **7.4.4 The role of job involvement in the wellbeing of academic employees**

The findings of Study 1 indicated that many academics working in UK universities are highly engaged in their work. Greater insight into the nature, extent and outcomes of job involvement in this occupational group was provided in Study 2b. It is concluded that the role played by job involvement in the wellbeing of academic employees is complex, as it appears to have both salutogenic and pathogenic effects. Very little evidence of alienation from the job role was revealed – most academics appeared to find their work engaging, meaningful and fulfilling. In fact, a considerable degree of what might be considered “over-involvement” was observed where, for many respondents, the work role might be more central than their roles in any other life domain. Whilst this might be beneficial for the organisation, over-involvement constitutes a threat to wellbeing, as academics who were more cognitively and psychologically involved in their jobs tended to report poorer health and more work-life conflict. These findings imply that if job involvement is reduced, and individuals are encouraged to become central participants in both the work and home domains, work-life conflict will decrease and wellbeing will improve.

The research reported in this thesis suggests that academics frequently attempt to improve their wellbeing and their work-life balance by endeavouring to reduce their level of job involvement. This implies some recognition on the part of employees that they might be over-involved in their work. Although the negative implications of over-involvement for wellbeing and family functioning are clear, reducing job involvement amongst academic employees might not easily be accomplished. There is a risk that attempts to reduce levels of engagement in work might actually be detrimental for the wellbeing of academic employees.

Evidence has been provided that academics are highly involved in their work through personal choice as well as externally driven demands. This view is supported by the finding that respondents who were more involved in their work reported more job satisfaction. In Study 2b, almost one-half of the sample maintained that most of their interests centred around their work. Under such conditions, self esteem and feelings of competence and personal effectiveness might suffer where attempts are made to reduce levels of involvement (Brown, 1996). Moreover, under current working conditions in the UK university sector, a high degree of job involvement may be required if academics are to meet personal and professional standards of performance. What could be considered “over-involvement” is likely to be a prerequisite for advancement; consequently attempts to reduce levels of involvement in work may have adverse implications for career prospects.

A number of issues relating to job involvement amongst academic employees have emerged from this research where further study might be fruitful. Firstly, further information on how highly involved employees make “trade-offs” in each domain to balance the demands of their work and family lives is warranted. Secondly, although the degree of family involvement was not assessed in this research programme, the excessive commitment of personal resources to work revealed amongst many academics suggests that this might be low. Alternatively, employees might be highly involved in both the work and family domains. Future research might examine the impact of job involvement on personal relationships and the wellbeing of spouses or partners who may need to increase their involvement in their home roles in order to compensate for the lower levels of involvement of their partners. Finally, and perhaps most importantly, research aimed at developing a conceptual model of contingencies in which job involvement is (and is not) related to work-family conflict and other forms of strain in different occupational groups is required. Such research also has the potential to provide insight into the circumstances under which job involvement has a positive impact on employee wellbeing. The findings of this research programme provide some preliminary suggestions for such a framework, but more work is needed to draw firm conclusions.

## **7.5 The implications of the findings for the higher education sector in the UK**

The provision of quality higher education and research output in the UK is clearly dependent upon healthy and motivated employees who have low levels of occupational stress and an acceptable balance between their working and non-working lives. The findings of this programme of research indicate that academics have a great deal of commitment to their jobs, and obtain a considerable degree of satisfaction from their work.

Nonetheless, the chronically high levels of psychological distress and leaving intentions also revealed have serious implications for British higher education and research, as well as individual employees and their families. Academics who responded to Study 1 (conducted in 1998) reported increased levels of demand from their work during the previous five-year period. The findings of Study 2 indicate that, six years on, academics perceived no real improvement in the demand they experience from the diverse pressures placed upon them. The level of demand experienced by academic staff is likely to increase still further unless the sector is resourced adequately. It has been estimated that at least 40,000 new academic staff will be required in order to retain student to staff ratios at current levels if the Government is to successfully meet its participation target for higher education in 2010 (AUT, 2001).

The sector is already experiencing difficulties with recruitment and retention of academic staff (UCEA, 2002; Metcalf *et al.*, 2005). These problems are compounded by the fact that academics are an ageing occupational group. Preliminary findings of a demographic review of the higher education sector indicate that, in some disciplines, up to one-half of academic staff are due to retire in the decade from 2010 (Johnston, 2004), although the ending of compulsory retirement in 2006 may give temporary relief to this problem. In order to assure a future supply of well-qualified academics, however, it will be important to improve the terms and conditions of their employment and promote the image of academia as a desirable career choice. The perception of an academic career as an ill-paid, competitive, stressful and demanding one (both in terms of professional and personal life), where serious management and resourcing problems exist, will discourage many potential applicants from considering such a job (Wellcome Trust, 2001).

This research programme highlights an additional reason for British universities to address the high levels of stressors and strains amongst their employees. The findings of Study 3 indicated a considerable proportion of the HSE minimum standards for the management of work stressors have not been achieved in the sector. The recommended benchmarks for coping with work demands and social support at work, in particular, are far from being met. Although, at the time of writing, these minimum standards are not legally binding, it is envisaged that they will make it easier for the HSE to enforce change following investigation into health and safety issues. There is, therefore, a clear incentive for universities in the UK to manage the work-related wellbeing of their employees more effectively. Although the HSE benchmarks are broad-based, vaguely defined and fairly crude (discussed in Chapter 6), they provide a basic framework through which universities and other organisations can compare desired states with actual or current states (Mackay *et al.*, 2004). As yet, however, the importance of work-life conflict to the work stress



process is not recognised in the HSE framework. The findings of the current research strongly indicate that a minimum standard for perceptions of conflict between the work and home domains should be introduced.

## **7.6 How can these findings be used to improve the wellbeing of academic employees?**

The findings of this research programme have important implications for policy and practice in the higher education sector in the UK. A number of areas have been highlighted that could inform the development of strategies to improve the wellbeing and satisfaction of academic employees. As yet, stress management interventions have almost invariably focused on the individual as the target of change. Similarly, in developing work-life balance initiatives, organisations have tended to ask “how can we help people arrange their home lives so that they interfere with work less?” rather than “how can we help employees balance their work and home demands?” This thesis provides evidence that a multi-level programme of intervention is required in order to reduce job stress, improve wellbeing and reduce work-life conflict in the sector. Whilst some of the issues reported here may be tackled at the individual or organisational levels, only national initiatives have the potential to solve other, more fundamental problems.

On the whole, the discrepancy between the efforts academics believe that they put into their work and the rewards they receive was considerable – not only as measured by the Effort-Reward Imbalance model, but also as evidenced by other facets of the research presented here. Interventions based on the Effort-Reward Imbalance model would involve changing aspects of the work environment to reduce this imbalance. Only one intervention study based on this model can, however, be located. Research conducted by Aust, Peter and Siegrist (1997) involved blue-collar workers attending group sessions that aimed: firstly, to raise awareness of the adverse effects induced by an imbalance between efforts and rewards; and secondly, to generate suggestions for structural changes to overcome this imbalance. Findings were used to develop a 12-week intervention programme that resulted in significantly improved wellbeing for the study sample compared with controls; the beneficial psychological effects remained after a three-month follow-up. The inductive approach adopted by Aust *et al.* might be an effective first step in generating options to restore the balance between effort and rewards in the higher education sector. It is clear, however, that extensive diagnostic research is required before introducing any structural change.

In order to improve the health, job satisfaction and retention of academics in the UK it seems necessary to increase job-related rewards in the sector. The findings of this

research programme provide some insight into how this might be accomplished. In terms of extrinsic rewards, salary should be more comparable with pay levels in other sectors, and commensurate with employees' qualifications, experience, and levels of responsibility. As discussed above, academics appear to gain a considerable degree of satisfaction from some intrinsic features of their work; it is also necessary, however, to enhance other aspects such as status and recognition, the opportunities and time available for professional development and training, and to introduce more formalised and transparent promotion procedures. As well as reducing perceptions of effort-reward imbalance, these structural changes also have the potential to increase self-esteem which may be one of the most important reward components of the ERI model (Van Vegchel *et al.*, 2005). The findings presented in this thesis also highlight the necessity of increased levels of social support, especially from senior managers. Enhanced support is also likely to decrease the discrepancy between efforts and rewards, by strengthening feelings of approval and affiliation (Tsutsumi & Kawakami, 2004).

Increased levels of autonomy might also reduce overall levels of psychological distress, improve job satisfaction, and minimise turnover intentions. However, although this thesis provided evidence that job control is generally beneficial, the findings of this thesis suggest that very high levels might not necessarily have positive outcomes for academic employees. Where autonomy is low, however, increasing control might be accomplished by enhancing the input of academic staff into departmental and institutional decision making processes, and reducing the emphasis on externally determined performance indicators. Research on stress-reduction approaches based on the JDC(S) model suggests that demands and control can be used to manipulate the work environment at the task level (Theorell & Karasek, 1996). The model implies that employee wellbeing could be improved without necessarily reducing demand (Karasek, 1979). The findings of the present research indicate, however, that interventions to increase job control and rewards in UK universities (although likely to have some beneficial effects) will only succeed in improving wellbeing if job demands are simultaneously reduced. In order to accomplish this, it appears necessary to implement and enforce a workload model that recognises and balances all aspects of academic work, provides protected time for research, and incorporates sufficient opportunity for innovation and planning.

Evidence has been provided that efforts to decrease over-commitment might improve the wellbeing of academics beyond those afforded by the structural improvements discussed above. As this has been found to be (of those variables tested) the primary predictor of work-life conflict, there is a clear incentive to design interventions to reduce excessive commitment to the job. How to accomplish this poses a challenge for occupational health

researchers. If Siegrist's (2001) conceptualisation of over-commitment as an intrinsic characteristic of the individual, is correct, it might not be easily modifiable. The stability of over-commitment has, however, not yet been established; it is possible that it might be reinforced to some extent by exposure to specific working conditions or particular occupational cultures, possibly at early career stages. Longitudinal research is clearly necessary to examine the extent to which over-commitment is a state or a trait, and ways by which it might be diminished.

In order to improve wellbeing amongst academic employees, this thesis has argued that it is essential to promote the compatibility of work and private life. An individualist perspective might argue that the responsibility for finding a work-life balance that suits their needs lies with the employee, and that this is of little direct concern to the organisation. As a high proportion of academics who responded to Study 2 have not achieved a work-life balance that meets their needs or those of their families, they might benefit from some guidance in creating more effective physical and psychological boundaries between their work and home lives. In order for any significant improvement to occur, however, enhanced institutional support for work-life balance is required. Means by which this might be accomplished will now be discussed.

Managing the conflict between work and family responsibilities has been recognised as a critical challenge for organisations in all sectors of the economy (Kossek & Ozeki, 1999). The research presented in this thesis suggests that, for several reasons, this might pose a particular problem for British universities. Few academics indicated that they received any support from their institutions to help them achieve a work-life balance. Furthermore, the level of satisfaction with any support obtained was generally low. Although employees who perceived more institutional support for work-life balance tended to report lower levels of all strain indicators, no evidence was found that the support received actually protected employees from the negative impact of job demands on their personal lives. These findings imply that the support structures available to academics are insufficient to offset the adverse consequences of the heavy demands inherent in academic work.

A first step to increase work-life balance in the higher education sector might be more effective publicity for the policies that are already available. It is clear, however, that a considerable amount of work needs to be done to develop more effective and inclusive strategies. It is acknowledged, however, that there is little research available to guide organisations in planning, introducing, implementing and evaluating work-life balance interventions. The findings of this research programme suggest that constructs obtained from generic models of work-life balance, combined with more job-specific factors, would

form the most effective basis for the development of such interventions. Burke (2006) has recently argued that collaborative “action research” projects, where researchers work jointly with organisations to address work and personal life concerns, have considerable potential in facilitating work and personal life integration. Such initiatives will reflect the characteristics of different working environments; they can also make a more explicit link between workers’ personal needs and business objectives, with a view to informing changes to culture, developing practices that reflect diverse needs and minimising resistance to their implementation. Interventions based on some of the issues discussed below could be developed and evaluated through such collaborative research projects. The potential benefits of such programmes are clear, but Burke maintains that considerable effort and commitment is required on the part of organisations and employees.

This thesis has provided evidence of considerable variation amongst academics in what is deemed to be an acceptable work-life balance. This is likely to be dependent upon individual preferences, job demands, working patterns and practices, levels of involvement in work and family, and/or family needs. The concept of fit is likely to facilitate the development of interventions to help individual employees reduce the discrepancy between their actual and ideal levels of work-home integration. The importance of achieving congruence is further underlined by the finding that academics who had achieved a closer fit between their actual and ideal levels of work-life integration were more healthy, more satisfied with their jobs, and less likely to wish to leave the sector. In order to improve work-life conflict, these findings suggest that creative strategies are required where employees are supported in their aims to achieve congruence. It is also evident from the findings of Study 2 that different strategies might need to be developed to reduce time-based conflict and strain-based conflict.

Formalising the availability of flexible working during normal office hours might go some way towards improving work-life balance in the sector. One option available to universities is to introduce a range of flexible working options. Some options already in existence in other sectors might be particularly appropriate for academic employees. The pattern of demand for services in the sector is variable between term-time and vacation; this makes consideration of flexibility in the arrangement of hours (such as seasonal, or term-time only working) feasible. Formalising the entitlement to work at home is another option that universities might wish to adopt. The availability of flexible employment options may make academic work more attractive to a wider range of candidates, such as older workers and those with caring responsibilities, and may help to retain existing employees. Phased retirement options could also be introduced to preserve the knowledge, experience and

skills of older academics. The findings of the present research suggest, however, that careful further investigation is required before any such options are introduced in the sector. It is necessary to gauge academic employees' views concerning flexible working options; for example, options such as term-time only working might be unpopular, as the vacation periods (which are normally less pressurised) would be unpaid.

Making a wide range of flexible employment options available to their academic staff may not be seen as a priority by UK universities. They already offer informal flexibility to some staff in response to *ad hoc* requests, so may not see a sound business case for allowing their employees to work more flexibly on a formal basis. Furthermore, the extent to which academics would wish any informal flexibility they might experience to be formalised is open to question. A study conducted in Germany by Klenner (2005) suggests that flexible working practices that are perceived as "imposed" might actually *reduce* feelings of autonomy and wellbeing rather than increase them. Academics clearly value the flexibility inherent in their work, and many wish to work from home during office hours more often; but there is a risk that formalising these facilities may be perceived as another means by which their control over their work has been eroded. At the same time, there are serious issues around the status and equity of informal arrangements. It is likely that academics with less access to schedule flexibility would welcome the formal introduction of flexible working practices. It is clear from the findings reported in this thesis, however, that flexibility is not a panacea. Under conditions where work demands are high and/or employees are over-involved in their work and over-committed to it, increased flexibility might actually be damaging to wellbeing and work-life balance. These are important areas where little is currently known and, as such, should be further researched.

The introduction of policies to increase flexibility, in isolation, is unlikely to substantially decrease work-life conflict in the sector. In order to accomplish this, it is necessary for a more holistic approach to be adopted (Kofodimos, 1995; Barnett & Hall, 2001). Daniels, Lewis and McCarraher (2000) have documented a four-stage process for organisational development in the field of work-life balance: this framework might provide some guidance for UK universities. Stage 1 (known as Grass Roots) focuses on the provision of child-care, which is generally perceived to be a "women's issue" only and provided in response to pressure from employees. Stage 2 (Human Resources) is when initiatives are developed and broadened in response to a growing recognition of the organisational benefits provided by introducing work-life balance policies in relation to absenteeism, recruitment, and retention. At the third stage (Culture Change) comes a recognition that work-life policies will only be effective in a workplace culture that is fully supportive of their aims. At this stage, the focus broadens further to encompass the work-life concerns of the

workforce as a whole rather than merely those of parents with young children. Finally, by Stage 4 (Work Redesign), there is a greater awareness of how a workplace culture could be fostered where organisational objectives and employees' work-life balance needs could be simultaneously satisfied. At this stage, work-life balance is seen as an integral component of fulfilling the goals of the organisation (Kofodimos, 1995).

It is clear from the findings presented in this thesis that the university sector in the UK remains firmly at the Grass Roots stage, and has not yet acknowledged the benefits to be gained in introducing equitable work-family programmes. Indeed, the sector does not even appear to be reacting adequately to regulations and mandates introduced by Government. Considerable effort will be required to guide universities through the subsequent stages towards Work Redesign. Based on the findings of this research, some preliminary suggestions are made below as to how this might be accomplished.

Evidence has been provided in this thesis that work-life balance is not merely a "women's issue" and not only relevant to parents of young children. Male academics are clearly experiencing levels of time-based and strain-based conflict at levels comparable with their female counterparts. Respondents also expressed concerns about the lack of support for employees who have responsibilities for the care of elderly relatives. Research findings suggest that attempting to balance caring responsibilities with the demands of work can have a negative impact on health and job performance (Lee, 1997). It is therefore important to have supportive structures in place to help employees with caring roles. Nonetheless, when universities are developing work-life balance initiatives, it is necessary to recognise that all employees require such balance, not merely those who care for children and the elderly. Employee surveys at a national level should provide more detailed information on the needs and concerns of the workforce as a whole, thus facilitating the development of work-life balance policies (possibly via action research techniques discussed above) that are congruent with employees' perceptions of equity and justice. This should help universities move beyond the initial stage and effect culture change.

There is strong evidence in the literature that cultural norms and values, once established, are highly resistant to change (Fried, 1998). The framework developed by Daniels *et al.* (2000) referred to above, acknowledges that the most difficult transition faced by organisations is the movement from the development of work-life balance policies to a genuine change in norms and values that conflict with achieving balance. It has been frequently observed that many employees hesitate to take advantage of family-friendly working options, fearing long-term negative consequences for their careers (Perlow,

2001). In the context of academia, Bailyn (2003) has commented upon the serious career consequences that North American academics (primarily women) can face if they take advantage of family-friendly working options.

The findings of the present research suggest that the prevailing culture in universities in the UK may not fully support employees who wish to utilise work-life balance initiatives. More worryingly, evidence has been provided that issues relating to work-life balance, and the related issue of workplace stress, may actually be stigmatised in the sector. In order to increase the uptake of any work-life balance policies that are provided by institutions, now or in the future, it is vital to reduce the stigma attached to these issues. Previous research evidence indicates that fears related to making use of work-life balance provisions are minimised in environments where there is strong “top-down” support for such initiatives (Barnett & Hall, 2001). This suggests that the business case for inclusive work-life balance initiatives and stress prevention and management strategies should be communicated to UK universities, and supervisors and senior managers should strongly encourage participation. In particular, it seems essential to train line managers to be sensitive to the issue of stress, and the difficulties faced by some employees whose work and life demands conflict.

The research presented in this thesis also indicates that a “long hours” culture is present in UK universities. This is likely to be a significant contributor to work-life conflict and poor wellbeing in the sector. In order to change the norms, attitudes and behaviour associated with working time expectations, two issues should be considered. Firstly, a reduction in demand is required. Secondly, it is necessary to foster an environment where long working hours are not seen as synonymous with commitment, and reduced working hours are not perceived as having negative consequences for career development. It is recognised, however, that this might pose a challenge where academics work long hours through choice.

## **7.7 Limitations of the research presented in this thesis**

The conceptual and methodological approach adopted in this research programme was described and justified in Chapter 1. Nonetheless, some limitations should be acknowledged. The first issue relates to the representative nature of the samples utilised. The academics who responded to the studies presented were predominantly from the “traditional” university sector. The findings might not be easily extended to lecturers and researchers working in “new” universities where different terms and conditions, and possibly different stressors, apply. The response rates to the two studies were similar in magnitude to those obtained in studies of academic stress conducted in other countries

(e.g. Winefield *et al.*, 2000), but they were not high. Nonetheless, the sample sizes were substantial, and the majority of the more traditional universities in the UK were represented. Moreover the demographic characteristics of the samples utilised were found to closely correspond with those of the wider population of academics working in British universities at the time each study was conducted, although there were two exceptions. Firstly, the samples were somewhat older than the wider population of academic employees in the UK. As research findings suggest that self-reported job satisfaction increases and job stress decreases in later life (Birdi, Warr & Oswald, 1995), the levels of job stressors and strains reported in this study may not be fully representative of the sector as a whole. Secondly, the low proportion of respondents employed on fixed-term contracts might have resulted in an under-estimation of the levels of stressors and strains inherent in the higher education sector as, for reasons explored in this thesis, academics on fixed-term contracts might be experiencing higher levels of strain.

It is acknowledged that the respondents in both studies were members of a trade union. Arguably, it might be in the interests of union members to exaggerate the negative aspects of their working conditions, and to describe themselves as depressed, anxious and lacking in job satisfaction in order to obtain improvements to their terms and conditions of employment. A considerable majority of academics in the traditional university sector are, however, members of the trade union in question, and it is not reputed to be a particularly militant organisation. Moreover, although high levels of psychological distress and leaving intentions were revealed, respondents also reported a considerable degree of job satisfaction. It is unlikely, therefore, that the participants were using this research as a vehicle with which to condemn the administration.

A further limitation of this thesis relates to the choice of methodology. In accordance with some 90 percent of published studies in the field of work and wellbeing (Briner, 1999), the research adopted a cross-sectional design and utilised self-report measures. Although widely used, such methodology has been subject to criticism for several reasons. The first issue is one of causality. The studies reported have been successful in establishing that perceptions of specific features of the work environment are related to several strain outcomes. Nonetheless, the cross-sectional nature of this research precludes making firm conclusions about causality. Although somewhat less plausible, it is nonetheless possible that negative assessments of work characteristics and work-life balance are the result (rather than the cause) of poor health, job dissatisfaction and leaving intentions. This might be effected either by a direct influence on the type of work experiences to which sick and dissatisfied employees are exposed, or by making work more difficult to cope with for such individuals. Means by which the direction of causality might be more



confidently established will be discussed later in this chapter in the context of options for future research.

The second issue concerns the limitations of self-report methodology. This research programme relied exclusively on self-reports to obtain perceptions of academics' stressors, strains, attitudes, and working practices. Although self-report methodology has been frequently criticised, it is widely recognised to be an important investigative tool in stress research (Jones & Bright, 2001). There is a growing realisation in the field of occupational health psychology that self-reports of stressors and strains in workplace settings can provide considerable insight into how employees perceive and experience their workplace; as such, they can be at least as valid as "objective" indicators (Spector *et al.*, 1988; Rick, Thomson, Briner, O'Regan & Daniels, 2002; Sulsky & Smith, 2005).

Where possible, this thesis attempted to minimise dependency on emotional processing when constructing the stressor scales, in order to maximise objectivity and minimise the risk of common method variance. It is recognised, however, that such attempts can only be partially successful. There is a fundamental difficulty in measuring features of the psychosocial work environment independently of a person's perception of them. In defence of the approach taken, it might be noted that the high levels of concordance observed amongst almost 1,500 respondents in levels of many stressors and strains at two points in time, although not necessarily capturing "objective" properties of the working environment, are likely to reflect a shared reality (see Cox & Ferguson, 1994). In terms of the validity of obtaining self-reports of wellbeing, it is evident that participants are in the most privileged position to monitor and assess information about their own attitudes and emotional states (Larsen & Fredrickson, 1999). Utilising subjective perception of strains (such as psychological symptomatology, job satisfaction and leaving intentions) would, therefore, seem to be essential. The limitations inherent in self-report methodology are also minimised by the fact that a longitudinal comparison was made between the findings of the two studies, implying the presence of some benchmarking of levels of stressors and strains in the sector.

Although self-report methodology can be defended in the context of this research, the risk of common method variance inflating relationships between some of the independent and dependent variables utilised is acknowledged. Some constructs in the second study, most notably efforts and rewards, explicitly assess the level of distress employees experience in relation to the absence or presence of various job features. This issue was discussed in depth in Chapter 4, but it should be reiterated that some confounding is likely to occur in the relationships between such variables and outcomes such as psychological strain.

As discussed in Chapter 1, there is some evidence to support the potential confounding effect of negative affectivity (NA) in self-reports of stressors and strains. (Brief *et al.*, 1988). Whether or not it inflates any observed associations between self-reports of stressors and strains is, however, hotly contested. The approach adopted in this thesis is that a measure of NA is not a pre-requisite. This decision can be justified with reference to the literature. Many studies, (e.g. Chen and Spector, 1991; Schonfield, 1996; Spector *et al.*, 2000) have concluded that the confounding influence of NA does not overly distort self-report relationships between stressors and strain outcomes. Dollard and Winefield (1998) and Spector *et al.*, (2000) go so far as to warn researchers against the practice of controlling for the "nuisance" aspects of NA, as this may result in an underestimation of the impact of the work environment on employee wellbeing. Finally, in order to control for NA it is necessary to compartmentalise "negative feelings" into two mutually exclusive categories: i.e. "state" and "trait". Whether this can be done in a valid manner is questionable (Wainwright & Calnan, 2002). Indeed, the chronically high levels of psychological distress observed in the sector over a six-year period provides strong support for this argument as, if negative affectivity were controlled for, important variance would have been lost.

More recently, it has been maintained that a further "person-level" factor has the potential to confound the relationship between stressors and strains. Fletcher (2003) has posited that individuals who are stressed at work have a fundamentally altered self-concept, and a different way of perceiving their organisations, their work, and their worlds in general than those who are not experiencing work-related stress. In other words, the stressed person perceives the world differently *because* they are stressed. For this reason, he has argued that it may be "impossible (conceptually rather than practically) to dissect stressors from strains unless these person-level cognitions can be accounted for in some way" (p. 552). Fletcher's perspective is thought provoking, and the questions it raises about the nature of occupational stress research are challenging. As yet, however, the majority of studies conducted in the field of stress research (including the research presented in this thesis) fail to take account of this "whole person" dimension.

The next methodological issue to be discussed relates to the validity of the high levels of psychological ill-health revealed in the research. As previously mentioned, the levels of GHQ "caseness" found amongst academic employees at the two points in time were surprisingly high – considerably higher than those found in other occupational groups. The findings provide evidence that working conditions in the higher education sector might be

genuinely toxic for psychological health. There are, however, some additional reasons that might help explain why levels of self-reported psychological strain found were so high.

There is evidence that educational and organisational status can influence how individuals evaluate their subjective wellbeing. This is of considerable relevance to lecturers and researchers, who are amongst the most highly qualified individuals in the UK. Epidemiological studies conducted in the UK conclude that employees with more qualifications and/or who are at higher levels in organisational hierarchies, on average, report lower levels of psychological wellbeing (Marmot *et al.*, 1991; Oswald, 2002). More specifically, a North American study conducted by Bryant and Marquez (1986) found that highly educated respondents tended to express reactions to environmental stressors in psychological terms (such as feelings of vulnerability, dissatisfaction and self-doubt). A related issue is that academics are a highly articulate professional group. They might, therefore, be able to communicate their perceptions and feelings relating to their working environment more readily and more eloquently than other groups. Finally, it has also been suggested that academics might compound (or even create) their own psychological distress by perpetuating an environment of intense perfectionism (Austin & Pilat, 2000). The strong relationship observed between job involvement and psychological ill health observed in Study 2b supports this view.

There is reason to believe that the extent of stressors and strains observed in the present research programme might be underestimated. The potential for the “healthy worker effect” should be recognised (McMichael, Spirtas and Kupper (1964). This suggests that employees who are most severely affected by stressors or strains may leave the profession as they age, or as a result of illness, early retirement, or death. It is probable that academics who experience the poorest health will not be adequately represented in the present research, but is not possible to quantify this factor. A related issue is the extent to which the psychological health of the sample was reliably assessed. The GHQ-12 provides explicit instructions that respondents should only indicate deviations from their “normal” state (Goldberg & Williams, 1988). As such, it is reasonable to believe that cases of a more chronic nature might be missed, as such individuals would indicate that they felt “no worse than normal”. As evidence has been provided in this thesis that levels of psychological distress in the sector are chronically elevated, future research might utilise a method of scoring the GHQ recently developed by Whaley, Morrison, Payne, Fritschi and Wall (2005) which has shown superior construct validity and sensitivity to chronic conditions.

## **7.8 Emerging issues and directions for future research**

This research programme has identified a number of key issues of relevance to the wellbeing of academic employees. Future research could conduct more focused investigations based on the findings of the studies presented.

This research has highlighted associations between characteristics of academic work and perceptions of work-life conflict. An attempt has been made to examine the ways in which these factors interact with working practices, and a number of individual difference variables, to cause strain in academic employees. In order to accomplish this, the research utilised multiple regression analysis. Although a valuable statistical tool, the use of multiple regression has limitations – mainly because this technique only allows for the examination of a single relationship at any one time. The level of complexity revealed in the findings indicates that structural equation modelling techniques could be employed in order to provide systematic, holistic, confirmatory extensions to the research.

This data reported here was obtained from two “snapshots” in time in 1998 and 2004. A longitudinal element to the research was included (Study 3), as the stability of levels of stressors and strains in the university sector in the UK were assessed by comparing the findings of key aspects of the two studies. Whilst specific participants from the 1998 study were not followed up in 2004, the size of the samples, the number of universities represented, and the fact that the samples were broadly representative of employees in the sector, all indicate that valid comparisons can be made. As discussed above, however, these studies cannot establish cause and effect relationships. In order to accomplish this, future research should adopt a longitudinal, “within-person” design to confirm the associations between features of the working environment and strains observed in the present research programme over time. Such an approach would allow stronger causal inferences to be made. A longitudinal design would also facilitate an examination of how work-family culture develops through time in UK universities, and the impact of any interventions that were introduced in the sector to manage work-related stress and improve work-life balance.

There is evidence that perceptions of job demands, job control and work-life conflict are subject to daily variation (Jones & Fletcher, 1996; Butler *et al.*, 2005). Future studies should utilise daily diaries to examine the nature of this variation in academic employees, and how it might impact on their wellbeing. Daily diaries are particularly useful when investigating work-life conflict (Frone *et al.*, 1992). The findings of the present research suggest that this methodology could provide greater insight into work and wellbeing experienced by academic employees in a number of ways. Firstly, the methodology would

allow researchers to examine the specific demands of work that lead to perceptions of time- and strain-based conflict, and the type of demands that might threaten or enhance work-life balance. Secondly, the impact of different working patterns and practices on the wellbeing and personal life of academics over time could be assessed. Thirdly, it would be possible to establish the circumstances in the work and family domains that are most likely to predict a discrepancy between actual and ideal levels of work-life integration. Finally, the research could explore the strategies used by employees on a daily basis in an attempt to minimise any discrepancy experienced (and the extent to which these are successful).

The findings of this research programme have consistently highlighted the importance of the work-home interface to the wellbeing of academic employees; future research might adopt a broader focus. Three issues, in particular, are worthy of examination. Firstly, the research presented here examined work-life conflict *uni-directionally* (i.e. from the workplace into the non-work domain). Although this approach is valid as work-to-family conflict has been found to be potentially more damaging than vice versa (Frone *et al.*, 1992), future studies might examine the reciprocal interaction between home and work. Initial focus could be placed on assessing the impact of support from family and friends on perceptions of work demands, individual wellbeing, and work-life balance, as this thesis indicates that the home domain is a considerable source of support for academic staff. Secondly, a considerable proportion of respondents revealed that their partners were also working in the education sector<sup>2</sup>. Whether this constitutes a risk to the wellbeing and work-life balance of academic employees or has a beneficial impact will be examined by the author in a subsequent study.

Thirdly, the majority of studies that have examined the work-home interface have focused on the negative impact, or *incompatibility*, between the demands of work and family roles. The present research is no exception. The concept of work-life facilitation, defined as “the extent to which participation in one life role is made easier through participation in another” has recently gained attention (Butler *et al.*, 2005, p. 155). In the present research, although over-involvement in work was identified as potentially damaging for the wellbeing of respondents, the high levels of engagement in work that were revealed suggest that a considerable degree of facilitation might be found. Studying work-life conflict and facilitation simultaneously is, therefore, likely to provide greater insight into academics’ experiences of the work-home interface.

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<sup>2</sup> This data is not reported in the thesis, but 43 percent of the sample indicated that their spouse or partner worked in higher/further education or the schools sector.

The research presented in this thesis assessed the impact of generic and job-specific demands. In order to guide the development of more effective interventions to improve the wellbeing of academic employees, there might be benefits in differentiating between the various types of demands or efforts inherent in academic work. In this manner, the JDC(S) and/or the ERI theoretical frameworks could be adapted to test different models where the relative impact of various stressors such as quantitative demands (e.g. overload), interpersonal pressures (e.g. emotional labour or interpersonal conflict) and cognitive demands (e.g. excessive interruptions) could be examined, together with the various types of supports and rewards that might minimise the negative effect of these stressors on wellbeing. Future research might also examine the impact of features of academic work on a broader range of affective outcomes. In the present research, psychological strain was conceptualised as symptoms of depression, anxiety and insomnia. According to the emerging Affective Events Theory (Weiss & Cropanzano, 1996), particular working conditions and practices are likely to result in specific affective phenomena (such as anger, frustration, guilt and disappointment) which, in turn, might lead to specific affectively-driven behaviours (such as leaving intentions).

This programme of research provides very clear incentives for the higher education sector to manage the stressors and strains experienced by their employees more effectively. Previous studies have observed that a supportive and cohesive working environment, where individual autonomy is high, is an important correlate of innovation, research performance and personal effectiveness amongst academic staff (Pelz & Andrews, 1966; Eisenburger, Fasalo & Davis-LaMastro, 1990; West et al., 1998). The findings reported here suggest that it is perhaps inevitable that academics' current working conditions, together with the generally low levels of wellbeing in the sector, will impact on their job performance. Research that could effectively link stressors, strains and work-life conflict to tangible performance indicators would make an even stronger business case for change.

## **7.9 Conclusions**

This thesis has made a number of significant and original contributions to knowledge in the field of occupational health psychology. Firstly, insight has been gained at a national level into the features of academic work that might have a negative impact on the wellbeing of employees. Evidence has been provided that the previous body of knowledge relating to the stressors and strains experienced by academics was based on outdated assumptions. The findings challenge the traditional view of academia as a working environment that is relatively low in demands, and high in autonomy and social support.

The assumption that the intrinsic satisfaction inherent in academic work offsets the poor levels of remuneration has also been questioned.

Secondly, this thesis has contributed to the understanding of the nexus between work and home for academic employees and, arguably, for workers in other sectors of the economy. The value of adopting a person-environment fit framework to the study of the work-home interface has been confirmed. Furthermore, the rich and varied qualitative data presented in Study 2 was a significant strength of this research as it provided considerably more insight into the nature and impact of work-life conflict experienced by lecturers and researchers than any study previously conducted in Britain or world-wide. Thirdly, the research reported in Study 3 provided potentially valuable information relating to the extent and stability of job demands, psychological distress and turnover intentions of academic employees in the university sector in the UK. Fourthly, the comparisons with the HSE minimum standards is a further strength (Study 3) as it provides more objective evidence of the extent to which UK universities are complying with these benchmarks. Fifthly, the findings have provided a wealth of information that has the potential to guide the development of more effective interventions to improve working life for academic employees.

Finally, this thesis has contributed to knowledge in a more theoretical sense. The performance of two of the most prominent models of job stress in the field has been tested, both independently and combined, in predicting strain outcomes in a large sample of academic employees. Strong evidence has been provided that, in order to gain insight into the stressors and strains experienced by any occupational group, hybrid models of job stressors should be utilised that are, to some extent, specific to the job context. It is necessary for such models to be developed by using inductive methodologies. Such an approach is more likely to guide the development of effective interventions, possible via collaborative action research, to improve the wellbeing of employees than reliance on generic frameworks.

For several reasons, there is a very strong business case for universities in the UK to act on the findings of this research programme. The wellbeing of employees compares poorly with that of other occupational groups, the sector is experiencing a serious problem with recruitment and retention, and many of the Health and Safety Executive benchmarks for the management of occupational stress do not appear to have been met. Evidence has been provided that the high level of strain found in 1998 is not a short-term reaction to recently imposed strain, but a chronic problem that requires attention. If UK universities are to maintain their current levels of excellence, let alone enhance them, a range of

innovative human resource strategies will need to be initiated. It has been argued in this thesis that a creative and flexible mix of strategies will be required to improve the well-being of the sector, and that generic stress management programmes and work-life balance initiatives are unlikely to be successful. Some preliminary recommendations have been made as to how universities in the UK might develop and implement such initiatives. It is acknowledged, however, that more research is needed to provide greater insight into the issues raised in this thesis.

The need to constantly review assumptions about the nature of workplace stressors and strains has been highlighted in this thesis. New ways of working, and rapid and widespread job change in a technology intensive environment such as higher education will mean that models will frequently require revision. It is also evident that any interventions introduced to manage the work-related wellbeing of academic employees will need to be responsive to the rapidly changing context and content of academic work revealed in the studies reported here.



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# **Appendix A**

**Questionnaire used in Study 1**

# ASSOCIATION OF UNIVERSITY TEACHERS

## SURVEY OF WORK AND WELLBEING

### About you and your job

**1 Age (please indicate your age group)**

- 1 21-25
- 2 26-30
- 3 31-35
- 4 36-40
- 5 41-45
- 6 46-50
- 7 51-55
- 8 56-60
- 9 61-65
- 10 66-70

**2 Gender**

- 1 Male
- 2 Female

**3 Institution (for reasons of anonymity, this question is optional):**

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**4 Type of Post (Please indicate the type and grade of your job):**

**Teaching and research academic staff**

*'Old' universities:*

- 1 Lecturer A
- 2 Lecturer B
- 3 Senior Lecturer or Reader
- 4 Professor

*'New' universities:*

- 5 Lecturer
- 6 Senior Lecturer
- 7 Principal Lecturer
- 8 Head of Department
- 9 Professor

**Research only staff**

*'Old' universities:*

- 1 Grade IB
- 2 Grade IA
- 3 Grade II
- 4 Grade III
- 5 Grade IV

*'New' universities:*

- 6 Researcher A
- 7 Researcher B

**5 Academic subject** *(Please indicate your principal discipline)*

- |                                      |                          |   |                          |
|--------------------------------------|--------------------------|---|--------------------------|
| 1 Medicine & dentistry               | <input type="checkbox"/> | 11 Social, economic & political studies | <input type="checkbox"/> |
| 2 Subjects allied to medicine        | <input type="checkbox"/> | 12 Law                                  | <input type="checkbox"/> |
| 3 Biological sciences                | <input type="checkbox"/> | 13 Business & administrative studies    | <input type="checkbox"/> |
| 4 Veterinary science                 | <input type="checkbox"/> | 14 Librarianship & information science  | <input type="checkbox"/> |
| 5 Agriculture & related subjects     | <input type="checkbox"/> | 15 Languages                            | <input type="checkbox"/> |
| 6 Physical sciences                  | <input type="checkbox"/> | 16 Humanities                           | <input type="checkbox"/> |
| 7 Mathematical sciences              | <input type="checkbox"/> | 17 Creative arts & design               | <input type="checkbox"/> |
| 8 Computer science                   | <input type="checkbox"/> | 18 Education                            | <input type="checkbox"/> |
| 9 Engineering & technology           | <input type="checkbox"/> | 19 Combined                             | <input type="checkbox"/> |
| 10 Architecture, building & planning | <input type="checkbox"/> |   |                          |

**6 Mode of employment** *(Please indicate your employment status)*

- |                                      |                          |                                      |                          |
|--------------------------------------|--------------------------|--------------------------------------|--------------------------|
| 1 Full-time with permanent contract  | <input type="checkbox"/> | 4 Part-time with fixed-term contract | <input type="checkbox"/> |
| 2 Part-time with permanent contract  | <input type="checkbox"/> | 5 Casual or hourly paid              | <input type="checkbox"/> |
| 3 Full-time with fixed-term contract | <input type="checkbox"/> | 6 Other                              | <input type="checkbox"/> |

**7 Length of employment**

*How long have you been employed in higher education in the UK?*

- |               |                          |
|---------------|--------------------------|
| 1 0-3 years   | <input type="checkbox"/> |
| 2 4-9 years   | <input type="checkbox"/> |
| 3 10-19 years | <input type="checkbox"/> |
| 4 20+ years   | <input type="checkbox"/> |

**8 Length of employment at your current institution**

*How long have you been employed at your current institution?*

- |               |                          |
|---------------|--------------------------|
| 1 0-3 years   | <input type="checkbox"/> |
| 2 4-9 years   | <input type="checkbox"/> |
| 3 10-19 years | <input type="checkbox"/> |
| 4 20+ years   | <input type="checkbox"/> |

**9 Hours of work** *(Please indicate the average number of hours you work\* per week [on and off site] during term-time)*

- |              |                          |                 |                          |
|--------------|--------------------------|-----------------|--------------------------|
| 1 0-10 hours | <input type="checkbox"/> | 7 36-40         | <input type="checkbox"/> |
| 2 11-15      | <input type="checkbox"/> | 8 41-45         | <input type="checkbox"/> |
| 3 16-20      | <input type="checkbox"/> | 9 46-50         | <input type="checkbox"/> |
| 4 21-25      | <input type="checkbox"/> | 10 51-55        | <input type="checkbox"/> |
| 5 26-30      | <input type="checkbox"/> | 11 56-60        | <input type="checkbox"/> |
| 6 31-35      | <input type="checkbox"/> | 12 More than 60 | <input type="checkbox"/> |

*(\* work means any tasks related to your contract of employment)*

**10** Work done outside 'office hours' (Please indicate the average proportion of the hours you work per week which are before 9am and after 5pm, Monday-Friday, and at weekends)

- |                  |                          |                         |                          |
|------------------|--------------------------|-------------------------|--------------------------|
| 1 0-10 per cent  | <input type="checkbox"/> | 4 31-40 per cent        | <input type="checkbox"/> |
| 2 11-20 per cent | <input type="checkbox"/> | 5 41-50 per cent        | <input type="checkbox"/> |
| 3 21-30 per cent | <input type="checkbox"/> | 6 More than 50 per cent | <input type="checkbox"/> |

**About aspects of your job**

**11** For each question, please indicate the one response which best matches your feelings

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1 My personal priorities are compromised.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 My workload is manageable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 I have an adequate level of administrative and technical support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 My general pace of work is too rushed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 I have too much administrative paperwork.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 I lack opportunities for promotion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Lack of time forces me to compromise the quality of my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Communication within my organisation is effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 I am clear about my responsibilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 In the main, I determine how I use my working time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 I don't have time to plan and organise my work properly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 I have ample opportunity to air my personal opinions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 My performance at work is compromised by a lack of resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 I am satisfied with my level of influence over departmental/work group decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14 I experience 'information overload'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
15 I have ample opportunities for training and development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16 I am happy with the level of support I obtain from my colleagues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17 I do not have enough time to enable me to deal effectively with students' problems/queries.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18 My annual appraisal/review process has fairly recognised my achievements and abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19 I am able to cope with the demands of my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20 I am frequently interrupted at work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21 I have enough time to prepare for my classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22 My lecture/tutorial groups are too big.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23 My students are able and competent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 My students are poorly motivated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25 On the whole, I have a good relationship with my students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 I am unhappy with the level of participation in my classes and seminars.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27 I lack opportunity and support to undertake scholarly work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28 I am happy with the quality of my research.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29 I am able to take time out to relax.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 My job interferes with my personal life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32 There is enough time available for me to pursue my hobbies and interests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33 I over-commit myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34 My social life suffers because of the demands of my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35 My family suffers from the demands of my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**About your perceptions of change in the sector**

**12** For each question, please indicate the one response which best matches your feelings. During the last **THREE** calendar years:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
36 There have been too many changes implemented in too short a time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37 Any changes made have been generally positive and desirable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38 In general, the management of change has been effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39 The atmosphere in my department or work group has become more competitive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40 Levels of support and co-operation from colleagues have declined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41 My colleagues are less likely to share information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42 The demands of my job have not significantly increased.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43 I have less autonomy in my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44 There are fewer resources available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45 In general, I work longer hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46 My work has encroached more into my private life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47 My sense of participation and involvement has increased.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48 Senior management have a poorer understanding of employees' needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49 Bullying and intimidatory management tactics have become more commonplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50 My institution has become more bureaucratic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51 There are more rules and procedures to follow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52 The number of senior managers has increased disproportionately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53 The increased emphasis on performance indicators has damaged the quality of education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
54 Staff are less likely to be consulted before important decisions are made.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55 There are more meetings to attend.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56 I rarely have to do tasks that I consider to be unnecessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57 My institution has become more efficient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58 The status of academic staff has declined in this country.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59 The pressure to publish has increased significantly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60 Management has become more sensitive to the needs of academic staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61 There is too much emphasis on quality assurance, such as assessment of teaching and research, and academic audit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62 In general, the results of quality assessments fairly represented the work of my department or work group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63 I feel under more pressure to increase my research or consultancy activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64 I feel under more pressure to obtain research funding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65 Quality assessment has compromised my professional independence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66 On balance, the effects of the Research Assessment Exercise on higher education have been positive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67 Quality assessment, on the whole, has had a positive effect on the student experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Other aspects of your working conditions**

**13** *During the last FIVE calendar years:*

	Yes	No
1 Has your level of responsibility at work significantly increased?	<input type="checkbox"/>	<input type="checkbox"/>
2 Has your employment status become less secure (e.g. tenure/open-ended contract changed to fixed-term?)	<input type="checkbox"/>	<input type="checkbox"/>
3 Have you been the object of a formal complaint by a student or colleague?	<input type="checkbox"/>	<input type="checkbox"/>

- |   | <i>Yes</i>               | <i>No</i>                |
|---|--------------------------|--------------------------|
| 4 Have you been the subject of a disciplinary or grievance procedure? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Have there been redundancies or job cuts in your institution?       | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Have you felt under personal threat of redundancy?                  | <input type="checkbox"/> | <input type="checkbox"/> |

### **Your job satisfaction and job security**

14 *For each question, please indicate the one response which best matches your feelings*

- |  | Strongly<br>agree        | Agree                    | Neither agree<br>nor disagree | Disagree                 | Strongly<br>disagree     |
|--|--------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|
| 1 My job is rewarding and worthwhile.        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 I am recognised for my efforts             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 I am motivated by my work                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 I am intellectually stimulated by my work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 I feel secure in my job.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | <input type="checkbox"/> | <input type="checkbox"/> |

### **Stress management and counselling**

15 *Please indicate the one response which best applies*

- |  | <i>Yes</i>               | <i>No</i>                |
|--|--------------------------|--------------------------|
| 1 Is there any provision for stress management training* or equivalent in your workplace?              | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 If such training is available, have you participated in it?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 If such training is not currently available, would you use it if it later became available?          | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Is there a counselling service available to you in your workplace?                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 If a counselling service is available, have you used it?   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 If a counselling service is not at present available, would you use it if it later became available? | <input type="checkbox"/> | <input type="checkbox"/> |

*(\*stress management means techniques for handling the psychological and emotional consequences of stress, not techniques for reducing stress, such as time management)*



## **Your plans for the future**

**16** *Please indicate the one response which best applies*

	<i>Yes</i>	<i>No</i>
Have you seriously considered leaving higher education over the last five years (other than through ordinary retirement?)	<input type="checkbox"/>	<input type="checkbox"/>

*Thank you very much for completing this questionnaire.*

# **Appendix B**

**Questionnaire used in Study 2**

# ASSOCIATION OF UNIVERSITY TEACHERS

## SURVEY OF MEMBERS 2004

### STRESS & WORK-LIFE BALANCE

#### Section 1: About you and your job

1. Are you? Male  1 Female  2
2. Do you consider yourself to belong to an ethnic minority group? Yes  1 No  2
3. Into which of the following age bands do you fall?
- |             |                          |   |            |                          |    |       |                          |   |       |                          |   |
|-------------|--------------------------|---|------------|--------------------------|----|-------|--------------------------|---|-------|--------------------------|---|
| 24 or under | <input type="checkbox"/> | 1 | 25-29      | <input type="checkbox"/> | 2  | 30-34 | <input type="checkbox"/> | 3 | 35-39 | <input type="checkbox"/> | 4 |
| 40-44       | <input type="checkbox"/> | 5 | 45-49      | <input type="checkbox"/> | 6  | 50-54 | <input type="checkbox"/> | 7 | 55-59 | <input type="checkbox"/> | 8 |
| 60-64       | <input type="checkbox"/> | 9 | 65 or over | <input type="checkbox"/> | 10 |       |                          |   |       |                          |   |
4. Please record your institution below: *(If you are wholly or principally employed by one of the constituent institutions of the University of London or University of Wales, please give the name of the constituent and federal institution, e.g. Birkbeck College, University of London, or University of Wales, Aberystwyth):*
- .....
5. What is your job grade?.....
- 6a. which your main employment function: *(Please tick one box only)*
- |  |                                    |                          |   |
|--|------------------------------------|--------------------------|---|
|  | Teaching only                      | <input type="checkbox"/> | 1 |
|  | Research only                      | <input type="checkbox"/> | 2 |
|  | Teaching and research              | <input type="checkbox"/> | 3 |
|  | Librarian                          | <input type="checkbox"/> | 4 |
|  | Medicine, Dentistry and Veterinary | <input type="checkbox"/> | 2 |
|  | Social studies                     | <input type="checkbox"/> | 3 |
|  | Arts and Humanities                | <input type="checkbox"/> | 4 |
- Other. Please specify: .....
7. Are you employed? Part-time  1 Full-time  2
8. Is your employment? *(Please tick the box that best describes your circumstances)*
- |  |            |                          |   |
|--|------------|--------------------------|---|
|  | Fixed term | <input type="checkbox"/> | 1 |
|  | Permanent  | <input type="checkbox"/> | 2 |
|  | Casual     | <input type="checkbox"/> | 3 |
9. For how many years have you been employed in higher education in the UK?
- |           |                          |   |           |                          |   |             |                          |   |           |                          |   |
|-----------|--------------------------|---|-----------|--------------------------|---|-------------|--------------------------|---|-----------|--------------------------|---|
| 0-3 years | <input type="checkbox"/> | 1 | 4-9 years | <input type="checkbox"/> | 2 | 10-19 years | <input type="checkbox"/> | 3 | 20+ years | <input type="checkbox"/> | 4 |
|-----------|--------------------------|---|-----------|--------------------------|---|-------------|--------------------------|---|-----------|--------------------------|---|
10. For how many years have you been employed at your current institution?
- |           |                          |   |           |                          |   |             |                          |   |           |                          |   |
|-----------|--------------------------|---|-----------|--------------------------|---|-------------|--------------------------|---|-----------|--------------------------|---|
| 0-3 years | <input type="checkbox"/> | 1 | 4-9 years | <input type="checkbox"/> | 2 | 10-19 years | <input type="checkbox"/> | 3 | 20+ years | <input type="checkbox"/> | 4 |
|-----------|--------------------------|---|-----------|--------------------------|---|-------------|--------------------------|---|-----------|--------------------------|---|
11. Please indicate the average number of hours you work\* per week (on/off site) during term-time:
- |       |                          |   |       |                          |   |       |                          |   |       |                          |    |       |                          |    |              |                          |    |
|-------|--------------------------|---|-------|--------------------------|---|-------|--------------------------|---|-------|--------------------------|----|-------|--------------------------|----|--------------|--------------------------|----|
| 0-10  | <input type="checkbox"/> | 1 | 11-15 | <input type="checkbox"/> | 2 | 16-20 | <input type="checkbox"/> | 3 | 21-25 | <input type="checkbox"/> | 4  | 26-30 | <input type="checkbox"/> | 5  | 31-35        | <input type="checkbox"/> | 6  |
| 36-40 | <input type="checkbox"/> | 7 | 41-45 | <input type="checkbox"/> | 8 | 46-50 | <input type="checkbox"/> | 9 | 51-55 | <input type="checkbox"/> | 10 | 56-60 | <input type="checkbox"/> | 11 | More than 60 | <input type="checkbox"/> | 12 |

*(\* work means any tasks related to your contract of employment)*

**12. Please indicate the average proportion of the hours you work per week which are at weekends and before 9am and after 5pm Monday to Friday:**

0-10%  1    11-20%  2    21-30%  3    31-40%  4    41-50%  5    More than 50%  6

## Section 2: Your job content

**The following questions assess how you feel about your working conditions and your job in general. For each question please indicate the one response that best matches your feelings:**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not relevant
1. My workload is manageable	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
2. I have too much administrative paperwork	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
3. I do not have enough time to enable me to deal effectively with students' problems/queries	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
4. I lack opportunities for promotion	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
5. I have ample opportunity for training and development	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
6. Communication within my organisation is effective	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
7. I am clear about my responsibilities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
8. I am satisfied with my level of influence over departmental/work group decisions	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
9. I have a choice in deciding what I do at work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
10. I have a choice in deciding how I do my job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
11. I have a good deal of say in decisions about work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
12. I have the possibility of learning new things through my work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
13. My work demands a high level of skill or expertise	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
14. I am happy with the level of support I obtain from my colleagues	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
15. I am happy with the level of support I obtain from my immediate line manager	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
16. I am happy with the level of support I obtain from managers above my immediate line manager	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
17. I have an adequate level of administrative and technical support	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
18. I am subjected to unacceptable behaviours (e.g. bullying) at work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
19. My annual appraisal/review process has fairly recognised my achievements and abilities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
20. I find my job stressful	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not relevant
21. I have enough time to prepare for my classes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
22. My lecture/tutorial groups are too big	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
23. I have ample opportunity to undertake scholarly work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
24. I am happy with the quality of my research	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0

**Perception of change in your institution**

The purpose of these questions is to obtain your opinions about changes that have taken place over the last 5 years in higher education in general and in your current institution. (If you have been employed in HE or your current institution for less than 5 years, please answer in relation to the relevant period of time).

<b>During the last FIVE years</b>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not relevant
25. The status of academic staff has declined in this country	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
26. The pressure to publish has increased significantly	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
27. Management has become more sensitive to the needs of academic staff	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
28. There is too much emphasis on quality assurance, such as assessment of teaching and research, and academic audit	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
29. In general, the results of quality assessments fairly represented the work of my department or work group	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
30. I feel under more pressure to increase my research or consultancy activity	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
31. I feel under more pressure to obtain research funding	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
32. Quality assessment has compromised my professional independence	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
33. On balance, the effects of the Research Assessment Exercise on higher education have been positive	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0
34. Quality assessment, on the whole, has had a positive effect on the student experience	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 0

<b>During the last FIVE years</b>	Yes	No	Don't know
35. Has your level of responsibility at work significantly increased?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
36. Have there been redundancies or job cuts in your institution?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
37. Have you felt under personal threat of redundancy?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
38. Have you been the object of a formal complaint by a student or colleague?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
39. Have you been the subject of a disciplinary or grievance procedure?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
40. Have you seriously considered leaving higher education (other than through early retirement)?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
41. If so, why?.....			

**Your job-related efforts and rewards**

For each of the following statements, please indicate first whether you agree or disagree with it. If there is an arrow  $\Rightarrow$  after your answer please also indicate how much you are generally distressed by this situation. Please answer all statements:

**42. I have constant time pressure due to a heavy work load**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**43. I have many interruptions and disturbances in my job**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**44. I have a lot of responsibility in my job**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**45. I am often pressured to work overtime**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**46. My job is physically demanding**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**47. Over the past few years, my job has become more and more demanding**

Disagree .....

Agree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**48. I receive the respect I deserve from my superiors**

Agree .....

Disagree .....   $\Rightarrow$  .....

I am not at all distressed 1

I am somewhat distressed 2

I am distressed 3

I am very distressed 4

**49. I receive the respect I deserve from my colleagues**

Agree .....

Disagree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**50. I receive adequate support in difficult situations**

Agree .....

Disagree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**51. I am treated unfairly at work**

Disagree .....

Agree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**52. My job promotion prospects are poor**

Disagree .....

Agree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**53. I have experienced or expect to experience an undesirable change in my work situation**

Disagree .....

Agree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**54. My current occupational position adequately reflects my education and training**

Agree .....

Disagree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**55. Considering all my efforts and achievements, I receive the respect and prestige I deserve at work**

Agree .....

Disagree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**56. Considering all my efforts and achievements, my work prospects are adequate**

Agree .....

Disagree ..... ⇒ .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3

I am very distressed 4

**57. Considering all my efforts and achievements, my salary / income is adequate.**

Agree .....

Disagree .....  => .....

- I am not at all distressed 1
- I am somewhat distressed 2
- I am distressed 3
- I am very distressed 4

**Section 3: Where you work**

**1. During an average term-time week, what percentage of your work do you estimate you do....**

In your work institution? .....

At home? .....

Elsewhere (e.g. meetings, conferences away from your work base) .....

**2. During an average term time week, ideally what percentage of your work would you like to do....**

In your work institution? .....

At home? .....

Elsewhere (e.g. meetings, conferences away from your work base) .....

**3. To what extent are you able to work without interruption.....**

	Never	Rarely	Sometimes	Frequently	Always
...at work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
... at home, if relevant	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**If you do any of your work at home please answer the following questions. If you do not please go to Section 4.**

**Please answer the following questions about working at home:**

**4. What type of work are you most likely to do at home? Why do you do these tasks at home rather than your place of work?**

.....

.....

.....



**Section 4: Work-Life Balance**

- 1. With whom do you share your household? (Please tick those that apply)**
- No-one  1
  - Spouse /partner  2
  - Under-school age child/ren  3 Number.....
  - School-age child/ren  4 Number.....
  - Above school age child/ren  5 Number.....
  - Elderly relative/s  6 Number.....

Other, please specify: .....

- 2. If you have a spouse or partner, does he / she work in.....**
- Higher education as an academic  1
  - Higher education in academic related work  2
  - Other work in higher education  3
  - Further education  4
  - School teaching  5
  - FE / school teaching related work  6
  - He/she does not work in the education sector  7
  - He/she does not have paid employment  7

**3. Which of the following two jobs is most similar to your job?**

- |   |  |
|---|--|
| Person A is expected to work in their workplace on a 9-5 basis Mon. to Fri. | Person B can decide for him/herself where and when to work |
| <input type="checkbox"/> 1  | <input type="checkbox"/> 4                                 |
| Exactly like A  | Similar to B   |
| <input type="checkbox"/> 2  | <input type="checkbox"/> 5                                 |
| Similar to A  | Exactly like B   |
| <input type="checkbox"/> 3  |  |
| In between A and B  |  |

**4. Please rate your current position on the following scale?**

- My work and home lives are completely separate  1  2  3  4  5  6  7  8  9 There is no separation between my work and home lives

**5. Please rate how you would ideally like to be?**

- My work and home lives would be completely separate  1  2  3  4  5  6  7  8  9 There would be no separation between my work and home lives

**To what extent...**

- |  |                            |                            |                            |                            |                            |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|  | <b>Not at all</b>          | <b>A little</b>            | <b>Quite a bit</b>         | <b>Very much so</b>        | <b>Unsure</b>              |
| 6. ...would you say that your institution helps workers to achieve a balance between their work and family responsibilities? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 0 |
| 7. ...are you satisfied with how well your institution is addressing the work and family needs of its employees?             | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 0 |
| 8. ...do you have a clear boundary between your working life and your home life?   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 0 |

<b>How well does...</b>	<b>Not at all</b>	<b>A little</b>	<b>Quite a bit</b>	<b>Very much so</b>	<b>Unsure/ not relevant</b>
9. ... your working schedule, and the degree of flexibility in this schedule, meet your own needs?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 0
10. ...your working schedule, and the degree of flexibility in this schedule, meet the needs of your spouse/partner?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 0
11. ...your working schedule, and the degree of flexibility in this schedule, meet the needs of your children/other dependents?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 0

**Please indicate to what extent you personally agree or disagree with the following statements:**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
12. I get easily overwhelmed by time pressures at work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
13. As soon as I get up in the morning I start thinking about work problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
14. When I get home, I can easily relax and 'switch off' work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
15. People close to me say I sacrifice too much for my job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
16. Work rarely lets me go: it is still on my mind when I go to bed	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
17. If I postpone something that I was supposed to do today I'll have trouble sleeping at night	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

**Please rate the extent of your agreement with the following statements:**

	<b>Strongly disagree</b>					<b>Strongly agree</b>	
18. The demands of my work interfere with my life outside work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
19. The amount of time my job takes up makes it difficult to fulfil other responsibilities (e.g. family, social, community etc)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
20. Things I want to do in my life outside work do not get done because of the demands my job puts on me	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
21. My job produces strain that makes it difficult to fulfil other duties (e.g. family, social, community etc.)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
22. Due to work-related duties, I have to make changes to my plans for non work activities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
23. Due to the demands of my work, I am irritable at home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
24. Due to the demands of my work, I withdraw from family and friends	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

25. Do you take any action to minimise conflicts between work and home? If so please describe briefly?

.....  
 .....

**Section 5: Your health and well-being**

Please rate how satisfied or dissatisfied you feel with each of the following features of your present job:

	I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1. Your job overall	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
2. The work itself	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
3. The physical working conditions	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
4. Relationships with your line manager	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
5. Your promotion prospects	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
6. Your rate of pay	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
7. Your hours of work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
8. Your job security	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
9. Your opportunities to use initiative	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
10. The intellectual stimulation you receive	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
<b>For academic staff only:</b>							
11. The courses or modules you teach	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
12. The students you teach and/or supervise	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
13. Your research	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
14. Your academic freedom: i.e. the opportunity to pursue your own ideas	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

The following questions assess the extent to which you are involved in your work. Please rate how much you agree with the following statements:

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
15. The most important things that happen to me involve my job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
16. Most of my interests are centred around my job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
17. To me, my job is a very large part of who I am	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
18. I am very much personally involved with my job	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
19. My job is a very important part of my life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

20. What is your annual leave entitlement? ..... days

21. How much of your leave entitlement do you actually take per year? ..... days

22. Your physical well-being.

During the past 30 days did you have any of the following symptoms?  
If you did have the symptom, did you see a doctor about it? (please tick one response only)

	No	Yes, but I didn't see a doctor	Yes, and I saw a doctor
1. An upset stomach or nausea	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
2. A backache	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
3. Trouble sleeping	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
4. A skin rash	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
5. Shortness of breath	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
6. Chest pain	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
7. Headache	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
8. Fever	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
9. Acid indigestion or heartburn	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
10. Eye strain	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
11. Diarrhoea	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
12. Stomach cramps (Not menstrual)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
13. Constipation	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
14. Heart pounding when not exercising	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
15. An infection	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
16. Loss of appetite	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
17. Dizziness	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
18. Tiredness or fatigue	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2

**Section 6: The support available to you**

Can you discuss stress related problems in an open way.....	Yes	No	Don't know
1... with your line manager?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 0
2... with your colleagues?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 0
<b>Which (if any) of the following services are available to you?</b>			
3. Occupational health services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 0
4. Stress management training	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 0
5. Stress helpline/confidential counselling (provided by your institution)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 0
<b>About the AUT's stress telephone helpline</b>			
6. Are you aware of this service?	<input type="checkbox"/> 1	<input type="checkbox"/> 1	
7. Have you ever used this service?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	

**Section 7: Work-family policies**

**From 6 April 2003 parents/adopters/guardians of children aged under six or disabled children aged under 18 have had the right to request flexible working, although this does not entitle them to insist on a new pattern of work. By law, eligible employees can request:**

- **A change to the hours they work**
- **A change to the times when they are required to work**
- **To work from home**

1. Has your employer told you that parents / adopters / guardians of children aged under six or disabled children aged under 18 have the right to request flexible working?      Yes  1      No  2      Don't know  0

**2. If your employer provides you with any benefit or working condition that helps you to balance work and non-work demands, please describe below.**

.....

.....

.....

**Section 8: Finally...**

**1. What measures would you like to see taken to reduce stress in HE ? (Think of things you would like to do yourself, or you would like your organisation/employer or the AUT to do):**

**2. What measures would you like to see taken to improve work-life balance (Think of things you would like to do yourself, or you would like your organisation or the AUT to do):**

**Thank you for completing this questionnaire. Please return it as soon as possible in the envelope provided.**

# **Appendix C**

## **General Health Questionnaire**

**Please read this carefully:**

We should like to know if you have had any medical complaints, and how your health has been in general, *over the past few weeks*. Please answer ALL the questions simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past. It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

**HAVE YOU RECENTLY:**

1	-	been able to concentrate on whatever you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
2	-	lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
3	-	felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
4	-	felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
5	-	felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
6	-	felt you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
7	-	been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
8	-	been able to face up to your problems?	More so than usual	Same as usual	Less able than usual	Much less able
9	-	been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
10	-	been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
11	-	been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
12	-	been feeling reasonably happy, all things considered?	More so than usual	About same as usual	Less so than usual	Much less than usual

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# **Appendix D**

**Details of factor analyses performed in  
Study 1**

### Factor loadings for items in work stressor sub-scales

Item stem	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<b>1. Work-home demands (Scale mean = 31.76, SD = 6.60; Eigenvalue = 8.1; alpha = 0.86; % variance = 23.1)</b>					
Personal priorities compromised	0.64	0.05	0.03	0.03	0.08
Unmanageable workload	0.72	0.18	0.08	0.05	0.10
No time to relax	0.58	0.07	0.07	0.29	0.04
Job too demanding	0.55	0.04	0.01	0.21	0.15
Job interferes with personal life	0.67	0.22	0.16	0.44	0.07
Lack time for hobbies/interests	0.54	0.21	0.12	0.27	0.03
Over-commit myself	0.43	0.37	0.05	0.14	0.22
Social life suffers	0.66	0.30	0.19	0.42	0.11
Family suffers effects of job	0.64	0.23	0.15	0.41	0.11
<b>2. Professional constraints (Scale mean = 24.07. SD = 5.93; Eigenvalue 3.17; alpha = 0.83; % variance = 9.1)</b>					
Lack opportunities for promotion	0.35	0.46	0.11	0.03	0.20
Ineffective communication	0.21	0.56	0.15	0.11	0.16
Unclear responsibilities	0.33	0.48	0.01	0.05	0.02
Lack opportunities to air opinion	0.43	0.58	0.18	0.05	0.14
Lack influence over decision-making	0.41	0.66	0.28	0.04	0.21
Lack opportunities for training/development	0.33	0.48	0.19	0.04	0.01
Lack support from colleagues	0.32	0.48	0.10	0.05	0.10
Annual appraisal unfair	0.30	0.61	0.17	0.04	0.05

Item stem	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<b>3. Student demands (Scale mean = 8.46, SD = 2.64; Eigenvalue = 2.30; alpha = 0.75; % variance = 6.6)</b>					
Students incompetent	0.08	0.30	0.70	0.11	0.00
Students poorly motivated	0.07	0.31	0.73	0.23	0.04
Unhappy with student participation	0.07	0.21	0.66	0.34	0.06
<b>4. Time demands (Scale mean = 26.16, SD = 5.18; Eigenvalue = 1.61; alpha = 0.79; % variance = 4.6)</b>					
Pace of work too rushed	0.42	0.26	0.05	0.62	0.11
Too much paperwork	0.37	0.15	0.17	0.48	0.23
Lack of time compromises work quality	0.26	0.22	0.14	0.60	0.08
Lack time to plan and organise	0.16	0.20	0.13	0.70	0.16
Lack time for students problems	0.27	0.07	0.21	0.53	0.00
Frequent interruptions at work	0.45	0.31	0.16	0.65	0.10
Lack time to prepare for classes	0.20	0.17	0.07	0.55	0.27
<b>5. Research demands (Scale mean = 6.89, SD = 1.97; Eigenvalue = 1.28; alpha = 0.59; % variance = 3.7)</b>					
Lack opportunity/support for research	0.42	0.07	0.03	0.16	0.60
Unhappy with quality of research	0.34	0.06	0.09	0.06	0.62

### Factor loadings for items in sources of change sub-scales

<i>Item stem</i>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
<b>1. Management of change (Scale mean = 46.94, SD = 9.0; (Eigenvalue = 9.0; alpha = 0.89; % variance = 26.7)</b>				
Too many changes	<b>0.56</b>	<b>0.03</b>	<b>0.07</b>	<b>0.31</b>
Changes negative and undesirable	<b>0.63</b>	<b>0.28</b>	<b>0.10</b>	<b>0.18</b>
Management of change ineffective	<b>0.63</b>	<b>0.35</b>	<b>0.08</b>	<b>0.24</b>
Less autonomy	<b>0.61</b>	<b>0.03</b>	<b>0.16</b>	<b>0.01</b>
Senior management less understanding	<b>0.63</b>	<b>0.24</b>	<b>0.28</b>	<b>0.02</b>
Personal involvement decreased	<b>0.47</b>	<b>0.36</b>	<b>0.18</b>	<b>0.20</b>
More bullying management	<b>0.64</b>	<b>0.17</b>	<b>0.24</b>	<b>0.14</b>
Institution more bureaucratic	<b>0.65</b>	<b>0.24</b>	<b>0.05</b>	<b>0.15</b>
More senior managers	<b>0.60</b>	<b>0.25</b>	<b>0.11</b>	<b>0.03</b>
More rules and procedures	<b>0.57</b>	<b>0.05</b>	<b>0.27</b>	<b>0.18</b>
Less consultation on decisions	<b>0.62</b>	<b>0.36</b>	<b>0.18</b>	<b>0.05</b>
Institution less efficient	<b>0.56</b>	<b>0.37</b>	<b>0.06</b>	<b>0.03</b>
Management less sensitive to needs	<b>0.66</b>	<b>0.24</b>	<b>0.17</b>	<b>0.03</b>

<i>Item stem</i>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
<b>2. Research change (Scale mean = 12.74, SD = 2.21; (Eigenvalue = 2.61; alpha = 0.76; % variance = 7.68)</b>				
More pressure to publish	0.38	0.55	0.06	0.24
More pressure to increase research activity	0.34	0.65	0.01	0.36
More pressure to obtain funding	0.32	0.54	0.02	0.32
<b>3. Quality assessment change (Scale mean = 17.42, SD = 4.27; (Eigenvalue = 2.1; alpha = 0.77, % variance = 5.9)</b>				
Performance indicators damaging	0.41	0.03	0.61	0.12
Too much emphasis on QA	0.39	0.04	0.53	0.15
QA compromised independence	0.26	0.11	0.57	0.29
RAE negative impact	0.33	0.16	0.49	0.24
QA negative impact on students	0.31	0.18	0.48	0.26
<b>4. Change in professional support (Scale mean = 9.78, SD = 2.45; Eigenvalue = 2.0; alpha = 0.74; % variance = 4.7)</b>				
Atmosphere more competitive	.032	0.29	0.21	0.63
Support from colleagues declined	0.15	0.04	0.27	0.52
Colleagues less likely to share info	0.24	0.06	0.24	0.58