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An exploration of the determinants of applicant fairness perceptions in high-stakes selection settings

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Submitted for PhD

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Abstract

In the last two decades there has been a proliferation of research focusing on the applicants' perspective of selection, which has examined the attitudes and cognitions that applicants have about a selection process. The fundamental premise underlying this research is that fairness perceptions influence certain outcomes such as applicant decision-making, organisation attractiveness and litigation intentions (Gilliland, 1993). There has been an abundance of research examining the *outcomes* of fairness perceptions; however, relatively little research has focused on the *determinants* of these perceptions. Therefore this thesis presents four studies designed to explore the determinants of applicant fairness perceptions in high-stakes selection settings.

All studies took place within the context of the UK National Health Service, using samples of applicants from two selection processes: General Practice (GP) and Public Health (PH). The first study explored the role of job relatedness, personality and self-efficacy in fairness perceptions using two samples of applicants from the shortlisting (N=156) and assessment centre (N=212) stages of the GP process. The second study explored the role of procedural justice rules, cognitive ability and candidate educational background using a sample (N=132) of applicants for PH. The third study explored the role of gender, ethnicity and selection method characteristics in perceptions of job relatedness in three field-based samples (total N=973). The fourth and final study presents research examining the role of spontaneously-produced attributions in applicant perceptions of a selection process using a series of 40 applicant interviews.

Overall, findings suggested that most of the variables explored were determinants of applicant fairness perceptions, including personality, self-efficacy, cognitive ability, candidate educational background and attributions. On the other hand, demographic characteristics (gender and ethnicity) were not found to be determinants of fairness perceptions in the samples examined. In the final chapter the overall findings are discussed in relation to both their theoretical and practical implications; and finally some directions for future research are suggested.

Chapter 1: An exploration of the determinants of applicant fairness perceptions in high-stakes selection settings

1.1 Introduction

The twenty-first-century organisational landscape looks somewhat different to that of the previous century, as noted by several authors (e.g. Cascio & Aguinis, 2008a; 2008b; Landy & Conte, 2009). There have been significant changes, such as the increasing globalisation of businesses; the Internet revolution; the growth of knowledge workers; the rapid pace of change, and less hierarchical organisations (Cascio & Aguinis, 2008a; Engardio, 2006; Herriot & Anderson, 1997; Landy & Conte, 2009). These changes have impacted the way in which individuals work and are selected into organisations, with an increasing reliance on team working, contracted labour and rapidly changing work roles that require flexibility, adaptability and innovation (Herriot & Anderson, 1997; Cascio & Aguinis, 2008a; 2008b; Tarique & Schuler, 2008).

Although the research and practice of personnel selection spans some 100 years, authors (e.g. Cascio & Aguinis, 2008a) suggest that current selection approaches may not be well suited for predicting performance in today's fast-paced and global organisations. Individuals are now selected to work in different ways where adaptability is necessary to cope with constant change, and team-based working means that 'performance' must be assessed in broader team or organisation-based contexts (Landy & Conte, 2009; Cascio & Aguinis, 2008a; Herriot & Anderson, 1997). Furthermore, the state of the labour market is fundamental to an organisation's selection process and in recent years, shortages in some labour markets have resulted in an increasing recognition that there is a "war for talent" (Lievens, van Dam, Anderson, 2002; Michaels, Handfield-Jones & Axelrod, 2001). As was observed in late 2009, *"no one word demonstrated the shift in corporations' attention... from processes to people more vividly than the single word 'talent'"* (The Economist, November 13th 2009). Indeed, talent (previously termed 'human resources') is seen as essential to an organisation's future success (Michaels et al, 2001), which highlights the importance of

personnel selection for organisations to gain competitive advantage. Given the high costs of hiring and retaining the best employees (Chambers, 2002) personnel selection remains a significant concern for organisations during the current economic down-turn.

Finding, selecting and then retaining talent is one of the toughest business challenges faced by organisations (Goldsmith, 2009) with talent thought to be "the world's most sought-after commodity" (Cascio & Aguinis, 2008a, p. 136). Traditionally, selection research has been from the organisation's perspective, often focusing on the extent to which various selection methods predict an applicant's future job performance (e.g. Schmidt & Hunter, 1998). However, the "war for talent" may be a practical reason for research to shift to an applicant-focused agenda. It is important for organisations to attract good candidates (Breaugh & Starke, 2000) and an organisation's selection process may send positive, or negative, 'signals' to candidates about the state of the future working relationship (Anderson, 2001). For instance, a fairly-designed selection process may suggest to applicants that fairness is an important concern for an organisation. In turn, this may result in the organisation's ability to attract top candidates (Landy & Conte, 2009; Lievens et al, 2002). Indeed, research suggests that an organisation's image is important to applicants and those with better reputations are better able to attract applicants (Turban & Cable, 2003; Turban, Forret & Hendrickson, 1998). Furthermore, a company's image can be defined by their recruitment practices (e.g. Fielden & Dulek, 1982) and applicants are more likely to apply to organisations that have desirable attributes (e.g. Terjesen, Vinnicombe & Freeman, 2007),

Nevertheless, to date most selection research has adopted an organisational perspective, with few studies focusing on the applicants' perspective. In fact, it has been estimated that less than 5% of empirical selection-based studies take an applicant-oriented stance (Anderson, Lievens, van Dam & Ryan, 2004). Since a selection process is a two-way social exchange between an individual and an organisation (Herriot, 1992; 1993; 2002; Lievens et al, 2002), it seems increasingly important also to examine the applicant's perspective (Anderson et al, 2004; Herriot & Anderson, 1997). Therefore the present thesis takes an applicant-oriented approach to selection, examining the selection process and methods from the applicant's point of view.

A brief review of the dominant, psychometric view of selection within organisational psychology that takes an organisational perspective is presented in this chapter; this is followed by an outline of an alternative perspective encompassing the applicant's point of view – selection as a social process. Following this, a review of the literature examining applicant perceptions of selection is presented, along with an overview of the main limitations of this research.

1.2 The psychometric view of selection

Historically, personnel selection and assessment has tended to be dominated by the psychometric paradigm, which takes a rationalistic, positivist and scientific approach to selection considered from the organisation's perspective (Anderson et al, 2004; Cascio & Aguinis, 2008b; Derous & De Witte, 2001; Pfeffer, 1993; Searle, 2003; de Wolff, 1993). In essence, selection is seen as an exercise in predicting someone's suitability for a job through the use of selection methods that predict future job performance (Cascio & Aguinis, 2008a; Derous & De Witte, 2001; McCourt, 1999; Thornton, 1993; de Wolff, 1993). The dominance of the psychometric paradigm within selection has resulted in improved methods of selection assessment due to researchers' efforts to demonstrate the validity, reliability and utility of selection methods (e.g. Schmidt & Hunter, 1998; Robertson & Smith, 2001). However, it is also associated with a number of issues that have resulted in some authors questioning the paradigm's utility (e.g. Cascio & Aguinis, 2008a; de Wolff, 1993). Four main issues are outlined below, which include: (1) there is a gap between selection research and practice (e.g. Sanders, Riemsdijk & Groen, 2008); (2) selection methods are more than neutral, non-impactful, predictors of subsequent job performance (e.g. Anderson, 2001); (3) selection is a *process,* not a "series of hurdles to overcome" (e.g. Herriot, 1993), and (4) the candidate can influence the process and the outcome of selection (e.g. Wanous, 1988).

(1) Firstly, there is a gap between selection research and practice (Anderson, 2005; Cascio & Aguinis, 2008a; Sanders et al, 2008). This is highlighted by the low adoption of psychometric methods in practice where surveys indicate that

organisations tend not to use the valid and reliable methods preferred by some psychologists (see for example Hodgkinson & Payne, 1998; Keenan, 1995; Robertson & Makin, 1986; Shackleton & Newell, 1991; Smith & Abrahamsen, 1992; Zibarras & Woods, 2010). These surveys highlight that there is a research-practice gap in selection: despite empirical research questioning the validity of unstructured selection methods, a significant number of organisations still choose to use them. Smith and Abrahamsen (1992) drew attention to this when they found a negative correlation between the use of selection methods in practice and the research evidence for validity. It appears therefore that in practice, organisations choose selection methods requiring little technical expertise rather than those that are highly valid. In fact, it has been argued that organisations are not concerned with validity except for legal purposes (Herriot, 2002). The gap between research and practice appears enduring, where over 20 years ago it was commented on in a survey: "...in relation to the impact that current research *should* have upon selection practices, the results are depressing" (Robertson & Makin, 1986, p. 51); recent survey findings (Zibarras & Woods, 2010) suggest that this view prevails. Some commentators (e.g. Guion, 1989; 1998; Highhouse, 2008) suggest that psychologists are at fault for the relative lack of influence of research on practice.

Alternatively, it could be that the gap between research and practice is due to the dominant positivist selection paradigm, which some argue is flawed (e.g. Anderson et al, 2004; Cascio & Aguinis, 2008a; De Wolff, 1989). Within the psychometric paradigm there has been an almost exclusive focus on demonstrating the validity and reliability of selection methods, whilst other practical or theoretical perspectives, such as person-organisation fit, have received less attention (Anderson, 2001; Derous & De Witte, 2001; De Wolff, 1989; Herriot; 1989; 1992; 1993; 2002; Herriot & Anderson, 1997; McCourt, 1999). For instance, selection methods with less robust psychometric properties such as unstructured interviews may be popular because they serve purposes other than candidate assessment. Less structured interviews may help determine the extent to which candidates 'fit' with the team or organisation (Anderson, 1992; Cable & Judge, 1997; Shackleton & Newell, 1991), and recruiters may 'sell' the organisation to candidates (Herriot,

2002). Indeed, selection at senior levels may be somewhat more of a two-way process of mutual influence and negotiation (e.g. Herriot, 1993; 2002).

(2) Secondly from a psychometric perspective, selection methods are often assumed to be neutral and non-impactful predictors of candidate suitability and later work performance (Anderson, 2001; Lievens et al, 2002; Robertson, Iles, Gratton & Sharpley, 1991). However, selection methods are unlikely to merely act as psychologically non-impactful predictors (Anderson, 2001; Herriot & Anderson, 1997; Robertson et al, 1991), and it is unlikely that applicants are merely passive "receptors" of selection processes (e.g. Rynes, 1993a). Evidence suggests that candidates experience selection methods in differing ways, forming impressions of the organisation from these experiences (Sutton & Griffin, 2004; Wanous, 1978; 1992). For example, empirical research shows that pre-entry experiences can have longer-term, detrimental effects on newcomer attitude and turnover (e.g. Riordan, Weatherly, Vandenberg & Self, 2001).

(3) Thirdly, the psychometric perspective places importance on the selection methods, considering them a 'series of hurdles to overcome' (Herriot, 1993). This ignores the fact that selection is a *process* consisting of a number of interpersonal exchanges between applicant and recruiter, each episode being a social situation where information and expectations are exchanged (Herriot, 1992; 1993; 2002; Lievens et al, 2002). It is the first step in a continuing relationship and many researchers believe that a psychological contract is formed and developed during the selection process (e.g. Anderson, 2001; Anderson & Ostroff, 1997; Conway & Briner, 2005; Herriot, 2002; Rousseau, 2001; Rousseau & Greller, 1994; Shore & Barksdale, 1998; Shore & Tetrick, 1994).

(4) Fourthly, the psychometric paradigm generally does not acknowledge that a candidate has an influence in the process and outcome of selection. In fact, applicants are often fairly proactive in attempting to influence selection outcomes (Rynes, 1993a). Topics such as the employees' role in organisational entry (e.g. Barber, Wesson, Roberson, & Taylor, 1999; Taylor & Bergmann, 1987; Wanous, 1988; 1992; Wanous & Colella, 1989); impression management (e.g. Gilmore,

Stevens, Harrell-Cook & Ferris, 1999; Imada & Hakel, 1977; Silvester, Anderson-Gough, Anderson & Mohammed, 2002) and self-selection (e.g. Ryan, Sacco, McFarland & Kriska, 2000) challenge the psychometric approach. Indeed, selection research has been referred to as pre-Copernican (Landy, Shankster & Kohler, 1994) because the "Universe's centre" in relation to selection has been the needs of an organisation – predicting future job performance and productivity – with less priority on applicants' needs (Anderson, 2004; Anderson et al, 2004; Derous & De Witte, 2001; Herriot & Anderson, 1997; Lievens et al, 2002).

Overall, there has been little debate over many of the assumptions within the objectivist psychometric paradigm, resulting in an incomplete understanding of the phenomena and issues that make up the dynamic environment of selection (Herriot & Anderson, 1997). Researchers (e.g. Cascio & Aguinis, 2008a; Herriot & Anderson, 1997) have speculated whether the psychometric paradigm can keep up with rapidly changing trends within organisations. Differing theoretical perspectives may be necessary to deal with the challenge of how organisations deal with personnel selection in changing conditions (Anderson, Born & Cunningham-Snell, 2001; Anderson et al, 2004; Billsberry, 2007; Herriot, 1993; Herriot & Anderson, 1997; McCourt, 1999). As such, a different perspective to selection has been proposed: *selection as a social process*, in which a subjective, social exchange takes place and considers selection from the candidate's point of view (e.g. Herriot, 1993). This approach does not claim to offer an alternative to how employees should be selected; however since the social process view of selection considers selection from the applicant's viewpoint, the present thesis explores this perspective. The next section briefly outlines this perspective; followed by a review of the research relating to applicant perceptions of selection.

1.3 The social process view of selection

Selection as a social process emphasises the nature of the relationship between the individual and the organisation, and selection is seen as the first stage in the employment relationship (Herriot, 1993; 2002). During the selection process both parties' expectations are considered and an emphasis is placed upon information and

social exchange (Derous & De Witte, 2001; Derous, Born, & De Witte, 2004; Derous, De Witte & Stroobants, 2003; Herriot, 1993; Marcus, 2009). The social process approach differs from the psychometric paradigm in two main ways (Derous & De Witte, 2001). Firstly, rather than predicting future work performance where applicants' preferences or expectations are not recognised (Herriot & Anderson, 1997), the social process approach considers inter and intra-personal processes between the individual and the organisation (Derous & De Witte, 2001). Secondly, the psychometric approach focuses on the organisation's point of view; yet both the individual and organisation attract and select each other (e.g. Bretz, Ash & Dreher, 1989; Schneider, 1987; 2001; Schneider, Goldstein & Smith, 1995; Schneider, Kristof-Brown, Goldstein & Smith, 1997) and so the social process view also recognises the importance of the applicant's point of view (Derous & De Witte, 2001; Bauer, Maertz, Dolen & Campion, 1998). One stream of research that focuses on the applicant's perspective is that of applicant perceptions of, and reactions to, selection methods and processes, which is outlined below.

1.4 Applicant perceptions of selection

In the last two decades a more applicant-focused research agenda has been pursued and a growing body of literature has emerged (Anderson, Herriot & Hodgkinson, 2001; Chan, Schmitt, Sacco & DeShon, 1998; Gilliland, 1994; Hülsheger & Anderson, 2009), which examines the attitudes, affect and cognitions that applicants may have about a selection process (Ryan & Ployhart, 2000). The fundamental premise underlying this research is that applicants' perceptions of (1) selection methods and (2) selection processes effect personal and organisational outcomes including applicant decision-making, organisation attractiveness and potential litigation (Gilliland, 1993). In the following section different theoretical approaches within the applicant reaction literature are reviewed and evaluated. Following this, empirical research findings relating to applicant perceptions are presented along with the limitations of some of this research.

1.4.1 Evaluating theoretical approaches of applicant perceptions

Early work focused on applicant perceptions of various selection methods (e.g. Robertson & Kandola, 1982), and was mainly descriptive, merely comparing reactions to a variety of methods (Chan & Schmitt, 2004). Since much of the early work was atheoretical in nature, several researchers attempted to develop frameworks to model the determinants and outcomes of these perceptions. Several theoretical models have been put forward and examples include: the *'social validity'* of selection methods (Schuler, 1993); the *'impact validity'* of selection (Iles & Robertson, 1989; 1997); '*socialisation impact'* of selection methods (Anderson, 2001; Anderson & Ostroff, 1997); and *organisational justice theory* (Gilliland, 1993) each of which are briefly outlined and evaluated below.

In an attempt to evaluate these theoretical frameworks, one must consider evaluation criteria that can be used. There is an ongoing debate within social sciences regarding what constitutes the criteria one can use to evaluate theoretical frameworks (see for example: Freese, 1980; Kaplan, 1964; Sutton & Staw, 1995; Weick 1989; 1995). However, Sutton and Staw (1995) suggest two main evaluation criteria. Briefly these are: (1) empirical evidence to confirm the theory, in particular data that proves causal relationships; (2) an explanation of why variables and constructs are connected and why they come about; that is, the theory should they answer both the 'what' and the 'why' of relationships between variables/constructs.

Social validity model

Schuler's (1993) 'social validity' model of selection is defined as the situational characteristics that make selection processes socially acceptable to candidates. Social validity is understood in relation to four situational characteristics which are thought to influence applicants' perceptions of selection methods. These are: (i) information about tasks and organisational characteristics; (ii) participation in the development and implementation of selection methods, or being able to exert some control over the process; (iii) transparency of selection processes and evaluation, and (iv) feedback in an honest and considerate manner. Schuler also describes empirical findings to support

his model. There is empirical evidence to suggest that the factors individually play a role in predicting applicant perceptions (e.g. Bauer et al, 1998; Gilliland, 1994; Smither, Reilly, Millsap, Pearlman & Stoffey, 1993), although currently no research supports this four-factor model since they have not been tested simultaneously (Derous & De Witte, 2001). Therefore, it could be argued that Schuler's (1993) model is a list of variables and constructs with some empirical research findings that relate to aspects of the model, but causality of the relationships has not yet been tested empirically. In fact, Schuler himself claims that his model is a 'heuristic' (p. 14) to guide investigation, rather than a testable theoretical model.

Impact validity model

Iles and Robertson's (1989; 1997) theoretical model relates to the 'impact validity' of selection, defined as the extent to which selection methods affect a candidate's psychological characteristics. This described one of the first causal models of applicant perceptions where selection methods positively or negatively influence candidate attitudes towards themselves, the selection process and the organisation. The basic premise underlying this model is that characteristics of selection methods (e.g. face validity, job relevance) and outcome (pass/fail) will influence applicant attitudes and perceptions towards the selection methods. These perceptions in turn will influence outcome variables such as self-esteem and organisational commitment. Iles and Robertson propose moderator variables such as life stage of candidate, including prior experience, and personality characteristics. Although initial support was found for the mediating role of applicant perceptions (Robertson et al, 1991), the authors themselves suggest that the model merely indicates the variables and how they may be related, but empirical research has not tested the components or their causality (Iles & Robertson, 1997; Sutton & Staw, 1995).

Socialisation impact model

A further theoretical model relates to the socialisation impact of selection (Anderson, 2001; Anderson & Ostroff, 1997) which suggests that selection and socialisation can be perceived of as stages in a process of newcomer integration through which both person-job and person-organisation fit are attained (Anderson & Ostroff, 1997). This model

proposes a five domain theoretical framework categorising the different ways in which selection methods may impact on candidates. These are: (i) Information Provision; (ii) Preference Impact; (iii) Expectational Impact; (iv) Attitudinal Impact and (v) Behavioural Impact. Information Provision refers to the information provided to candidates through the selection methods, intentional or otherwise; for instance organisations may convey information about what the job is like through using realistic work samples. Preference Impact refers to applicant perceptions towards selection methods, where positive perceptions increase the chances of hiring the best applicants. It is argued that selection methods are liked or disliked for particular reasons, one of which is that they may have a long-lasting psychological influence on candidates (e.g. Gilliland, 1993). Expectational Impact refers to applicants making formal, varied and long-lasting expectations of the future work relationship. Candidates extend information obtained during selection into a psychological contract of the employment relationship (e.g. Conway & Briner, 2005; Rousseau, 1995). Attitudinal Impact refers to applicant attitudes towards the prospective employer, organisation, team and job role. This is influenced by the information provided to the applicant, their preference impact reactions and the series of expectations they have generated during the selection process. It is likely that this unfolds over time as candidates have more contact with organisational members. Finally, Behavioural Impact refers to subsequent, on-the-job behaviour of hired applicants which is influenced by the previous four domains. It should be noted that the five domain framework has not yet been tested empirically, although Anderson (2001) suggests that it can be done through empirical research.

In sum, it appears that the models outlined above are mainly descriptive in nature. There is some empirical research supporting relationships between some of the variables within the models; however an explanation of why variables are related is not always included in these models; and furthermore empirical research has not yet proven causal relationships or shown why applicant perceptions occur.

Organisational justice theory

The dominant model for research on applicant perceptions, however, is presented by Gilliland (1993; 1995) who proposes organisational justice theory (Greenberg, 1987;

1990) as a framework to consider applicant perceptions of selection processes. As with organisational justice theory, Gilliland makes a distinction between *procedural* and *distributive justice*. In a selection context, procedural justice refers to the fairness of the selection process itself, whilst distributive justice refers to the fairness of the selection outcome. The model, displayed in Figure 1.1, proposes that the extent to which applicants believe that selection processes satisfy or violate certain procedural and distributive justice rules leads to overall fairness perceptions. This, in turn, leads to individual and organisational outcomes (Gilliland, 1993; 1994; 1995; Ployhart & Ryan, 1998a; Truxillo, Bauer & Sanchez, 2001). It is probable that this is the dominant theoretical model used in applicant perception research since not only is there empirical evidence supporting causal relationships between variables, but it also answers the 'why' question as well as the 'what' (Kaplan, 1964; Sutton & Staw, 1995). That is, not only does Gilliland's theory explain *what* happens in relation to fairness perceptions, but it also explains *why* fairness perceptions occur: when certain procedural and distributive justice rules are satisfied or violated.

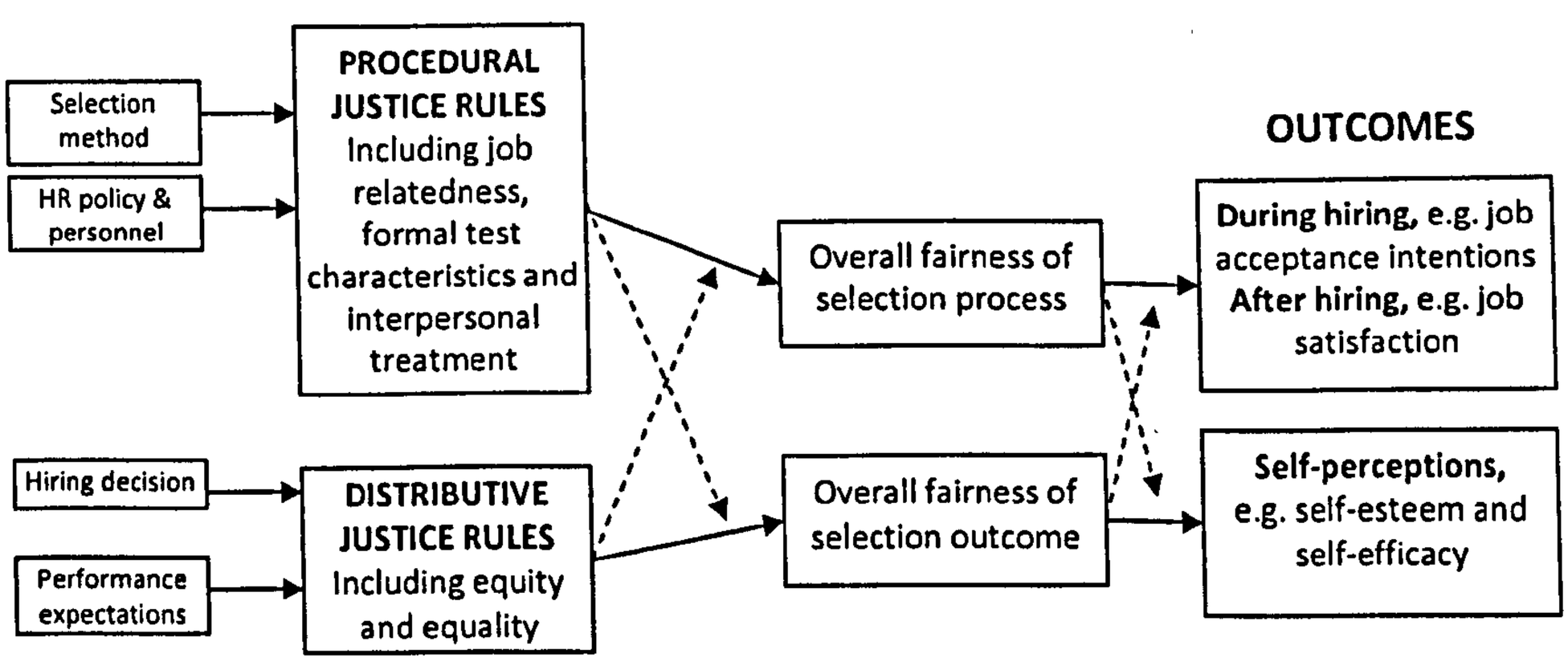


Figure 1.1: Organisational justice model of applicants' perceptions to selection processes, adapted from Gilliland (1993)

Based on organisational justice theory and empirical findings relating to applicant perceptions, Gilliland (1993) proposed 10 procedural justice rules of selection. These encompass three domains that influence perceptions of overall fairness: formal

characteristics, interpersonal treatment and explanation. The formal characteristics incorporate job relatedness, opportunity to perform, opportunity for reconsideration, and consistency of administration. Interpersonal treatment relates to interpersonal effectiveness, two-way communication and propriety of questions. Explanation relates to feedback, selection information and honesty in treatment. These 10 procedural justice rules are outlined with a summary description in Table 1.1. The formal test characteristics and interpersonal treatment domains refer to the test-taking process itself, while explanation relates to the final stage of the selection process when feedback is received (Van Vianen, Taris, Scholten & Schinkel, 2004). The 'selection fairness' model put forward by Gilliland (1993; 1994) has been the most widely cited framework in applicant perceptions research and has influenced much of the current debate on this topic (Chan, Schmitt, Jennings, Clause & Delbridge, 1998a; Truxillo, Steiner & Gilliland, 2004).

Table 1.1: Procedural justice rules underlying perceptions of selection processes

Rule	Description
1. Job relatedness	The extent to which selection methods appear to measure content that is relevant to the job role or appears to be valid
2. Opportunity to perform	The extent to which candidates can demonstrate their knowledge, skills and abilities
3. Reconsideration opportunity	Candidates having the opportunity to review test results or challenge scores, or to be able to re-test
4. Administration consistency	The degree to which selection processes are consistent or standardised across people and over time
5. Feedback	The provision of feedback that is timely and informative regarding test results and selection decision
6. Selection information	Information on, and justification for, the use of selection methods and decisions made
7. Honesty	The extent to which communication with candidates is candid
8. Interpersonal effectiveness	The extent to which candidates are treated with respect during the selection process
9. Two-way communication	The opportunity for candidates to ask questions during interpersonal interaction throughout the selection process

Rule	Description
10. Propriety of questions	The degree to which the questions asked of candidates during the selection process are appropriate

Note. Table adapted from Gilliland, 1995, p. 12

The previous section summarised and evaluated the theoretical approaches to applicant perceptions. Currently, organisational justice theory is the most widely used framework to examine applicant perceptions of selection methods and processes. However, there remain some conceptual issues which result in a lack of clarity of some applicant perception research. Firstly, some of the research within the applicant perception arena is atheoretical because it has not been based on comprehensive models (e.g. Smither et al, 1993); this can be problematic when comparing findings between studies (Sackett & Lievens, 2008).

Secondly, there is a general lack of clarity around some of the terminology used within the applicant perception literature. For example, the terms applicant *perceptions* and applicant *reactions* are used interchangeably. Ryan and Ployhart (2000) suggest that in using the term 'reactions' it may appear, erroneously, that reactions operate as outcome variables only; whereas perceptions are often examined as determinants of other (outcome) variables relating to the applicant or organisation. Therefore to aid clarity, the present thesis will use the term 'perceptions' to refer to an applicant's general views of the selection process.

Thirdly, in some empirical research there remains a lack of clarity about whether selection *methods* or *processes* are examined (e.g. Macan, Avedon, Paese & Smith, 1994) and thus researchers often do not conceptually separate the two. Selection processes typically occur over a period of time, and during this time candidates may experience a number of different selection methods, gaining information and as a result, readjusting their perceptions (Carless, 2003; Chan & Schmitt, 2004). Indeed, perceptions of a low fidelity selection method used at the start of a selection process may be different to a high fidelity selection method used towards the end of a selection process. Furthermore, failing to get the job at the last stage of selection is likely to

result in more negative reactions than failing at the first stage of a selection process, since candidates have invested more time and effort in the process. This reflects the temporal dynamics of the pre-entry relationship. As such, separating the analysis of selection methods and processes could allow a more precise description of the likely outcomes of applicant perceptions.

Finally, to date authors have used several different ways to unify and organise the research findings relating to applicant perceptions. One approach has been to focus on the determinants and outcomes of applicant perceptions (e.g. Hausknecht, Day & Thomas, 2004), where the *outcomes* of applicant perceptions have been studied extensively (Van Vianen et al, 2004) and to a lesser extent, the *determinants* (Chan & Schmitt, 2004). Indeed, research most often centres on the relationship between the perceived fairness of selection methods/processes and various outcomes, such as organisational attractiveness (Truxillo et al, 2004). A further way has been to focus on 'hard' versus 'soft' outcomes, where 'hard' outcomes relate to actual behavioural outcomes, and 'soft' outcomes relate to attitudes and perceptions (e.g. Truxillo et al, 2004). However, this thesis focuses on determinants as opposed outcomes, for a number of key reasons. First, authors (e.g. Chan & Schmitt, 2004) have commented on the relative lack of research on the determinants of fairness perceptions; second, a recent meta-analysis (Hausknecht et al, 2004) concluded that future research should focus on the determinants of applicant fairness perceptions; and third, it is thought that identifying and clarifying the determinants of fairness perceptions will lead to a better understanding of the psychological mechanisms underlying applicant perceptions (Hausknecht et al, 2004).

A general framework (shown in Figure 1.2) has been devised by the researcher to both structure the literature review on applicant perceptions research and to outline the studies presented in this thesis. Essentially, this framework is based on both Gilliland's (shown in Figure 1.1) and Hausknecht et al's (2004) models, but extended to include the person characteristics that may be determinants of applicant perceptions. Furthermore, Gilliland's model considers 'test type' as a determinant of justice rules; in

the present framework, selection methods and processes have been separated to depict selection as a process that operates over time.

As can be seen in Figure 1.2, there are five main determinants of overall fairness perceptions of the selection; these are (i) person characteristics; (ii) the individual selection methods that make up the stages of the selection process; (iii) procedural justice rules; (iv) job characteristics; and (v) the organisational context. The first three areas are explored in detail in the following sections and where relevant, job and organisational context variables are commented on. However, the job and organisational context variables are explored in greater detail in the following chapter with particular reference to this thesis. The empirical research relating to applicant perceptions in the sections that follow is structured using this framework and therefore the research is outlined relating to: person characteristics; determinants and outcomes of applicant perceptions relating to selection *methods*, and outcomes of applicant perceptions relation to selection *processes*.

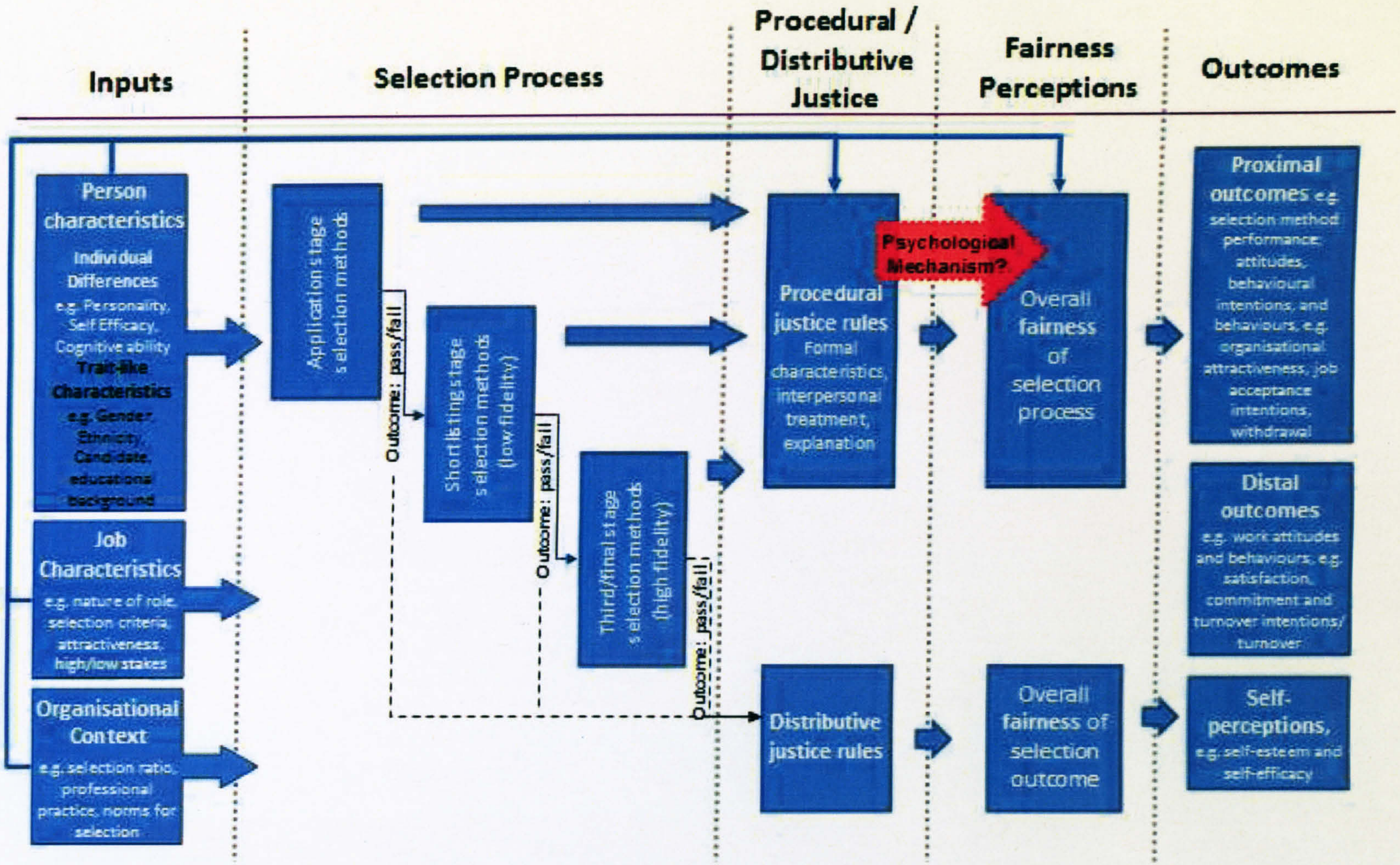


Figure 1.2: Framework for examining applicant perceptions in this thesis

1.4.2 Person characteristics relating to perceptions of selection methods

Person characteristics have generally included gender, ethnicity and individual differences such as personality or cognitive ability. The following sections outline key research findings relating to these person characteristics.

Gender

Gender differences have been found in studies examining work-related attitudes (e.g. Davey, 1998; Gutek & Cohen, 1987). However, the research examining gender differences relating to fairness perceptions is mixed. On the one hand some research has found gender differences, for example Chapman and Ployhart (2001) found gender differences in the extent to which selection processes were perceived as unfair, where women reacted more negatively than men to some types of unfairness, for instance being asked questions about family. On the other hand, further empirical research shows no gender differences in fairness perceptions relating to perceptions of the selection methods themselves (e.g. Carless, 2006; Ispas, Ilie, Iliescu, Johnson & Harris, 2010). This is supported by meta-analytic findings that suggest a near zero relationship between applicant perceptions and gender (Hausknecht et al, 2004). Nevertheless, given the mixed findings and the reported gender differences in work-related attitudes, further research may be warranted.

Ethnicity

In relation to ethnicity, the issue of adverse impact of cognitive ability tests is well documented in the selection literature (e.g. Potosky, Bobko & Roth, 2005; Schmidt, 1988) and applicant perceptions have been examined as a possible reason why there is a Black-White test score gap (Chan, 1997; Chan & Schmitt, 1997; Chan, Schmitt, DeShon, Clause & Delbridge, 1997; Hausknecht et al, 2004; Ployhart, Ziegert & McFarland, 2003; Schmit & Ryan, 1992). Ethnic group differences have been found relating to both test-taking attitudes, where Whites rated their motivation towards cognitive ability tests significantly higher than Blacks (Arvey, Strickland, Drauden & Martin, 1990; Chan et al, 1997); and test perceptions, where minority groups react less positively to tests than do majority groups (Schmitt, Oswald, Kim, Gillespie & Ramsay, 2004). However it could be argued that these studies (Arvey et al, 1990; Chan et al, 1997; Schmitt et al, 2004) are limited by the fact that they were

not field-based, since job applicants may have been more motivated to perform well on selection tests than students.

Further research using police officer applicants (Schmit & Ryan, 1997) found that Caucasians rated their motivation and belief in tests significantly higher and comparative anxiety significantly lower, than African-Americans. However the authors suggest that absolute magnitudes of these differences were not large, although they do not report effect sizes. Furthermore, significantly more African-Americans withdrew in comparison to Caucasians; but qualitative results indicated that test-taking attitudes played only a minor role in the withdrawal decision. Viswesvaran and Ones (2004) found ethnic group differences in terms of the relative importance placed on different aspects of the selection process; for instance Asians assigned more importance to the objectivity of the selection process than Whites, whereas Whites were more concerned about the legality of variables. However, the numbers of ethnic minorities used in the sample – 18 Asians and 12 Hispanics – were small, and thus it is hard to draw firm conclusions. It should also be noted that the research outlined above examining ethnic group differences has mainly focused on test attitudes and has not been specifically related to perceptions of procedural justice or general fairness perceptions. A more recent study (Zibarras & Patterson, 2009) that focused on procedural justice perceptions (job relatedness, formal test characteristics, interpersonal treatment) and process fairness, found no substantive ethnic group differences in these perceptions. A further study (Chan et al, 1998b) examining test perceptions relating to fairness and job relatedness, found no differences in perceptions or test performance between Black and White subgroups. Indeed, Hausknecht et al's (2004) meta-analysis concludes that there is a near zero relationship between applicant perceptions and ethnic characteristics. Nevertheless, given the somewhat inconclusive findings, there is scope for further research to determine the extent to which ethnicity can be conceived of as a determinant of applicant perceptions.

Individual differences

In looking at other person characteristics, it has been suggested that individual differences such as personality or cognitive ability might be a source of variance in perceptions of both selection methods and processes (Ryan & Ployhart, 2000), but

the relationship has only been examined in a small number of studies (Hausknecht et al, 2004). In relation to personality, Viswesvaran and Ones (2004) found that emotional stability was moderately positively related to perceptions of selection process variables whilst individuals high on conscientiousness and emotional stability placed less importance on context variables such as selection ratio and organisational resources. However, their study involved only a small sample (N=78) of working individuals who were not actually experiencing a selection process per se. Truxillo, Bauer, Campion and Paronto (2006) also found personality variables to account for variance in self- and organisation perceptions above that accounted for by fairness perceptions. Emotional Stability was positively related to selection process variables and applicant perceptions, whilst Agreeableness was positively related to perceived likelihood of getting the job and perceptions of organisation-employee relations.

In relation to cognitive ability, Viswesvaran and Ones' (2004) study also showed cognitive ability to be positively correlated with content perceptions (including job relatedness, objectivity and invasiveness) and negatively correlated with context of selection perceptions (including selection ratio and organisational resources). However, these relationships showed small effect sizes and participants were rating their perceptions of selection processes in general, rather than based on their experience of a specific selection process. In a further study that examined the role of cognitive ability in applicant perceptions to selection processes, Bauer, Truxillo, Paronto, Weekley, and Campion (2004) found no difference between candidates for perceptions of structure fairness, but found that individuals higher on cognitive ability were more likely to view an interactive voice response screening method as more socially fair than individuals low on cognitive ability. In essence, given the paucity of research examining individual differences, results are currently inconclusive about the precise nature of the relationship between individual differences and fairness. As such, more research is warranted.

Summary

In summary, person characteristics have not been extensively examined as potential determinants of applicant perceptions and thus more research in this area is required. Indeed, researchers have commented on the relative lack of examination

of the role of person characteristics in applicant fairness perceptions (e.g. Bauer et al, 2004; Rynes, 1993a; 1993b; Truxillo et al, 2004). Therefore, some authors (e.g. Schmitt & Chan, 1999; Nikolaou & Judge 2007; Ryan & Ployhart, 2000; Thornton, 1993) have argued that more work is needed to establish person characteristics as determinants of applicant perceptions; in particular so-called 'trait-like' variables (such as gender and ethnicity; Schmitt & Chan, 1999; Chan & Schmitt, 2004) and stable individual differences. Therefore the present thesis explores person characteristics as determinants of applicant perceptions, with a specific focus on 'trait-like' variables, including gender, ethnicity and candidate educational background; and individual differences, including personality, self-efficacy, and cognitive ability.

1.4.3 Selection methods: determinants and outcomes of applicant perceptions

This section examines selection methods as determinants of applicant perceptions and the subsequent outcomes. Specifically, research relating to selection methods as determinants of applicant perceptions focuses on the selection methods themselves, procedural justice rules and contextual factors. The subsequent outcomes generally focus on selection method performance. These are reviewed separately below.

1.4.3.1 Selection methods: determinants of applicant perceptions

Selection methods

The determinants of applicant perceptions relate to the characteristics of the selection methods themselves, with variability found in the perceived fairness of different methods (Anderson, 2003; Anderson & Witvliet, 2008; Bertolino, Steiner & Verdi, 2007; Elkins & Phillips, 2000; Ispas et al, 2010; Lievens, de Corte & Brysse, 2003; Marcus, 2003; Moscoso & Salgado, 2004; Nikolaou & Judge, 2007; Phillips & Gully, 2002; Steiner & Gilliland, 1996; Truxillo et al, 2001; Van Vianen et al, 2004). Several studies have been conducted to compare cross-national perceptions of process fairness for 10 common selection methods (interviews, CVs, work samples, biodata, ability tests, references, personality questionnaires, honesty tests, personal contacts and graphology; e.g. Anderson & Witvliet, 2008; Moscoso & Salgado, 2004; Marcus, 2003; Nikolaou & Judge, 2007; Phillips & Gully, 2002;

Steiner & Gilliland, 1996). Since these studies have shared a common methodological approach, comparisons have been made across countries. Findings indicate a relatively stable pattern of results with few cross-national differences in ratings of process fairness on these selection methods. Generally, interviews, CVs and work samples are rated most favourably, whilst personal contacts, graphology and honesty tests are rated least favourably with very few significant differences found between countries. As such, authors (e.g. Hülsheger & Anderson, 2009; Anderson & Witvliet, 2008) conclude that similarities in applicant perceptions are actually more prevalent than are differences, suggesting that it may be possible to generalise findings internationally. Although these results provide a compelling case supporting the extent to which these selection methods are perceived of as fair, one criticism of this body of work is that it has been largely dependent on student-based samples with relatively few field-based studies (Bauer et al, 1998; Carless, 2003; Hausknecht et al, 2004; Landy & Conte, 2009). This is important because undergraduate students may not be familiar with *all* the selection methods they are rating (Marcus, 2003). Indeed, it has been argued that for social science research, caution should be exercised when extending relationships found using student samples to non-student, adult populations (e.g. Dipboye & Flanagan, 1979; Peterson, 2001). Such authors suggest replicating research based on student samples with non-student samples before attempting to generalise. Therefore further research is needed to examine applicant perceptions of particular selection methods within field-based samples, as is done in the present thesis.

Perceptions of selection methods have also been examined in two field-based studies. Firstly, Rosse, Miller and Stecher (1994) found that applicants reacted least favourably to a personality assessment plus interview condition as compared to either an interview alone, or an interview plus cognitive ability test. Secondly, in a sample of police force applicants, Carless (2006) found that interviews were rated the most job-related, followed by physical agility tests and personality assessment; additionally, in relation to the extent to which applicants perceived they could exert control over the selection situation, interviews and physical agility tests were rated most positively, followed by personality assessment. This research indicates that field-based studies might replicate previous lab-based findings; however further research is warranted.

Selection procedural justice rules

Other determinants of fairness perceptions include the perceived selection procedural justice rules originally identified by Gilliland (1993; 1994) such as job relatedness, opportunity to perform and two-way communication (e.g. Bauer et al, 1998; Truxillo et al, 2001; Van Vianen et al, 2004). In particular, the most frequently examined justice concern has shown positive associations between job relatedness and fairness perceptions (Chan & Schmitt, 2004). In fact, Gilliland (1993) considers job relatedness of the selection methods to have greatest impact on fairness as compared to other characteristics of a selection process. Rynes and Connerly (1993) found that job-related selection methods received the most favourable ratings, such as simulation-based interviews, written simulations and business-related tests; additionally, perceptions of ability tests were improved when items were framed around business-related rather than abstract topics. Similarly, Smither et al (1993) found that ability tests with business-related items were perceived as more job related than those with abstract items. Assessment centre exercises were perceived to be highly job-related whilst personality questionnaires and biodata were perceived as having relatively low job-relatedness. However, in the former study undergraduate students were used; whilst in both studies, ratings were based on descriptions of the methods or sample items for cognitive ability tests, rather than field-based selection methods. These issues could potentially limit the generalisability of the findings to general applicant samples. Nevertheless, it is interesting to note that some of the differences in ratings may relate to the fidelity of the selection method (Motowidlo, Dunnette & Carter, 1990) where higher fidelity selection methods (such as assessment centres) are perceived more positively than lower fidelity selection methods (such as cognitive ability tests); and further that perceptions can be improved by creating a higher fidelity version of a particular method (such as converting 'abstract' ability test items to 'business-related' items; Smither et al, 1993). This is perhaps not surprising since higher fidelity methods are considered more similar to actual work conditions than low fidelity methods (Motowidlo et al, 1990).

In a more recent study also rating descriptions of selection methods but using job applicants, Lievens et al (2003) showed that people who have a stronger 'belief in

tests' have more positive fairness perceptions of selection methods. Specifically the authors showed that test belief was positively related to *fairness perceptions* for structured interviews, cognitive ability tests and personality inventories; and positively related to *job relatedness* for personality inventories, structured interviews, cognitive ability tests, work samples and unstructured interviews. This indicates that individual differences relating to test utility perceptions may predict fairness perceptions.

Other studies have shown that different aspects of selection methods can be perceived as differentially fair, for example, in a field-based study using police applicants, Truxillo et al (2001) found that two selection methods - a written multiple choice test and a video-based oral test – were seen as fair on different procedural dimensions. The video-based oral test was perceived as more *job related* than the written multiple choice test; but the multiple choice test was perceive to have more *consistent administration* than the video-based test. Similarly, Lievens et al (2003) found that work samples and unstructured interviews obtained the highest ratings for overall fairness and job relatedness; whilst cognitive ability tests followed by work samples, received the highest ratings for 'scientific value' where participants felt that they were based on solid scientific research. However, this study was based on applicants rating descriptions of selection methods, which may to some extent question the generalisability of these findings.

Contextual factors

Research shows that contextual factors may also be important in perceptions of fairness. Firstly, Elkins and Philips (2000) found that biodata was considered more job-related and procedurally fair when, in a hypothetical scenario, it was used to select managers internationally than when it was used for either local or non-specific selection. However, being a hypothetical context using undergraduates, one may question the ecological validity of the findings. Secondly, Gamliel and Peer's (2009) experimental study using live applicants rating hypothetical scenarios indicated that the way information is framed about a particular selection method has a significant impact on the way in which it is perceived. The authors found that when the method of selection (an interview and grade point average score) was framed in a positive way (that is, being used to *select* a percentage of applicants),

candidate perceptions were significantly more positive than when information about these methods was framed negatively (that is, being used to *reject* a percentage of applicants). The authors suggest that this framing may effect the psychological process in which information is encoded, where positive labelling invokes favourable memory associations whilst negative labelling invokes unfavourable associations.

Summary

To summarise, the preceding section has shown that there are a number of determinants of applicant perceptions towards various selection methods. These include: (i) the *selection methods* themselves, where studies show relatively consistent ratings of selection method perceptions, even cross-culturally; (ii) *procedural justice rules*, where studies show that these rules are key determinants of fairness perceptions and further, that methods are differentially perceived dependent on procedural aspects; and finally (iii) *contextual factors*, such as framing the way in which selection methods are used.

1.4.3.2 Selection methods: performance outcomes of applicant perceptions

Researchers have found small to moderate positive relationships between applicant perceptions and actual and perceived selection method performance (e.g. Macan et al, 1994; Chan et al, 1997; Chan et al, 1998a; Chan et al, 1998b; Marcus, 2003; Schmitt et al, 2004; Van Vianen et al, 2004); where actual performance refers to test scores on the selection method itself and perceived performance refers to self-assessed performance. It should be noted that although actual and perceived performance are referred to as outcomes of applicant perceptions, many of the studies reported here are cross-sectional in design and thus causality cannot be assumed (Ryan & Ployhart, 2000). Nevertheless, findings replicate across both student and field-based applicant samples. For instance, in three different student-based studies, (1) Chan et al (1997) found a positive relationship between face validity perceptions of a cognitive ability test battery and actual performance on the test; (2) Marcus (2003) found that perceptions of perceived predictive validity and fairness of a cognitive ability test were positively related to performance on the same selection method; and (3) Schmitt et al (2004) found that relevance of biodata and situational judgement items (to the role of a college student) and fairness

perceptions (of using such measures to evaluate college applicants) were positively related to perceived performance.

Similarly, researchers have replicated such findings using actual job applicants, firstly Chan et al (1998a) found that job relevance perceptions of a reading comprehension test and video-based situational judgement test (SJT) and overall fairness perceptions were positively related to applicants' perceived performance; secondly, Van Vianen et al (2004) found that pre-feedback fairness perceptions were positively related to perceived performance on three selection tests (cognitive ability, personality questionnaire and SJT). A "self-serving bias" psychological mechanism has been proposed as a way to explain the perceptions-performance relationship: applicants who feel that they have not performed well on a test also perceive the tests as neither job-relevant nor fair (Chan et al, 1997; Chan et al, 1998a). It is thought that this 'bias' exists because individuals seek to explain their behaviour in a way that will maintain a positive self-image (Higgins & Snyder, 1989). Therefore, in seeking to explain and justify the reason for not doing well, applicants make 'excuses' and blame the cause as being due to unfair selection processes. Thus, by evaluating tests as unfair a person's self-esteem is protected since the cause of not doing well is perceived to be due to external situational factors such as unfair selection processes, rather than internal dispositional factors (Ployhart & Harold, 2004).

A study by Chan et al (1998b) showed that this self-serving bias mechanism is evident for cognitive ability tests but not for personality assessment. The authors found a relationship between both pre- and post-test perceptions and cognitive ability test performance; however, pre- and post-test perceptions were unrelated to personality scores. Chan and colleagues suggest that this is because personality assessment is a typical performance measure and may be less psychologically threatening since candidates are unlikely to know what the "right" answer is. As such, candidates are unlikely to self-assess their performance and so a self-serving bias mechanism may not exist for typical performance measures. This implies that there is scope for further research examining selection methods other than psychometric tests.

1.4.4 Selection processes: outcomes of applicant perceptions

This section relating to selection processes focuses only on the outcomes of applicant perceptions and not on the determinants. This is because research relating to the selection process as a whole, or different methods examined longitudinally during the selection process, have focused on the subsequent outcomes of these perceptions, rather than the determinants of these.

1.4.4.1 Psychological and behavioural outcomes of applicant perceptions

In relation to the selection process, the following section includes research either focusing on perceptions relating to the selection process as a whole; perceptions of various selection methods examined longitudinally at different time points throughout the selection process; or perceptions examined following outcome feedback (that is, passing or failing the selection process). Three types of outcomes of applicant perceptions relating to selection processes are reviewed: psychological outcomes, including: a) *attitudes*; b) *intentions;* and behavioural outcomes, c) *behaviours*. These are outlined below.

1.4.4.1.a Attitudes

This section focuses on the different attitudes that have been examined in relation to candidate perceptions, including those relating to the selection process, the job and the organisation.

Attitude towards the selection process and job: Applicants' perceptions of selection methods have been found to be positively related to their satisfaction with the selection process (e.g. Macan et al, 1994). In a longitudinal study of applicants for a manufacturing organisation, Macan et al (1994) found that perceptions (face validity and fairness) of a cognitive ability test battery and an assessment centre positively predicted satisfaction with the selection process as a whole. Additionally, applicants were more satisfied with the selection process following the assessment centre than following the cognitive ability tests. This indicates that perceptions of a low fidelity selection method (e.g. cognitive ability test) used at the start of a selection process are less positive than a high fidelity selection method (e.g. assessment centre) used at the end of a selection process. Applicant perceptions

have also been linked with attitudes towards the job, where Macan et al (1994) found face validity and fairness perceptions of a cognitive ability test battery and face validity perceptions of an assessment centre positively predicted the extent to which candidates rated perceptions of liking the job they would perform.

Attitude towards the organisation: When considering attitudes towards the organisation, generally research has focused on organisational attractiveness (that is, the appeal of a company). Studies have typically shown positive relationships between applicant perceptions and organisational attractiveness (Anseel & Lievens, 2009; Bauer et al, 1998; Bauer, Truxillo, Sanchez, Craig, Ferrara, & Campion, 2001; Macan et al, 1994; Van Vianen et al, 2004). For organisations this may have a significant impact on public relations because an applicant's attitude towards the organisation can influence how positively they discuss the organisation (Rynes, 1993a). In fact, this is important even when candidates are rejected, because rejected applicants may criticise the organisation to other potential applicants negatively impacting an organisation's reputation (Smither et al, 1993). First, Macan et al (1994) found that face validity and fairness perceptions of a cognitive ability test battery and face validity of an assessment centre were positively related to perceptions of organisational attractiveness. Furthermore, applicants were more attracted to the organisation following the assessment centre than following the cognitive ability test battery. Second, Bauer et al (1998) found that procedural justice perceptions were positively related to perceptions of organisational attractiveness even after controlling for pre-test perceptions. However, those who passed the test evaluated the organisation more positively than those who failed; suggesting that passing or failing is more important in determining organisational attractiveness than procedural perceptions, although procedural justice still has incremental value. Third, Anseel and Lievens (2009) showed in an experimental study with students, that the impact of outcome decision (pass/fail) on perceptions of organisational attractiveness, were mediated by perceptions of feedback accuracy on a personality questionnaire.

In contrast, two field-based studies have found no such relationships. Firstly, Truxillo, Bauer, Campion and Paronto (2002) found no relationship between selection fairness information and perceptions of organisational attractiveness.

However sample characteristics may have influenced this finding: police applicants are likely to have already considered the relative advantages and disadvantages of the job and organisation and so perceptions of fairness were relatively unimportant in this organisational context. Secondly, Carless (2003) found no relationship between perceptions of an interview and psychometric test and organisational attractiveness. Instead, the author found that other variables, such as type of work, organisational reputation, pay and job security, were significant predictors of organisational attractiveness. Overall, findings suggest that procedural justice perceptions may be related to organisational attractiveness to a degree, but that other job and organisational variables are also important. Indeed, since attitudes can be considered favourable or unfavourable evaluative reactions towards something or someone (Myers, 1999) and are said to be characteristic adaptations (McCrae & Costa, 1996; 1999; 2003), they develop over time as an individual interacts with their environment. This therefore implies that attitudinal responses to a selection process may develop over the course of a selection process as an individual interacts with organisational representatives, selection methods and the general selection process (e.g. Carless, 2003; Harold & Ployhart, 2008). As such a person's attitudinal response to their initial experience of a selection method may appear somewhat different to their attitudes at a later date (Landy & Conte, 2009). This may explain the somewhat diverse findings relating to attitudinal outcomes.

1.4.4.1.b Intentions

Researchers have found applicant perceptions to be positively related to a number of behavioural intentions. These include *job acceptance intentions* (e.g. Bauer et al, 2004; Carless, 2003; Macan et al, 1994; Ployhart & Ryan, 1998a; Truxillo et al, 2002); *recommendation intentions* (e.g. Anseel & Lievens, 2009; Bauer et al, 1998; Gilliland, Groth, Baker, Dew, Polly & Langdon, 2001; McCarthy, Hrabluik & Jelley, 2009; Ployhart & Ryan, 1998a); *re-application intentions* (Bauer et al, 1998; Bauer et al, 2001; Ployhart & Ryan, 1997), and *litigation intentions* (Bauer et al, 2001; Seymour, 1988). Macan et al (1994) found that job acceptance intentions were positively predicted by attitudes towards the selection process, job and organisation; whilst Bauer et al (2004) found that the only positive predictor of job acceptance intentions was passing the selection process, and Carless (2003) found that the only positive predictors were pre-selection job acceptance intentions and

number of alternative job offers. On the other hand, Ployhart and Ryan (1998a) found that job acceptance intentions were high regardless of participants' perceptions of the procedural characteristics of administration consistency. However, they also found that those who were selected by what were perceived as an unfair process reported the least favourable recommendation intentions even if they were selected for the job. This may suggest that even if a person is hired, negative reactions can occur, the extent of which may spill over into the job role and possibly lead to lower performance and ultimately turnover.

Bauer et al (1998) also found that procedural justice characteristics positively predicted recommendation and re-application intentions; whilst Anseel and Lievens (2009) found that the effect of passing/failing the selection process on recommendation intentions was fully mediated by perceptions of personality questionnaire feedback accuracy. Yet Truxillo et al (2002) found no relationship between procedural characteristics and job pursuit or recommendation intentions. However, as stated above, this was considered to be due to the sampling context where police applicants have already considered the job in great deal; in fact, for career-focused jobs, this may be a normal phenomenon. Although LaHuis (2005) found a positive relationship between procedural fairness perceptions and job acceptance intentions, his findings indicated that individual differences relating to job search self-efficacy and motivational control actually moderated this relationship where the relationship was stronger for those with lower levels of motivational control and higher levels of job search self-efficacy. Finally, Bauer et al (2001) found a negative relationship between legal intentions and the 'social' factor of their measure which included communication and interpersonal treatment during the selection process. Overall, researchers have mostly found positive associations between procedural characteristics and various behavioural intentions, the extent of which appears to change depending on sample and contextual characteristics. One could argue therefore that there remains unexplained variance in these perceptions. Since associations between procedural characteristics and intentions appear to change according to the sample or context, it is plausible that person characteristics, individual differences or other contextual factors might influence these fairness perceptions. This will be examined in some detail in this

thesis and shows the importance of considering these variables in applicant perception research.

1.4.4.1.c Behavioural outcomes

Gilliland (1993) suggested that perceptions of fairness affect behavioural outcomes such as job acceptance, legal challenges and subsequent job performance and satisfaction. However, research evidence for the link between applicant perceptions and behavioural outcomes remains unclear (Chan & Schmitt, 2004; Truxillo et al, 2004). This is despite the fact that confirming this association is important in establishing the practical utility and value of applicant perceptions in predicting behaviour (Chan & Schmitt, 2004; Ployhart & Ryan, 1998; Sackett & Lievens, 2008; Schmitt & Chan, 1999). However, empirical evidence showing that applicant perceptions directly link to practical individual and organisational outcomes is limited because most outcome variables measured have been intentions rather than actual behaviour (Schmitt & Chan, 1999). Selection fairness perceptions *have* been positively linked to work performance (Gilliland, 1994); subsequent re-application among rejected candidates (Gilliland et al, 2001) and later performance on an alternate test (Anseel & Lievens, 2009). For instance, Gilliland (1994) showed that individuals who thought they had been selected by an unfair selection process had poorer job performance and work attitudes than those who believed the process to be fair. However, the sample in this study was undergraduate students and the "job" on which their performance was measured was a four hour journal-coding task. This type of experiment may have limited ecological validity since the setting is somewhat artificial since the "job" may not be particularly representative of the types of work that job incumbents may encounter (Greenberg, 1990). As such, it may not be possible to infer that individuals selected by unfair processes will have poorer work performance. Gilliland et al (2001) found that when applicants received rejection letters implying that the selection decision was beyond the company's control, they were more than twice as likely to re-apply for a position as applicants who received a letter with no such explanation. However, it should be noted that the sample size was small (N=32). Finally, Anseel and Lievens (2009) found that participants who reported higher feedback accuracy on an in-basket exercise were more likely to perform better on a subsequent alternate form of the exercise.

By contrast, research evidence is inconsistent in explaining the relation to behaviours such as applicant withdrawal (Truxillo et al, 2002; Schmit & Ryan, 1997), subsequent commitment and satisfaction (Cunningham-Snell, Anderson & Fletcher, 1999), and turnover among those who were subsequently hired (Truxillo et al, 2002). The inconsistent findings may to some extent be explained by the fact that some of these behavioural outcomes measured were proximal (e.g. Anseel & Lievens, 2009) and others were distal (e.g. Truxillo et al, 2002). It is plausible that linking fairness perceptions to more distal behavioural outcomes may be harder to do, since there may be a number of moderator variables (job market, organisational culture) that reduce the potency of these relationships (Chan & Schmitt, 2004; Schmitt & Chan, 1999). Indeed, some subsequent, on-the-job organisational practices may make the selection process seem insignificant and as such the influence of the selection methods and process may be lessened (Schmitt & Chan, 1999). Furthermore, given that such behavioural outcomes have only been measured in a small portion of studies, there is less conclusive evidence related to behaviours; and other potentially important outcomes are yet to be explored, such as legal action. Although Bauer et al (2001) found a negative relationship between 'process factors' and legal intentions, the link to actual behaviour remains unknown. Outside the selection context, one study (Goldman, 2001) has investigated decisions to file discrimination claims among terminated workers. Findings indicated that perceptions of both procedural and distributive justice positively predicted self-reported behaviour of filing a discrimination claim. As such, it is feasible that findings may be similar in an employee selection context, although one might question the ease of examining legal action in operational settings (Truxillo et al, 2004). It seems unlikely that employers would want to raise litigation issues with potential employees. Nevertheless, if such an association is found, it is significant for organisations because legal challenges would be not only expensive, but also have a subsequent negative impact on image (Schmitt & Chan, 1999).

Finally, intentions and behaviour have been shown to be moderately related in one study examining the relationship between job acceptance intentions and actual acceptance (Carless, 2003). Contrary to predictions, the author found no

relationship between fairness perceptions and job acceptance behaviour; however, findings indicated that the only predictor of actual job acceptance behaviour was individuals' job acceptance intentions at the end of the selection process. The intention-behaviour link has been found in other areas of psychology (e.g. Ajzen, 1991; Ajzen & Fishbein, 1977; 1980; Armitage & Conner 2001; Conner & Sparks, 1996); as such it is plausible that further research may support the claim that applicant perceptions and behavioural intentions are related to subsequent behaviours such as re-application, recommendation, job acceptance and litigation claims.

The preceding sections have provided an overview of applicant perceptions literature, including: person characteristics; determinants and outcomes of applicant perceptions relating to selection methods, and outcomes of applicant perceptions relation to selection processes. An additional area highlighted in Figure 1.2 (the framework used in this thesis) is the psychological mechanism linking procedural justice rules with applicant fairness perceptions. A number of theories have been proposed, such as 'fairness theory' (e.g. Gilliland et al, 2001): however the framework that has increasingly gained research attention in relation to fairness perceptions is attribution theory. The next section briefly describes attribution theory as a potential psychological mechanism and determinant of applicant fairness perceptions.

1.4.5 Psychological mechanism

Recently, Ployhart and Harold (2004) proposed a new theory, the Applicant Attribution-Reaction Theory (AART), that integrates research and theory from applicant perceptions with literature from social psychology on attributions. According to attribution theorists, individuals take part in a process of sense-making in order to identify the causes of important events (Wong & Weiner, 1981). Given that selection processes are usually considered stressful and highly uncertain (Ployhart, Ehrhart & Hayes, 2005); experiencing one may prompt an attributional search. The AART framework focuses on attributions as the causal psychological mechanism by which applicants develop fairness perceptions. Thus the authors suggest that what causes and explains applicant perceptions and the subsequent outcomes (cognitive, affective, behavioural) is attributional processing. Indeed, it

matters less whether procedural justice dimensions are violated (or not) but rather how justice is perceived in relation to attributional dimensions; and so *attributions* are considered determinants of fairness perceptions. Ployhart and Harold (2004) propose AART as way to understand fairness perceptions, believing that attributions are fundamental to the formation and a key determinant of fairness perceptions. Results of some applicant perception research have been consistent with an attributional interpretation (e.g. Ployhart & Ryan, 1998; Ployhart, Ryan & Bennett, 1999). Furthermore, two studies have included a direct examination of attributions in applicant perception research (e.g. Ployhart et al, 2005; Ployhart & Ryan, 1997). This research evidence is outlined in greater detail in study four. Since preliminary research findings suggests that attributions might be the psychological mechanism through which applicants form perceptions of fairness and indeed a determinant of fairness perceptions, more research appears to be necessary. Therefore the role of attributions in fairness perceptions is explored in one study.

1.4.6 Limitations of previous research

The previous sections have reviewed previous applicant perception research; however, there are a number of limitations of this research which some authors suggest (e.g. Sackett & Lievens, 2008) highlight doubts about its added value. The following sections outline methodological issues which may contribute to the perceived weaknesses of this research area. These include the use of student samples and laboratory-based studies; the over reliance on cross-sectional, quantitative studies; construct and measurement issues, and the lack of examination of person characteristics, including individual differences and other 'trait-like' variables.

1.4.6.1 Use of student samples and lab-based studies

One potential criticism of applicant perception research is the use of student samples, with an over-reliance on undergraduates (e.g. Bauer et al, 2004; Elkins & Phillips, 2000; Gilliland, 1994; Moscoso & Salgado, 2004; Rynes & Connerly, 1993; Schmitt et al, 2004). Furthermore, some of the applicant perception research relies on the use of hypothetical rather than authentic contexts in laboratory-based studies (e.g. Brooks, Guidroz & Chakrabarti, 2009; Gamliel & Peer, 2009; Moscoso

& Salgado, 2004; Nikolaou & Judge, 2007; Rynes & Connerly, 1993; Smither et al, 1993). Fewer studies have been field-based, using actual job applicants (e.g. Chan et al, 1998a; Truxillo et al, 2001; Van Vianen et al, 2004) and so the generalisability of the findings from research on students and/or inauthentic contexts to real-life selection settings may be questionable; particularly since research suggests that organisational context variables, such as type of work and organisational reputation, influence applicant perceptions (Hausknecht et al, 2004). Indeed, it should be noted that many of the studies outlined in the preceding review have not examined participants applying for actual employment within organisations (see Table 2.1 in Chapter 2 for further details on samples used).

There are a number of problems with using (1) student samples and (2) hypothetical contexts. In relation to using student samples; firstly, actual applicants may respond in different ways based on their prior experience with selection methods and the context within they make their job search (Anderson, 2003). Therefore it may be difficult to draw inferences from student-based studies since students are likely to differ in terms of job search experience, commitment to securing employment within an organisation and previous exposure to selection methods (Hausknecht et al, 2004). Secondly, it is likely that university graduates have higher intellectual abilities (Landy & Conte, 2009), and are generally younger (Phillips & Gully, 2002), than a large proportion of working individuals. Therefore one could question whether student perceptions of selection methods and processes are generalisable to other, possibly less-educated and older, working populations (Landy & Conte, 2009). Thirdly, it is suggested that attitudinal and emotional responses might develop over time (e.g. Carless, 2003; Chan & Schmit, 2004). Since students may not have experienced a particular selection method before, rating it for the first time may appear somewhat different to how they might feel about it in the future (Landy & Conte, 2009). In fact, empirical research indicates that there *are* differences between student and job applicant samples. For instance, Arvey et al (1990) found motivational and attitudinal differences between students and job applicants on employment tests; and Nikolaou and Judge (2007) found differences in ratings of CVs and psychometric tests between employees and students. It is possible that students are generally more positive about psychometric tests because of greater exposure to testing as a method of evaluation (Schmit & Ryan, 1997).

In relation to hypothetical contexts, firstly, meta-analytic findings (Hausknecht et al, 2004) indicate that relationships between procedural justice and outcomes are stronger when hypothetical settings are used rather than field-based contexts. This suggests that the role of fairness may to some extent be overestimated for studies using hypothetical contexts. Secondly, participants often have not completed the actual selection methods that they are evaluating in the hypothetical scenario (Hausknecht et al, 2004; Ryan & Huth, 2008). Indeed, one cannot be certain that introducing selection methods by using brief descriptions is a sufficient substitute for actually completing the method for selection purposes (Landy & Conte, 2009; Ryan & Huth, 2008). This is highlighted by empirical research (Marcus, 2003) showing that the image of a selection method provided by brief descriptions changed considerably after actually experiencing the method. Thus, even if studies are conducted with student samples, they may have greater research and practical value if the participants actually completed the selection methods, rather than evaluating them in the abstract. Thirdly, there is a clear difference between being hypothetically rejected in an experiment and *actually* being rejected as an applicant for a job (Landy & Conte, 2009), since job applicants may have invested considerable time and effort in applying for jobs. Therefore some authors (e.g. Bauer et al, 1998; Van Vianen et al, 2004; Truxillo et al, 2002) have suggested that research should be field-based with real candidates, because reactions may differ with real employment consequences (Bauer et al, 1998; Truxillo et al, 2002).

To conclude, experimental research has provided important information about applicant perceptions (Truxillo et al, 2004), but field studies are needed to test the ecological validity of the determinants and outcomes of fairness perceptions established in laboratory-based studies (Greenberg, 1990). Since the focus of the present thesis is the applicant perspective of selection, it is appropriate to conduct field-based studies. Therefore, all samples used in this thesis are from high-stakes, operational selection settings.

1.4.6.2 Over reliance on cross-sectional, quantitative studies

Research on applicant perceptions has been criticised for focusing solely on immediate level reaction outcomes (Anderson, 2003; Anderson et al, 2001; Bauer et

al, 1998; Chan & Schmitt, 2004). While this is important and has implications for the design of selection methods; it can only shed light on applicants' immediate level responses (Anderson et al, 2001; Anderson & Golsti, 2006; Bauer et al, 1998). There still remain questions about the longer-term impact and outcomes of applicant exposure to different selection methods (Anderson & Golsti, 2006; Sackett & Lievens, 2008), which is important because typical employee selection processes involve a number of discrete stages using different selection methods (Ryan & Ployhart, 1998). As Chan and Schmitt (2004, p. 11) state: *"one of the most important but neglected areas of applicant reactions research concerns if and how reactions change over time... because they inform us about the stability of reactions"*. Indeed, studies that longitudinally measure applicant perceptions at different time points during selection (e.g. Truxillo et al, 2002) are rare and these show that applicant perceptions differ depending on when the data is collected (Sackett & Lievens, 2008).

Furthermore, since much of the research is cross-sectional, the relationship between fairness and certain outcomes may be inflated due to common method variance (Bauer et al, 1998; Sackett & Lievens, 2008; Truxillo et al, 2004). Common method bias occurs when procedural fairness variables and outcomes are collected on the same instrument (Schmitt & Chan, 1999). Certainly, these studies have been important because they have demonstrated that relationships do exist; however, to understand the implications of these effects in field-based settings, applicant perception research should aim to be longitudinal in organisational contexts with real consequences for applicants (Schmitt & Chan, 1999). Thus, the use of longitudinal studies can reduce the effects of common method variance, examine longer-term outcomes and can also take into consideration reactions following performance feedback in the selection process (Bauer et al, 1998; Truxillo et al, 2004). Therefore three of the four studies in the present thesis examine applicant perceptions using two-wave longitudinal designs in high-stakes operational selection settings.

A further criticism that can be noted is the over-reliance on quantitative research methods with only two notable studies (Gilliland, 1995; Schleicher, Venkataramani, Morgeson, & Campion, 2006) using qualitative methods. Whilst the use of

questionnaires offer advantages from a researcher's perspective, such as the ease of administration and consistency across participants (Robson, 2006); they do have considerable drawbacks because attention is focused on topics that the researcher considers important but are not necessarily salient to the applicants themselves (Bartunek & Seo, 2002). On the other hand, when data is gathered using qualitative methods such as interviews, the data are salient and personally relevant to the candidate (Gilliland, 1995). Indeed, authors (e.g. Schleicher et al, 2006; Marcus, 2003) have suggested that qualitative research on fairness is needed to "hear from" those who are affected by selection processes. Since the focus of this thesis is on the applicant's perspective of selection, one study explores applicant perceptions using qualitative methods. Thus the present thesis takes a multi-method approach to examining applicant perceptions.

1.4.6.3 Construct validity and measurement issues

Applicant perceptions research has been criticised by authors (e.g. Ryan & Ployhart, 2000; Sackett & Lievens, 2008) for the way in which constructs have been defined and measured, with variability in the operationalisation of these constructs. Often research has not been based in comprehensive applicant reactions models (e.g. Smither et al, 1993) or has not considered multiple fairness dimensions as suggested by Gilliland (1993). Indeed, it is only in the last decade that measures of process and outcome fairness have been developed based on organisational justice theory (such as Bauer et al's 2001 Selection Procedural Justice Scale) and until recently constructs were assessed using ad hoc measures (Sackett & Lievens, 2008). The use of various ad hoc measures creates problems in comparing between studies, since it is hard to determine whether differences in findings relate to the measurement of truly different constructs, or to inadequate measurement (Ryan & Ployhart, 2000). Sackett and Lievens (2008) therefore suggest that it is preferable to examine applicant perceptions using multi-dimensional and theory-driven measures. As such, an aim of this thesis is to ground research findings in theoretical frameworks to examine applicant perceptions. Organisational justice theory is used as an over-arching framework to examine applicant perceptions with measures that are based on the current literature base (e.g. Gilliland, 1994; Bauer et al, 2001). Although two studies focus on the examination of only one procedural justice dimension (job relatedness), this is chosen because not only is it the dimension that is most

consistently related to fairness (e.g. Macan et al, 1994; Rynes & Connerly, 1993; Schmitt et al, 2004), but it was also deemed relevant for the specific samples used (details outlined in the chapters themselves). A third empirical study focuses on multiple dimensions of procedural justice. A final study goes some way towards exploring the applicability of attribution theory as a psychological mechanism for examining fairness perceptions.

1.4.6.4 Lack of examination of person characteristics, including individual differences and 'trait-like' variables

A limitation that has been noted several times (e.g. Anderson, 2003; Bauer et al, 2004; Chan & Schmitt, 2004; Ryan & Ployhart, 2000; LaHuis, 2005; Schmitt & Chan, 1999; Truxillo et al, 2004; Truxillo et al, 2006; Viswesvaran & Ones, 2004) is that person characteristics are rarely considered as determinants of applicant fairness perceptions, despite frequent calls within the literature to do so (e.g. Chan & Schmitt, 2004; Ryan & Ployhart, 2000). Authors have commented on the relative lack of examination of individual differences such as personality (Anderson, 2003; Bauer et al, 2004; Rynes, 1993; Truxillo et al, 2004) and cognitive ability (Bauer et al, 2004). Indeed, less research has focused on the determinants than the outcomes of applicant perceptions (Hülsheger & Anderson, 2009).

The limited research that has been conducted examining individual differences (e.g. Viswesvaran & Ones, 2004) does suggest a role for these in fairness perceptions. Therefore some authors (e.g. Nikolaou & Judge 2007; Ryan & Ployhart, 2000; Schmitt & Chan, 1999; Thornton, 1993) have commented that more work is needed to establish person characteristics as the determinants of applicant perceptions, including so-called 'trait-like' variables (such as gender and ethnicity; Schmitt & Chan, 1999; Chan & Schmitt, 2004) and stable individual differences. This will ascertain whether applicant perceptions are more than just a function of the characteristics of the methods themselves. Some researchers (e.g. Truxillo et al, 2004) suggest that people will differ in terms of their perceptions of fairness, where some might be more tolerant of "unfairness" than others. This may have important practical implications because if negative candidate perceptions to selection methods are mainly due to item content or poorly administered processes, then it is possible to improve perceptions by changing the content or method (Schmitt &

Chan, 1999). Conversely, such modifications may have little effect if applicant perceptions are due to stable individual and 'trait-like' differences, such as ethnicity or previous candidate experience. Therefore the present thesis explores person characteristics as determinants of applicant perceptions, with a specific focus on 'trait-like' variables, including gender, ethnicity and candidate educational background; and individual differences, including personality, self-efficacy, and cognitive ability.

1.5 Summary and research question

This literature review has focused on the components presented in the framework (introduced in section 1.4.1), and has presented four key areas that may be considered determinants of fairness perceptions: person characteristics; perceptions relating to selection methods, including both method characteristics and procedural justice rules; and attributions as a potential psychological mechanism that may determine fairness perceptions. Some issues that may limit some of the quality, relevance and practical value of the research were also highlighted. A further framework is presented below (Figure 1.3) which shows the key areas that this thesis will focus on, indicated by the red line. The job characteristics and organisational context variables are explored in some detail in the next chapter.

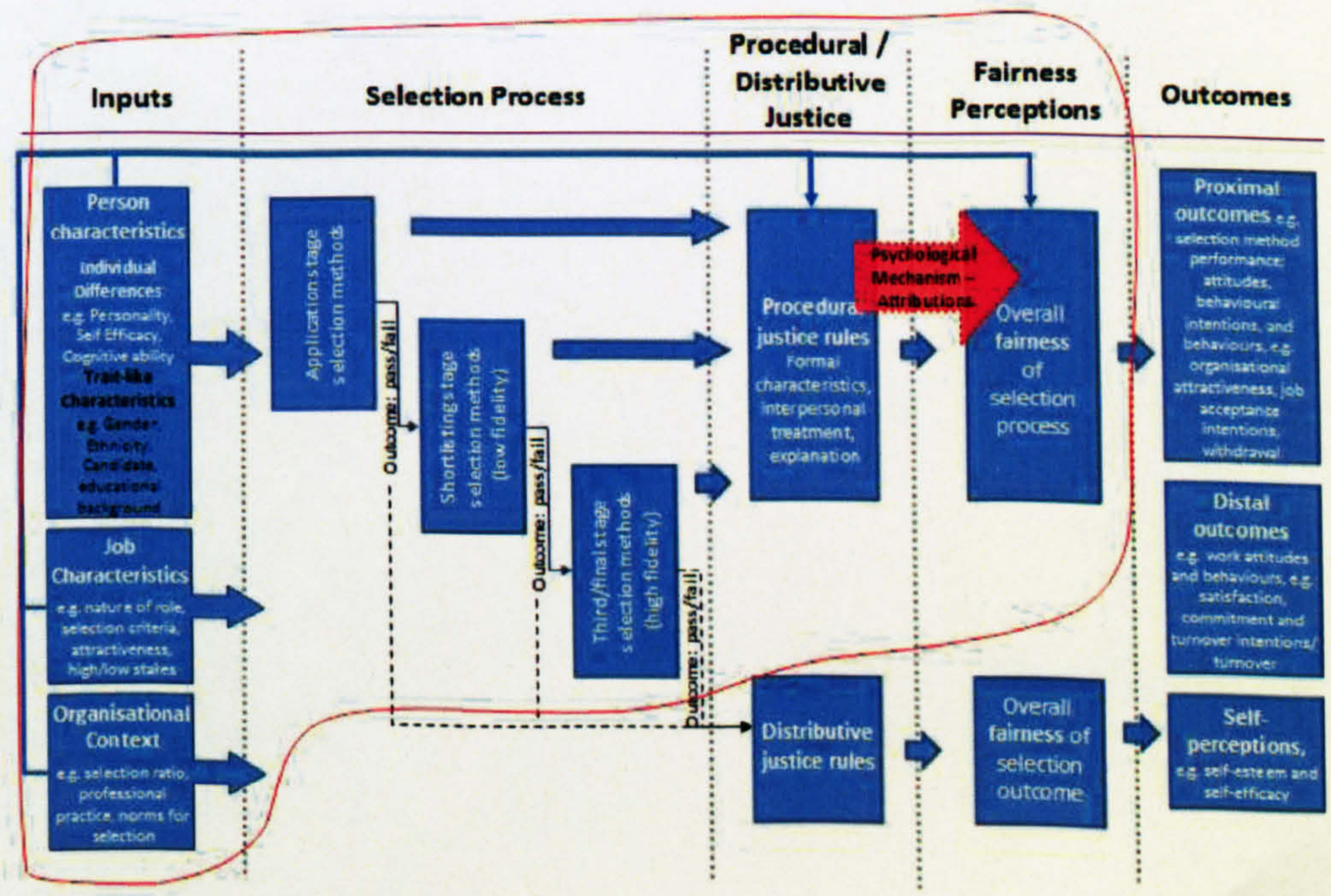


Figure 1.3: Framework for examining applicant perceptions in this thesis, highlighting key research areas

In sum, the overall aim of this research is to explore the determinants of applicant fairness perceptions in high-stakes selection settings. Essentially, when choosing the key determinant variables to focus on, the researcher prioritised (1) variables where little prior research existed so that evidence could be populated into areas where it was lacking, and (2) variables where research evidence already existed but had not been explored in this particular research context, that is using field-based applicant samples in high-stakes selection settings. The previous review of literature outlined four key areas that may be considered determinants of applicant fairness perceptions (person characteristics, selection methods, procedural justice rules and attributions). These are explored in the present thesis for the reasons outlined below:

1. <u>Person characteristics</u>

   Person characteristics are explored in this thesis because they are yet to be extensively examined in the applicant perception literature as predictors of fairness perceptions, and authors (Bauer et al, 2004; Rynes, 1993a; 1993b; Truxillo et al, 2004) have argued that research is warranted. Therefore, the extent to which both individual differences (personality, self-efficacy and cognitive ability) and 'trait-like' variables (gender, ethnicity, candidate educational background) are determinants of fairness perceptions is considered in this thesis.

2. <u>Selection methods</u>

   Although the influence of selection methods on fairness perceptions has been examined to a great extent, there is still relatively little research that has been conducted using field-based samples. Since it has been argued that replicating research based on student samples with non-student samples is important in social science research (e.g. Dipboye & Flanagan, 1979; Peterson, 2001), the need for more research appeared important. Therefore, applicant perceptions of a range of selection methods are explored in this thesis.

3. <u>Procedural justice rules</u>

Procedural justice rules have perhaps been the most often investigated determinants of fairness perceptions. Yet, they are considered in the context of this thesis because a key aim of the studies presented is to explore the extent to which person characteristics predict fairness perceptions *over and above* procedural justice rules. Additionally, there has been a lack of research in field-based and high-stakes selection settings. So, whilst examining procedural justice rules as determinants of fairness perceptions may not necessarily be unique *per se*, the context within which this is explored presents an original setting.

4. Attributions

Attributions are explored within this thesis because in the context of fairness perceptions, they have received very little research attention, apart from two notable studies (Ployhart et al, 2005; Ployhart & Ryan, 1997). Since preliminary research findings suggest attributions as the potential psychological mechanism through which fairness perceptions are formed, they may be considered a determinant of these. Therefore the role of attributions in perceptions of fairness perceptions is explored in this thesis.

However, as with all research, certain variables were prioritised over others and this meant that some determinants were *not* considered in this thesis, these were: contextual factors and test-taking attitudes. Contextual factors were not considered because prior research focusing on contextual factors (e.g. Elkins & Philips, 2000; Gamliel and Peer, 2009) has been experimental with the selection context manipulated for different participants. Given that the present research took place in operational selection processes, an experimental approach would not have been possible, and furthermore the context was to some extent controlled since all applicants were experiencing the same selection setting (this is explored in greater detail in Chapter 2). Test-taking attitudes were also not considered in this thesis, even though they have been shown to be a precursor of applicant perceptions (e.g. Schmit & Ryan, 1997). The decision for this was two-fold: first, since the present thesis sampled applicants from high-stakes selection processes, it is likely that all participants would be highly motivated to do well in the selection processes with little variance in test-taking attitudes (Morgeson & Ryan, 2009); second, because

test-taking attitudes have been explored to a greater extent than determinants in both student and applicant samples, the decision was taken to focus on the less well-researched area. Additionally, as shown in Figure 1.3 job characteristic and organisational context variables are also important in determining applicant fairness perceptions. Rather than being directly examined in this thesis, they are controlled for instead. This is outlined in further in Chapter 2 (section 2.3).

So, with the overall aim of this research to explore the determinants of applicant fairness perceptions in high-stakes selection settings, the over-arching research question is:

"To what extent are person characteristics, selection methods, procedural justice rules and attributions determinants of applicant fairness perceptions in high-stakes selection settings?"

In addressing the research question, the methodological limitations presented above (section 1.4.6) will be dealt with. This is outlined further in the next chapter, which will also introduce the context, sampling, research design and methods used in this research programme, and subsequently, present the studies in this thesis.

Chapter 2: Context, Sampling, Research Design and Methods

2.1 Introduction

This chapter begins by presenting the context within which this research programme was conducted. Next, the sampling, research design and methods are considered; and finally a brief outline of each of the studies conducted within this thesis is presented.

2.2 Context

It is important to consider 'context' in organisational research, since it is likely to have at least some influence on the way in which research is conducted (Johns, 2001). The context of the present thesis was the UK National Health Service (NHS), where one of the biggest changes in recent years has been Modernising Medical Careers. This aimed to reform medical education and training (Tooke, 2008) and has resulted in a specific focus on how doctors should be selected throughout the medical career pathway (shown in Figure 2.1). As can be seen in Figure 2.1, there are a number of entry points to the medical career indicated by the blue arrows in the diagram; for example from undergraduate medical training to foundation training and then from foundation training to core specialty posts and so on. A recent report (Tooke, 2008) highlighted the importance of excellence in health service delivery and in so doing the author suggests that selection processes and the associated assessment methods at each "gateway" of the medical pathway must be reliable and valid. Indeed, extensive research has been conducted focusing on the selection methods' validity and reliability at these "gateways" (e.g. Patterson, Carr, Zibarras, Burr, Berkin, Plint, Irish & Gregory, 2009; Patterson et al, 2005; Randall, Davies, Patterson & Farrell, 2006; Randall, Stewart, Farrell & Patterson, 2006) since selecting the wrong person for a job can have serious negative consequences both for the NHS, but perhaps more importantly, patients (Patterson & Ferguson, 2007). Furthermore, the Tooke report highlighted that "fair treatment" for applicants during selection is both important and necessary. Since selection of doctors within the NHS is a high profile event that attracts both public and media interest, there is a high level of scrutiny and public accountability (Harris, 2000;

Ryan, Greguras & Ployhart, 1996). Therefore selection decisions must be made fairly and methods must be legally defensible (Carr & Patterson, 2009; Patterson, Zibarras, Carr, Irish & Gregory, *submitted*).

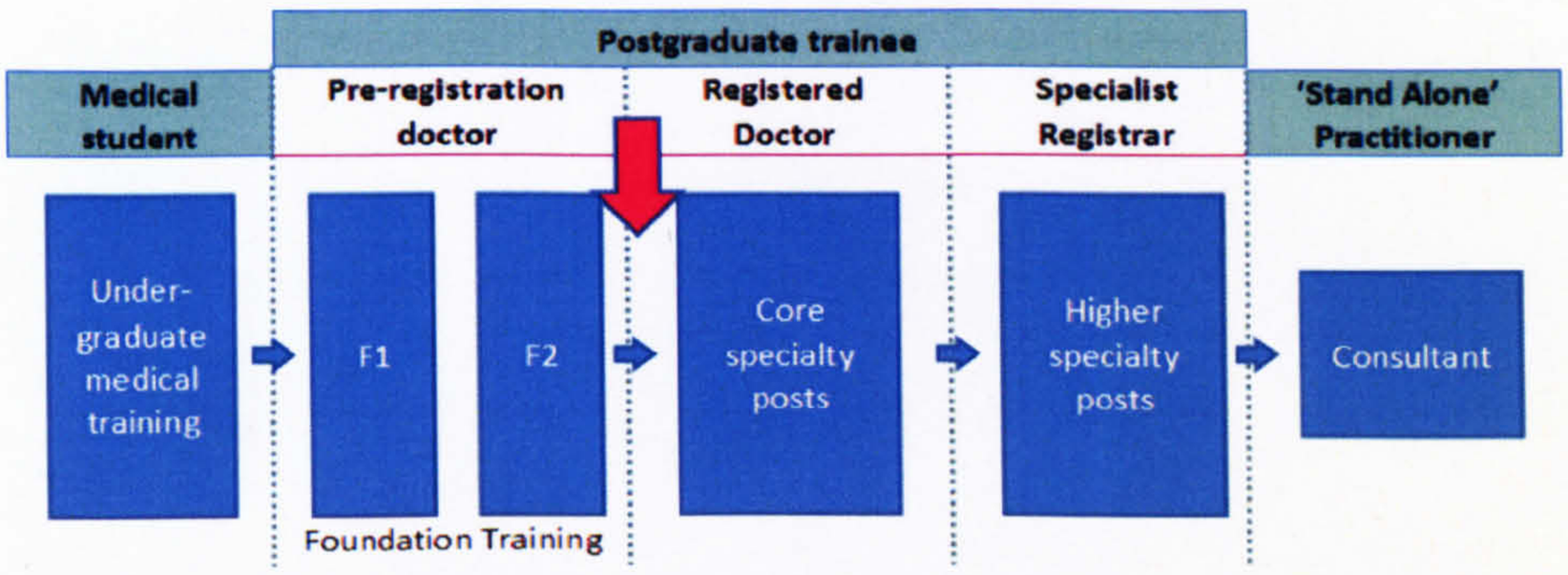


Figure 2.1: Medical Career Pathway (Tooke, 2008).

Fair selection methods can be seen from two perspectives: first, their ability to meet requirements of equal opportunities legislation and second, fairness perceptions of the applicants who experience the selection methods (Harris, 2000). Patterson and Ferguson (2007) called for more applicant perceptions research in the NHS because whilst there has been a growing literature in other occupations, this has not been explored extensively within the NHS, although there has been a focus on the applicants' perspective within health service contexts generally (e.g. Kumar, Roberts, Rothnie, du Fresne & Walton, 2009; Humphrey, Dowson, Wall, Diwakar & Goodyear, 2008; Patterson et al, *submitted*; Zibarras & Patterson, 2009). For example, Humphrey et al (2008) examined candidate and interviewer perceptions of newly-implemented multi-mini interviews (MMI) for selection to a UK regional paediatric programme and found that both parties perceived this selection method to be fair and reliable. Similarly, Kumar et al (2009) examined candidate and interviewer perceptions of MMIs for graduate entry medical school admission in Australia: qualitative data showed that MMIs were positively received by candidates and interviewers alike; specifically that candidates liked the one-to-one format and the multiple assessment opportunities which they felt enhanced their opportunity to demonstrate skills. However, neither study used a theoretical framework within which to explore their findings.

Finally, a recent study Patterson et al (*submitted*) used Gilliland's (1993) model of organisational justice theory to examine applicant perceptions to the UK General

Practice selection process over three consecutive years. Findings indicated positive perceptions of the process overall and significant positive increases in job relevance perceptions for a situational judgement test, group and written exercise. It was deemed important to examine perceptions in this particular context so that interventions could be implemented to increase information given to applicants about the types of selection method and reasons for their use. This body of evidence suggests that researchers are starting to consider the importance of applicant perceptions in healthcare contexts. Thus, the present research programme appears to be a timely addition to this growing body of research.

2.3 Conducting organisational research

As was outlined in the previous chapter, much of the applicant perception research has been laboratory-based, using student samples (e.g. Sackett & Lievens, 2008). Whilst there are clear advantages to conducting laboratory-based research, including the ability to control conditions and manipulate variables (Elmes, Kantowitz & Roediger, 2006; Myers, 1999; Orne, 1962), there are also potential limitations. Firstly there are potential limits in the generalisability of findings from student populations as was outlined in the previous chapter (Elmes et al, 2006; Landy & Conte, 2009; Marcus, 2003). A second potential limitation relates to the representativeness of the setting (that is, the ecological validity), since the experimental setting may be somewhat artificial (Greenberg, 1990). Indeed, some researchers (e.g. Bauer et al, 1998; Van Vianen et al, 2004; Truxillo et al, 2002) question the ecological validity of laboratory experiments in applicant perception research and argue for research to be conducted in operational field-based settings.

Nevertheless, organisational research also faces a number of key challenges when compared to laboratory-based studies. As Robson (2002, p. 4) so aptly states: "*one of the challenges inherent in carrying out investigations in the 'real world' lies in seeking something sensible about a complex, relatively poorly controlled and generally 'messy' situation*". Thus, in field-based research, not only is it harder to control conditions and variables than in lab-based research (Elmes et al, 2006; Robson, 2002; Cook Campbell & Shadish, 2006); but there are also particular challenges in relation to gaining access to participants and subsequently, the way in which data collection is conducted.

In this particular research setting the selection process timelines dictated when data could be collected. Furthermore, the organisation imposed constraints on the amount of data that could be collected from participants, since the time that candidates had available was extremely limited. Specifically, this meant that for one study questionnaire length was limited to one page; and in a further study, questionnaire length was limited to two pages long. Thus, the research was guided, not only by the research needs and associated research questions, but also by the needs of the organisation and participants. Thus, both access to and the time that participants had available were two major constraints to the present research. Unfortunately these issues were outside of the researcher's immediate control and therefore had an impact on the amount of data that could be collected within this context.

Additionally, it should also be noted that in organisational field-based research, a number of uncontrolled factors will inevitably exist (Elmes et al, 2006; Robson, 2002). For example, in applicant perception research, this might relate to job characteristic and organisational context variables such as: the nature of the job role; high- versus low-stakes selection; selection ratio; selection criteria; and norms for selection (e.g. Carless, 2003; Hausknecht et al, 2004). All of these job characteristic and organisational context variables may influence fairness perceptions, as shown in Figures 1.2 and 1.3 in the previous chapter. However, there has been little systematic attempt to examine them (Hausknecht et al, 2004). Thus, in order to minimise the potential confounding influence that organisational context variables might have on findings in this thesis, the populations were drawn from one specific research context; and to minimise the confounding job characteristics variables within the research context, samples were drawn from two specific selection processes. This ensured that the researcher could control aspects such as the selection ratio, criteria and nature of the job role. Therefore potential confounds were minimised to increase the internal validity of findings and to ensure that more accurate conclusions could be made about the effects that the independent variables have on the dependent variables (Elmes et al, 2006; Shadish et al, 2001).

2.4 Sampling

Within this research programme, access to participants was available for applicants entering core specialty posts (indicated by the red arrow on Figure 2.1). The present thesis draws upon samples of participants applying for posts within two healthcare specialties: General Practice (GP) and Public Health (PH). It can be hard to gain representative samples from a specific population when conducting field-based research (Robson, 2002); therefore measures were taken to ensure that participant samples were representative of the broader applicant populations. This was achieved by comparing demographic variables between respondents and non-respondents; for both specialties, the samples used were relatively representative since there were no significant demographic differences between respondent and non-respondent samples.

The GP and PH selection processes differ somewhat from one another. There is high competition within both specialties; however, the applicant numbers and posts available are very different. For General Practice, over 8000 doctors apply for around 3000 posts. On the other hand, around 500 individuals apply for 80 posts within Public Health. So, although competition ratios are higher for Public Health, many more applicants are rejected from the GP selection process. Another key difference is that Public Health attracts two distinct types of applicants: both doctors who have completed foundation training and also individuals from other professional backgrounds, such as psychologists.

Despite these differences in selection ratio, both the GP and PH posts represent highly coveted jobs with a monopoly employer. Therefore these selection processes are considered high-stakes (Carr & Patterson, 2009; Lievens, Peeters & Schollaert, 2008; Lievens & Sackett, 2007) for three main reasons. First, the applicants in these samples have completed many years of training, most of whom were doctors who have completed eight years in junior posts. This is both longer and more costly than most other professions (Carr & Patterson, 2009) and thus applicants have already invested a great deal of time and effort in their careers. Second, since there is high competition for posts, some candidates who are competent and 'pass' the selection process may not receive a position (Patterson & Ferguson, 2007). Instead, they remain within the NHS in staff grade doctor roles. Third, there is a single career

path into specialties within the NHS, so failure can severely limit professional choices (Carr & Patterson, 2009; Patterson & Ferguson, 2007). Therefore, the organisational setting and participants provided the researcher a relatively unique high-stakes context within which to examine applicant fairness perceptions.

There are two points worthy of note regarding the applicant perception research outlined in Chapter 1, in relation to context and sampling. First the majority of research has not been conducted within organisational contexts and for research that has, there appears to be an abundance of research using police recruits; second, there has been no applicant perception research using organisational justice theory in healthcare settings. (This is illustrated in Table 2.1 which provides an overview of the applicant perception research presented in Chapter 1.) This further illustrates the uniqueness of the research setting within which this research was conducted.

Indeed, applicant fairness perceptions may be considered particularly important in this healthcare setting for a number of reasons: (1) negative applicant perceptions may result in the loss of good applicants from the selection process (Hülsheger & Anderson, 2009; Chambers, 2002), which would have a detrimental effect on the utility of the selection process (Murphy, 1986); (2) those who perceive the selection processes to be unfair may legally challenge the process which is not only costly (Schmitt & Chan, 1999), but would also have a knock-on effect of negative publicity for the NHS; and (3) if applicants perceive the process to be unfair or feel mistreated, they may be less likely to re-apply or actively dissuade other applicants from applying, thus reducing the total number of applications (Chambers, 2002; McCarthy et al, 2009; Patterson et al, *submitted*). Therefore, by focusing on the applicants' perspective, organisations such as the NHS can ensure that the best applicants are recruited and not unintentionally "put off" by the selection process. In operational, high-stakes, selection settings such as these, not only should candidates have confidence in the selection process (Humphrey et al, 2008) but it is also important for organisations to be able to maximise the size and quality of the applicant pool (McCarthy et al, 2009; Ryan et al, 2000).

Table 2.1: Overview of research setting and design of previous applicant perception research

Authors	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
Robertson, Iles, Gratton & Sharpley, 1991	141 managers on development programme	Financial institution	Longitudinal, quantitative	Situational interviews, 2 Assessment centres	Both	Withdrawal cognitions, org commitment, beliefs about selection methods, career impact and psychological health
Schmit & Ryan, 1992	157 under-graduate students	N/A	Longitudinal, quantitative	Ability and personality test	Low	Test-taking motivation and dispositions using Test Attitude Survey (TAS)
Rynes & Connerly, 1993	390 students	N/A	Cross-sectional, quantitative	Hypothetical selection scenarios (13 methods)	Both	Reactions to scenarios; attitudes towards organisation; demographic variables
Smither, Reilly, Millsap, Pearlman & Stoffey, 1993	110 newly hired managers & 44 recruiting managers	Civil Service	Cross-sectional, quantitative	Hypothetical selection scenarios: 8 cognitive tests, 6 other methods	Both	Perceived job relatedness & predictive validity of methods, cognitive ability & background characteristics
Gilliland, 1994	260 under-graduate students	N/A	Cross-sectional, quantitative	Work sample, cognitive ability test, integrity test	Both	Hiring expectations, Fairness perceptions, recommendation intentions, self-efficacy, performance
Macan, Avedon, Paese & Smith, 1994	Study 1 = 3,984; Study 2 = 194 applicants	Manufactur-ing	2 X cross-sectional; but subset longitudinal, quantitative	Cognitive ability tests (CAT) & Assessment centre (AC)	Both	Perceptions of selection methods; self-performance; attitudes towards selection process, job and org; job acceptance and purchase intentions
Rosse, Miller & Stecher, 1994	80 applicants	Property management firm	Cross-sectional, quantitative	Interview, CAT and personality assessment	Low	Perceptions of selection methods (i.e. privacy and appropriateness)
Gilliland, 1995	31 recent graduates	N/A	Cross-sectional, qualitative	Variety of selection methods and processes	Both	Critical incidents of fair/unfair selection processes and perceptions of selection methods
Steiner & Gilliland, 1996	France = 117 psychology students; US = 142 students	N/A	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Process favourability and procedural justice dimensions for 10 selection methods (interviews, CVs, work samples, biodata, ability tests, references, personality tests, honesty tests, personal contacts and graphology).
Chan & Schmitt, 1997	241 psychology under-graduates	N/A	Cross-sectional, quantitative	Two SJT versions: video-based vs. paper-and-pencil	Low but VB higher	Face validity perceptions, reading comprehension
Chan, Schmitt, DeShon, Clause & Delbridge, 1997	210 under-graduate students	N/A	Cross-sectional, quantitative	2 parallel cognitive ability test (CAT) batteries	Low	Face validity perceptions and test taking motivation.

Authors	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
Schmit & Ryan, 1997	3290 applicants with 618 follow-up interviews	Police	Cross-sectional, quantitative	Two-part paper-and-pencil police exam	Low	Test-taking attitudes (motivation, belief in tests, comparative anxiety, literacy) and withdrawal decisions.
Bauer, Maertz, Dolen & Campion, 1998	144 applicants	Accounting department, large public organisation	Longitudinal – 3 time points, quantitative	Written, multiple choice test covering cognitive aptitude & job knowledge	Low	Procedural justice perceptions, organisational attractiveness, intentions towards the organisation, attitude towards employment testing, test-taking self-efficacy, pass/fail.
Chan, Schmitt, Jennings, Clause & Delbridge, 1998	494 applicants (91% male)	Police (State Trooper)	Cross-sectional, quantitative	Reading comprehension test & video-based SJT	Low	Job relevance perceptions, fairness perceptions, and perceived performance
Chan, Schmitt, Sacco & Deshon, 1998	198 under-graduate students	N/A	Cross-sectional, quantitative	Cognitive ability test (CAT) & personality test	Low	Belief in tests, pre- and post-test perceptions, test performance.
Ryan & Ployhart, 1998	239 under-graduate students	N/A	Longitudinal – 2 time points, quantitative	Cognitive ability test	Low	Process fairness, performance expectations, job acceptance intentions, future experiment intentions & recommendation intentions
Ployhart, Ryan & Bennett, 1999	Study 1: 156 under-graduates Study 2: 35 applicants to graduate school	N/A	Cross-sectional, quantitative	Cognitive ability test & job knowledge test	Low	Manipulation of selection decision, justification as to why decision was made, and sensitivity; process fairness and self-perceptions.
Truxillo & Hunthausen, 1999	82 applicants	Police	Cross-sectional, quantitative	Paper-and-pencil multiple choice test and video-based test	Low	Perceived predictive validity, fairness, affect towards the test and perceived performance
Elkins & Phillips, 2000	255 undergraduate students enrolled in business classes	N/A	Cross-sectional, quantitative	Biodata	Low	Job context (international, local, non-specific), selection decision outcome, job relatedness, and justice perceptions.
Gilliland, Groth, Baker, Dew, Polly & Langdon, 2001	Study 1: 119 jury pool; study 2: 32 applicants; study 3: 380 students	Study 1 & 3: N/A Study 2: University	Cross-sectional, quantitative	Study 1: hypothetical interview/ testing; 2: not known; 3: as study 1	Low	3 types of explanations in rejection letters plus outcome and procedural fairness, interpersonal treatment and recommendation intentions.
Truxillo, Bauer & Sanchez, 2001	246 applicants	Police	Longitudinal, quantitative	Multiple choice (MC) written test; video based (VB) oral test	Low	Process fairness; overall fairness of selection; test-taking self-efficacy

Authors	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
Phillips & Gully, 2002	108 working Americans, 158 working Singaporeans	N/A	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Fairness reactions to 10 selection methods as per Steiner & Gilliland (1996)
Truxillo Bauer, Campion & Paronto, 2002	N=274 144 in control group, 130 in 'information' group	Police	Longitudinal – 4 time points, quantitative	Video based (VB) oral test	Low	Job relatedness, feedback timeliness, structure fairness, test-taking self-efficacy, information intervention, org attractiveness, job pursuit, recommendation intentions, actual offer acceptance and turnover.
Carless, 2003	T1: N=193; T2: N=140; T3: N=81; T4: N=65	Australian national telecommunic-ation company	Longitudinal – 4 time points, quantitative	Interview and psychometric testing	Low	Org attractiveness; job acceptance intention; fair process; beliefs in tests/interviews; job relatedness; ability to influence; job/org characteristic perceptions; other job offers; job acceptance.
Lievens, de Corte & Brusse, 2003	100 applicants	Consultancy firm	Cross-sectional, quantitative	CAT, personality interview, structured & unstructured interview, references, biodata, graphology & work sample	Both	Belief in tests & comparative anxiety; perceptions of 8 selection methods (hypothetical context); overall process fairness.
Marcus, 2003	213 German under-graduate students	N/A	Longitudinal – pre and post test perceptions, quantitative	10 methods described in questionnaire (hypothetical), then, CAT, personality, integrity and biodata tests	Both	Methods as per Steiner & Gilliland (1996); process favourability of all methods
Bauer, Truxillo, Paronto, Weekley & Champion, 2004	153 under-graduate students	N/A	Longitudinal – 2 time points, quantitative	Face-to-face (FTF), telephone or interactive voice response (IVR) interviews	Low	Cognitive ability, conscientiousness, selection procedural justice, litigation intentions, organisational sophistication, attractiveness & job acceptance intentions
Moscoso & Salgado, 2004	125 Spanish and 104 Portuguese under-graduates	N/A	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Procedural fairness perceptions of 10 selection methods as per Steiner & Gilliland (1996)
Schinkel, van Dierendonck & Anderson, 2004	119 under-graduate students	N/A	Cross-sectional, quantitative	Simulated scenario and GMA testing.	Low	Core self-evaluations (CSE); Affective well-being; 2X dimensions procedural fairness – job relatedness and opportunity to perform.
Schmitt, Oswald, Kim, Gillespie & Ramsay, 2004	644 under-graduate students	N/A	Cross-sectional, quantitative	Biodata items, situational judgement items (SJI)	Low	Performance beliefs, perceptions of test relevance and fairness

Authors	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
Van Vianen, Taris, Scholten & Schinkel, 2004	282 applicants	Variety of organisation	Longitudinal – 3 time points, quantitative	Cognitive ability & personality tests, SJT	Low	Openness to experience, test beliefs, job relatedness, perceived performance, pre- & post-feedback fairness, perceived feedback treatment, feedback content, job attractiveness
Viswesvaran & Ones, 2004	131 working individuals (not going through selection)	N/A	Cross-sectional, quantitative	N/A	N/A	Relative importance of five factors of selection processes; Big Five variables (NB: Big Five results from only 78 participants)
LaHuis, 2005	291 applicants	Entry-level clerical position in a federal agency	Longitudinal – 2 time points, quantitative	Speed test consisting of verbal and quantitative components	Low	Belief in tests, job relatedness, perceived performance, test-taking motivation, employment commitment, job search self-efficacy, motivational control, perceived procedural fairness, job pursuit intentions.
Carless, 2006	Applicants (T2=112 & T3=117)	Police	Longitudinal – 3 time points, quantitative	Physical agility testing, personality assessment and interview	Both	Beliefs about and job relatedness of each test; organisational attractiveness, job acceptance; ability to influence; fair process/outcome
Schleicher, Venkataramani, Morgeson & Campion, 2006	T1: 754 and T2: 249 applicants	Agency within US government	Longitudinal – 2 time points, quantitative and qualitative	Leaderless group discussion (LGD); memo exercise; 3 interviews	Both	Job relevance, opportunity to perform, communication, interpersonal treatment, overall procedural fairness and outcome pass/fail.
Truxillo, Bauer, Campion & Paronto, 2006	120 applicants	Police	Longitudinal – 2 time points, quantitative	Multiple choice, written test	Low	Big Five personality variables; social, structure and outcome fairness; self- and organisational perceptions
Bertolino & Steiner, 2007	137 Italian university students	N/A	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Fairness reactions to 10 selection methods as per Steiner & Gilliland (1996)
Nikolaou & Judge, 2007	158 employees and 181 under-graduates	Employee sample, various organisation	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Fairness perceptions of 10 selection methods as per Steiner & Gilliland (1996); and core self evaluations
Anderson & Witvliet, 2008	167 Dutch under-graduates	N/A	Cross-sectional, quantitative	10 methods described in a questionnaire (hypothetical)	Both	Fairness reactions to 10 selection methods as per Steiner & Gilliland (1996)
Burns, Siers & Christiansen, 2008	95 applicants (91% male)	Manufactur-ing	Cross-sectional, quantitative	Cognitive ability tests	Low	Fairness perceptions, validity perceptions and satisfaction with testing; and use of pre-test information and preparation
Gamliel & Peer, 2009	243 applicants	Various positions	Experimental cross-sectional,	Selection interview and grade point	Low	Perceptions relating to fairness, satisfaction and belief that other

Authors	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
			quantitative	average (GPA)		organisations should use process.
Anseel & Lievens, 2009	Study 1: 125 Masters students; Study 2: 252 Masters students	N/A	Experimental longitudinal, quantitative	Study 1: Personality questionnaire; Study 2: in-basket exercise	Both	Hiring expectation, feedback acceptance, organisational attractiveness, recommendation intentions
Brooks, Guidroz & Chakrabarti, 2009	Study 1 and 2: 285 and 348 undergraduate students respectively	N/A	Experimental cross-sectional, quantitative	Hypothetical scenario explaining selection approach and diversity policy	Low	Study 1: Organisation's selection approach (mechanical vs. holistic) and participant's evaluation mode (separate vs. joint); study 2, as 1, but including diversity term (diversity vs. racial diversity)
McCarthy, Hrabluik & Jelley, 2009	Police officers, study 1: 498 study 2: 182	Police	Cross-sectional, quantitative	Promotional police exam	Low	Behavioural and performance anxiety, motivation, procedural and interactional justice, recommendation intentions

2.5 Research design

The aim of this research programme was to explore the determinants of applicant fairness perceptions in high-stakes selection settings. In addressing the aim, this thesis deals with some of the methodological limitations of previous applicant perception research. As outlined in the first chapter and also seen in Table 2.1; a large proportion of research has taken place with student samples using cross-sectional quantitative research designs. Therefore, to address the limitation of using student samples and laboratory-based settings, all samples used in this thesis were field-based applicants experiencing high-stakes operational selection processes. Secondly, in addressing the limitation of cross-sectional quantitative study design, three empirical studies present two-wave longitudinal research, one of which used qualitative research methods. Thirdly, to address the limitation of construct and measurement issues, the present thesis uses organisational justice theory as an over-arching framework to examine applicant perceptions with measures based on the current literature base (e.g. Gilliland, 1994; Bauer et al, 2001), and a further study explores attributions as a psychological mechanism for considering applicant perceptions. Finally, to address the lack of examination of person characteristics, the present thesis focused on an examination of individual differences and other trait-like variables as determinants of applicant perceptions.

As was noted in the first chapter, some researchers have highlighted doubt about the added value of applicant perception research (e.g. Sackett & Lievens, 2008), questioning whether these perceptions actually "matter" given that there is currently little evidence that fairness significant influences important outcomes, such as withdrawal from the selection process (e.g. Ryan et al, 2000). A potential explanation for this is that perceptions may not have the same influence on behaviour as they do on attitudes and intentions (Reeves & Schultz, 2004). While this may be true to some extent, it could also be that focusing on distal outcomes (that is, behaviours) is premature until researchers have a better understanding of the determinants of applicant perceptions. Gaining greater conceptual clarity of what determines fairness perceptions should lead to better understanding of the effect on various outcomes; indeed, this may help researchers to "focus down" on the key important variables that need to be explored in relation to certain outcome variables, much like has recently been done in Anderson's (2010) model of perceived job discrimination and applicant propensity for case initiation. Therefore, the present research programme focuses on an exploration of determinants rather than outcomes of fairness perceptions.

2.6 Research methods

Both quantitative and qualitative research methods were employed in this thesis to address the overall research objectives. This included quantitative questionnaires and qualitative interviews analysed using both content analysis and attributional coding. The following sections briefly outline the questionnaire measures and qualitative interviews used in this research programme.

2.6.1 Questionnaires

In Studies 1, 2 and 3 questionnaires were used as a way to gather data to produce a quantifiable measure of applicant perceptions. As a method of data collection, questionnaires are considered to be relatively simple to use: versatile and efficient in terms of researcher/participant time and effort (Robson, 2002; Kent, 2001; De Vaus, 2002). Furthermore, they are useful in theory and hypothesis testing (De Vaus, 2002). The questionnaire items used in this thesis were all derived from previous research based on organisational justice theory. Some questionnaire items

came from scales that had been used in previous applicant perception research: in Study 1, items to measure *job relatedness* were derived from Bauer et al (2001) and Gilliland et al (2001); whilst items to measure *process fairness* were based on Gilliland's (1994) scale. In Study 2, Bauer et al's (2001) selection procedural justice scale was used to measure a number of different variables: *job relatedness-content*; *job relatedness-predictive; information known; chance to perform; consistency; treatment, and two-way communication.* Other variables that were measured included: *occupational self-efficacy* (Schyns & Von Collani, 2001); *personality* as measured by the single-item measure of personality (SIMP; Woods & Hampson, 2005); and *cognitive ability* as measured by the combined score from two psychometric tests: W-GCTA[1] and RANRA[2] (the User Manual suggests that a composite T score for these two tests can be used as a measure of cognitive ability; Pearson, 2008). For Study 3, the job relatedness data that had been collected for the three samples used in Studies 1 and 2 were analysed further in order to examine the influence of both the selection methods themselves and demographic variables on job relatedness perceptions. Thus, additional items were also used to elicit demographic variables such as ethnicity and candidate educational background. Further details of the questionnaire scales and example items can be found both in the relevant study chapters and in Appendices 9.1 through to 9.6.

2.6.2 Interviews

In the fourth and final study, interviews were used to explore applicants' experiences during a selection process. The interview is a popular data collection technique within organisational research since it is flexible and can address issues where the participants' perspectives are important (King, 2004; Robson, 2002; Silverman, 2005). Indeed, as King (2004, p. 11) states: *"the goal of any qualitative research interview is... to see the research topic from the perspective of the interviewee, and to understand how and why they have come to this particular perspective"*. Therefore, the interview as a data collection method was considered useful in this particular context because the data gathered would be salient and personally relevant to the candidate (Gilliland, 1995) and explanations for events provided from the candidate's, not the researcher's, point of view (MacKenzie-

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[1] Watson-Glaser Critical Thinking Appraisal test
[2] Rust Advanced Numerical Reasoning Appraisal test

Davey & Arnold, 2000; Silvester, 2004; Schleicher et al, 2006; Symon, Cassell & Dickson, 2000). Indeed, there are a number of potential limitations of questionnaire approaches. First, questionnaires often implicitly assume that the researcher and participants share a similar understanding of the variables examined (Bartunek & Seo, 2002). Second, questionnaires do not capture the important dynamics of the selection environment (Rynes, 1993a). By contrast, qualitative research methods allow participants to expand on responses and discuss salient issues (Rynes, 1993a); adding detail that they consider relevant to the topic (MacKenzie-Davey & Arnold, 2000). This is not possible when closed-response questionnaire items are used.

The interviews conducted in Study 4 were semi-structured and questions broadly related to participants' experiences of the selection process and their perceptions of fairness. The interview schedule can be found in Appendix 9.7. One of the main disadvantages of conducting interviews when compared to questionnaires is that they are time-consuming for participants (King, 2004; Silverman, 2005). Therefore the researcher aimed to keep each interview to a maximum of 30 minutes; and furthermore, since participants were based in a variety of UK locations, they were conducted via telephone to minimise the necessity for travel (for either the researcher or participants). With permission, all interviews were recorded, and then transcribed verbatim (see Appendix 9.8 for a full interview transcript). Finally, two types of analyses were conducted on the data derived from the interviews: a content analysis (MacKenzie-Davey & Arnold, 2000; Silverman, 2006) and an attributional analysis using the Leeds Attributional Coding System (LACS; Munton, Silvester, Stratton, & Hanks, 1999). LACS is a five-stage process in which the researcher identifies the source of attributions; extracts the attributions; identifies agents and targets; codes the attributions on the causal dimensions; and finally analyses the data. These analyses are outlined in further detail in Study 4 (chapter 6).

2.7 Studies presented in this thesis

Four studies are presented in this thesis and Table 2.2 presents the research design, sampling, selection methods and variables explored in each study. The research programme was designed to explore determinants of applicant fairness perceptions. These included the selection methods themselves; procedural justice rules; person characteristics including gender, ethnicity and candidate educational background;

and individual differences including personality, self-efficacy and cognitive ability. Additionally, attributions were also considered in this thesis, not only as potential determinants of fairness, but also as a psychological mechanism underlying applicant perceptions. The next sections outline each of the studies in this thesis.

Table 2.2: Research design, sampling, selection methods, measures and variables for studies presented in this thesis

Study	Sample	Organisation setting	Research design/method	Selection methods	High/low fidelity	Measures & Variables
1	Sample 1: 156 applicants for GP at shortlisting stage Sample 2: 212 applicants for GP at assessment centre (AC) stage	NHS – GP selection process	Quantitative, questionnaire-based. Longitudinal: Sample 1, T1 = shortlisting; T2 = outcome (pass/fail shortlisting). Sample 2, T1 = AC; T2 = outcome (pass/fail AC)	Sample 1: job knowledge test (JKT) and situational judgement test (SJT) Sample 2: simulated patient consultation (SPC); group exercise (GE); written exercise (WE)	Both	Sample 1 and Sample 2: T1 = job relatedness of selection methods; personality; self-efficacy; T2 = outcome (pass/fail); process fairness; self-efficacy.
2	132 applicants for PH, matched across shortlisting and AC	NHS – PH selection process	Quantitative, questionnaire-based. Longitudinal: T1 = shortlisting; T2 = AC.	Shortlisting = psychometric tests: numerical reasoning (NR) and critical thinking (CT) AC = group exercise (GE) and interviews	Both	T1 and T2: job relatedness-content and job-relatedness-predictive of selection methods; information known; chance to perform; consistency; treatment, and two-way communication; overall fairness. T1 only: cognitive ability.
3	Sample 1: 358 applicants for GP at shortlisting stage Sample 2: 483 applicants for GP at AC stage Sample 3: 132 matched applicants, shortlisting and AC	NHS – GP and PH selection processes	Quantitative, questionnaire-based and cross-sectional.	Sample 1: JKT and SJT Sample 2: SPC, GE and WE Sample 3: NR, CT and GE and interviews	Both	For Samples 1 and 2: job relatedness of selection methods; for Sample 3: job relatedness-content and – predictive for selection methods; gender and ethnicity.
4	40 interviews in total: 26 applicants interviewed following shortlisting; of 26, 14 made it through to the final stage and interviewed following the AC.	NHS – PH selection process	Qualitative method, data collected via semi-structured interview. Longitudinal, T1 = shortlisting, T2 = AC.	Shortlisting = psychometric tests: NR and CT AC = Interview panels.	Both	Attributions coded on causal dimensions: internal-external; stable-unstable and controllable-uncontrollable; and further coded as positive-negative or fair-unfair experiences.

2.7.1 Study one: An investigation of the role of job relatedness, personality and self-efficacy in fairness perceptions

Initially, the first study adopted a quantitative two-wave longitudinal research design, using two samples examining (a) the extent to which job relatedness perceptions predict process fairness perceptions following outcome feedback (i.e. pass/fail); (b) the extent to which personality predicts process fairness perceptions above that accounted for by job relatedness perceptions; and (c) whether occupational self-efficacy can be considered a trait or an outcome in applicant perception research. Two samples of applicants were used from the GP selection process: Sample 1 used applicants from the shortlisting stage, whilst Sample 2 used applicants from the assessment centre stage. In both, job relatedness perceptions of the selection methods were measured at the time of testing, along with personality and self-efficacy. Then, one month later following outcome feedback, process fairness perceptions were measured, along with self-efficacy. For Sample 1, outcome feedback involved candidates finding out whether they had made it through to the assessment centre; for Sample 2 candidates found out whether or not they had been accepted for GP posts. Figure 2.2 outlines the research process.

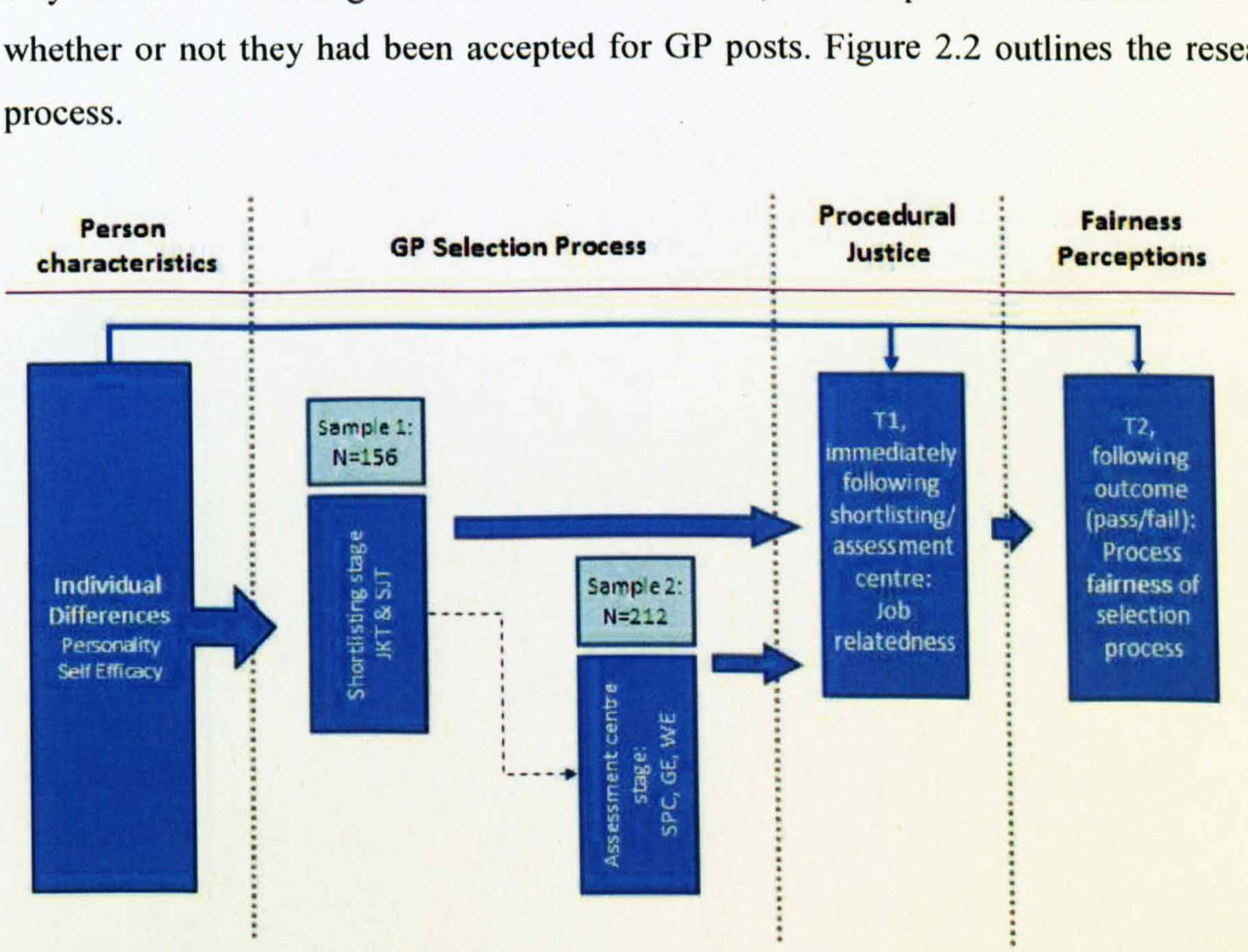


Figure 2.2: Study one research process

2.7.2 Study two: An investigation of the role of procedural justice rules, cognitive ability and candidate background in applicant fairness perceptions

Study 2 adopts a quantitative two-wave longitudinal research design, using one sample. This study examines the extent to which procedural justice rules and person characteristics predict fairness perceptions at two stages of a selection process (following shortlisting and following assessment centre). In this study, the following were examined: (a) the extent to which job relatedness and other procedural justice rules positively predict fairness perceptions; (b) whether cognitive ability adds incremental variance to fairness perceptions over and above job relatedness perceptions; and (c) potential interaction effects of person characteristics on the ratings of selection process procedural justice characteristics. A sample of applicants was used from the PH selection process in 2009. The applicants were tracked through selection from shortlisting (stage 2), to assessment centre (stage 3), and completed selection procedural justice scale (SPJS; Bauer et al, 1998) questions at both time points. Figure 2.3 outlines the research process.

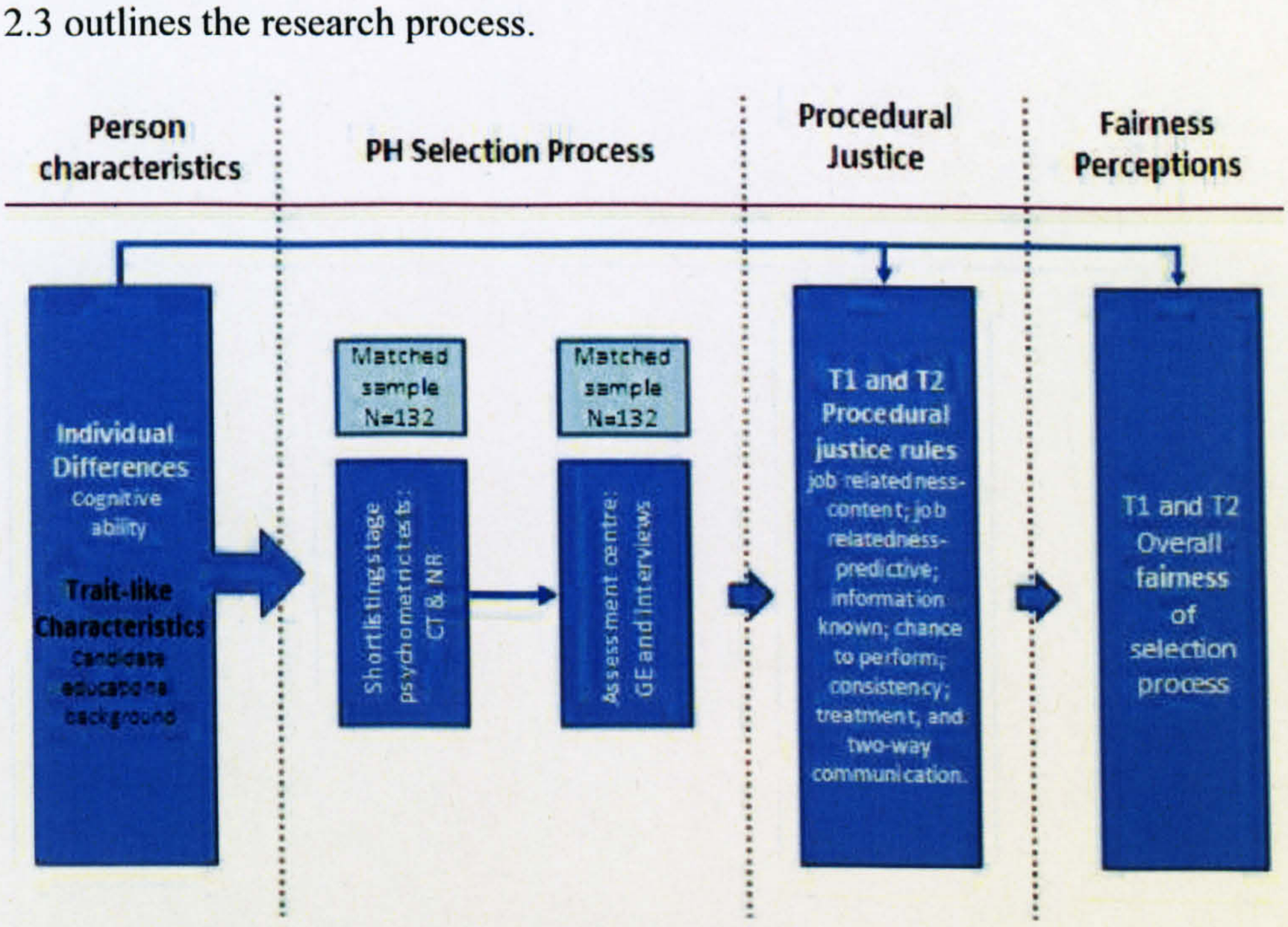


Figure 2.3: Study two research process

2.7.3 Study three: An investigation of job relatedness perceptions of selection methods in three field-based samples

Study 3 adopts a quantitative, cross-sectional research design. Essentially, the samples used in the previous two studies were used in this study to examine the extent to which there are differences in perceptions of job relatedness for different selection methods used at different stages of selection processes. Furthermore, ethnicity and gender were explored as a potential determinant of these perceptions. Figure 2.4 outlines the research process.

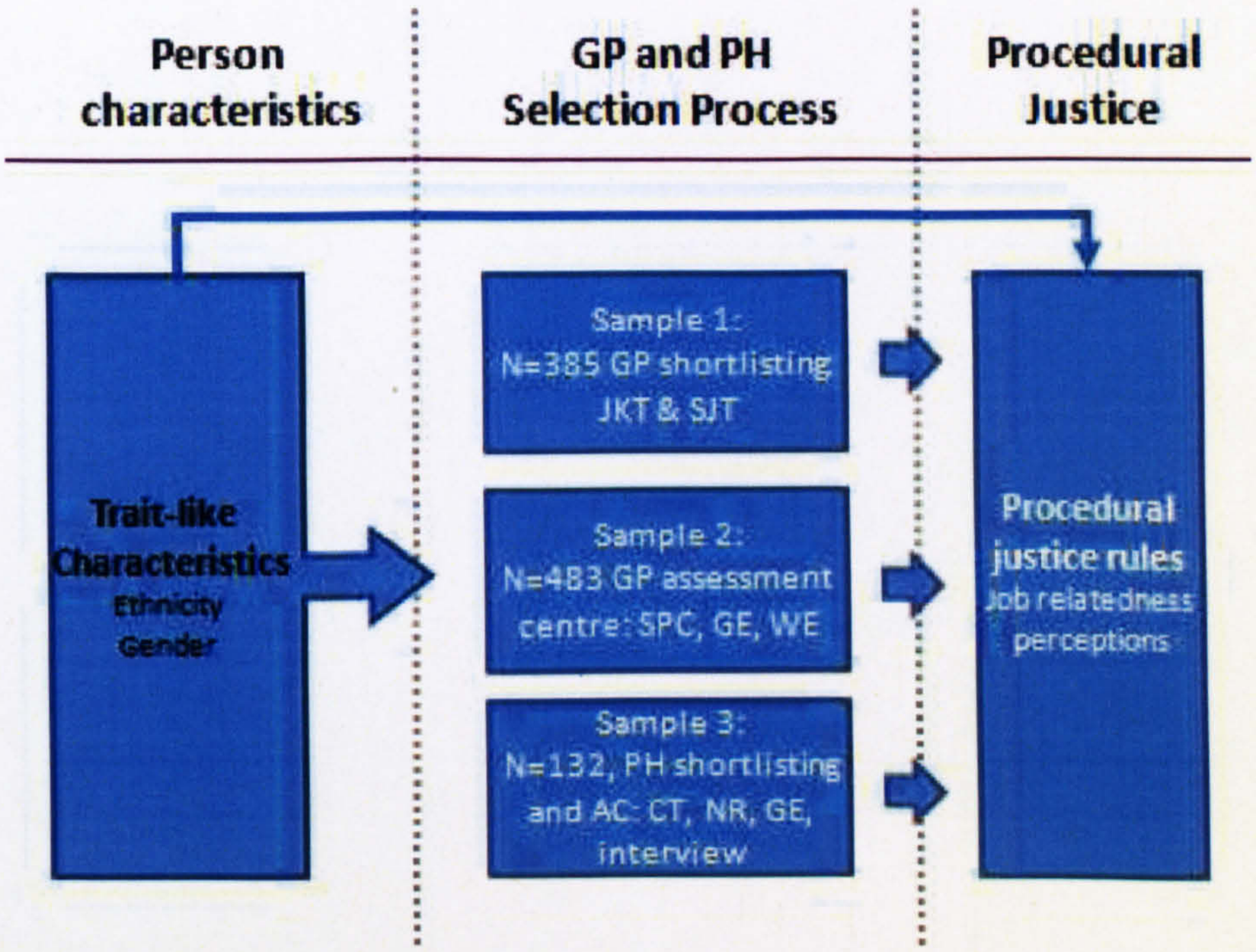


Figure 2.4: Study three research process

2.7.4 Study four: An investigation of the role of attributions in applicant perceptions of a selection process

Finally, Study 4 uses a longitudinal research design using qualitative data collection methods. In using a qualitative method to collect data, this chapter focuses on data that is salient and personally relevant to candidates and explores the causal attributions that applicants made when they discuss their experiences during a selection process and the content of the attributions; that is, what topics applicants discussed in relation to their

experiences. It is a first step towards exploring whether attributions are determinants of fairness perceptions and whether they could be the psychological mechanism underlying applicant perceptions. This study used a sample of 26 candidates from the PH selection process in 2008. All were interviewed following their participation in the second stage of the selection process (shortlisting), but before they received their results. Of these 26, 14 candidates made it through to the third stage of selection and were interviewed following their participation in the assessment centre, but before they received their results.

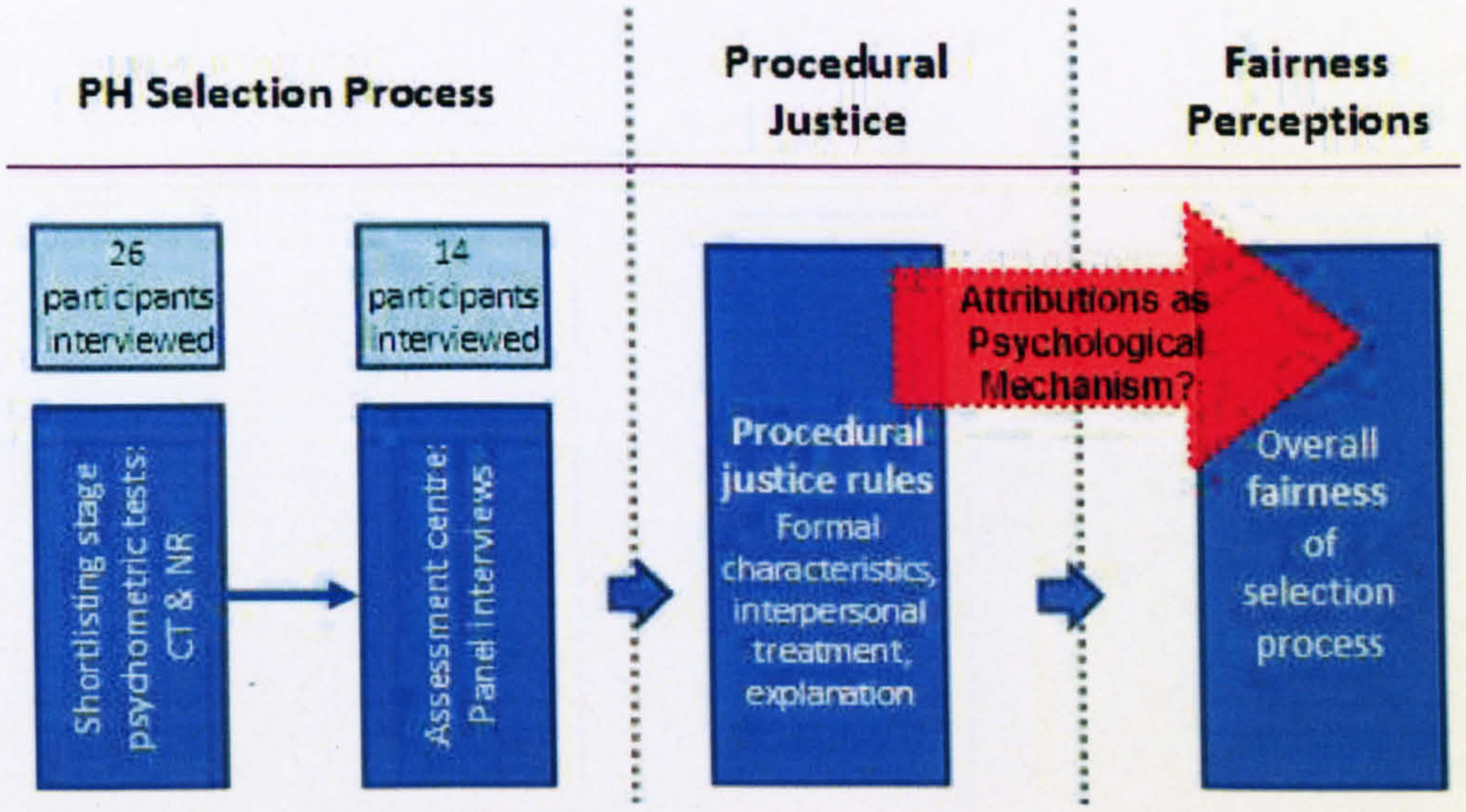


Figure 2.5: Study four research process

2.8 Summary

In summary, this chapter has outlined the context, sampling, research design and research methods used in this thesis. The research takes place in the context of the NHS and draws on samples of applicants from two specific selection processes: General Practice and Public Health. In drawing participants from one research context and within this, two selection processes, potential confounding job and organisational context variables could be controlled to some extent. However, due to the nature of organisational research, there were a number of constraints regarding access to participants which influenced the research design and methods used; nevertheless, the

research programme aimed to address some of the methodological limitations of previous research. This thesis employs both longitudinal and cross-sectional research designs; and both quantitative and qualitative research methods, in order to examine the overall aim of this research: to explore the determinants of applicant fairness perceptions in high-stakes selection settings. The chapters that follow present the four empirical studies that comprise this thesis.

Chapter 3: An investigation of the role of job relatedness, personality and self-efficacy in fairness perceptions

3.1 Introduction

This chapter presents a study conducted in an operational selection setting, using two samples with two-wave longitudinal designs. The purpose of this study is three-fold: first to explore job relatedness perceptions as determinants of process fairness using Gilliland's (1993) established method. The second aim is to explore the role of individual differences in applicant perceptions, since research suggests a role for personality (e.g. Viswesvaran & Ones, 2004) and core self-evaluations such as self-efficacy (e.g. Nikolaou & Judge, 2007). The third aim is to explore whether self-efficacy is better conceptualised as a trait (e.g. Ryan et al, 1996) that predicts process fairness perceptions, or an outcome variable negatively influenced by failing a selection process (e.g. Gilliland, 1994). Additionally, this study addresses some of the methodological limitations found in previous published research. Many studies have been laboratory-based using student samples with cross-sectional designs (e.g. Elkins & Philips, 2000; Moscoso & Salgado, 2004); therefore this study uses two samples of applicants involved in a high-stakes selection process and investigates perceptions immediately after applicants were tested and following the results of their assessment.

The samples presented in this study were qualified doctors applying for general practitioner posts in the UK National Health Service. The General Practice (GP) selection process comprised three stages (Figure 3.1 depicts this process). Stage 1 included eligibility checks, using an electronic application process. Stage 2 entailed shortlisting using two validated tests: a Job Knowledge Test (JKT), where candidates apply clinical knowledge to solve problems; and a Situational Judgement Test (SJT), where candidates are presented with written work-related scenarios to which they have choose an appropriate response from a list of alternatives (Patterson et al, 2009a; Patterson et al, 2009b). Stage 3 was an assessment centre including three selection methods: a group exercise (GE) which involved a group discussion exercise relating to

a work-related issue; a simulated patient consultation (SPC) where candidates play the role of doctor and an actor plays the patient role; and a written exercise (WE) where candidates prioritise a list of work-related issues and justify their choices (Patterson et al, 2009a; Patterson, Ferguson, Norfolk & Lane, 2005). Extensive research has shown that this selection process is stable and valid (e.g. Patterson et al, 2009a; Patterson et al, 2009b; Patterson et al, 2005).

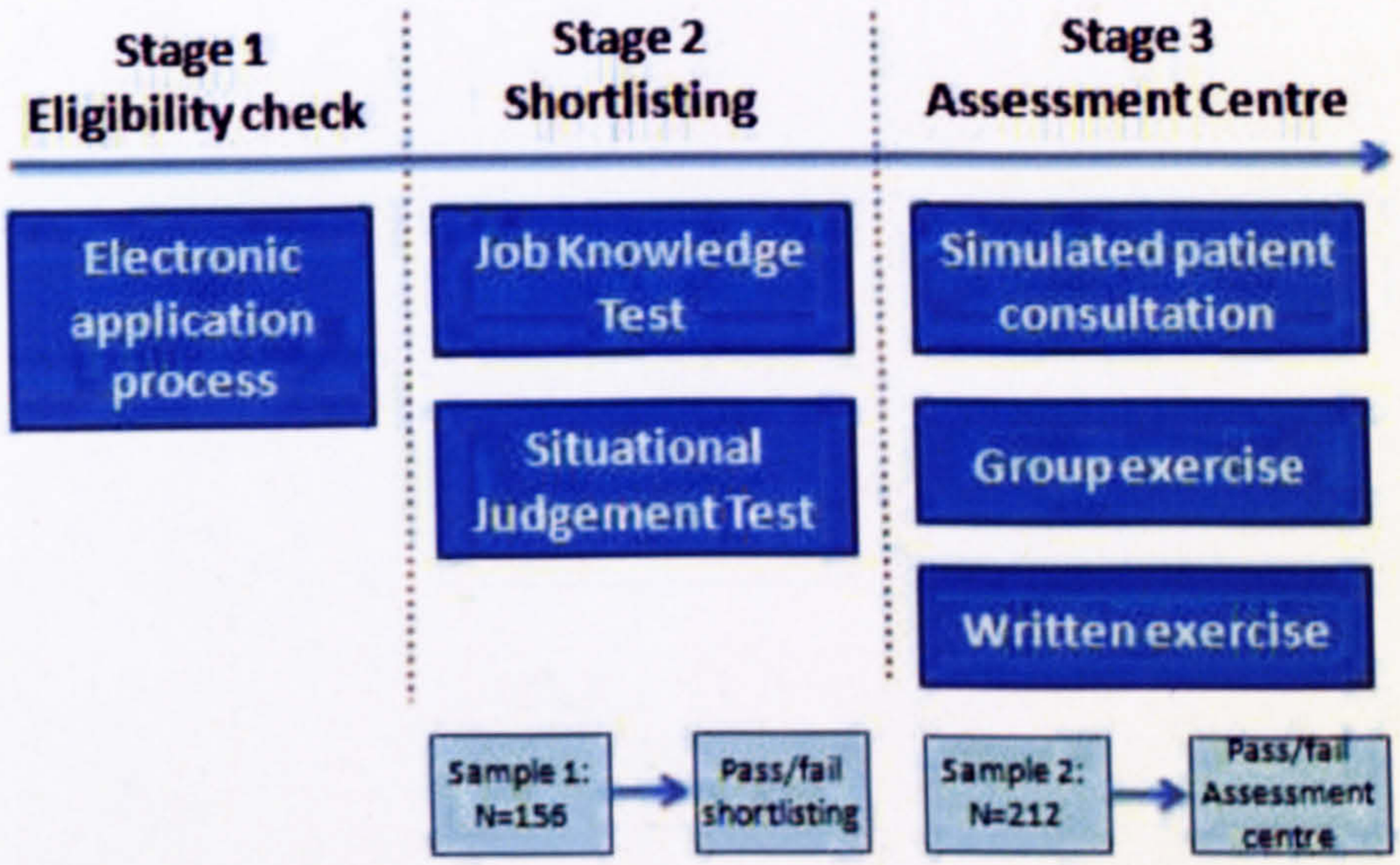


Figure 3.1: General Practice selection process

The first sample presented in this study used applicants from the shortlisting phase (stage 2), while the second sample used applicants from the assessment centre phase (stage 3). In both, job relatedness perceptions of the selection methods were measured at the time of testing, along with personality and self-efficacy. Then, one month later following outcome feedback, process fairness perceptions were measured, along with self-efficacy. For stage 2, outcome feedback involved candidates finding out whether they had been accepted for further consideration in the selection process and for stage 3, candidates found out whether they had been accepted for GP posts. Figures 3.2 and 3.3 represent these research processes.

3.1.1 Relationship between job relatedness and process fairness

Job relatedness as a determinant of process fairness is well established in research (e.g. Gilliland, 1993; Macan et al, 1994; Rynes & Connerly, 1993; Schmitt et al, 2004; Smither et al, 1993; Truxillo, Bauer & Sanchez, 2001). However studies have been criticised for mainly focusing on cross-sectional rather than longitudinal relationships (Sackett & Lievens, 2008). Indeed, a longitudinal relationship has been established in only a few field-based studies (e.g. Bauer et al, 1998; Chan et al, 1998a; Schmitt et al, 2004; Truxillo et al, 2001). Therefore this study explores whether job relatedness perceptions, measured at the time of testing are positively related to process fairness perceptions measured one month later following feedback. Perceptions of job relatedness are focused on, rather than other justice principles for three reasons. Firstly, job relatedness is considered the justice principle that has the greatest influence on overall fairness perceptions as compared to any other characteristics of a selection method; this has been supported in a number of studies (e.g. Gilliland, 1993; Macan et al, 1994; Rynes & Connerly, 1993; Schmitt et al, 2004; Smither et al, 1993; Truxillo et al, 2001; Van Vianen et al, 2004). Secondly, in the present selection contexts most of the methods were administered to applicants in large group sessions and therefore many of the other justice principles in Gilliland's (1993) model were likely to be restricted in their effects due to lack of variance (Chan et al, 1998a). For instance, because the administration of tests was standardised, the justice principles relating to consistency of administration, selection information and explanation may have been constant for applicants in the group session. However, perceptions of job relatedness are likely to vary across applicants even when the same selection method is used (Chan et al, 1998a). Thirdly, Chan and Schmitt (2004) suggest that questionnaire measures should direct applicant attention to aspects of the selection method where they are naturally likely to have focused their perceptions. Within the present selection contexts it was anticipated that job relatedness would be a particularly salient feature for candidates because the selection methods being examined were recently-developed and relatively new methods of assessment (Patterson et al, 2009a; Patterson et al, 2009b); all of which were based on an extensive analysis of the GP role in the UK (Patterson,

Ferguson, Lane, Farrell, Martlew & Wells, 2000; Patterson et al, 2005). Therefore the following hypothesis was posed for both Samples 1 and 2:

Samples 1 and 2, hypothesis 1: job relatedness perceptions of selection methods, measured at the time of testing (T1), will be significantly and positively related to fairness perceptions of the selection process measured one month later following outcome feedback (T2).

3.1.2 Individual differences

A limitation that has consistently been noted is that individual differences in applicant perceptions are rarely considered (e.g. Anderson, 2003; Chan & Schmitt, 2004; LaHuis, 2005; Rynes, 1993; Ryan & Ployhart, 2000; Truxillo et al, 2004; Truxillo et al, 2006; Viswesvaran & Ones, 2004). In particular, authors argue that research is needed regarding individual differences as potential determinants of fairness perceptions (e.g. LaHuis, 2005; Nikolaou & Judge 2007; Ryan & Ployhart, 2000; Thornton, 1993). There is variance in studies of fairness perceptions that remains unexplained and an examination of individual differences may enhance understanding of the role of individual, rather than procedural, factors (LaHuis, 2005). It is probable that people differ in terms of their perceptions of fairness, where some might be more tolerant of "unfairness" than others (Truxillo et al, 2004). Furthermore, there is research to suggest that individual differences do predict fairness perceptions (e.g. Viswesvaran & Ones, 2004). Therefore the present study explores the role of personality variables and self-efficacy in process fairness perceptions; both of which are outlined below.

3.1.2.1 Personality

Although extensive research has documented a relationship between Big Five personality characteristics and work-related attitudes, such as job satisfaction (e.g. Judge, Heller & Mount, 2002); work motivation (Judge & Ilies, 2002) and organisational citizenship (e.g. Konovsky & Organ, 1996); there has been very little research examining the relationship between personality and applicant fairness perceptions. Since personality explains variance in work attitudes (e.g. Judge et al,

2002; Konovsky & Organ, 1996; McManus, Keeling & Paice, 2004), it may also explain variance in applicant attitudes and perceptions towards selection processes (Truxillo et al, 2006); particularly since personality traits, as stable characteristics, are likely influence a person's preferences in a given situation (Bipp, 2010).

The present study specifically focuses on three of the Big Five personality characteristics to determine whether they play a role in predicting fairness perceptions; these were Conscientiousness, Emotional Stability and Openness. These three factors were focused on for three reasons. First, Hausknecht et al's (2004) meta-analysis concludes that conscientiousness and emotional stability are positively correlated with procedural justice perceptions, although the average effect size was small. Despite the small effect sizes, these authors note that research on personality variables has been limited and thus more research is warranted. Second, empirical research has consistently shown both emotional stability (e.g. Truxillo et al, 2006; Viswesvaran & Ones, 2004) and conscientiousness (e.g. Ostberg, Truxillo, & Bauer, 2001; Viswesvaran & Ones, 2004) to be positively related to selection process variables and applicant perceptions. Although Agreeableness has been found to be related to two outcomes: perceived likelihood of getting the job and perceived organisation-employee relations (Truxillo et al, 2006), studies have shown no relationship with procedural justice or process fairness perceptions, and therefore Agreeableness was not considered in this study. Third, open individuals are willing to try new experiences (Costa & McCrae, 1992) and empirical research has shown that candidates high on openness were more positive about the use of tests in selection (Van Vianen et al, 2004); thus it is possible that openness is related to fairness perceptions, particularly in situations where new and innovative methods are being used, as with the present context (Ryan & Ployhart, 2000).

Therefore the aim of this study was to examine whether the personality variables, Conscientiousness, Emotional Stability and Openness to Experience, add incremental variance in explaining process fairness perceptions, after controlling for job relatedness perceptions; consistent with Truxillo et al's (2006) methodology. This will indicate the degree to which process fairness is a function of stable personality characteristics,

which currently remains a gap in the literature. The same design was used for both samples 1 and 2; and so the following hypothesis was set:

Sample 1 and 2, hypothesis 2: personality variables (Conscientiousness, Emotional Stability and Openness to Experience) measured at T1 will positively add incremental variance in the prediction of process fairness perceptions measured at T2.

3.1.2.2 Self-efficacy

Gilliland's (1993) model proposes self-efficacy as a possible outcome variable where procedural justice and outcome (pass/fail) interact to influence an applicant's self-efficacy. This is supported by research (Gilliland, 1994) in which it was found that when job relatedness was high, job performance self-efficacy increased for selected participants, but decreased for rejected participants. However, when job relatedness was low, there was no effect on job performance self-efficacy. Similarly, Bauer et al (1998) found a positive relationship between fairness and test-taking self-efficacy for applicants who passed the test and a negative relationship for those who had failed. A further study examining test-taking self-efficacy (Truxillo et al, 2001) reported that increased perceptions of test fairness led to lower test-taking self-efficacy for those who failed the test. In the studies outlined above, the concept of self-efficacy is viewed as something that can be influenced by the experience of the selection process and the methods themselves. Job performance self-efficacy relates to a person's confidence in their ability to perform at a given level (Gilliland, 1994) and test-taking self-efficacy relates to a person's evaluation of their ability to cope with the actual testing process (Bauer et al, 1998), both of which are relatively context-specific self-efficacy constructs (Ployhart & Ryan, 1997).

However, the authors in the studies outlined above (Gilliland, 1994; Bauer et al, 1998) take a considerably different perspective to other researchers (e.g. Nikolaou & Judge, 2007) in the view of self-efficacy as a dependent variable. Indeed, authors such as Nikolaou and Judge (2007) and Ryan and colleagues (1996) have suggested that self-efficacy is in fact a predictor variable in fairness perceptions. This is because when

looking at broader conceptualisations, such as generalised (e.g. Judge, Locke, Durham & Kluger, 1998) or occupational self-efficacy (e.g. Schyns & von Collani, 2002), self-efficacy is assumed to be a personality construct or stable trait (Nikolaou & Judge, 2007). Generalised self-efficacy relates to evaluations that individuals make about themselves, perceptions about their fundamental ability to cope life's demands (Judge et al, 1998; Nikolaou & Judge, 2007); while occupational self-efficacy is considered a global personality construct and relates to *"one's belief in one's own ability to perform successfully and effectively in different situations and across different tasks in a job"* (Schyns & von Collani, 2002, p. 227). These definitions assume self-efficacy to be a trait and therefore stable over time; and as such may be viewed as an individual difference that could predict fairness perceptions, rather than an outcome.

This conceptualisation of self-efficacy has rarely been examined in applicant perception research to date, except for two notable exceptions (Nikolaou & Judge, 2007; Ryan et al, 1996). In the earlier study, Ryan et al (1996) consider self-efficacy to be a predictor of applicant perceptions and findings indicated that self-efficacy positively correlated with perceptions of job-relatedness. Furthermore, individuals with higher self-efficacy perceived physical agility tests to be more fair and consistently administered than those with lower self-efficacy. In the latter study (Nikolaou & Judge, 2007) self-efficacy by itself was not examined, however the role of core self-evaluations (CSE; encompassing self-efficacy, self-esteem, locus of control and neuroticism) in fairness perceptions of a number of selection methods was explored. Findings indicated that CSE was positively related to participants' preferences for both interviews and CVs and also positively related to procedural dimensions of interviews and personal contacts; indicating that participant personality, and potentially self-efficacy, has some relationship with perceptions of selection methods. However, more research in this area may be necessary for two reasons, first Ryan and colleagues used a sample of incumbent fire-fighters as their participants meaning that findings may not extend to applicant samples; and second, in Nikolaou and Judge's study the relationship found might be due to the other personality constructs encompassed within CSE, rather than self-efficacy *per se*. Therefore more research is warranted to examine the precise nature of the relationship between self-

efficacy and fairness perceptions, and furthermore whether self-efficacy can be construed of as a determinant.

Therefore, the present study was designed to test whether self-efficacy is better conceptualised as a *trait that predicts* process fairness perceptions, or an *outcome variable negatively influenced* by failing a selection process. If self-efficacy is better conceived of as a trait then one would expect it to be relatively stable over time (hence it was measured at both T1 and T2). Furthermore, one would expect T1 self-efficacy to add incremental variance to the prediction of process fairness perceptions measured at T2. Conversely, if self-efficacy is better conceived of as an outcome variable then one would expect self-efficacy to be negatively influenced by experiencing the selection process; this can be tested using Bauer et al's (1998) methodology outlined above. Thus the following research question was posed:

Sample 1 and 2, research question: Is self-efficacy better conceived of as a trait (and therefore predicts process fairness perceptions) or an outcome variable (and therefore negatively influenced by failing the selection process)?

3.2 Sample 1: Method

3.2.1 Participants

Three hundred and fifty-eight candidates were recruited during the shortlisting phase of selection, from a pool of applicants for entrance into General Practice (GP) in the UK. A total of one hundred and fifty-six GP participants completed both T1 and T2 questionnaires and thus formed the sample for this study. Forty percent of the participants were female, 55% were male (data was missing from 5%); their mean age was 30.5 years (SD = 6.2). The participants' ethnic origins were as follows: White (49%), Asian (33%), Black (2%), Mixed (1%), Chinese (3%) and other ethnic groups (6%), data was missing from 6% of the participants.

3.2.2 Measures

The first section of the questionnaire contained demographic questions including gender, age and ethnic origin; these were collected at T1. Items in the questionnaire outlined below were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree, unless otherwise stated. See Figure 3.2 for further details and example items, and Appendix 9.1 and 9.2 for copies of the T1 and T2 questionnaires.

Job relatedness: A measure of job-relatedness was used based on items from Bauer et al (2001) and Gilliland et al (2001) but adapted to fit a medical context. For example an original item from Gilliland et al (2001) was: *"The methods this company used to screen applicants were appropriate"*, and this was adapted to read: *"The content of the Job Knowledge test seemed appropriate for the entry level I was applying for"*. In Sample 1, there were four items measuring job relatedness of the Job Knowledge Test (JKT) and four items measuring job relatedness of the Situational Judgment Test (SJT).

Personality: Personality was measured at T1 using the Single-Item Measure of Personality (SIMP; Woods & Hampson, 2004; 2005). This uses five single items with bipolar response scales to measure the Big Five personality factors. Responses are rated on a nine-point graded line which is placed between two descriptions and participants are asked to indicate the extent to which the poles describe them by marking a point on the line.

More widely-used measures of personality such as the 240-item NEO Personality Inventory and the condensed 60-item Five Factor Inventory were considered too long to complete because they take 45 and 18 minutes respectively. Lengthy measures such as these were considered impractical in this research setting because brevity of the questionnaire was a key concern and more specifically, the questionnaire had to be no longer than one page. Indeed, even a shorter measure such as Goldberg's bipolar markers (Goldberg, 1992) would not fit onto one page, along with the other applicant perception items. One need only consider the considerable cost to the NHS for doctors to complete the selection process itself to understand why a pragmatic approach had to

be taken to measure personality. Recent research shows that the NHS loses billions of pounds per year when doctors take time off work (e.g. Boorman, 2009) and therefore due to these research constraints the SIMP was chosen as an acceptable way to measure personality.

Although it can be argued that using single-items sacrifices both content validity and reliability of the measure (Robins, Hendin & Trzesniewski, 2001), the SIMP (Woods & Hampson, 2005) is considered to be an efficient yet psychometrically sound measure of personality for three main reasons. Firstly, the construction of descriptions of each pole ensured a mix of trait descriptors and behaviours with up to five descriptive components to maximise coverage; this ensured good content validity. In using pairs of contrasting descriptions (that is a bipolar response scale), participants can make bi-directional judgements rather than the unidirectional judgement made when presented with a unipolar item. Secondly, the SIMP demonstrates generally good reliability, with test-retest coefficients up to 0.78. Thirdly, Woods and Hampson (2005) showed that the SIMP had a mean convergence of $r = 0.61$ with longer Big Five measures (Big Five Inventory (BFI), John & Srivastava, 1999; Trait Descriptive Adjectives, Goldberg, 1992); for example convergence between the SIMP and the BFI was $r = 0.62$ for Conscientiousness, $r = 0.57$ for Emotional Stability and $r = 0.61$ for Openness, which show acceptable levels of convergence for one-item scales. In fact, other researchers (e.g. Burisch, 1984; Robins et al, 2001) suggest that the benefits of shorter scales in terms of economy outweigh any psychometric disadvantages encountered with single-item measures, and provide an acceptable balance between practical needs and psychometric concerns. Thus, all things considered, the SIMP was deemed acceptable for use in this study.

Self-efficacy: Self-efficacy was measured at both T1 immediately after testing, and T2 after candidates had received their results one month later. Six items were adapted from Schyns and von Collani (2002) and responses were rated on a 6-point Likert scale, from 1 = not at all true to 6 = completely true. The original instrument was developed to be a broad, work-related measure of self-efficacy, relevant for a wide range of people from different professions and was therefore deemed relevant in this context.

Pass/fail: Whether the applicant was selected for further consideration at the next stage of selection was assessed using one item at T2. Responses were measured as yes (= 2) or no (= 1).

Process fairness. Process fairness was measured at T2 after candidates had received their results using the four-item scale developed by Gilliland (1994).

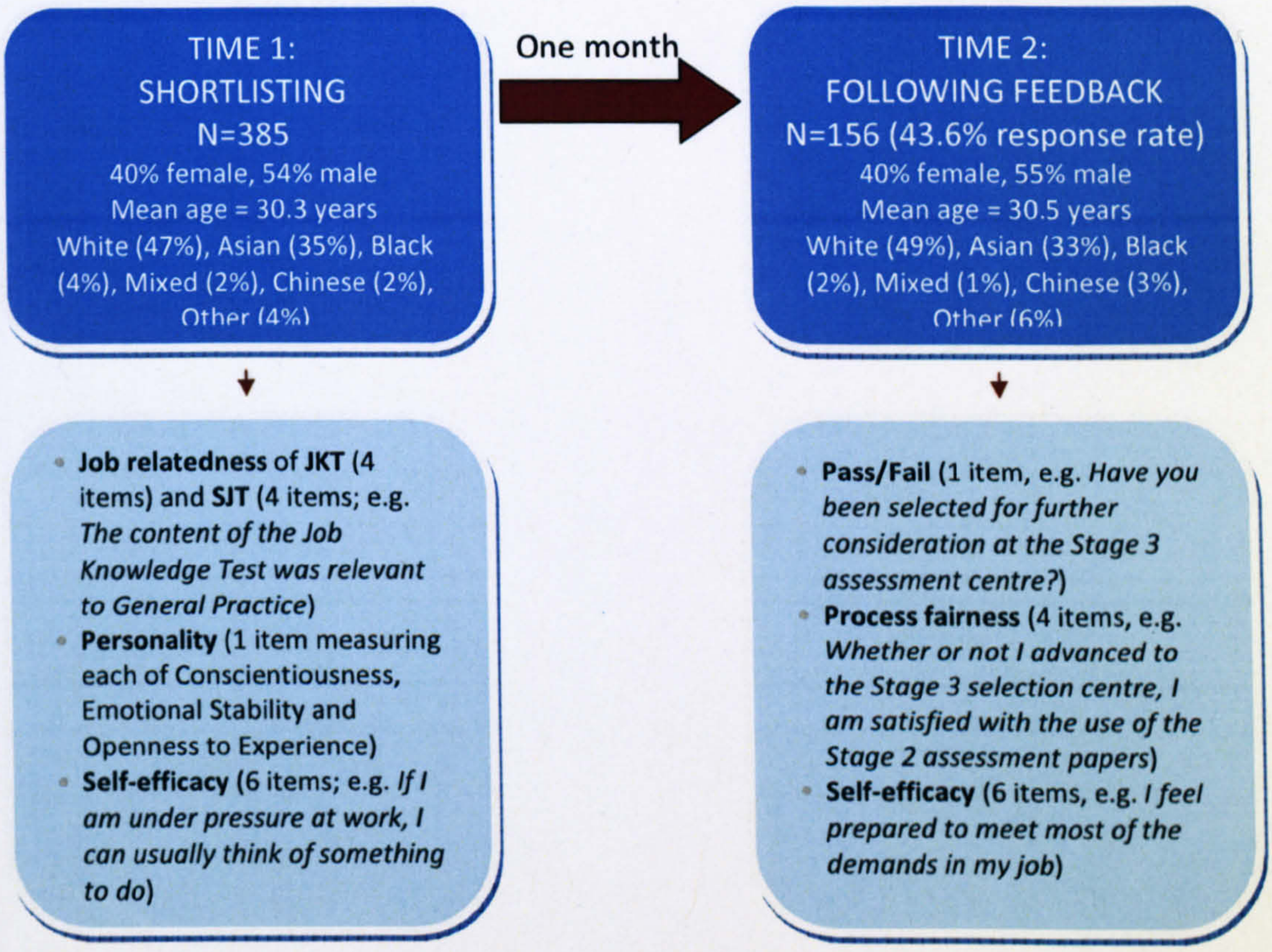


Figure 3.2: Longitudinal measurement of constructs (Sample 1)

3.2.3 Procedure

Three hundred and fifty-eight participants were recruited from a pool of applicants for entrance into GP in the UK, who had given their consent to be involved in this research. Applicants attended one of 15 testing centres throughout the UK where they completed two assessment papers: a Job Knowledge Test (JKT) and a Situational

Judgment Test (SJT). Candidates were invited to participate in the research on a voluntary basis and were assured that information would be used for research purposes only and not in any selection decision. Surveys were collected from applicants at two time points: (T1) after candidates had completed the two assessment papers they completed a paper-based questionnaire which was distributed by trained invigilators; and (T2) about one month following the assessment day and after applicants had received results indicating whether or not they were eligible for further consideration in the selection process, they were contacted via their email address and sent an online questionnaire. One hundred and fifty-six applicants completed the T2 questionnaire, representing a 43.6% response rate. There were no significant differences between the response and non-response groups on age, gender and ethnic origin.

3.3 Sample 1: Results

To ensure that assumptions for parametric tests were not violated, variables were checked to ensure that distributions were normal. All variables were normally distributed as indicated by skew and kurtosis values (Field, 2005). The means, standard deviations and alpha coefficients of and correlations between all the study variables measured at both T1 and T2 are displayed in Table 3.1. Partial correlations were calculated to control for the effects of age, since age correlated with both T1 and T2 self-efficacy ($p < .001$). All study scales demonstrated good alpha reliabilities (all $\alpha > .80$). T1 and T2 self-efficacy correlate highly ($r = .70$, $p < .001$), suggesting that self-efficacy is relatively stable over a one month period.

Table 3.1: Descriptive statistics, alpha reliabilities, and partial-correlations between study variables in Sample 1

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. JKT job relatedness	15.62	3.30	(.89)								
2. SJT job relatedness	13.57	3.43	.57***	(.88)							
3. Emotional Stability	4.54	1.78	.02	-.05	-						
4. Conscientiousness	5.74	1.69	-.05	-.15	-.19*	-					
5. Openness	5.22	1.51	.08	.12	.07	-.12	-				
6. Self efficacy (T1)	29.73	3.49	.17*	.17*	.12	.02	.19*	(.85)			
7. Pass/fail [a]	1.88	0.33	.14	.02	-.05	.18*	.04	-.04	-		
8. Process fairness [a]	14.90	3.00	.31***	.35***	.10	-.07	.13	.27***	.19*	(.84)	
9. Self-efficacy (T2) [a]	30.10	3.60	.05	.14	.14	.02	.15	.70***	-.04	.27***	(.91)

Note. N = 147, due to missing age data. [a] variables measured at T2. Numbers in parentheses indicate alpha reliability coefficients.

* $p < .05$, *** $p < .001$ (2-tailed).

3.3.1 Pre-analysis checks for regression

In order to test the hypotheses, a hierarchical regression was required. However, first a number of assumptions had to be met to indicate that the data were suitable for regression (Field, 2005). For the assumption of independent errors, the Durbin-Watson statistic was checked to ensure it was close to 2. The variance inflation factor (VIF) and tolerance statistics were checked to ensure that there was no multi-colinearity in the data. Plots of standardised residuals against standardised predicted values were checked to ensure that the assumptions of linearity and homoscedasticity were met. Finally histogram and normal probability plots were checked to ensure that residuals were normally distributed. All these assumptions were met, indicating that the data were suitable for regression. Additionally, the number of cases needed to be checked to ensure that there were enough to run these regression analyses. Field (2005) suggests 10 cases for each predictor: there were six predictors and therefore 60 cases would have been sufficient. On the other hand, Green (1991) suggests 104 + k cases where k equals the number of predictors: with six predictors this would be 110 cases. Using both these rules of thumb, the number of cases was sufficient to run regression analyses. A further method for calculating the sample size required is given by Miles and Shevlin (2001). For this, the number of predictors, power and effect size values are checked against tables that indicate the sample size necessary for the regression analysis. In this instance with six predictors, to achieve a medium effect size with a power of 0.8[3], the look-up tables suggest that a minimum sample size of 100 is needed. Thus, once again, the sample size was sufficient.

3.3.2 T1 job relatedness, personality, self-efficacy and T2 process fairness

According to Hypothesis 1, job relatedness perceptions for the JKT and SJT measured at T1 would positively predict process fairness perceptions measured at T2 (after applicants had received their test results). Hypothesis 2 predicted that Emotional Stability, Conscientiousness and Openness would positively add incremental variance to process fairness at T2. Finally, the research question posed queried whether self-efficacy is better

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[3] Power indicates the probability of finding a result, given that the effect size exists within the population; and a value of 0.80 suggests that there is an 80% chance of finding a significant result. The value 0.8 is used because this is the recommended minimum value (Soper, 2008).

conceived of as a trait (and therefore predicts fairness perceptions) or as an outcome (and is therefore negatively influenced by failing the selection process). It should be noted that T1 and T2 self-efficacy highly correlated (r = .70, p < .001), implying that self-efficacy was relatively stable over a one month period and could be conceived of as a trait in this study. Thus in this analysis, self-efficacy (as a trait) would also add incremental variance to perceptions of process fairness over and above personality variables.

A hierarchical regression equation was calculated, with process fairness perceptions as the dependent variable. For this regression equation gender, age and pass/fail were entered in the first step as control variables. Outcome favourability (pass/fail) is important in determining fairness perceptions because candidates are likely to perceive selection processes as more fair if they perform well (Bauer et al, 1998; Greenberg, 1986). Therefore the outcome variable pass/fail was controlled for in this and the subsequent regression equation to ensure any relationships found were related to predictor variables alone. JKT and SJT job relatedness perceptions were entered in Step 2; personality variables were entered in Step 3; and self-efficacy[4] was entered in Step 4.

Table 3.2 shows that the addition of JKT and SJT job relatedness perceptions in Step 2 added to the overall prediction of process fairness perceptions, $\Delta R^2 = .13$, F (2, 132) = 10.95, $p < .001$; the beta-weight for SJT job relatedness was statistically significant (β = .29, $p = .003$). This shows that, after the control variables, job relatedness perceptions explain an additional 13% of the variance in T2 process fairness perceptions (measured following feedback) and that the SJT added unique variance; that is the SJT was a unique predictor of fairness perceptions.

The addition of Emotional Stability (ES), Conscientiousness and Openness in Step 3 also added to the prediction of process fairness perceptions, $\Delta R^2 = .03$, F (3, 133) = 3.03, p = .03; the beta-weight for ES ($\beta = .14$, $p = .06$) approached significance. This implies that personality variables explained an extra 3% of the variance in T2 process fairness

[4] Note that T1, rather than T2, self-efficacy is used. In these analyses it is conceived of as a trait, being relatively stable over time (r = .70). This also reduces common method bias.

perceptions over and above that explained by job relatedness perceptions and that ES uniquely adds variance (approaching significance) in explaining fairness perceptions.

Finally, the addition of self-efficacy in Step 4, significantly added to the prediction of process fairness perceptions at T2, $\Delta R^2 = .03$, F (1, 132) = 4.80, $p = .03$; with a significant beta-weight for self-efficacy ($\beta = .19$, $p = .03$). This shows that self-efficacy explains an additional 3% of variance in T2 process fairness perceptions over and above that explained by job relatedness perceptions and personality variables.

These findings support hypotheses 1 and 2 and also show that self-efficacy can be considered a trait variable that predicts process fairness perceptions. However, it should be noted that for Steps 3 and 4 in the multiple regression, these increases in variance are only small effect sizes; consistent with previous research (Hausknecht et al, 2004).

Table 3.2: Hierarchical regression for control variables, JKT / SJT job relatedness perceptions, personality and T1 self-efficacy on process fairness at T2

	B	*SE B*	*β*
Step 1, $R^2 = .06$			
Constant	9.73	2.36	
Age	0.06	0.04	.12
Gender	-0.67	0.54	-.11
Pass/fail	1.87	0.84	.19
Step 2, $\Delta R^2 = .13$			
JKT job relatedness	0.10	0.09	.11
SJT job relatedness	0.26	0.09	.29**
Step 3, $\Delta R^2 = .03$			
Emotional Stability	0.24	0.14	.15#
Conscientiousness	-0.01	0.16	-.01
Openness	0.10	0.17	.05
Step 4, $\Delta R^2 = .03$			
Self-efficacy	0.17	0.08	.19*

Note. N = 136. # $p = .06$, * $p < .05$, ** $p < .01$

3.3.3 Is self-efficacy an outcome variable at the shortlisting stage?

In order to test the research question, can self-efficacy be conceived of as an outcome variable that is negatively influenced by failing the shortlisting stage, Bauer et al's (1998) methodology was used. This explored whether JKT and SJT job relatedness perceptions measured at T1 interact with outcome favourability (pass/fail) to predict T2 self-efficacy. Therefore, two regression models were run with T2 self-efficacy as the dependent variable. For both equations age, gender, ethnic origin and T1 self-efficacy were entered into step 1, as control variables. For the first equation, JKT job relatedness perceptions, outcome favourability and their interaction term were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .01$, $F\,(3, 128) = 0.59$, $p = .62$. For the second equation, SJT job relatedness perceptions, outcome favourability and their interaction were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .00$, $F\,(3, 128) = 0.28$, $p = .84$. Therefore, using Bauer et al's (1998) methodology, findings indicate that job relatedness perceptions and outcome favourability do not interact to predict self-efficacy measured at T2.

The research question was also tested by examining the difference between T2 self-efficacy for those who had passed the shortlisting process (N = 137) and those who had failed (N = 19). If self-efficacy is influenced by failing the shortlisting process, one would expect T2 self-efficacy to be significantly lower for those who failed than those who passed the shortlisting process. To test pass and fail group differences for T2 self-efficacy, a non-parametric Mann-Whitney U test was used, rather than a parametric t-test, because the 'fail' group had only 19 participants (below the suggested minimum of 20 for parametric tests; Field, 2005). Findings indicated no significant difference in T2 self-efficacy between those who passed ($Mdn = 30.00$) and those who failed shortlisting ($Mdn = 31.00$, $U = 1093.00$, $p = .25$, $r = -.09$); thus it appears that those who fail shortlisting do not appear to have lower self-efficacy than those who passed shortlisting.

It is also conceivable that what is influenced is the *change* in reported self-efficacy from T1 to T2, which can be calculated by subtracting T2 self-efficacy from T1 self-efficacy. Therefore the *change* in self-reported self-efficacy was examined, and findings indicated

no significant difference between pass and fail groups (U = 1297.50, p = .98). Overall therefore, contrary to what has been found in previous research (e.g. Bauer et al, 1998; Gilliland, 1994), it appears that occupational self-efficacy is *not* an outcome negatively influenced by failing the shortlisting process in this sample.

3.4 Sample 2: Method

3.4.1 Participants

Four hundred and eighty-three individuals were recruited during the assessment centre phase of selection, from a pool of applicants for entrance into GP. A total of two hundred and twelve participants completed both T1 and T2 questionnaires and thus comprised the sample for this study. Forty-seven percent of the participants were male, 50% were female (data was missing from 3%); their mean age was 29.1 years (SD = 4.9). The participants described themselves as: White (55%), Asian (33%), Black (2%), Mixed (3%), Chinese (2%) and other ethnic groups (3%); data was missing from 2% of the participants.

3.4.2 Measures

The measures used for Sample 2, were identical to those used for Sample 1 (see section 3.2.2). The first section of the questionnaire included demographic questions: gender, age and ethnic origin, and were collected at T1. As with Sample 1, items in the questionnaire were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree, unless otherwise stated. See Figure 3.3 for further details and example items, and Appendix 9.3 and 9.4 for copies of the T1 and T2 questionnaires.

Job relatedness: the same items relating to job relatedness perceptions of selection methods were used for Sample 2. Thus, there were four items that measured the job relatedness of each of the group exercise (GE); the simulated patient consultation (SPC), and the written exercise (WE).

Personality: Personality was measured at T1 using the SIMP (Woods & Hampson, 2005). Responses were rated on a nine-point graded line placed between the two bipolar descriptions.

Self-efficacy: Self-efficacy was measured at T1 and T2 using the same six items as used in Sample 1, adapted from Schyns and von Collani (2002). Responses were rated on a 6-point Likert scale, from 1 = not at all true to 6 = completely true.

Pass/fail: Whether the applicant had been selected for GP was assessed using one item at T2. Responses were measured as yes (=2) or no (=1).

Process fairness. Process fairness was measured at T2 using the same four-item scale developed by Gilliland (1994) as used for Sample 1.

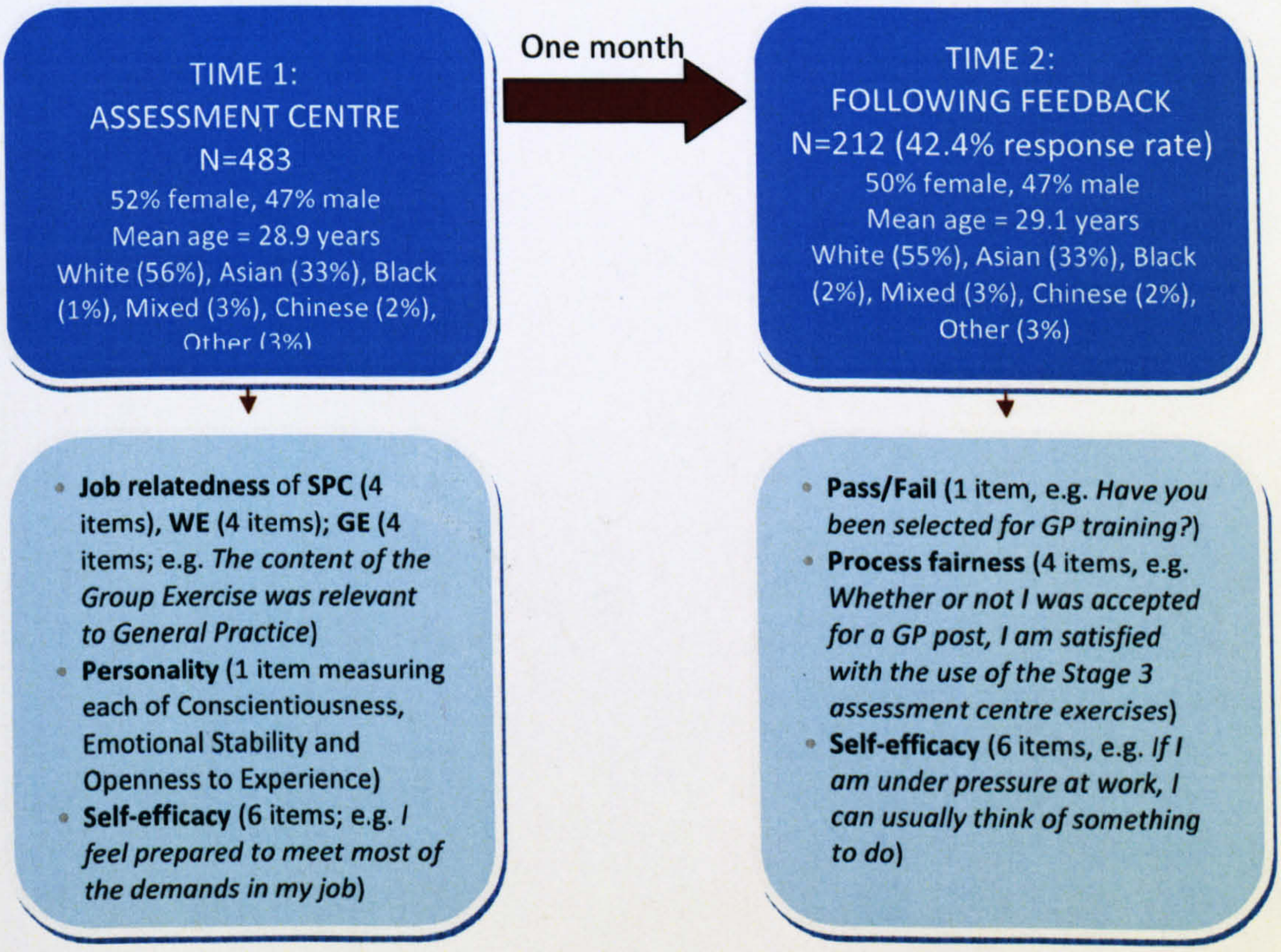


Figure 3.3: Longitudinal measurement of constructs (Sample 2)

3.4.3 Procedure

Four hundred and eighty-three participants were recruited from a pool of applicants for entrance into GP, who gave consent to be involved in the research. This was the third and final stage of the selection process and applicants attended assessment centres throughout the UK where they completed three selection method exercises: a group exercise (GE); a simulated patient consultation (SPC), and a written exercise (WE). Candidates were invited to participate in the research on a voluntary basis and were assured that information would be used for research purposes only and not in any selection decision. Surveys were collected from applicants at two time points: (T1) after candidates had completed the selection exercises they completed a paper-based questionnaire which was distributed by trained invigilators; and (T2) about one month following the assessment day and after applicants had received results indicating whether or not they had been offered a GP post, they were contacted via their email address and sent an online questionnaire. Two hundred and twelve applicants completed the T2 questionnaire, representing a 42.4% response rate. There were no significant differences between the response and non-response groups on age, gender and ethnic origin.

3.5 Sample 2: Results

To ensure that assumptions for parametric tests were not violated, variables were checked to ensure that distributions were normal. All variables were normally distributed as indicated by skew and kurtosis values (Field, 2005). The means, standard deviations and alpha coefficients of and correlations between all the study variables measured at both T1 and T2 are displayed in Table 3.3. Partial correlations were calculated to control for the effects of age, since age correlated with both T1 and T2 self-efficacy ($p < .001$). All study scales demonstrated good alpha reliabilities (all $\alpha > .80$). Self-efficacy was highly correlated between the two time points ($r = .65$, $p < .001$) suggesting that it is relatively stable over the one month period.

Table 3.3: Descriptive statistics, alpha reliabilities, and inter-correlations between study variables for Sample 2

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. GE job relatedness	15.94	2.61	(.82)									
2. SPC job relatedness	17.37	2.45	.45***	(.85)								
3. WE job relatedness	15.58	2.63	.56***	.41***	(.86)							
4. Emotional Stability	4.73	1.69	-.08	.05	-.06	-						
5. Conscientiousness	5.87	1.57	.12	.05	.03	-.06	-					
6. Openness	5.50	1.52	.02	-.06	.10	.05	-.22**	-				
7. Self efficacy (T1)	29.58	3.04	.17*	.15*	.13	.04	.12	.08	(.84)			
8. Pass/fail [a]	1.79	.41	.02	.08	-.00	-.16*	.02	-.05	-.02	-		
9. Process fairness [a]	15.35	3.26	.13	.14*	.13	.09	-.06	-.08	.12	.54***	(.91)	
10. Self-efficacy (T2) [a]	29.37	3.61	.11	.12	.04	.02	.04	.06	.65***	-.12	.11	(.86)

Note. N = 206 (due to missing data). [a] variables measured at T2. Numbers in parentheses indicate alpha reliability coefficients.

* p < .05, ** p < .01, *** p < .001 (2-tailed).

3.5.1 T1 job relatedness, self-efficacy and T2 process fairness perceptions

The same pre-analysis checks as per Sample 1 (see section 3.3.1) were conducted for the required hierarchical regression. All assumptions were met, indicating that the data were suitable for regression. According to Hypothesis 1, job relatedness perceptions for the three selection methods measured at T1 would be positively related to process fairness perceptions measured at T2 (after applicants had received the outcome results). Hypothesis 2 stated that personality would add incremental variance to this; and to test the research question, self-efficacy (as a trait) would add incremental variance over and above personality variables. A hierarchical regression equation was calculated with process fairness as the outcome. Age, gender and pass/fail were entered into Step 1 as control variables; GE, SPC and WE job relatedness perceptions were entered into Step 2; personality variables were entered in Step 3, and self-efficacy was entered into Step 4. Note that T1 and T2 self-efficacy correlated highly ($r = .65$, $p < .001$) suggesting it is fairly stable over the one month period.

Although Step 1 variables were entered into the regression equation as control variables, it is noteworthy that this step predicts 33% of the variance in process fairness, and in particular that the variable pass/fail is highly significant ($\beta = .60$, $p < .001$). This indicates that passing the selection process significantly and positively predicts perceptions of process fairness.

Table 3.4 shows that the addition of job relatedness perceptions (SPC, GE and WE) in Step 2 added to the overall prediction of T2 process fairness perceptions, $\Delta R^2 = .03$, F (3, 193) = 2.85, $p = .04$. This shows that, after the control variables, job relatedness perceptions measured immediately following testing explain an additional 3% of the variance in T2 process fairness perceptions (measured following feedback). However, the beta weights for the three selection methods were not statistically significant indicating that none of them had unique variance in predicting process fairness perceptions.

The addition of Emotional Stability (ES), Conscientiousness and Openness in Step 3 significantly added to the prediction of process fairness perceptions, $\Delta R^2 = .03$, F (3, 190) = 3.41, $p = .02$; specifically the beta-weight for ES ($\beta = .16$, $p = .01$) was significant. This implies that personality variables explained an extra 3% of the variance in T2 process fairness perceptions over and above that explained by job relatedness perceptions, and specifically that ES predicted unique variance.

Finally, the addition of self-efficacy in Step 4 added to the prediction of process fairness perceptions, $\Delta R^2 = .02$, F (1, 189) = 4.18, $p = .04$; specifically the beta-weight for self-efficacy ($\beta = .13$, $p = .03$) was significant. This shows that self-efficacy explains an additional 2% of variance in T2 process fairness perceptions over and above that explained by job relatedness perceptions and personality variables.

These findings partially support Hypothesis 1, support Hypothesis 2 and also show that self-efficacy can be considered a trait variable that predicts process fairness perceptions. However, it should be noted that for Steps 3 and 4 in the regression equation, these increases in variance are only small effect sizes; nevertheless, this is consistent with previous research (e.g. Hausknecht et al, 2004).

Table 3.4: Hierarchical regression for control variables, job relatedness perceptions, personality and T1 self-efficacy on T2 perceived process fairness

	B	*SE B*	*β*
Step 1, $R^2 = .33$			
Constant	5.23	1.72	
Age	0.07	0.04	.11
Gender	-0.89	0.40	-.13
Pass/fail	4.78	0.49	.60***
Step 2, $\Delta R^2 = .03$			
GE job relatedness	0.10	0.10	.08
SPC job relatedness	0.02	0.09	.02
WE job relatedness	0.13	0.09	.10
Step 3, $\Delta R^2 = .03$			
Emotional Stability	0.31	0.12	.16*
Conscientiousness	-0.14	0.13	-.07
Openness	-0.22	0.13	-.10
Step 4, $\Delta R^2 = .02$			
Self-efficacy	0.14	0.07	.13*

Note. N = 197. * $p < .05$; *** $p < .001$

3.5.2 Is self-efficacy an outcome variable at the assessment centre?

As with Sample 1, to test the research question, can self-efficacy be conceived of as an outcome variable negatively influenced by failing the selection process, Bauer et al's (1998) methodology was used. This explored whether GE, SPC and WE job relatedness perceptions measured at T1 interacted with outcome favourability (pass/fail) to influence T2 self-efficacy. Therefore three regression models were run with T2 self-efficacy as the dependent variable. For all three equations, age, gender, ethnic origin and T1 self-efficacy were entered into step 1 as control variables. For the first equation, GE job relatedness perceptions, outcome favourability and their interaction term were entered into step two. The addition of the variables did not add to the prediction of the model, $\Delta R^2 = .01$, F (3, 189) = 1.48, $p = .22$. For the second equation, SPC job relatedness perceptions, outcome favourability and their interaction were entered into step two. The addition of the variables did not add to the prediction

of the model, $\Delta R^2 = .01$, F (3, 190) = 1.66, p = .18. Finally, for the third model, WE job relatedness perceptions, outcome favourability and their interaction term were entered into step two. The addition of variables did not add to the prediction of the model, $\Delta R^2 = .01$, F (3, 190) = 1.60, p = .19. Therefore, findings indicated that job relatedness perceptions and outcome favourability do not interact to predict self-efficacy measured at T2.

As with Sample 1, the differences between T2 self-efficacy for those who had passed the assessment centre (N = 162) and those who had failed (N = 50) was also examined to test the research question. Again, if self-efficacy is influenced by "failing" the assessment centre, one would expect T2 self-efficacy to be lower for those who failed than those who passed. However, age appears to be a covariate because there was a significant association between age and self-efficacy ($r = .26$, $p < .001$) and a significant difference in age between the pass ($M = 28.33$) and fail ($M = 31.98$) groups. Therefore, an ANCOVA was used to examine the difference between the pass and fail groups for T2 self-efficacy, while partialling out the effect of age. The covariate, age, was significantly related to T2 self-efficacy, $F(1, 204) = 9.23$, $p = .003$. After controlling for the effects of age, there was no significant effect of the pass/fail outcome on T2 self-efficacy, $F(1, 204) = 3.43$, $p = .09$, $\eta_p^2 = .02$. Thus, there is no significant difference between pass and fail groups on T2 self-efficacy whilst controlling for age; thus it appears that those who fail the assessment centre do not have lower self-efficacy than those who passed it.

As was mentioned for Sample 1, it is also possible that the *change* in reported self-efficacy from T1 to T2 is influenced and this can be calculated by subtracting T2 self-efficacy from T1 self-efficacy. Therefore the *change* in self-reported self-efficacy was explored, using a non-parametric Mann-Whitney U test to examine differences between pass and fail groups due to the uneven sample size in each group (age was not a covariate in this instance). Findings indicated no significant difference between pass and fail groups for change in self-efficacy between T1 and T2 ($U = 4710.00$, $p = .10$). Overall therefore, contrary to what has been found in previous research (Bauer et al,

1998; Gilliland, 1994) it appears that self-efficacy is *not* an outcome negatively influenced by failing the shortlisting process.

3.6 Discussion

This study presented two-wave longitudinal research examining the role of job relatedness and individual differences in fairness perceptions of a high-stakes selection process. Two samples of candidates applying for general practice (GP) were used.

3.6.1 Job relatedness and process fairness perceptions

In Sample 1, job relatedness perceptions of the individual selection methods (JKT and SJT) measured at the time of testing (T1) added to the prediction of process fairness perceptions measured one month later, even after controlling for whether applicants passed or failed the shortlisting stage. These findings support previous work by researchers (e.g. Bauer et al, 1998; Chan et al, 1998a; Schmitt et al, 2004; Truxillo et al, 2001). However, only the SJT had unique variance in predicting process fairness perceptions following feedback. Conversely, in Sample 2, although job relatedness perceptions for the three selection methods (GE, SPC, WE) significantly added to the prediction of process fairness perceptions measured one month later (T2), none of the beta-weights were significant. This indicates that the job relatedness perceptions of three selection methods made a joint contribution in predicting process fairness perceptions, but that no single selection method contributed unique variance. In other words, the selection methods together had predictive power in explaining fairness perceptions, but no single selection method uniquely explained fairness perceptions.

The selection process examined in this study is particularly high-stakes, where the outcome of the selection process is important to candidates, since not getting a post may have a significant negative impact on future careers (Carr & Patterson, 2009; Patterson & Ferguson, 2007; Truxillo et al, 2002). Indeed, following the final stage assessment centre, it appears that the outcome (pass/fail) rather than procedural factors better predicted perceptions of process fairness. This suggests that passing or failing is more important in determining process fairness than job relatedness perceptions,

although job relatedness still has some incremental value. On the other hand at the shortlisting stage, pass/fail was not a significant predictor of process fairness. In combination, these results suggest that failing the process at the final stage of the selection process has a greater influence on applicants' perceptions of fairness; this may be because they have invested more time and effort in the process at this stage. These findings support previous research where, following feedback, fewer procedural justice rules predict various outcomes (e.g. Bauer et al, 1998); and those who 'passed' the process evaluated testing more positively than those who failed (Schleicher et al, 2006). On the other hand, at early stages in the selection process, findings indicated that job relatedness perceptions are more important in explaining fairness perceptions. Taken together, these findings support Hausknecht et al's (2004) assertion that a key variable to be considered in applicant fairness perceptions is the stage of the selection process. Since applicant perception variables have been measured at different selection process stages, important differences in the magnitude of relationships between variables could potentially have been obscured in previous research (Hausknecht et al, 2004).

Alternatively, findings could indicate that perceptions may not be stable over time (Chan & Schmitt, 2004) and demonstrate the importance of examining fairness perceptions following outcome feedback. Indeed, previous research may have over-emphasised relationships due to cross-sectional research designs (Sackett & Lievens, 2008), where respondents provide perceptions of procedural justice rules and fairness at the same time. As such, correlations may have been inflated due to common method bias. This possibility highlights the importance of conducting longitudinal research.

3.6.2 Personality

This research has demonstrated a positive relationship between personality and process fairness perceptions in a field-based setting. The present study showed that personality variables add incremental variance to the prediction of process fairness perceptions, beyond that accounted for by job relatedness. Although the effect sizes were small, Emotional Stability (ES) was the most consistent predictor, adding incremental

variance to process fairness perceptions in two samples across different stages of selection. Although these findings are only a first step towards understanding the role of personality in process fairness perceptions, a key strength of the present study is that findings replicated across both samples. Individuals low on ES experience life events more negatively than others (e.g. Magnus, Diener, Fujita & Pavot, 1993) and are less able to cope effectively with stressful situations (Costa & McCrae, 1992). Since selection processes are considered to be stressful by candidates (Truxillo et al, 2006), it is perhaps not surprising that emotional stability is positively related to applicant perceptions of process fairness.

It may also be possible to explain these results using McCrae and Costa's (1996; 1999; 2003) Five-Factor theory of personality. They propose that there are several components of the personality system, two of which are *basic tendencies* and *characteristics adaptations.* Essentially, basic tendencies are the Big Five personality traits, but also include cognitive abilities. On the other hand, characteristic adaptations are structures that evolve as an individual interacts with his or her environment; these include attitudes, beliefs, interests and learned skills. The term *characteristic* suggest that they reflect a person's enduring personality traits, and *adaptation* in the sense that they are shaped in response to the external environment. Basic tendencies are therefore stable; whilst characteristic adaptations can change either in response to the environment or through deliberate intervention. Thus one could interpret fairness perceptions as characteristic adaptations that develop through an applicant's interaction with the selection environment; however, their "basic tendency" of emotional stability positively influences the development of fairness perceptions. Indeed, findings from this study support McCrae and Costa's (1999) assertion that low emotional stability (or neuroticism) is associated with pessimistic attitudes (McCrae & Costa, 1996; 1999; 2003).

On the other hand, neither Conscientiousness nor Openness added unique variance in predicting process fairness perceptions, which suggests that these two personality variables are not as important as ES in predicting process fairness perceptions. An examination of the characteristic adaptations (McCrae & Costa, 1999) associated with

Conscientiousness and Openness does not elicit attitudes or perceptions that might link to fairness perceptions, instead they are associated with skills and expertise (Conscientiousness); and hobbies and vocational interests (Openness). This could potentially explain the study findings. A further reason why neither Conscientiousness nor Openness had predictive value in explaining fairness perceptions may be because, as some authors (e.g. Hough, 1992) have argued, they are too broad and heterogeneous. In particular, the Conscientiousness domain combines two, somewhat diverse, facets - *duty* and *achievement striving* – which is thought to mask its predictive ability (Moon, 2001). If this is the case, then future research is warranted using longer more fine-grained measures of personality to explore the relationship between personality (at both domain and facet level) and fairness perceptions. Nevertheless, in the present study research constraints prevented the use of longer personality questionnaires and as such a pragmatic approach was taken to measure personality. Therefore, as previously stated, this study is a first step towards exploring the role of personality in fairness perceptions.

3.6.3 Self-efficacy – trait or outcome?

This study aimed to explore whether self-efficacy can be conceived of as a trait that predicts fairness, or an outcome that is influenced by the selection process. Results showed that occupational self-efficacy was not influenced by failing the selection process, despite previous research indicating that *test-taking* self efficacy is (e.g. Truxillo et al, 2001). Instead, a key finding was that self-efficacy explains variance in process fairness perceptions across two samples, beyond that accounted for by job relatedness and personality. Although effect sizes were small, a key strength of the present study was that findings replicated across both samples: self-efficacy measured following testing positively predicted variance in process fairness measured following outcome feedback.

This study therefore makes an important contribution to the applicant perception literature: it has shown that self-efficacy can be conceived of as a trait that *positively predicts* fairness perceptions, rather than an *outcome negatively influenced* by the

selection process. This indicates that applicants who report higher self-efficacy are more likely to perceive selection processes as procedurally fair following outcome results. Similarly, Ployhart and Ryan (1997) found a positive relationship between perceptions of fair processes and self-efficacy regardless of whether applicants were accepted or rejected; and LaHuis (2005) found that candidates with higher levels of job search self-efficacy had more positive responses to selection processes. Self-efficacy relates to a person's evaluations of their ability to perform successfully in a variety of situations and generally, empirical research shows that self-efficacy relates positively to work attitudes such job satisfaction (e.g. Judge, Van Vianen, Annalies & Pater, 2004; Nielsen, Yarker, Randall & Munir, 2009) and also job performance (e.g. Judge & Bono, 2001). Individuals high on self-efficacy deal effectively with difficulties (Gist & Mitchell, 1992), persist when challenges arise (Myers, 1999), and are more likely than others to attain desired outcomes (Judge & Bono, 2001). Furthermore, substantial positive relationships have been found between occupational self-efficacy and internal locus of control (r = .49; Schyns & von Collani, 2002) supporting Bandura's (1977) assertion that people with high perceptions of self-efficacy tend to attribute favourable performance to internal factors such as personality or disposition.

In fact, these findings may be explained by the self-serving bias mechanism, where applicants who perceive themselves positively, internalise their ability to perform well on selection methods and therefore consider the process to be fair. Studies that have examined the relationship between test performance and applicant perceptions have provided evidence that post-test reactions may in part reflect the operation of a self-serving bias (e.g. Chan & Schmitt, 1997; Chan et al, 1998a; Chan et al, 1997): applicants who perceive that they have performed well during the selection process report higher favourability perceptions than those who perceive that they did not perform well. If self-efficacy relates to how individuals *generally* feel about themselves (that is, better able to cope and perform successfully in a wide array of situations), then they may believe they will perform well during selection and therefore rate the process fairer.

In addition, Consistency Theory (Dipboye, 1977) may also help to explain these findings. This theory suggests that people strive to maintain a positive self-image. If individuals have high self-perceptions they reject negative feedback (that is, failing the selection process) because it is inconsistent with their self-image. Because the sample's self-efficacy was particularly high, it could be that individuals who failed the selection process discounted this to maintain a positive self-image and as such self-efficacy was not negatively influenced (Schleicher et al, 2006). An alternative explanation, and one that cannot be corroborated because information was not sought from participants, is that candidates rejected from GP had alternative job offers and therefore their self-efficacy was not negatively influenced by failing because the alternative offer attenuated the negativity of rejection (Anderson & Goltsi, 2008; Ployhart & Ryan, 1997).

3.6.4 Implications

The findings outlined in this study have a number of important implications relating to both research and practice. In relation to research, firstly this study has highlighted the importance of conducting longitudinal research. It is likely that previous applicant perception research has over-emphasised relationships between justice rules and fairness, due to cross-sectional research designs and common method bias (Hausknecht et al, 2004). Longitudinal studies enable researchers to examine whether perceptions are stable over time and examine reactions following outcome feedback. In Sample 2 job relatedness perceptions only moderately predicted process fairness following feedback, with no one selection method predicting unique variance. In fact, at this final stage in the selection process, the outcome (pass/fail) was more important in predicting process fairness than were job relatedness perceptions. This suggests that perceptions may be less stable than alluded to in previous cross-sectional designs; that is, once outcome feedback is received the perceptions of job relatedness are no longer important in predicting process fairness perceptions.

This leads onto a second implication relating to the importance of considering the stage of the selection process in applicant perception research (Hausknecht et al, 2004;

Gilliland, 1993). This study showed that procedural justice rules may be more or less important depending on the stage of the selection process. For instance, job relatedness perceptions accounted for more variance in process fairness perceptions at the shortlisting stage (15% for Sample 1), than they did at the assessment centre stage (3% for Sample 2). Thus, in sample 2 job relatedness perceptions only moderately predicted process fairness following feedback, with no one selection method predicting unique variance; whereas the outcome (pass/fail) explained 33% of the variance in process fairness. On the other hand, at shortlisting once outcome feedback was received, perceptions of job relatedness remained important in predicting process fairness perceptions. It is plausible that the outcome is more important at the final stage of selection since applicants have invested more time and effort in the process than at earlier stages in the selection process; as such failing has a significant negative influence on fairness perceptions.

Thirdly, this research demonstrates a role for individual differences in perceptions of fairness. Individual differences among applicants accounted for a proportion of variance in process fairness perceptions. Although these effects were small, it could imply that there is a stable component to applicant perceptions. Indeed, it is encouraging that findings relating to emotional stability and self-efficacy were consistent across two field-based samples. This increases the potential generalisability of findings to other organisational settings. As such, personality, self-efficacy and other individual differences should be included in future studies so that researchers can obtain a more complete understanding of the factors that affect applicant perceptions of selection methods and processes (Truxillo et al, 2006). However, it is recommended that future research uses longer, fine grained, measures of personality, since the Big Five personality domains are considered broad and heterogeneous (Hough, 1992) which may attenuate their predictive ability (Moon, 2001).

Fourthly, research findings also suggest that self-efficacy can be conceived of as a trait that *positively predicts* fairness perceptions, rather than an *outcome negatively influenced* by the selection process. Although test-taking self-efficacy has been shown to be negatively influenced by a selection process (e.g. Truxillo et al, 2001), it is

plausible that broader conceptualisations of self-efficacy (that is, general or occupational) are predictors of fairness since, operationalised as traits, they are stable over time (Schyns and von Collani, 2002). If the occupational self-efficacy constructs relates to how individuals *generally* feel about themselves, then it is perhaps not surprising that this influences their perceptions of selection.

Fifthly, passing or failing the final stage of selection process (Sample 2) predicted a significant amount of the variance in process fairness following pass/fail results. From a practical perspective, this indicates that organisations will have to 'work hard' to overcome the disappointment that comes from being rejected from a highly desirable job. It may suggest that organisations with high-stakes selection processes have limited control to improve applicant perceptions because failing will negatively influence fairness perceptions, whether or not selection methods are procedurally fair.

Finally, achieving greater conceptual understanding of the nature of applicant perceptions has further practical implications. If negative perceptions of selection methods are primarily a result of a method's content or the way it was administered, then it may be possible to encourage positive perceptions through amending content or administration. Conversely, if applicant perceptions are due to stable individual differences among applicants, such as personality and self-efficacy, then employers may only be able to influence applicant perceptions to some extent. Thus, interventions to improve candidate perceptions of selection processes are unlikely to be effective for all applicants (LaHuis, 2005; Truxillo et al, 2006), since what may seem fair to some candidates may not appear fair to others. Indeed some types of candidates (e.g. low emotional stability) may react negatively to organisations regardless of efforts to ensure that processes are perceived of as fair. In gaining greater conceptual clarity of applicant perceptions, recruiters may be able to identify types of candidates with negative perceptions and could therefore design targeted interventions (Schmitt & Chan, 1999).

3.6.5 Limitations

There are a number of potential limitations of the studies presented in this study that should be noted. Firstly, the selection methods in this research were specifically created for General Practice. However, these types of formats are fairly common, so to the extent that other selection methods are similar, these results are likely to be generalisable. Nevertheless, results should be interpreted with this caution in mind.

Secondly, one could argue that perception measures should have been collected both before and after completing the selection methods because otherwise participants' base-rate for these variables cannot be controlled for, which might confound the ability to isolate the effects of applicant characteristics (Chan & Schmitt, 2004; Schmitt & Chan, 1999). However, in this instance pre-test perceptions would have been meaningless, because it would have been impossible for candidates to assess job relatedness of the method *before* it was completed. Nonetheless, the self-efficacy questionnaire may have been better completed prior to the selection process. Ideally, future research should aim to access this information; however, in the present testing context, it was not possible to collect pre-test perceptions due to time and logistical constraints of an operational setting.

Thirdly, a further limitation of this research relates to the measure of personality that was used. It was noted earlier that there were time constraints that prevented the use of a longer personality questionnaire in this research setting and therefore the SIMP (Woods & Hamson, 2006) was chosen as it provided a balance between practical needs and psychometric concerns. Nevertheless, it is acknowledged that short measures of personality may lack the reliability of longer measures and furthermore, one cannot examine facet levels of personality, which may be particularly important for domains such as Conscientiousness (Hough, 1992; Moon, 2001). Therefore, future research should aim to use longer, more fine-grained measures of personality to explore more specific associations between fairness and personality constructs.

Finally, researchers (e.g. Truxillo et al, 2001) have suggested that multi-dimensional measures of fairness (as suggested by Gilliland, 1993) should be used, in addition to

employing broader measures. In the present study, a specific measure of one procedural factor, job relatedness, was used. In the context of this research however, it was deemed appropriate to focus on job relatedness since it was anticipated that job relatedness would be a particularly salient feature for candidates as the selection methods being examined were recently-developed and relatively new methods of assessment. However, research is needed to explore the relative impact of various justice rules on fairness because this will provide more specific insight into the rules crucial in applicant perceptions, since procedural rules may be differentially weighted (Anderson et al, 2001; Schleicher et al, 2006). Therefore, the next study uses a multidimensional measure of procedural justice rules, examining these and other person characteristics and their role in fairness perceptions.

3.6.6 Summary

Overall, the results from this study show that in two samples, job relatedness perceptions measured at the time of testing predict process fairness perceptions measured following outcome feedback. However, findings also indicated that the stage in the selection process was important in determining the extent to which job relatedness perceptions predicted fairness. That is, job relatedness perceptions were more important at the shortlisting stage, than the assessment centre stage, in predicting fairness perceptions; at the final assessment centre stage, passing or failing the process was more important. Secondly, findings indicated a role for individual differences (personality and self-efficacy) in applicant perceptions, which were consistent across two samples. Thirdly, this study showed that in these samples self-efficacy was better conceptualised as a trait that predicted process fairness perceptions, rather than an outcome variable negatively influenced by 'failing' the selection process.

The next study also considers the role of job relatedness perceptions in overall fairness perceptions; but in addition, explores other procedural justice rules and their influence on fairness. Additionally, further individual differences and person characteristics are explored to explore the extent to which they influence applicant perceptions. These include cognitive ability and candidate educational background.

Chapter 4: An investigation of the role of procedural justice rules, cognitive ability and candidate educational background in applicant fairness perceptions

4.1 Introduction

This chapter presents a two-wave longitudinal study conducted in an operational selection setting. The purpose of this study is three-fold. First, this study builds on the previous study by exploring other aspects of procedural justice in addition to focusing on job relatedness, and explores these as potential determinants of fairness using Gilliland's (1993) established method. The second aim is to explore the role of person characteristics (cognitive ability and candidate educational background) as determinants of applicant perceptions. The third aim is to address methodological weaknesses of previous published studies that have been criticised for being lab-based with student samples and cross-sectional designs. Therefore this study used a sample of applicants and assessed their perceptions of an operational selection process longitudinally at two time points.

The study presented in this chapter used a sample of candidates applying for Public Health (PH) specialty posts in the UK NHS, during the 2009 selection process. Selection into PH comprised three stages (depicted in Figure 4.1). Stage 1 included eligibility checks and the completion of an online application form; Stage 2 entailed shortlisting via two tests, a Numerical Reasoning (NR)[5] test, which assessed the extent to which respondents could understand and analyse numerical data, and a Critical Thinking (CT)[6] test, which assessed the ability to identify, analyse and evaluate information to reach appropriate conclusions. Finally Stage 3 entailed an assessment centre involving a series of four panel interviews each lasting 12 minutes; and a group exercise lasting 30 minutes with 20 minutes preparation time, in which four candidates

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[5] The Rust Advanced Numerical Reasoning Appraisal test.
[6] The Watson-Glaser Critical Thinking Appraisal test.

solved a work-based issue (Pashayan, Duff & Mason, 2007). A sample of applicants were tracked through the selection process from shortlisting (stage 2), to assessment centre (stage 3). Candidates completed selection procedural justice scale (SPJS; Bauer et al, 1998) questions immediately after testing at both time points, but before they were aware of their outcome results.

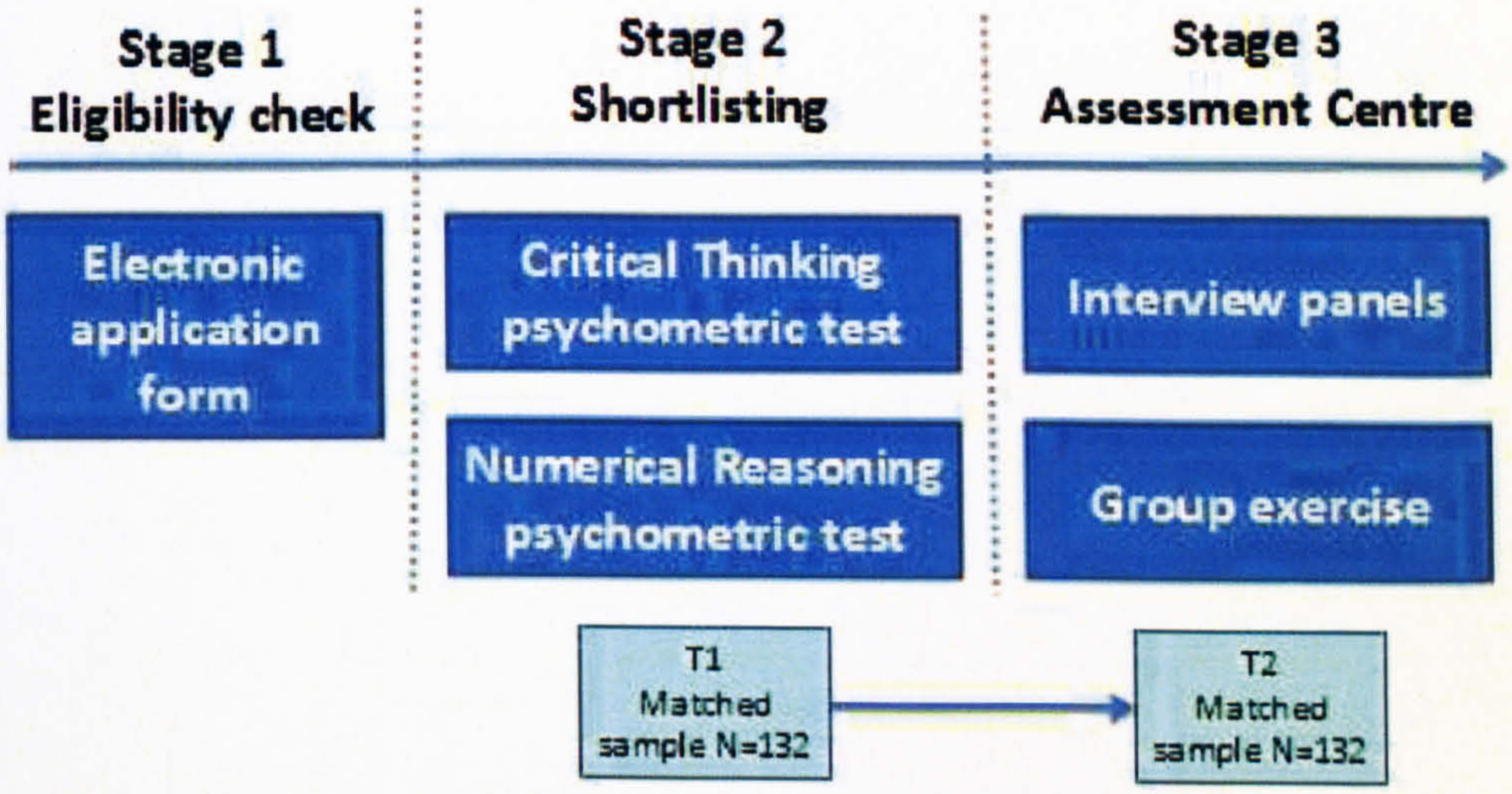


Figure 4.1: Public Health selection process

4.1.1 Procedural justice perceptions

In the previous study it was suggested that research is needed to explore the relative impact of various justice rules as determinants of fairness perceptions as this will provide more specific insight into the aspects that are crucial in applicant perceptions (Anderson et al, 2001). Therefore, this study explored job relatedness along with other procedural justice dimensions as first defined by Gilliland (1993) and built upon by Bauer and colleagues (2001) in the development of the SPJS. Along with job relatedness of the selection methods, this study examined five procedural justice rules relating to the selection process as a whole. These were: *chance to perform*, the opportunity for candidates to demonstrate their knowledge, skills and abilities; *consistency of administration*, selection process being consistent across people and over time; *information known*, information and explanation prior to selection assessment; *treatment*, the extent to which candidates are treated respectfully, and

communication, the opportunity for candidates to have their views considered during the selection process (Bauer et al, 2001).

These procedural justice rules were examined immediately after shortlisting (cognitive ability tests) and immediately following the assessment centre. Research indicates that applicants are likely to give favourable ratings to assessment centres (e.g. Macan et al, 1994; Smither et al, 1993), probably due to their apparent job relatedness and the use of work sample tests (Iles & Robertson, 1997; Macan et al, 1994). Assessment centres are viewed positively since they are considered more job-related and more likely to give applicants the opportunity to demonstrate a broader range of skills than psychometric tests (Macan et al, 1994; Van Vianen et al, 2004). In Macan et al's (1994) study, applicants completed questionnaires following two stages of a selection process: first following a cognitive ability test, and second (for those who made it through), following an assessment centre. The authors found that applicants were more satisfied with the selection process and more attracted to the organisation following the assessment centre than following the cognitive ability test. However, only a handful of field-based studies (e.g. Macan et al, 1994; Robertson et al, 1991) have been conducted comparing applicant perceptions to different stages of a selection process in this way. Thus, based on empirical research, the following hypothesis was devised:

Hypothesis 1a: Chance to perform and overall fairness will be rated significantly more positively following the assessment centre (T2) than the shortlisting stage (T1).

It is the aim of both psychometric tests and assessment centres to deliver a standardised assessment in a consistent way to all applicants (Rust & Golombok, 1999). However, it is likely that there is less scope for variability in the administration of psychometric tests than assessment centres. In the present context, the assessment centre involved interviews and a group exercise; therefore candidates could have perceived variability either during interviews due to their interactive nature or during the group exercises because they rely to some extent on other candidates' behaviour. Therefore it is plausible that candidates may perceive the administration of the selection methods to be

more consistent during the shortlisting than the assessment centre. Therefore the following hypothesis was set:

Hypothesis 1b: consistency will be rated significantly more positively following the shortlisting stage (T1) than following the assessment centre (T2).

Additionally empirical studies have shown that the procedural justice rules outlined above positively predict fairness perceptions (e.g. Bauer et al, 1998; Carless, 2003; 2006; Chan et al, 1998a; Ployhart & Ryan, 1998; Schleicher et al, 2006; Schmitt, et al, 2004; Truxillo et al, 2001; Truxillo et al, 2002). Overall fairness perceptions were measured in the present study, and so the following hypothesis was set:

Hypothesis 2: Job relevance perceptions of the selection methods along with procedural justice rules will significantly positively relate to overall fairness, both at the T1 shortlisting and the T2 assessment centre.

4.1.2 Cognitive ability

Despite calls for more research on the role of individual differences in applicant perceptions, such as cognitive ability (e.g. Ryan & Ployhart, 2000), few studies have examined whether cognitive ability might predict applicant perceptions. Cognitive ability has been shown to relate to the ability to acquire knowledge (Schmidt, 2002) and is a consistent predictor of job performance (Hunter, 1986; Schmidt & Hunter, 1998; Robertson & Smith, 2001; Schmidt, 2002). For instance, Robertson and Smith (2001) present a mean validity of 0.51 for the relationship between cognitive ability and job performance. It could be reasoned that applicants with high cognitive ability are the most desirable candidates since they are likely to have the potential to be high performers on the job (Hunter, 1986; Schmidt, 2002); indeed it could be further reasoned that an organisation's key selection concern is to retain the highest performing applicants throughout the selection process (Macan et al, 1994). Thus it is important for organisations to ensure that they are not putting the best candidates off their organisation or selection process through the use of their selection methods (Bauer et

al, 2004). This is particularly important because when the best candidates turn down job offers, there is a detrimental effect on the utility of a selection process (e.g. Murphy, 1986).

In one study exploring cognitive ability and its relationship with perceived determinants of selection process fairness (Viswesvaran & Ones, 2004), findings indicated that cognitive ability was positively correlated with content perceptions (including job relatedness, objectivity and invasiveness) and negatively correlated with context of selection perceptions (including selection ratio and organisational resources). However, these relationships showed small effect sizes and participants were rating their perceptions of selection processes in general, rather than based on their experience of a specific selection process. In a further study that examined the role of cognitive ability in applicant perceptions to selection processes, Bauer et al (2004) found no difference between candidates for perceptions of structure fairness, but found that individuals higher on cognitive ability were more likely to view an interactive voice response screening method as more socially fair than individuals low on cognitive ability. However, cognitive ability did not relate to any of the other applicant perceptions measured. As Bauer and colleagues' study appears to be the only one of its kind (to the best of the researcher's knowledge) and because it only focuses on three screening selection methods, there is a need for more research focusing on cognitive ability and its role in fairness perceptions. Therefore the aim of the present study was to examine whether cognitive ability added incremental variance in explaining fairness perceptions, beyond that explained by procedural justice perceptions, consistent with Truxillo et al's (2006) method. This will indicate the degree to which fairness perceptions are a function of cognitive ability, which currently remains a gap in the literature. Therefore the following hypothesis was devised:

Hypothesis 3: Cognitive ability will add incremental variance in the prediction of overall fairness perceptions measured at both T1 and T2.

4.1.3 Person characteristics

Person characteristics may also relate to fairness perceptions, such that candidate background may influence the way in which process fairness is perceived (e.g. Anderson et al, 2001; Schmidt & Ryan, 1992). Indeed, researchers have explored the possibility that candidate background may help explain applicant perceptions (Truxillo et al, 2004) and it has been suggested as a potential moderator variable (e.g. Gilliland, 1993; Hausknecht et al, 2004). One feature relatively unique to this particular selection process is that PH attracts two types of candidates with different educational backgrounds. Candidates applying for PH may either be individuals who have medical training (that is doctors) or they may come from other professional backgrounds, without medical training. It is plausible that candidates' educational background (medical training) may influence applicant perceptions towards selection at each stage of the process. Although the research literature makes a case for candidate background as a moderator variable, no studies have actually explored the direction that this might take. Therefore, no *a priori* hypotheses are set because it would be difficult to state the specific direction of the results. Instead, a research question was posed as follows:

Research question 1: Do person characteristics (i.e. candidate educational background relating to medical training) influence the way in which T1 and T2 procedural justice perceptions are rated?

Since cognitive ability is also considered a 'person characteristic' (Hausknecht et al, 2004) an additional method can be used to explore the role of cognitive ability in applicant perceptions. It is possible to create "high" and "low" categories for cognitive ability, by using a median split; a common method for creating a categorical variable from a continuous one (Field, 2005). Therefore, an additional research question was posed to determine the extent to which cognitive ability would also influence applicant perceptions:

Research question 2: Do person characteristics (i.e. high/low cognitive ability) influence the way in which T1 and T2 procedural justice perceptions are rated?

4.1.4 Passing or Failing the process

Since passing or failing a selection process is important in determining fairness perceptions, this will also be examined in the present study. Candidates are likely to perceive selection processes as more fair if they perform well (Bauer et al, 1998; Gilliland, 1993; 1994; Greenberg, 1986). Indeed, Bauer et al (1998) found that individuals who 'passed' the process evaluated testing more positively than those who failed. Furthermore, previous studies have found positive relationships between perceptions and selection performance (Macan et al, 1994; Chan & Schmitt, 1997; Chan et al, 1998a; Schmitt et al, 2004; Van Vianen et al, 2004). This is thought to relate to a self-serving bias mechanism (Chan & Schmitt, 2004) in which candidates who perceive that they have performed well are more likely to report positive perceptions about the process than those who perceive they have performed badly (Chan & Schmitt, 2004). Therefore, perceived performance appears to be a major determinant of applicant fairness perceptions. Applicant perceptions were gathered from candidates immediately following testing and therefore candidates did not yet know whether they had passed the process or not. However, given the self-serving bias mechanism it was anticipated that individuals might respond to the questions differently based on whether they thought that they had passed or failed the process. This was exploratory, with no specific hypothesis set, given that perceived performance was not measured. However, because it has been suggested that studies examining potential interaction effects may provide interesting and possibly more externally valid findings (Chan & Schmitt, 2004), the present study will examine interaction effects of person characteristics – high/low cognitive ability, candidate educational background (with/without medical training) – and also the variable pass/fail, to determine how these influence the way in which T1 and T2 procedural justice perceptions are rated.

4.2 Method

4.2.1 Participants and procedure

Participants were recruited from a pool of 460 applicants for selection into Public Health. Questionnaires were collected from participants at two time points, details of

which are outlined in the following sections. Figure 4.2 depicts this process and includes sample questionnaire items.

Time 1 (T1) - shortlisting: The shortlisting stage involved candidates completing two psychometric tests: a Critical Thinking (CT) test lasting 50 minutes and a Numerical Reasoning (NR) test lasting 40 minutes. Immediately after candidates had completed the tests they completed a paper-based applicant perceptions questionnaire, distributed by trained invigilators. Four hundred and fifty-five out of 460 applicants completed the T1 questionnaire (representing a 98% response rate).

Time 2 (T2) – assessment centre: One hundred and ninety five applicants were selected for the assessment centre (AC), the third and final stage of the selection process. Candidates took part in a series of four panel interviews and a group exercise. Once candidates had finished the AC exercises they were asked to complete a paper-based questionnaire, distributed by trained invigilators. A total of 149 candidates responded to the T2 questionnaire (76% response rate).

Matched data

Participants' identification (ID) numbers were used to match data across the two time points. Matched data was available for 132 participants who responded to both questionnaires (some cases could not be matched due to missing or incomplete ID numbers). Of the 132 participants, sixty-six percent were female, 30% were male (data missing for 4%); they had a mean age of 32.8 years (S.D. = 6.45), an average of 8.4 years work experience and 49% were medically trained. Sixty-nine percent were White, 13% were Asian, 5% were Black, 6% were Mixed, 2% were Chinese and 3% were from other ethnic groups (data missing for 2%). All candidates were invited to participate in the research on a voluntary basis and assured that information would be used for research purposes only and not be used in any selection decision.

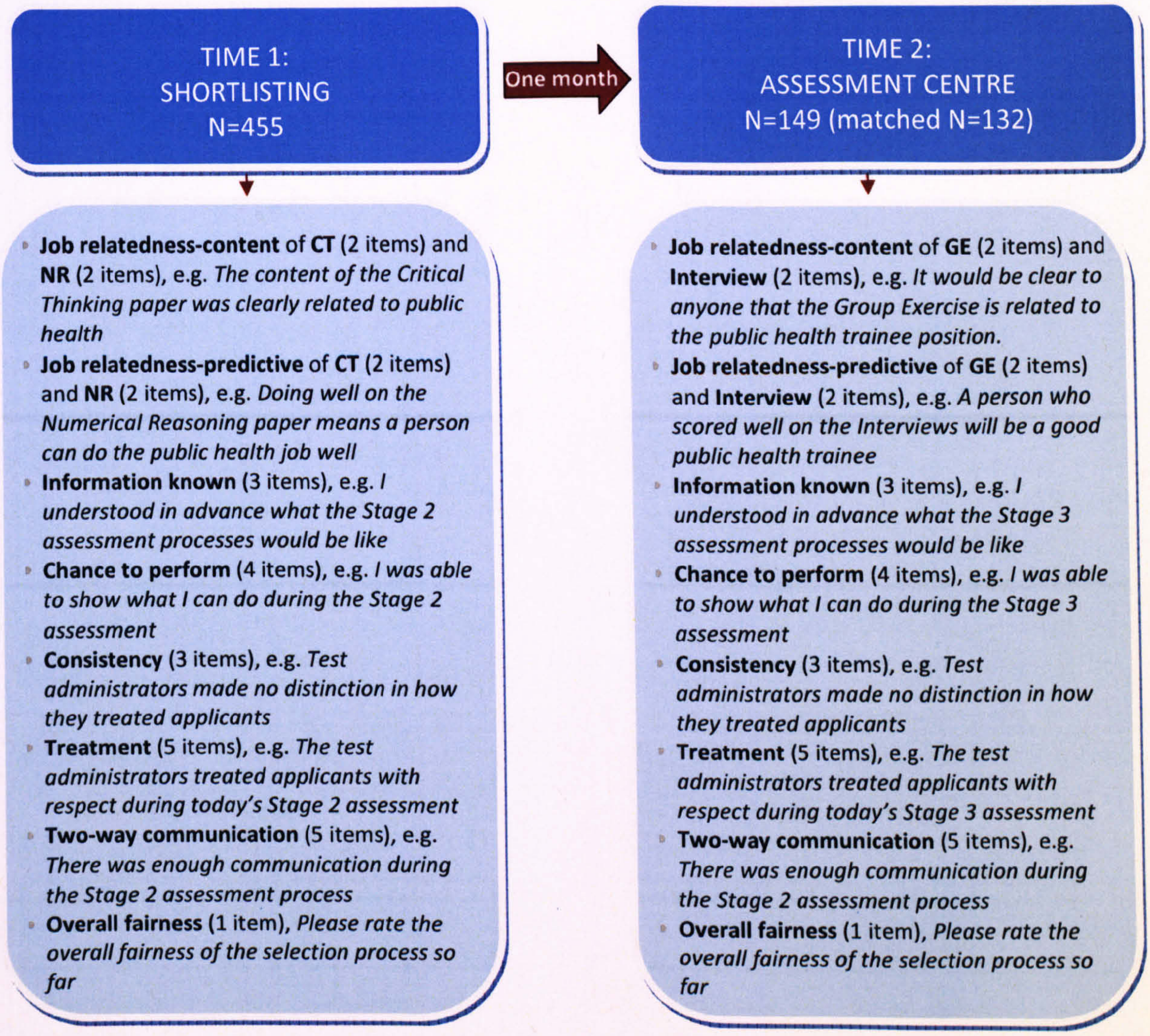


Figure 4.2: Longitudinal measurement of constructs

4.2.2 Measures

4.2.2.1 Time 1 questionnaire – shortlisting

The time one questionnaire consisted of four section sections. The first section contained demographic questions including gender, age, ethnic origin, and education background (i.e. whether the applicant had medical training). The questions in section two and three were from the selection procedural justice scale (SPJS) developed by Bauer et al (2001), but adapted to fit the context (as suggested by Bauer and colleagues, specific words were changed to fit the research setting and in particular the word 'test'

was replaced with 'Stage 2 assessment'). All responses for sections two and three were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. See Figure 4.2 for further details and Appendix 9.5 for a copy of the T1 questionnaire.

Job relatedness (content and predictive): Section two entailed questions specifically related to the psychometric tests – a critical thinking (CT) and a numerical reasoning (NR) test – and focused on the "job relatedness-predictive" and "job relatedness-content" facets of the SPJS (Bauer et al, 2001). Two items related to job relatedness-predictive for each of the CT and NR tests, and two items related to job relatedness-content.

Procedural justice perceptions: Section three included other facets from the SPJS, but focused on overall perceptions of the shortlisting process, rather than the individual tests. Facets included in this section were: information known; chance to perform; consistency; treatment, and two-way communication. The other subscales were not included because they were deemed not relevant in the context of this research. For example, 'reconsideration opportunity' was not included because re-consideration was not an option for candidates and selectors did not want to suggest to candidates that it might be; similarly selectors did not want 'honesty' and 'propriety of questions' to be included because it was felt that these questions might cause misunderstanding or suspicion about the process among candidates; and 'feedback' was not included because candidates had not yet received results.

Overall fairness: Section four contained a question relating to the overall selection process. Participants were asked to rate the following statement on a scale of 1 = not at all fair to 10 = extremely fair: the overall fairness of the selection process so far. Although this was a single-item measure, it gave a proxy measure of overall fairness, consistent with other applicant perception research (e.g. Ployhart & Ryan, 1997). Some researchers claim that using single item scales is not ideal (e.g. Gosling, Rentfrow & Swann, 2003), however it has been argued elsewhere that single item measures may suffice where the construct being measured is sufficiently narrow (Sackett & Larson, 1990; Scarpello & Campbell, 1983). Studies of single-item

measures of self-esteem (Robins et al., 2001) and job satisfaction (Nagy, 2002; Wanous, Reichers & Hudy, 1997) have demonstrated that single-item measures compare reasonably well with their multiple-item equivalents and that the benefits of shorter scales in terms of economy outweigh any psychometric disadvantage encountered with single items (Woods & Hampson, 2005; Burisch, 1984). From a practical point of view administrators were concerned about questionnaire length and therefore a single item measure for overall fairness was used as it provided an acceptable balance between practical needs and psychometric concerns.

Cognitive ability: Cognitive ability was measured using the combined scores on the two psychometric tests completed at T1. The W-GCTA and RANRA are measures of critical thinking and numerical reasoning respectively and together they can be used as a measure of cognitive ability. The User Manual (Pearson, 2008) suggests that this can be done by calculating a composite T-score. It was this composite score that was used as a measure of cognitive ability.

4.2.2.2 Time 2 questionnaire – assessment centre

The time two questionnaire was similar to the time one questionnaire: that is, the same questions were asked of applicants, but they were worded slightly differently to reflect the Stage 3 selection process. As with the T1 questionnaire, the T2 questionnaire consisted of four sections, the first section containing demographic questions as per T1. Section two and three used the SPJS but adapted questions to fit this context, with reference to 'Stage 3 assessment'. All responses for sections two and three were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. See Figure 4.2 for further details and Appendix 9.6 for a copy of the T2 questionnaire.

Job relatedness (content and predictive): Section two entailed questions specifically related to the Stage 3 selection process which entailed Interview Panels[7] and a Group Exercise, and once again focused on the "job relatedness-predictive" and "job

[7] Pilot work in 2008 suggested that applicants perceived panels similarly with no differences in perceptions between each panel. Therefore applicant perceptions were asked for regarding the panels generally, rather than each individual interview panel.

relatedness-content" facets of the SPJS. Two items related to job relatedness-predictive for interview panels and group exercises, and two items related to job relatedness-content.

Procedural justice perceptions: Section three included other facets from the SPJS, but focused on overall perceptions of the assessment centre, rather than the individual selection methods. Facets included in this section were: information known; chance to perform; consistency; treatment and two-way communication.

Overall fairness: As with the T1 questionnaire, section four contained the same question relating to the overall selection process. Participants were asked to rate the following statement on a scale of 1 = not at all fair to 10 = extremely fair: the overall fairness of the selection process so far.

4.3 Results

4.3.1 Pre-analysis checks

All variables were first checked to see if they were normally distributed; however all were significantly different from a normal distribution as indicated by Kolmogorov-Smirnov tests (all D values > .10 and p < .01). Inspection of histograms for the variables indicated that there was a strong negative skew for all variables, as a result of generally positive ratings from candidates. Two types of transformation of the data were attempted: logarithmic transformation and square root transformation (Aron & Aron, 2002; Field, 2005). However, even after these transformations were conducted skew was still detected as Kolmogorov-Smirnov tests remained significant; thus it was not possible to transform the data. Therefore, non-parametric tests were used where possible in the following analyses as they are likely to have more power than parametric tests for non-normal distributions (Judd, McClelland & Culhane, 1995).

The means, standard deviations and alpha coefficients of and Spearman's rho correlations between all the study variables measured at both T1 and T2 are displayed in Table 4.1. Due to the large number of variables and therefore correlations, only

results at the .01 level of significance are reported. All scales demonstrated good alpha reliabilities (all $\alpha > .70$) apart from job relatedness-content and –predictive for the Critical Thinking test, which were $\alpha = .63$ and .69 respectively. However, these are acceptable values for two-item scales (Rust & Golombok, 1999).

Table 4.1: Descriptive statistics, alpha reliabilities and inter-correlations between all study variables

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	CA	54.83	6.77																				
Shortlisting (Time 1)																							
2.	CTC	5.92	1.75	.06	(.63)																		
3.	CTP	5.76	1.68	.16	**.39***	(.69)																	
4.	NRC	5.21	1.84	.13	**.59***	**.38***	(.74)																
5.	NRP	5.22	1.82	.22	.19	**.62***	**.53***	(.81)															
6.	Info	11.61	2.69	-.03	-.02	.06	.05	.15	(.85)														
7.	CtoP	9.31	3.30	.13	**.27***	**.29***	**.43***	**.50***	.11	(.89)													
8.	Con	13.07	2.71	-.02	.08	.12	.06	.07	**.27***	-.08	(.95)												
9.	Treat	21.72	4.42	.09	.04	.12	.02	.16	**.30***	-.04	**.76***	(.95)											
10.	Com	20.20	4.38	.09	-.04	.08	-.04	.14	**.47***	-.00	**.58***	**.61***	(.93)										
11.	OF	7.30	1.63	.08	**.24***	.20	.14	**.27***	.16	.22	**.27***	**.26***	**.35***	-									
Assessment centre (Time 2)																							
12.	IntC[a]	8.45	1.45	.10	-.07	-.15	**-.23***	-.18	.02	-.06	-.01	.02	-.06	.19	(.76)								
13.	IntP[a]	6.95	1.40	.00	.10	.16	.04	.10	-.02	.06	.13	.03	.08	.17	**.30***	(.72)							
14.	GEC[a]	8.30	1.44	-.10	.22	-.03	.12	.00	-.05	.12	.06	.03	.01	**.29***	**.53***	**.28***	(.81)						
15.	GEP[a]	6.91	1.50	-.15	.05	-.02	.09	.05	.00	.19	.06	.00	-.03	.13	.18	**.53***	**.44***	(.82)					
16.	Info[a]	9.16	3.13	-.10	.13	.04	.15	.02	**.39***	.14	**.25***	.19	**.32***	.12	.13	.10	.18	.20	(.91)				
17.	CtoP[a]	12.89	3.37	-.06	.11	.16	.02	.16	.15	.06	**.30***	.16	**.25***	.19	.20	**.55***	**.33***	**.41***	**.36***	(.92)			
18.	Con[a]	12.32	2.33	-.19	.10	-.05	-.03	-.02	.05	.13	.14	.07	.04	**.28***	**.40***	**.24***	**.44***	**.28***	**.30***	**.25***	(.86)		
19.	Treat[a]	21.42	3.60	-.18	.08	-.12	.03	.00	-.07	.06	.10	.14	-.05	.15	**.39***	.17	**.46***	**.33***	.12	.21	**.51***	(.92)	
20.	Com[a]	19.84	4.00	-.10	.07	.03	.07	.14	.17	.17	.17	.13	.14	.20	**.34***	**.38***	**.39***	**.32***	**.31***	**.35***	**.48***	**.60***	(.92)
21.	OF[a]	7.64	1.39	-.07	**.25***	.14	.17	.20	.21	.18	.10	.12	.14	**.45***	**.31***	**.38***	**.45***	**.32***	**.33***	**.45***	**.38***	**.31***	**.43***

Note. N = 132. * = $p < .01$. [a] measured at T2. Numbers in parentheses indicate alpha reliabilities. CA = Cognitive ability T score; CTC = CT job relatedness-content; CTP = CT job relatedness-predictive; NRC = NR job relatedness-content; NRP = NR job relatedness-predictive; Info = Information Known; CtoP = Chance to Perform; Con = consistency; Treat = Treatment; Com = Communication; OF = overall fairness; IntC = Interview job relatedness-content; IntP = Interview job relatedness-predictive; GEC = Group exercise job relatedness-content; GEP = Group exercise job relatedness-predictive.

4.3.2 Are the stages of selection rated differently?

Hypotheses 1a and 1b made predictions about applicant perceptions following shortlisting and the assessment centre. It was suggested that chance to perform and overall fairness would be rated more positively following the assessment centre (T2) than the shortlisting stage (T1); and consistency would be rated more positively following the shortlisting stage (T1) than following the assessment centre (T2). Wilcoxon signed-rank tests were used to test these hypotheses and Table 4.2 displays the findings, with effect sizes signified by *r*. The assessment centre was rated significantly more positively on Chance to Perform ($p < .001$) and Overall Fairness ($p = .008$), which supports Hypothesis 1a. Shortlisting was rated significantly more positively on Information Known ($p < .001$) and Consistency ($p = .002$) than the assessment centre, partially supporting Hypothesis 1b. Note that for Information Known and Chance to Perform effect sizes are large; whilst for Consistency and Overall Fairness, effect sizes are small (Cohen, 1988). There were no differences for Treatment and Communication. Nevertheless, it should be noted that absolute levels for all variables were high.

Table 4.2: Wilcoxon signed-ranks tests for shortlisting vs. assessment centre.

	SL Mdn	*AC Mdn*	*T*	*p*	*r*
Information Known	12.00	9.00	701.50	**< .001**	-.61
Chance to Perform	9.00	13.00	833.50	**< .001**	-.63
Consistency	15.00	12.00	1044.50	**.002**	-.27
Treatment	23.00	23.00	1967.00	.14	-.13
Communication	20.00	20.00	2370.50	.24	-.10
Overall Fairness	8.00	8.00	1272.50	**.008**	-.23

Note: SL = Shortlisting; AC = Assessment centre

4.3.3 Procedural justice perceptions, cognitive ability and their influence on fairness

Hypothesis 2 suggested that the job relatedness perceptions of the selection methods along with other procedural justice perceptions would predict overall fairness perceptions, both at T1 and at T2; and hypothesis 3 suggested that cognitive ability

would add incremental variance to this. T1 analyses were conducted first, followed by T2 analyses. First, pre-analysis checks were conducted.

4.3.3.1 Pre-analysis checks for regression analyses

Regression does not require normally distributed predictors so could be used with the present data (Aron & Aron, 2002). However, other assumptions need to be met and therefore pre-analysis checks were conducted as follows. For the assumption of independent errors, the Durbin-Watson statistic was checked to ensure it was close to 2. The variance inflation factor (VIF) and tolerance statistics were checked to make sure there was no multi-colinearity in the data. Plots of standardised residuals against standardised predicted values ensured that the assumptions of linearity and homoscedasticity were met. Finally histogram and normal probability plots were checked to ensure that residuals were normally distributed. In all instances for the regression analyses that follow in this study, assumptions were met indicating that the data were suitable for regression analysis (Field, 2005). The number of cases was also checked to ensure that there were enough to run these regression analyses. Field (2005) suggests 10 cases for each predictor: there were 10 predictors and therefore 100 cases would be sufficient. Green (1991) suggests 104 + k cases where k equals the number of predictors: with ten predictors this would be 114 cases. Using both these rules of thumb, the number of cases was sufficient to run regression analyses. Additionally, the method given by Miles and Shevlin (2001) was used to check for sample size. In this instance, with ten predictors, to achieve a medium effect size with a power of 0.8, the look-up tables suggest that a minimum sample size of 120 is needed. Thus, once again, the sample size was sufficient.

4.3.3.2 Control and predictor variables for regression equations

For the regression equations that follow, age, gender, pass/fail, and candidate educational background were entered into Step 1 as control variables. Whether a person passes or fails determines fairness perceptions as candidates perceive selection methods as more fair if they perform well (Bauer et al, 1998; Greenberg, 1986), even if they do not yet know their outcome result. Therefore the variable pass/fail was

controlled for in the regression equations to ensure any relationships found were related to procedural characteristics or cognitive ability alone. Job relatedness and procedural justice perceptions were entered into Step 2; and cognitive ability was entered into Step 3. Table 4.3 displays the regression equation for T1 analyses and Table 4.4 displays the regression equation for T2 analyses.

4.3.3.3 T1 regression analysis, overall fairness as the dependent variable

Hypothesis 2 stated that procedural justice perceptions would predict overall fairness perceptions of the selection process at T1 shortlisting, and hypothesis 3 stated that cognitive ability would add incremental variance to this. A hierarchical regression equation was calculated, with overall fairness perceptions as the dependent variable.

Table 4.3 shows that the addition of the procedural justice perceptions in Step 2 significantly added to the prediction of overall fairness perceptions of the selection process, $\Delta R^2 = .24$, F (9, 108) = 3.98, $p < .001$. Specifically, the beta weights for critical thinking job relatedness-content ($\beta = .28$, $p = .02$); numerical reasoning job relatedness-content ($\beta = .25$, $p = .05$); chance to perform ($\beta = .23$, $p = .02$), and communication ($\beta = .38$, $p = .004$) were significant. This shows that, after the control variables, procedural justice perceptions measured immediately following testing explain an additional 24% of the variance in overall fairness perceptions (measured at the same time).

However, the addition of cognitive ability in Step 3 did not add to the prediction of overall fairness perceptions $\Delta R^2 = .01$, F (1, 107) = .62, $p = .43$, indicating that cognitive ability does not add incremental variance in predicting overall fairness. Therefore findings support Hypothesis 2 but not Hypothesis 3.

Table 4.3: T1 hierarchical regressions for control variables, procedural justice and cognitive ability on overall fairness

	B	*SE B*	*β*
Step 1, $R^2 = .04$			
Constant	6.98	1.06	
Age	.01	0.02	.01
Gender	-0.24	0.32	-.07
Pass/fail	0.43	0.31	.13
Medical Training	-0.28	0.31	-.11
Step 2, $\Delta R^2 = .24$			
CT job relatedness-content	0.26	0.11	.28*
CT job relatedness-predictive	-0.02	0.12	-.02
NR job relatedness-content	0.23	0.12	.25*
NR job relatedness-predictive	0.22	0.13	.24
Information known	-0.04	0.06	-.07
Chance to perform	0.11	0.05	.23*
Consistency	-0.03	0.10	-.03
Treatment	-0.01	0.06	-.03
Communication	0.14	0.05	.38**
Step 3, $\Delta R^2 = .01$			
Cognitive ability	0.02	0.02	.07

Note. N = 132. * $p < .05$, ** $p < .01$. CT = Critical thinking test; NR = Numerical reasoning test.

4.3.3.4 T2 regression analyses, overall fairness as the dependent variable

Hypothesis 2 stated that procedural justice perceptions would predict fairness perceptions at T2 assessment centre, and Hypothesis 3 stated that cognitive ability would add incremental variance to this. A hierarchical regression equation was calculated, with overall fairness as the dependent variable. Table 4.4 shows the addition of procedural justice perceptions in Step 2 added to the prediction of fairness perceptions, $\Delta R^2 = .32$, F (9, 108) = 6.15, $p < .001$; the beta weight for communication ($\beta = .23$, $p = .05$) was statistically significant; and the beta weight for Chance to Perform ($\beta = .18$, $p = .07$) approached significance. This shows that, after the control variables, procedural justice perceptions explain an additional 32% of the variance in overall fairness perceptions (measured at the same time). On the other hand, the addition of cognitive ability in Step 3 did not add to the prediction of overall fairness, $\Delta R^2 = .00$, F (1, 107) = 0.11, $p = .75$, thus does not add incremental variance in

predicting overall fairness. Therefore findings support Hypothesis 2 but not Hypothesis 3.

Table 4.4: T2 hierarchical regressions for control variables, procedural justice and cognitive ability on overall fairness

	B	*SE B*	*β*
Step 1, $R^2 = .06$			
Constant	6.56	0.87	
Age	0.04	0.02	.16
Gender	-0.28	0.26	-.10
Pass/fail	0.23	0.26	.05
Medical Training	0.14	0.26	.05
Step 2, $\Delta R^2 = .32$			
Interview job relatedness-content	-0.03	0.11	-.03
Interview job relatedness-predictive	0.16	0.11	.17
GE job relatedness-content	0.21	0.12	.23#
GE job relatedness-predictive	-0.06	0.09	-.07
Information known	0.06	0.04	.13
Chance to perform	0.07	0.04	.19#
Consistency	0.05	0.07	.08
Treatment	-0.01	0.05	-.02
Communication	0.08	0.04	.23*
Step 3, $\Delta R^2 = .00$			
Cognitive ability	0.01	0.02	.03

Note. N = 132. # $p < .10$, * $p < .05$. GE = group exercise

4.3.4 Do person characteristics influence justice and fairness perception ratings?

The following set of analyses was conducted to determine whether person characteristics influence the way in which T1/T2 justice perceptions are rated. Firstly, a research question was posed as to whether a candidate educational background, that is having medical training, would effect T1/T2 perceptions. There were two groups, individuals with (N=65) and without (N=67) medical training[8]. Secondly, a research question was posed as to whether cognitive ability would influence the way T1 and T2 procedural justice perceptions were rated. "High" and "low" categories of cognitive ability were calculated using a median split (median composite T score = 54.56), which

[8] Note that there were no significant differences in cognitive ability between the medic/non-medic groups

resulted in relatively equal high (N=64) and low (N=62) groups. Finally, it was anticipated that there may be differences in procedural justice perceptions based on whether individuals passed or failed, despite candidates not yet knowing whether or not they had passed the process. In the present study, there were roughly equal numbers of candidates who passed (67 were offered a PH post) and failed (55 did not get offered a post) the assessment centre. Data was missing for 10 candidates.

It was necessary to conduct a mixed design ANOVA to analyse these data, because there were both repeated measure within-subjects variables (i.e. T1 and T2 procedural justice perceptions) and between-subject factors (i.e. high/low cognitive ability; with/without medical training; pass/fail); and a non-parametric version of this type of analysis does not exist. Ideally, normal data is necessary for ANOVA, but some authors suggest (e.g. Levine & Dunlap, 1982; Donaldson, 1968) that the ANOVA *F* test is robust and that data transformations are not always necessary. Indeed, Games and Lucas (1966) suggest that "normalising transformations" of skewed data may result in more problems than they solve, particularly because it is no longer possible to interpret data in terms of the original hypotheses. Overall, findings indicate that the *F* test tends to be conservative with skewed distributions, although there may be a loss of power (Glass, Peckham & Sanders, 1972). It was therefore decided to go ahead with conducting a mixed design ANOVA to test these hypotheses, bearing in mind the potential loss of power, which may lead to an increased likelihood of Type II errors. Thus the observed power of each analysis was checked. Any findings for which the power was lower than the ideal (0.80; Soper, 2008) *and* the *p* value approached significance were therefore reported. Additionally, Levene's test for equality of variances was checked to ensure that variances were homogenous (signified by a non-significant result): in all instances the *p* value was greater than .05 indicating that the data met the assumption of homogeneity of variances. Finally, effect sizes were calculated and signified by *r* in the reported results.

4.3.4.1 Information Known

There was a significant main effect for T1/T2 Information Known, $F(1, 111) = 58.20$, $p < .001$, $r = .59$; indicating that T1 ratings of Information Known were significantly

more positive than T2 ratings. There was a significant interaction between T1/T2 Information Known, Pass/Fail and Medical Training, $F(1, 111) = 3.34$, $p = .07$, $r = .17$. Looking at the interaction graphs shown in Figure 4.3, and using *post hoc* t-tests, this suggests that when candidates pass the selection process, there is no difference in the way that those with/without medical training rate T1/T2 Information Known. On the other hand, when candidates fail the process, those with medical training ($M = 12.29$, $SE = .46$) rate T1 Information Known more positively (approaching significance) than those without medical training ($M = 11.03$, $SE = .59$) $t(53) = -1.68$, $p = .06$, $r = .22$; but there is no significant difference at T2. This shows that for those who fail, applicants with medical training rated information known higher at shortlisting than those with no training.

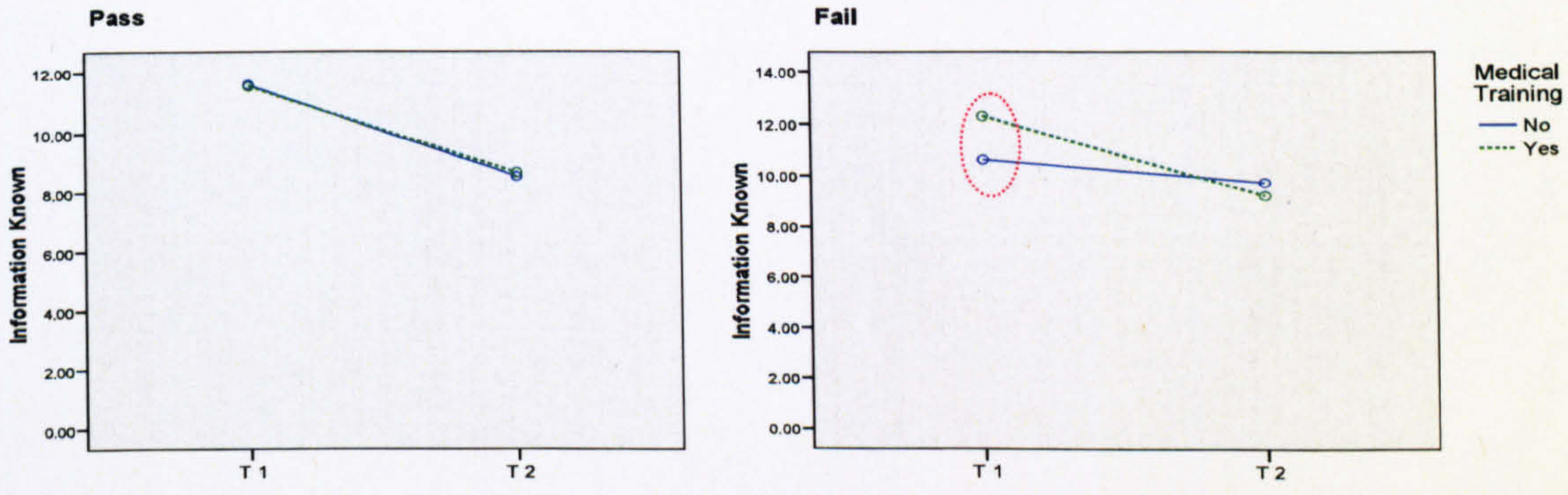


Figure 4.3: Pass/fail group's ratings of T1/T2 Information Known by those with/without medical training

4.3.4.2 Chance to Perform

There was a significant main effect for T1/T2 perceptions of Chance to Perform, $F(1, 111) = 64.45$, $p < .001$, $r = .61$; indicating that T2 Chance to Perform was rated significantly more positively than at T1. There were no significant main effects for the between subjects variables. There was a significant interaction between T1/T2 Chance to Perform and Pass/Fail, $F(1, 111) = 4.36$, $p = .04$, $r = .19$. Looking at the interaction graph (Figure 4.4), and using *post hoc* t-tests, this suggests that those who passed the process ($M = 8.64$, $SE = 0.38$) rated T1 Chance to Perform significantly lower than those who failed the process ($M = 9.93$, $SE = 0.44$), $t(120) = -2.22$, $p = .03$, $r = .20$; whilst at T2, there was no significant difference between pass and fail groups, $t(120) =$

0.65, $p = .51$. This shows that at shortlisting applicants who failed the selection process rated T1 higher on Chance to Perform than applicants who passed.

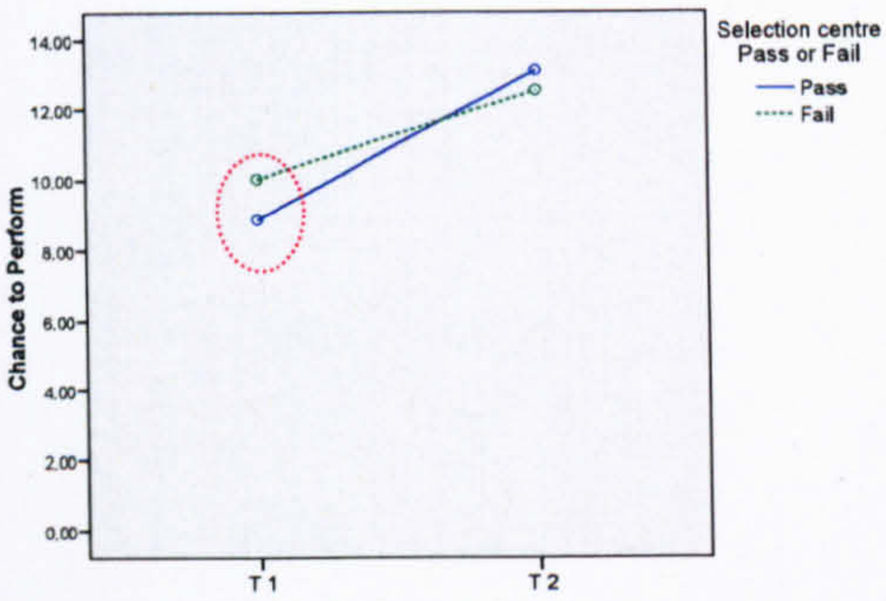


Figure 4.4: Pass/Fail group's ratings of T1/T2 Chance to Perform

Additionally, a significant interaction was found between T1/T2 Chance to Perform; Pass/Fail and High/Low cognitive ability, $F(1, 111) = 4.78$, $p = .03$, $r = .20$. Looking at the interaction graphs (Figure 4.5), and using *post hoc* follow up *t*-tests, this suggests that when candidates pass the selection process, there is no difference between high/low cognitive ability groups in the way that T1 and T2 Chance to Perform is rated. On the other hand when participants fail, the 'low' cognitive ability group rates T1 Chance to Perform significantly lower ($M = 9.13$; $SE = 0.45$) than the 'high' group ($M = 11.04$, $SE = 0.80$), $t(53) = -2.24$, $p = .03$, $r = .29$; but there is no significant in the way that T2 Chance to Perform is rated $t(53) = 1.23$, $p = .23$. This shows that for those who fail, applicants with high cognitive ability rated chance to perform higher at shortlisting than those with lower cognitive ability.

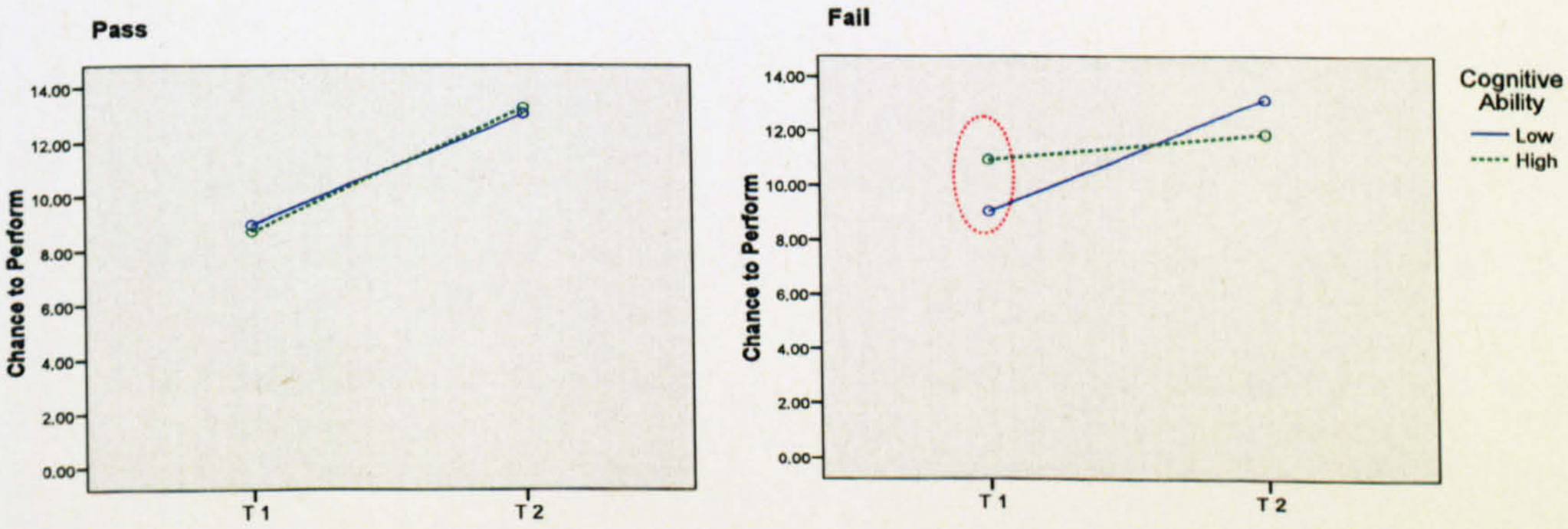


Figure 4.5: Pass/Fail groups' ratings of T1/T2 Chance to Perform by high/low cognitive ability.

4.3.4.3 Consistency

There was a significant main effect for T1/T2 Consistency, $F(1, 115) = 3.98$, $p = .04$, $r = .18$, indicating that T1 ratings for Consistency were higher than T2 ratings. There were no significant main effects for any of the between-subjects variables. A significant interaction between T1/T2 Consistency, high/low cognitive ability and medical training was found, $F(1, 111) = 12.42$, $p = .001$, $r = .32$. The interaction graphs (Figure 4.6) and *post hoc* t-tests suggest that when applicants had no medical training, the high cognitive ability group ($M = 12.17$, $SE = 0.77$) rated T1 Consistency significantly lower than the 'low' group ($M = 13.77$, $SE = 0.30$), $t(61) = 2.26$, $p = .03$, $r = .28$; whilst at T2 there was no significant difference, $t(61) = 1.80$, $p = .08$, $r = .22$. On the other hand, when participants had medical training, the 'high' cognitive ability group ($M = 13.65$, $SE = 0.60$) rated T1 Consistency significantly higher than the 'low' group ($M = 11.78$, $SE = 0.37$), $t(61) = -2.80$, $p = .007$, $r = .34$; whilst at T2 there was no significant difference, $t(61) = 1.34$, $p = .19$. This shows that for applicants with no medical training, the high cognitive ability group rate shortlisting lower on consistency than did the low cognitive ability group. On the other hand, for the applicants with medical training, the high cognitive ability group rate shortlisting higher on consistency than did the low cognitive ability group.

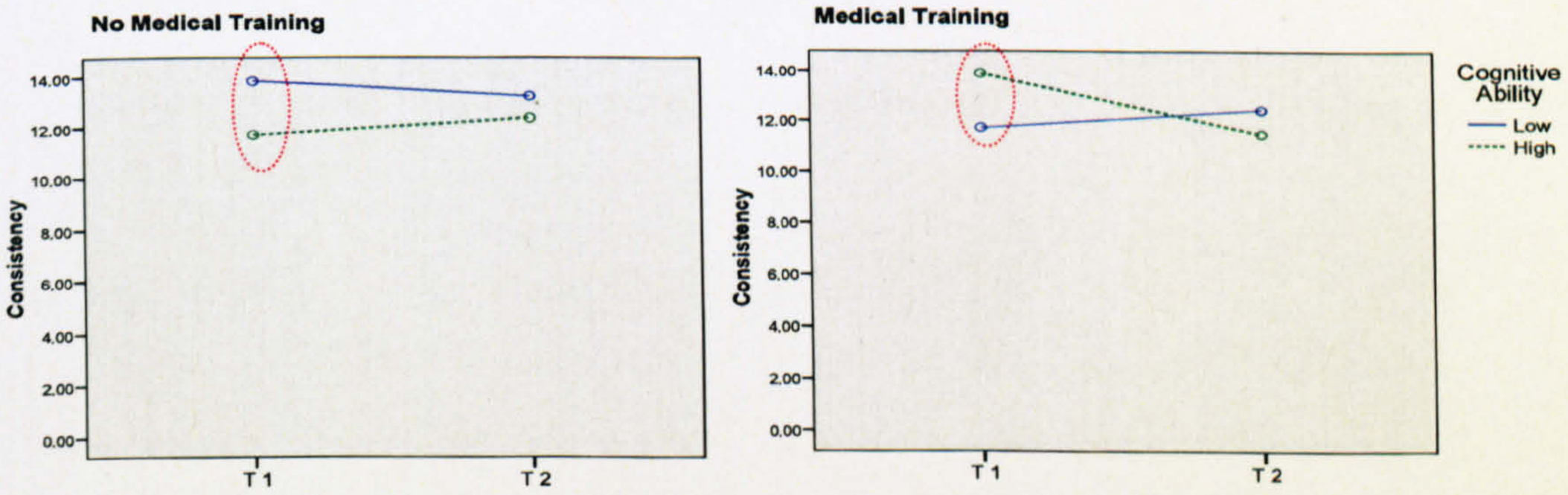


Figure 4.6: Medical training groups' ratings of T1/T2 Consistency by High/Low Cognitive Ability

4.3.4.4 Treatment

There was no significant main effect for T1/T2 Treatment, $F(1, 111) = .30$, $p = .58$. Additionally, there were no significant main effects for any of the between-subjects variables. However, there was a significant interaction effect between T1/T2

Treatment, high/low cognitive ability and with/without medical training, $F(1, 111) = 15.79$, $p < .001$, $r = .35$. Looking at the interaction graphs (Figure 4.7), and using *post hoc* tests, this suggests that for those with no medical training there is no significant difference for high/low cognitive ability groups for ratings of Treatment at either T1, $t(61) = 1.73$, $p = .09$, $r = .21$ (although this does *approach* significance); or at T2, $t(61) = 0.34$, $p = .74$, $r = .04$. On the other hand, for those with medical training, the 'high' cognitive ability group ($M = 23.05$, $SE = 0.58$) rated T1 Treatment significantly higher than the 'low' group ($M = 19.00$, $SE = 0.88$), $t(61) = -3.97$, $p < .001$, $r = .45$; but there was no significant difference between high/low ratings at T2, $t(61) = 1.12$, $p = .27$. There were no other interaction effects. This shows that for applicants with medical training, the high cognitive ability group rate shortlisting more positively on treatment than did the low cognitive ability group.

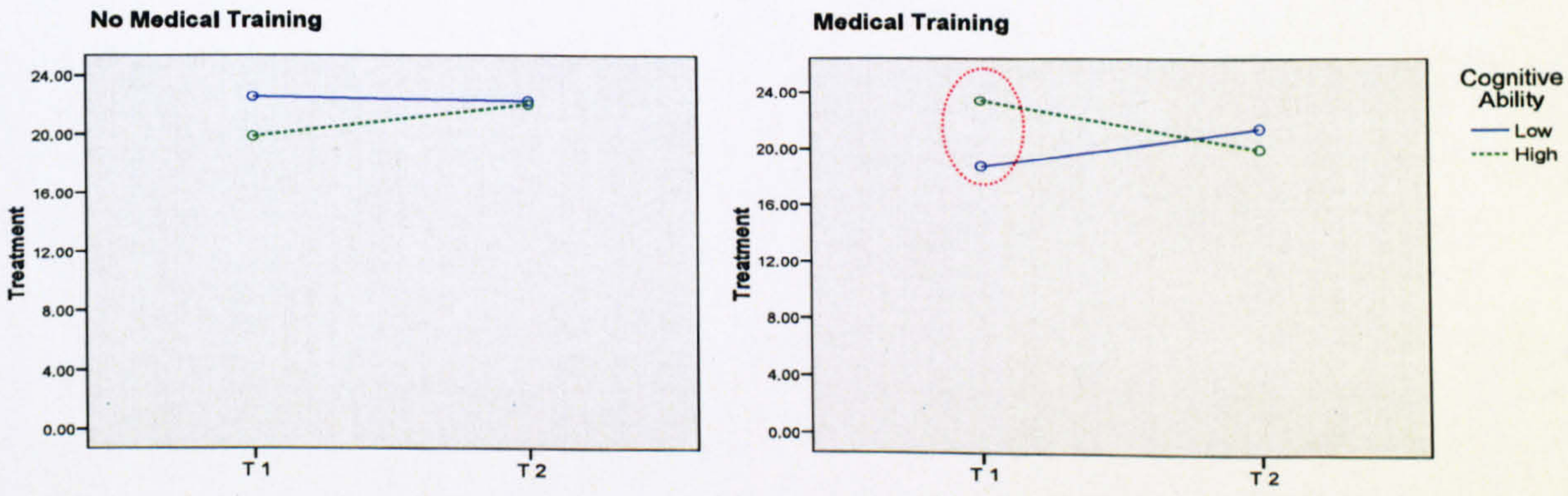


Figure 4.7: With/without medical training groups' ratings of T1/T2 Treatment by High/Low Cognitive Ability

4.3.4.5 Communication

There was no main effect for T1/T2 ratings of Communication, $F(1, 111) = .03$, $p = .91$; indicating that there is no difference in the way Communication was rated at both time points. There were also no significant main effects for any of the between-subjects variables. An interaction effect was found between T1/T2 Communication, high/low cognitive ability and with/without medical training, $F(1, 111) = 8.28$, $p = .005$, $r = .26$. Looking at the interaction graphs (Figure 4.8), and using *post hoc* tests, this suggests that for those with no medical training there was no significant difference between high/low cognitive ability groups' ratings of either T1 Treatment, $t(61) = 1.74$, $p = .09$,

r = .22 (although this does *approach* significance), or T2 Treatment, $t(61) = 0.74$, p = .46, r = .09. On the other hand, for those with medical training, the 'high' cognitive ability group (M = 21.50, SE =.68) rated T1 Communication significantly higher than the 'low' cognitive ability group (M = 18.39, SE =.77), $t(61) = -2.93$, p = .005, r = .35; whilst there was no difference for T2 Communication, $t(61) = 0.15$, p = .88. This shows that for applicants with medical training, the high cognitive ability group rate shortlisting more positively on communication than did the low cognitive ability group.

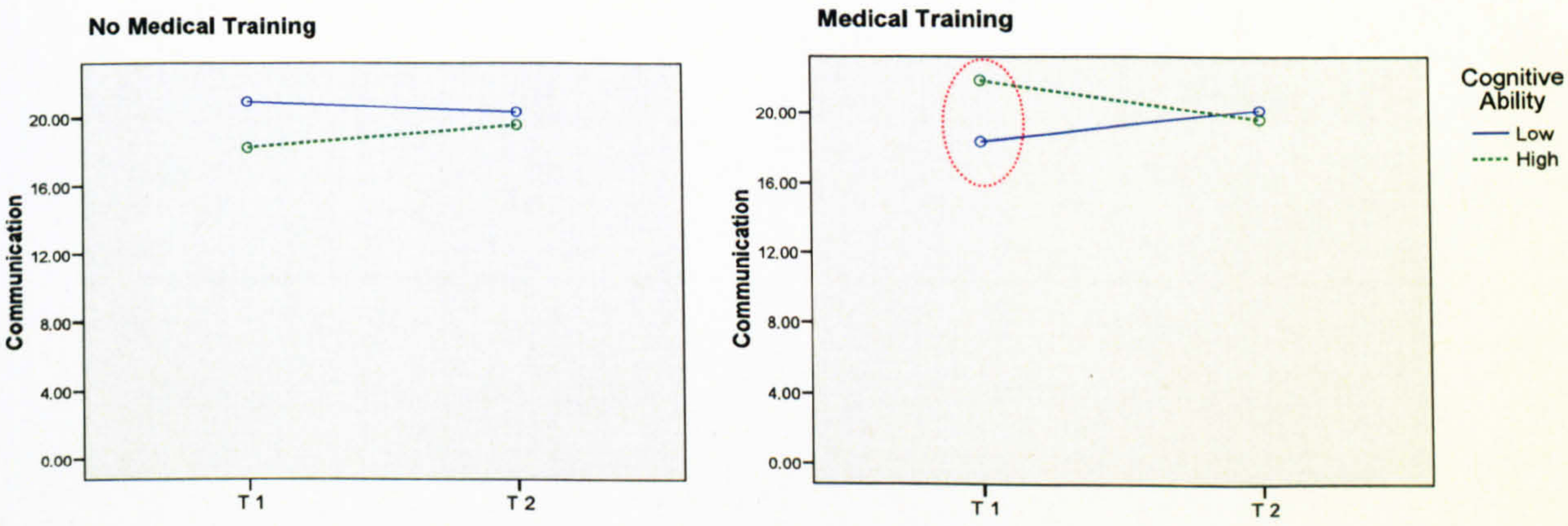


Figure 4.8: With/without medical training groups' ratings of T1/T2 Communication by high/low cognitive ability

4.3.4.6 Overall Fairness perceptions

There was a significant main effect for T1/T2 ratings of overall fairness perceptions, $F(1, 111) = 7.05$, p =.009, r = .24, indicating that T1 fairness perceptions were significantly lower than T2 perceptions. There were no significant main effects for any of the between-subjects variables, and no significant interactions were found.

4.4 Discussion

This study has presented two-wave longitudinal research examining applicant perceptions of a number of different selection methods and the overall selection process in an operational selection setting. A sample of participants applying for Public Health posts was tracked through the selection process from the shortlisting phase to the

assessment centre phase. A discussion of the main findings of this research is now presented.

4.4.1 Shortlisting versus assessment centre

Findings in this study indicate that different stages of a selection process can be perceived differently on distinct aspects of procedural justice: the shortlisting phase was considered more consistent and rated more positively on information known than the assessment centre. It is perhaps not surprising that shortlisting was considered more consistent than the assessment centre because shortlisting was conducted in large group sessions and the administration of the tests was standardised (Chan et al, 1998a). Thus it would have been clear to candidates that procedures were consistent across people (Bauer et al, 2001). Conversely, candidates went through the assessment centre in groups of four or five, meaning that consistency of the process may have been less obvious to candidates. Additionally, these findings may reflect the fact that the psychometric tests were administered by trained Level A personnel, whilst the assessment centres involved numerous administrators who, although they received training, it was possibly less rigorous than a Level A qualification.

Information known relates to the "information, communication, and explanation about the selection process prior to testing" (Bauer et al, 2001, p. 391) and in advance of shortlisting, all candidates were able to complete practice psychometric tests. By contrast, this was the first year that the group exercise was used in national selection across assessment centres, so it is plausible that candidates felt that they had less information about this new process. Research shows that providing information to candidates about selection methods is a relatively easy and inexpensive way of improving perceptions of the selection process (Truxillo et al, 2009); and study findings may suggest more information is needed regarding the assessment centre.

On the other hand, the assessment centre was rated higher on chance to perform and the process was rated fairer than shortlisting. Chance to perform is described as "having adequate opportunity to demonstrate one's knowledge, skills, and abilities within the testing situation" (Bauer et al, 2001, p. 391). It is likely that candidates perceive that

they have more opportunity during an assessment centre's interview and group exercise to display their skills as opposed to psychometric tests that focus on a specific ability. This supports findings by Gilliland (1995) that candidates perceive work samples give them the opportunity to perform. In relation to feeling the process was fairer following the assessment centre; this supports previous research findings that candidates are more positive about the selection process following an assessment centre than cognitive ability testing (Macan et al, 1994). Taken together, these findings support the assertion that different procedural issues are important at different stages of a selection process (Hausknecht et al, 2004) and therefore the stage in the selection process should be considered.

4.4.2 Procedural justice perceptions and fairness

Also examined in this study was the relationship between procedural justice perceptions and overall fairness perceptions and whether cognitive ability added incremental variance beyond the procedural justice perceptions. Similar findings were found across both time points: at both the shortlisting phase (T1) and the assessment centre (T2): overall fairness perceptions were positively predicted by job relatedness-content of the selection methods, chance to perform and communication. However at T1, job relatedness-content for both psychometric tests predicted unique variance in fairness perceptions; yet at T2, it was only job relatedness-content for the group exercise that was significant. Findings generally support previous work (e.g. Bauer et al, 1998; Chan et al, 1998a; Schmitt, et al, 2004) and in particular, the finding that chance to perform is a consistent predictor of fairness (Schleicher et al, 2006). Though it should be noted that in the present study both these examinations were cross-sectional and thus it could be concluded that relationships were inflated due to the cross-sectional nature of each time point (Sackett & Lievens, 2008). However, it can also be argued that regression analyses test only for unique variance and so by definition, shared method variance is not included (Cohen, Cohen, West & Aiken, 2003). Furthermore, a core aim of this research was to examine the incremental variance explained in perceptions by applicant cognitive ability after controlling for procedural justice perceptions, for which a cross-sectional design is appropriate.

However, findings indicated that cognitive ability did *not* add incremental variance in explaining perceptions of fairness. This is contrary to previous research (e.g. Viswesvaran & Ones, 2004), where cognitive ability was positively related to content perceptions (including job relatedness); but consistent with Bauer et al's (2004) findings, where cognitive ability was not related to structure fairness. However, it is suggested that further research is needed given the somewhat inconsistent findings.

On the whole and in contrast to much of the previous research, this study found that less of the procedural justice rules were determinants of fairness than might have been anticipated. In fact Gilliland (1993, p. 711) states: *"procedural rules should explain most of the variance in overall perceived fairness of the selection system"*. Yet in this study, consistency, treatment and information known predicted no unique variance in fairness perceptions. However, the present selection process appeared to be largely positively perceived by the applicants, as indicated by the skewed data. Obviously this is positive from the organisation's perspective, but it may account for the non-significant findings since regression analyses are not as accurate when used with a restricted range and when the predictors lack variance (Aron & Aron, 2002). Indeed, this has been encountered in other applicant perception research (e.g. Carless, 2006) and may highlight a bias typical in this field: organisations with fair selection processes are more likely to allow an investigation of their processes (Truxillo et al, 2004). Truly unfair treatment is scarce in applicant perceptions research (Truxillo et al, 2004), yet it is these types of processes that may have a deleterious effect on candidates, including on their well-being and self-esteem (Anderson, 2004). This therefore leaves unanswered questions regarding processes considered unfair by candidates and to what extent these might have influence candidate fairness perceptions.

A further plausible reason why procedural justice perceptions did not influence fairness is that the SPJS measure focused on aspects of the selection process that were not salient to these applicants (Schmitt & Chan, 1999). The issue of 'salience' may significantly limit fairness research because measures may not focus on issues important to the applicants themselves. The fact that the data was skewed indicates that the candidates were generally positive about these aspects of the process; yet there may

have been other more important issues that could have positively or negatively influenced perceptions of fairness. In fact, Gilliland (1995) suggests that procedural justice rules are not weighted equally by applicants at all times; and in certain instances, some rules may be emphasised more heavily than others. This is supported by research that has indicated there are relative levels of salience for different justice rules to applicants (e.g. Schleicher et al, 2006). In a qualitative interview-based study, Gilliland (1995) found that some procedural justice rules were considered important by applicants, such as interpersonal treatment and feedback; whilst reconsideration opportunity was not a salient concern at all. This implies that qualitative research may be necessary to focus on issues from the applicant's, not the researcher's point of view (Gilliland, 1995; Silvester, 2004; Symon et al, 2000). Additionally, the lack of significant findings may be because interaction effects between other variables (such as person characteristics) are important and in fact better at revealing the complexities of the way in which candidates perceive selection processes (discussed below).

Alternatively, an explanation for the negatively skewed data may be that candidates were concerned about the anonymity of the results since ID numbers were used to match data across time points. Although care was taken to assure candidates that findings would be used for research purposes only, it is possible that candidates, hoping to make a good impression, were not honest about the selection process in case their responses could be linked back to them via their candidate ID number. This issue with social desirability is well documented in psychological research (e.g. Arnold & Feldman, 1981) and has the effect of attenuating correlations due to the restricted variance of scale scores (Podsakoff & Organ, 1986).

4.4.3 Person characteristics and their influence on justice and fairness perceptions

It is notable that person characteristics significantly influence the way in which procedural justice perceptions are rated during the selection process, with a number of interactions found between the different variables. As Chan and Schmitt (2004) point out, justice principles do not occur in isolation and therefore should be examined

together in the same selection situation (as has been done in the present study) and moreover, interaction effects provide interesting and potentially more externally valid findings. In fact, the two- and three-way interaction effect findings in this study go towards demonstrating the complexity of applicant perceptions. This study shows that person characteristics such as candidate educational background and cognitive ability can be potential moderators of applicant perceptions (e.g. Hausknecht et al, 2004) and significantly influence the way in which procedural justice perceptions and outcomes are rated.

In examining person characteristics, this study showed that high/low cognitive ability, candidate educational background (i.e. medical training) and passing/failing the process influence procedural justice perceptions. For instance, for the group who failed, those with medical training rated T1 information known higher than those without training. This is interesting because as a process that attracts two types of candidates, it is important for the recruiters to be aware that candidates with a different educational background might feel that they have less information about and explanation prior to the selection methods and process. Additionally, those with previous medical training, but with high cognitive ability, rated T1 treatment, T1 communication and T1 consistency higher than those with low cognitive ability; conversely, those without previous medical training, but with high cognitive ability, rated T1 treatment, T1 communication and T1 consistency *lower* than the low cognitive ability group. Although the non-medical training group's difference was not significant for treatment and communication, it is in a direction that might cause concern to the organisation and is worth noting due to the possibility of type II errors. These findings are important because they could signify that the best candidates without a medical background have less positive perceptions of the selection process. This demonstrates the importance of organisations understanding their applicant pool and may suggest that targeted interventions could be useful. Indeed in this context it appears that the group of applicants without medical training may need more information about the selection process and methods.

These findings may suggest that the constructs of fluid and crystallised intelligence have differential effects on, and interact to influence, procedural justice perceptions. For example, the 'cognitive ability' measured in this study may be considered fluid intelligence, since the psychometric tests measured 'potential' (Pearson, 2008); whilst on the other hand, a person's educational background (that is, medical training) may be considered crystallized intelligence, since it is based on learning and experience (Cattell, 1963; Horn, 1968). This may suggest that researchers should explore other 'types' of intelligence and the influence that they may have on procedural justice and fairness perceptions.

Finally, it is noteworthy that overall fairness perceptions are not influenced by person characteristics, which is a positive finding for organisations that attract and recruit candidates with different backgrounds. This may be an important finding, particularly if fairness perceptions are indeed linked to outcomes such as withdrawing from the process (Gilliland, 1993). However, since behavioural outcomes were not measured in this context, this suggestion is speculative.

4.4.4 Implications for research and practice

There are a number of important implications of this research, both in terms of theory and practice. First, from a theoretical perspective, this research has shown the importance of examining different person characteristics, such as candidate educational background and cognitive ability (Schmit & Ryan, 1992). Findings indicate that applicant perceptions can be a function of person characteristics that interact to influence procedural justice perceptions in different ways, implying that applicant perceptions are in fact extremely complex. These variables may combine to influence the potency of reactions (Hausknecht et al, 2004). Therefore by examining a number of different variables and how they interact to influence procedural justice perceptions, this research has provided potentially externally valid findings. Even so, it is also probable that not only do person characteristic factors influence perceptions of the process, but also other contextual variables, such as economic concerns and competing job offers (Carless, 2003; Chan & Schmitt, 2004). Future research should therefore

consider both person characteristics and other contextual variables in examining applicant perceptions.

Secondly, contrary to the hypotheses, not all the procedural justice perceptions in this study were determinants of fairness perceptions. It is possible that this is because the measure of procedural justice did not include issues that were salient to these applicants. This may indicate that perceptions are more complex than those captured in the measures used in quantitative questionnaire research. Indeed, one draw-back with using quantitative questionnaire measures with pre-defined variables is the fact that it is implicitly assumed, not only that the researcher and participants assign similar meaning to the variables (Bartunek & Seo, 2002;), but also that these variables are salient to the participants (Morgan & Smircich, 1980; Symon et al, 2000). Thus using pre-defined variables alone may omit salient aspects of a selection process. Therefore there appears to be scope for examining applicant perceptions using more in-depth qualitative methods, not only to provide insight into the candidate's perspective (Marcus, 2003) similar to that used by Gilliland (1995), but also to inform the development of theoretical models and quantitative survey research (Ryan & Ployhart, 2000; Rynes, 1993).

Thirdly, findings may also imply that there may be a different mechanism through which applicants form perceptions to selection methods and processes. Indeed, it has been suggested that perhaps applicants do not always view selection through a justice lens (Hausknecht et al, 2004), for example one could go through a difficult selection process and not like it, but equally may not necessarily view it as unfair. Applicant perception research has emphasised the examination of perceptions from a justice perspective; but it appears that there may be more about a selection process to which candidates react. Therefore, the findings from the present study may imply that it is necessary to expand this theoretical scope for a better understanding of the phenomenon of fairness (e.g. Ployhart & Harold, 2004).

Finally, from a practical perspective, these findings suggest that it is important for organisations to understand their applicant pool since an important determinant of

applicant perceptions is the candidate's educational background. This is something that might have an impact on the type of selection methods that candidates have previously experienced, although this claim cannot be substantiated with this sample since this information was not sought from participants. Nevertheless, if organisations understand their applicant pool in terms of background variables (such as education) they are in a better position to make choices about the format of the selection process including how much and what information to give candidates prior to selection (Schleicher et al, 2006). Once again, by gaining a clearer conceptual picture of the way in which candidates react to selection methods and selection processes, recruiters may be able to design targeted interventions to improve perceptions (Schmitt & Chan, 1999). This may be particularly important in the present context given that there are two distinct types of candidates and it may mean that some groups need specific information about the selection process and methods (including a rationale for their use) more than other groups.

4.4.5 Limitations and next steps

There are a number of potential limitations of the study presented in this study that should be noted. Firstly, one could argue that perception measures should have been collected both before and after completing the selection methods because otherwise participants' base-rate for these variables cannot be controlled for, which might confound the ability to isolate the effects of applicant characteristics (Chan & Schmitt, 2004; Schmitt & Chan, 1999). However, in this instance pre-test perceptions may have been somewhat meaningless, because it would have been impossible for candidates to assess job relatedness of the methods and their experience during selection *before* the process was completed. Nonetheless, it may be important to access information relating to pre-testing hiring expectations, since research (e.g. Anseel & Lievens, 2009) has shown this to be positively related to other applicant perceptions.

Secondly, the negatively skewed data could have resulted in some of the non-significant findings. Lack of variance in data can be a problem; in particular, regression analyses can be less accurate when data has a restricted range (Aron &

Aron, 2002). Furthermore, low power in some of the ANOVAs could have resulted in an increased occurrence of type II errors. Indeed, it is possible that skewed data occurred as a result of impression management or self-selection, thereby weakening the observed effects (Hausknecht et al, 2004). However, in reporting results that approached significance and by checking the power of the ANOVAs, it is hoped that type II errors were minimised. It should also be noted that having skewed data is not an unusual phenomenon in applicant perception research; as Truxillo et al (2004) point out, most participants' ratings on perception scales tend to be on the positive side, with very few participants endorsing the negative end of the scale.

Thirdly, the findings in this study are specific to the public health selection process, which may limit the generalisability of these findings. That said, the psychometric tests were 'off the shelf' developed for use in a variety of organisational contexts including commercial, industrial and public sector organisations (Pearson, 2008) and as such, findings may generalise across different organisational contexts. Indeed, it is relatively common to find selection processes with psychometric tests, interviews and group exercises (Zibarras & Woods, 2010) and so to the extent that other selection processes are similar; these results are likely to be generalisable.

Finally, whilst the use of questionnaires in studies offers significant advantages from a researcher's perspective, such as the ease of administration and consistency across participants (Robson, 2006); they do have considerable draw backs because attention is focused on topics that the researcher considers important but are not necessarily salient to the applicants themselves. Indeed, it cannot always be assumed that the researcher and participants give the same meaning to key variables (Bartunek & Seo, 2002). This may be the reason why some of the procedural factors measured in this study did not in fact predict any of the outcomes, despite previous research suggesting that they would (e.g. Bauer et al, 2001). Questionnaire research methods assessing pre-defined variables are often based on the implicit assumption that applicants experience selection processes based on their individual experiences (Bartunek & Seo, 2002); but this leaves out the dynamics of sense-making and the influence of social cues that are likely to occur during selection (Ployhart & Harold, 2004). Since one aim of this thesis

is to focus on the applicant's perspective and their experiences of the selection process, a later study (4) examines the selection process from the candidate's point of view rather than using pre-established questionnaires. However, before the study using qualitative data collection methods is presented, the next chapter is a further quantitative examination of job relatedness of the selection methods used in studies 1 and 2.

4.4.6 Summary

This study built on the previous study by exploring other aspects of procedural justice in addition to focusing on job relatedness. Overall, results from this study firstly showed that at two stages of a selection process, job relatedness and procedural justice perceptions positively influenced fairness. However, contrary to expectations, only some of the procedural justice rules were significant predictors: job relatedness-content of the selection methods, chance to perform and communication. Potentially, this indicates that procedural justice rules were not salient to the applicants and that further qualitative research may be needed to determine which aspects of a selection process are. Secondly, findings suggested that cognitive ability did not add incremental variance in predicting fairness perceptions, after controlling for procedural justice rules. However, cognitive ability did have an influence when examined in conjunction with candidate educational background interacted, where interactions were found showing that these variables jointly influenced the way in which procedural justice perceptions were rated.

Before turning to a qualitative examination of applicant fairness perceptions in a subsequent study, the next study adopts a quantitative cross-sectional research design. Essentially, Study 3 uses the samples from the previous two studies and examines the extent to which there are differences in perceptions of job relatedness for different selection methods used at different stages of selection processes. Furthermore, ethnicity and gender were explored as a potential determinant of these perceptions.

Chapter 5: An investigation of job relatedness perceptions of selection methods in three field-based samples

5.1 Introduction

This chapter presents research examining applicant perceptions of a number of different selection methods used in different selection processes and stages of selection; and also explores the extent to which there are demographic group differences. As mentioned in the literature review, a key determinant of fairness perceptions relates to the characteristics of selection methods themselves, with variability found in the perceived fairness of different methods (e.g. Anderson & Witvliet, 2008). Several studies (e.g. Steiner & Gilliland, 1996) have shown that generally interviews, CVs and work samples are rated most favourably, whilst personal contacts, graphology and honesty tests are rated least favourably. However, one potential limitation of these studies is that they mostly involved student samples rating hypothetical scenarios. This may limit the external validity of these findings since students may have restricted knowledge of some selection methods presented in these studies (Marcus, 2003). Furthermore, there have been fewer studies examining perceptions of other types of selection methods, such as SJTs (Anderson & Golsti, 2006; Carless, 2003). There are also inconsistent findings relating to whether gender or ethnicity are determinants of applicant perceptions (Chan et al, 1998b; Schmit & Ryan, 1997).

The three samples used in this study were drawn from the General Practice (GP) and Public Health (PH) selection processes reported in studies 1 and 2 (Pashayan et al, 2007; Patterson et al, 2009a; Patterson et al, 2009b). In the present study, samples 1 and 2 were two sets of candidates applying for general practitioner posts in the UK National Health Service (NHS). As reported in study 1, the General Practice (GP) selection process comprised three stages. Stage 1 eligibility checks; Stage 2 shortlisting using two tests: a Job Knowledge Test (JKT) and a Situational Judgement Test (SJT); and Stage 3 is an assessment centre which includes three selection methods – a group exercise (GE), a simulated patient consultation (SPC) and a written exercise (WE)

(Patterson et al, 2009a). Sample 1 used applicants from the shortlisting phase (stage 2), whilst Sample 2 used applicants from the selection centre phase (stage 3); this is depicted in Figure 5.1. For both samples, job relatedness perceptions of the selection methods were measured immediately after testing.

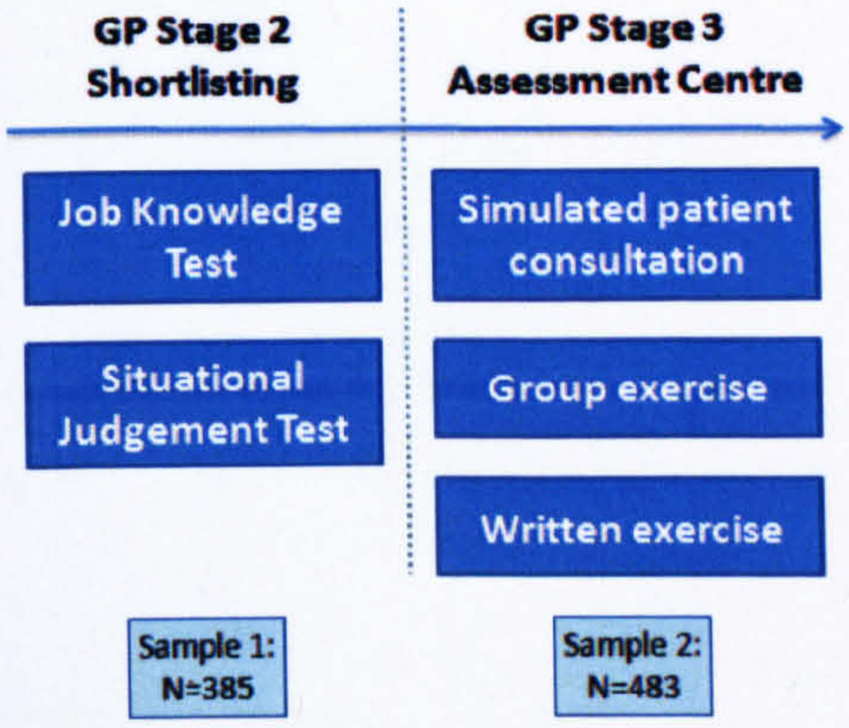


Figure 5.1: GP selection process and associated samples (1 and 2)

Sample 3 used candidates applying for Public Health (PH) posts in the UK NHS, during the 2009 selection process. Stage 1 included eligibility checks and the completion of an online application form; Stage 2 entailed shortlisting via two tests, a Numerical Reasoning (NR) and a Critical Thinking (CT) test; and Stage 3 entailed an assessment centre involving a series of four panel interviews and a group exercise (Pashayan et al, 2007). Sample 3 examined applicants' job relatedness perceptions of the selection methods immediately after shortlisting (stage 2) and the assessment centre (stage 3); this is depicted in Figure 5.2.

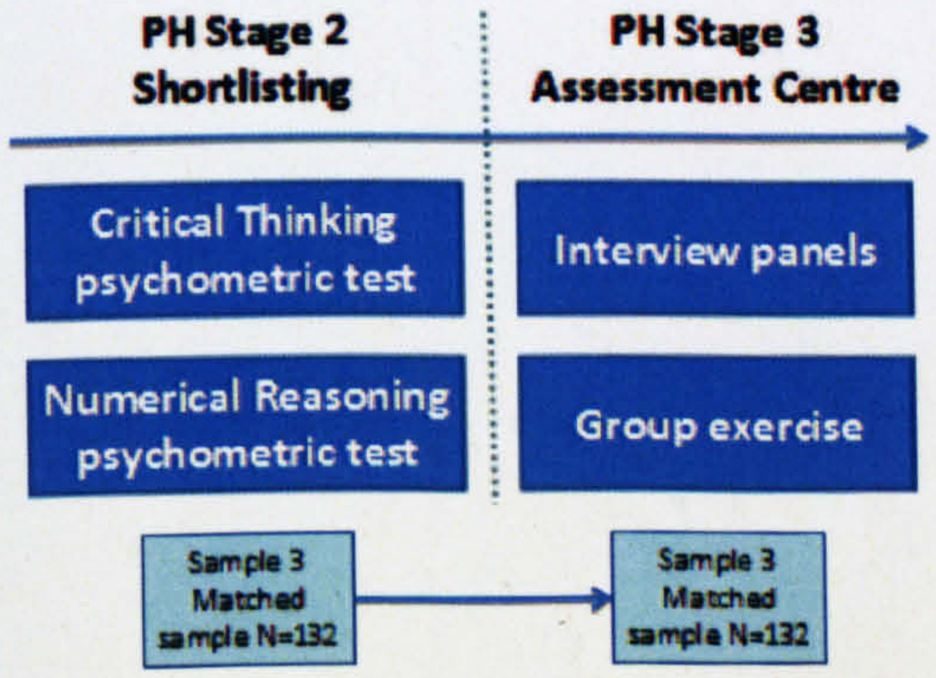


Figure 5.2: PH selection process and associated sample 3

5.1.1 Perceived job relatedness of selection methods

The purpose of this study was to examine candidates' job relatedness perceptions to the selection methods outlined above. As outlined in study 1, perceptions of job relatedness are focused on, rather than other justice principles for three reasons. Firstly because job relatedness is thought to be the justice perceptions most strongly related to fairness (e.g. Gilliland, 1993; 1994); secondly, because many of the selection methods were administered to applicants in large group sessions and therefore the other justice principles in Gilliland's (1993) model were likely to be restricted in their effects due to lack of variance (Chan et al, 1998a); and thirdly because Chan and Schmitt (2004) suggest that questionnaires should direct applicants to aspects of the selection method where they would naturally focus their perceptions. In the present selection contexts it was anticipated that job relatedness would be particularly salient for candidates because the selection methods were recently-developed and relatively new methods for selection assessment in both selection processes (Patterson et al, 2009; Pashayan et al, 2007). The methods for each selection process were based on an extensive analysis of the General Practitioner (Patterson, Ferguson, Lane, Farrell, Martlew & Wells, 2000; Patterson et al, 2005; Patterson et al, 2009a) and Public Health specialist roles (Pashayan et al, 2007; Williams, Duff, Patterson, Kerrin, Zibarras & Mason, 2009)

In Sample 1 the Job Knowledge Test (JKT) assessed clinical knowledge whilst the Situational Judgement Test (SJT) assessed non-clinical domains such as empathy and integrity. Previous research (e.g. Rynes & Connerly, 1991) suggests that methods are considered less job-relevant when items appear 'abstract'. Furthermore, participants have less favourable perceptions towards less commonly-used types of selection method, possibly due to the unfamiliarity with the format (Ryan & Huth, 2008; Stees & Turnage, 1992; Truxillo & Hunthausen, 1999). Truxillo and Hunthausen (1999) found that a video-based test format was considered less fair and valid than a paper-and-pencil multiple choice test. The authors suggest that because the video format was unfamiliar, applicants may have felt uncomfortable with it and therefore had negative perceptions. In the present context, since the JKT measures clinical problem solving

knowledge, which is clearly and obviously related to the role of GP and requires a clear right or wrong answer, it is likely to be a more familiar test format than the SJT. On the other hand, not only does the SJT measure the domains of empathy and integrity (Patterson et al, 2000), which may not be so obviously related to the role of GP; but it also has a less familiar response format where candidates choose an appropriate response from a list of alternatives. Therefore, due to the candidates' unfamiliarity with this method of selection, it is plausible that the SJT will appear less job-related than the JKT. Therefore the hypothesis for Sample 1 is as follows:

Hypothesis 1: The JKT will be perceived to be significantly more job-related than the SJT.

In Sample 2, the simulated patient consultation (SPC) is a high-fidelity selection method that closely resembles the work conditions (Patterson et al, *submitted*). For candidates, this type of high fidelity assessment is likely to have high face validity (Motowidlo et al, 1990; Wyatt, Pathak & Zibarras, 2010) and consequently will be judged to be more job relevant than either the group or written exercise. Therefore the hypothesis for Sample 2 is as follows:

Hypothesis 2: The SPC will be perceived to be significantly more job-related than either the GE or the WE.

5.1.2 Job relatedness-content and job relatedness-predictive

From an applicant's perspective, job relatedness refers to the extent to which a method appears to measure aspects of the job that are important for performance. This is related to both face validity and perceived predictive validity (Macan et al, 1994; Elkins & Philips, 2000), which has been defined as applicant perceptions regarding the extent to which the selection method predicts future job performance (Smither et al, 1993). Researchers therefore suggest that job relatedness is complex and different types of selection methods might be perceived as job relevant on one aspect but not the other (e.g. Bauer et al, 1998; Truxillo et al, 2001; Gilliland, 1993). Gilliland's (1993) model

distinguishes between perceived *content validity* (that is, face validity) and *perceived predictive validity* and empirical support for this distinction has been shown in previous studies. For example, Smither et al (1993) found that ten of their items measuring applicant perceptions factored into face and predictive validity components. Specifically, they found a moderate correlation between face and predictive validity components (0.36), whilst the internal reliabilities of the two scales were much higher at 0.86 and 0.83 respectively. This provides evidence of discriminant validity between the two components. Similarly, in the development of the SPJS, Bauer et al (1998) found that exploratory factor analysis revealed two factors for job-relatedness: *job relatedness-content* and *job relatedness-predictive*. Finally, in field-based empirical research, Truxillo et al (2001) found that two selection methods – a written multiple choice and a video-based test – were differently rated on job relatedness. The video-based test was rated more positively than the multiple choice test on job relatedness-predictive; but there was no significant difference between the two on job relatedness-content.

Therefore in Sample 3, the job relatedness of four selection methods was explored by focusing on both the perceived content and perceived predictive validity of the different methods. Studies have generally found that cognitive ability tests are rated less positively than other methods; whilst interviews and work samples are among the most positively perceived (e.g. Elkins & Phillips, 2000; Lievens et al, 2003; Moscoso & Salgado, 2004; Nikolaou & Judge, 2007; Steiner & Gilliland, 1996). In the present context, the methods used during the assessment centre are likely to be perceived as clearly related to the PH role. This is because the interview questions correspond directly to the public health person specification and involve actual public health-related scenarios (Pashayan et al, 2007). Similarly, the group exercise (GE) was developed specifically for use in the public health selection process and is based on a scenario that trainees are likely to encounter early on during their training. Conversely the numerical reasoning (NR) and critical thinking (CT) tests were 'off the shelf' tests developed for use in a variety of organisational contexts including commercial, industrial and public sector organisations (Pearson, 2008). They were general measures of aptitude, and did not contain items that pertained specifically to public health, and

therefore were low fidelity selection methods. It is likely therefore that both the selection methods used in the assessment centre – the interview and group exercise – would be considered more job relevant on both aspects (content and predictive) than either of the two aptitude tests. Thus, the third hypothesis was set as follows:

Hypothesis 3a: The group exercise and interview will be perceived to be significantly more job related in terms of content, than either of the critical thinking or numerical reasoning psychometric tests.

Hypothesis 3b: The group exercise and interview will be perceived to be significantly more job related in terms of perceived predictive validity, than either of the critical thinking or numerical reasoning psychometric tests.

It is also conceivable that each selection method might be viewed as differentially job relevant; that is, a particular method might be viewed as more *content* job related, than *predictive* job related (and vice versa). Therefore this study explores whether this is the case with the selection methods used in Sample 3, and poses the following research question:

Research question 1: Are the public health selection methods (CT, NR, GE and Interview) perceived differently on the two aspects of job relatedness (content and predictive)?

5.1.3 Gender and ethnicity as determinants of applicant perceptions?

It is plausible that distinct demographic groups differentially perceive the selection methods examined in this study. In particular, the present study investigates how demographic variables relating to gender and ethnicity influence perceptions of job relatedness measured in this study.

Gender represents a widely-examined demographic variable in organisational research (Viswesvaran & Ones, 2004) and research has found gender differences in some work-

related attitudes (e.g. Davey, 1998). However, as outlined in the literature review (section 1.4.2), the research findings specifically relating to fairness are mixed: some research has found gender differences (e.g. Chapman & Ployhart, 2001) where women react more negatively than men to some types of unfairness; and other research has found no gender differences in fairness perceptions of selection methods (e.g. Carless, 2006; Ispas et al, 2010). A further study (Viswesvaran & Ones, 2004) found only one gender difference where women placed less importance on the need for consistency across applicants than men. Given these relatively inconsistent findings, this study explores whether there are gender differences relating to perceptions of job relatedness of the selection methods used in three samples. As such, the following research question is posed:

Research question 2: Is gender a determinant of applicant perceptions: that is, are there Male and Female group differences in relation to job relatedness perceptions for selection methods in Samples 1, 2 and 3?

As outlined in the literature review (section 1.4.2), empirical research has shown ethnic group differences in test-taking attitudes (e.g. Arvey et al, 1990; Schmit & Ryan, 1997), test perceptions (e.g. Schmitt et al, 2004) and perceptions of importance of various aspects of selection methods (e.g. Viswesvaran & Ones, 2004). Generally this research has indicated that majority groups react more positively to selection methods than do minority groups. However, as was noted, much of the research examining ethnic group differences has focused on test attitudes and has not been specifically related to perceptions of procedural justice. Indeed, two studies (Chan et al, 1998b; Zibarras & Patterson, 2009) that have focused on procedural justice perceptions have found no ethnic group differences. Furthermore, Hausknecht et al's (2004) meta-analysis concludes that there is a near zero relationship between applicant perceptions and ethnic characteristics. Since there are few studies that have examined ethnic group differences in relation to procedural justice characteristics, the present study aims to explore whether ethnicity is a determinant of job relatedness for the selection methods outlined in the preceding sections. Therefore the following research question is posed:

Research question 3: Is ethnicity a determinant of applicant perceptions: that is, are there White and Non-White ethnic group differences in relation to job relatedness perceptions for selection methods in Samples 1, 2 and 3?

5.2 Sample 1: Method

5.2.1 Participants

Three hundred and eighty-five candidates applying for General Practice (GP) specialty training took part in this research during the shortlisting stage of selection. Forty percent of the participants were female, 54% were male (data was missing from 6%); their mean age was 30.3 years (SD = 5.4). The participants' ethnic origins were as follows: White (47%), Asian (35%), Black (4%), Mixed (2%), Chinese (2%) and other ethnic groups (4%); data was missing from 6% of the participants.

5.2.2 Measures

The questionnaire contained demographic questions including gender, age, ethnic origin and measured job relatedness perceptions. The measure of job-relatedness was the same as that used in Study 1 (see section 1 in Appendix 9.1). It was based on items from Bauer et al (2001) and Gilliland et al (2001) but adapted to fit a medical context. For example an original item from Gilliland et al (2001) was: *"The methods this company used to screen applicants were appropriate"*, and this was adapted to read: *"The content of the Job Knowledge test seemed appropriate for the entry level I was applying for"*. Therefore in Sample 1, there were four items measuring job relatedness of the Job Knowledge Test (JKT) and four items measuring job relatedness of the Situational Judgment Test (SJT), e.g. *"The content of the Job Knowledge Test was relevant to the role of general practitioner"*. All items were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

5.2.3 Procedure

Three hundred and fifty-eight participants were recruited from a pool of applicants for entrance into GP in the UK, who had given their consent to be involved in this

research. Applicants attended one of 15 testing centres throughout the UK where they completed two shortlisting tests: a Job Knowledge Test (JKT) and a Situational Judgment Test (SJT). Candidates were invited to participate in the research on a voluntary basis and were assured that information would be used for research purposes only and not in any selection decision. Immediately after candidates had completed the two shortlisting assessment papers they completed the paper-based applicant perception questionnaire which was distributed by trained invigilators.

5.3 Sample 1: Results

To ensure that assumptions for parametric tests were not violated, variables were checked to ensure that distributions were normal. All variables were normally distributed, as indicated by histograms, skew and kurtosis values (Field, 2005). For the t-tests and ANOVAs reported below, Levene's test for equality of variances was checked. In all instances, this was non-significant, indicating that the assumption of homogeneity of variances had not been violated (Field, 2005).

To test Hypothesis 1, that applicants would perceive the JKT to be more job relevant than the SJT, a paired samples t-test was used with effect size signified by *r*. Findings indicated that applicants perceived the Job Knowledge Test ($M = 15.68$, $SE = .17$) to be significantly more job relevant than the Situational Judgment Test ($M = 13.93$, $SE = .18$, $t\,(365) = 9.83$, $p < .001$, $r = .46$). Therefore Hypothesis 1 is supported.

In order to test whether there were demographic group differences in perceptions of the JKT and SJT, the minority ethnic groups were combined (that is, Asian, Black, Mixed, Chinese and 'Other') to form a "minority ethnic" or "non-white" group. Thus two 2X2 (gender X ethnicity) factorial ANOVAs were conducted. For the JKT, there were no main effects for either ethnic origin, $F(1,334) = .01$, $p = .93$, or gender, $F(1,334) = 1.09$, $p = .30$; and no interaction effects, $F(1,334) = 2.71$, $p = .10$. For the SJT, there were no main effects for either ethnic origin, $F(1,327) = 3.43$, $p = .08$, or gender, $F(1,327) = .02$, $p = .88$; and no interaction effects, $F(1,327) = .01$, $p = .94$. These

findings suggest that gender and ethnicity are not determinants of job relatedness perceptions in this sample.

5.4 Sample 2: Method

5.4.1 Participants

Four hundred and eighty three candidates applying for GP specialty training took part in this research during the assessment centre stage of selection. Forty-seven percent of the participants were male, 52% were female (data was missing from 1%); their mean age was 28.9 years (SD = 4.41). The participants described themselves as: White (56%), Asian (33%), Black (1%), Mixed (3%), Chinese (2%) and other ethnic groups (3%); data was missing from 2% of the participants.

5.4.2 Measures

The questionnaire contained demographic questions including gender, age and ethnic origin; and measured job relatedness perceptions. The same measure of job relatedness perceptions was used as per Sample 1 (see section 1 of the questionnaire shown in Appendix 9.3). Thus, there were four items that measured the job relatedness of each of the group exercise (GE); the simulated patient consultation (SPC), and the written exercise (WE); e.g. *"The content of the simulated patient consultation was clearly related to the role of general practitioner"*. Items were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

5.4.3 Procedure

Four hundred and eighty-three participants were recruited from a pool of applicants for entrance into GP, having given their consent to be involved in this research. This was the third and final stage of the selection process and applicants attended assessment centres throughout the UK where they completed three selection method exercises: a group exercise; a simulated patient consultation, and a written exercise. Candidates were invited to participate in the research on a voluntary basis and were assured that information would be used for research purposes only and not in any selection decision.

Paper-based questionnaires were collected from applicants immediately after candidates had completed the selection exercises, distributed by trained invigilators.

5.5 Sample 2: Results

To ensure that assumptions for parametric tests were not violated, variables were checked to ensure that distributions were normal. All variables were normally distributed, as indicated by histograms, skew and kurtosis values (Field, 2005). For the t-tests and ANOVAs reported below, Levene's test for equality of variances was checked. In all instances, this was non-significant, indicating that the assumption of homogeneity of variances had not been violated (Field, 2005).

To test Hypothesis 2 that the simulated patient consultation (SPC) would be perceived as significantly more job related than both the group exercise (GE) and written exercise (WE), a one way repeated measure ANOVA was conducted (Mauchley's test was non-significant (p = .15) which meets the condition of sphericity). Findings indicated a significant main effect for type of selection method on job relatedness perceptions F(1, 475) = 24990.50, p < .001, η_p^2 = .98. Paired samples t-tests were used to follow up these findings, applying a Bonferroni correction so that all effects are reported at the .016 significance level. Effect sizes are signified by r in the results. *Post hoc* tests indicated that applicants perceived the SPC (M = 17.42, *S.E.* = .12) to be significantly more job relevant than both the GE (M = 15.89, *S.E.* = .13, t(475) = -12.48, p < .001, r = .50), and the WE (M = 15.44, *S.E.* = .13, t(480)= 15.15, p < .001, r = .57). There was no significant difference between the group and written exercises. This supports Hypothesis two.

In order to test whether there were demographic group differences in perceptions of the three selection methods, SPC, GE and WE, a series of 2X2 factorial between subjects ANOVAs were conducted; note that as with Sample 1, the minority ethnic groups were combined to form one "non-white" group. For the simulated patient consultation, there were no main effects for either ethnicity, F(1,452) = .82, p = .37, or gender, F(1,452) = .80, p = .37; and no interaction effects, F(1,452) = .67, p = .41. For the group exercise,

there were no main effects for ethnicity, $F(1,449) = 1.75$, $p = .19$, or gender, $F(1,449) = 3.23$, $p = .08$; and no interaction effects, $F(1,449) = .01$, $p = .94$. Finally, for the written exercise there were no main effects for either ethnicity, $F(1,454) = .23$, $p = .63$, or gender, $F(1,454) = 3.50$, $p = .07$; and no interaction effects, $F(1,454) = .09$, $p = .77$. These findings suggest that ethnicity and gender are not determinants of job relatedness perceptions in this sample.

5.6 Sample 3: Method

5.6.1 Participants and procedure

Participants were recruited from the applicants for selection into Public Health specialty posts. Questionnaires were collected from participants immediately following shortlisting and immediately following the assessment centre. It was possible to match participants across the two time points using their ID numbers, and therefore a matched sample was used in order to compare job relevance perceptions across both selection stages.

Time 1 (T1) - shortlisting: The shortlisting stage of selection into PH involved candidates completing two psychometric tests: a Critical Thinking (CT) test lasting 50 minutes and a Numerical Reasoning (NR) test lasting 40 minutes. Immediately after candidates had completed the tests they were asked to complete a paper-based applicant perceptions questionnaire distributed by trained invigilators. Four hundred and fifty-five out of 460 applicants completed the T1 questionnaire (representing a 98% response rate).

Time 2 (T2) – assessment centre: One hundred and ninety five applicants were selected for the assessment centre, where they took part in a series of four panel interviews and a group exercise. Once candidates had finished the assessment centre exercises they were asked to complete a paper-based questionnaire, distributed by trained invigilators. A total of 149 candidates responded to the T2 questionnaire (76% response rate).

Matched data

Participants' ID numbers were used to match data across the two time points. Matched data was available for 132 participants[9] who responded to both questionnaires (some cases could not be matched due to missing or incomplete ID numbers). Of the 132 participants, sixty-six percent were female, 30% were male (data missing for 4%); they had a mean age of 32.8 years (S.D. = 6.45). Sixty-nine percent were White, 13% were Asian, 5% were Black, 6% were Mixed, 2% were Chinese and 3% were from other ethnic groups (data missing for 2%). All candidates were invited to participate in the research on a voluntary basis and assured that information would be used for research purposes only and not be used in any selection decision.

5.6.2 Measures

The first section of the questionnaire contained demographic questions including gender, age, and ethnic origin. The job relatedness questions were from the selection procedural justice scale (SPJS) developed by Bauer and colleagues (2001). All responses for shortlisting and assessment centre were rated on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Shortlisting job relatedness (content and predictive): Two items related to job relatedness-content, and two items related to job relatedness-predictive for each of the CT and NR tests. An example item from the job relatedness-predictive scale was: *"Doing well on the Numerical Reasoning paper means a person can do the public health job well"* and an example item from job relatedness-content scale was: *"The content of the Critical Thinking paper was clearly related to public health"*. See section 1 of the questionnaire shown in Appendix 9.5.

Assessment centre job relatedness (content and predictive): Two items related to job relatedness-predictive for interview panels[10] and group exercises, and two items related

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[9] Note that this is the same sample of applicants as presented in Study 2.

[10] Pilot work in 2008 suggested that applicants perceived panels similarly with no differences in perceptions between each panel. Therefore, perceptions were asked for regarding the panels generally, rather than each interview panel separately.

to job relatedness-content. An example item from the job relatedness-predictive scale was: *"A person who scored well on the Interviews will be a good public health trainee"* and an example item from job relatedness-content scale was: *"It would be clear to anyone that the Group Exercise is related to the public health trainee position"*. See section 1 of the questionnaire shown in Appendix 9.6.

5.7 Sample 3: Results

Hypotheses 3a and 3b stated that the selection tests would be rated as differentially fair, and specifically that the interview and group exercise used during the assessment centre would be rated as more job related (both content and predictive) than the psychometric tests used during shortlisting. A research question was also posed to determine whether each test was considered more or less job related on each aspect – content and predictive.

5.7.1 Job relatedness-content

Due to significantly skewed data (details of which were outlined in Study 2), Friedman's ANOVA was used (a non-parametric version of repeated measures ANOVA; Field, 2005) to test whether there were differences in job related (JR)-content for four selection methods used. Friedman's ANOVA indicated that candidate's JR-content ratings for the selection methods was significantly different (χ^2 (3) = 234.54, p < .001). *Post hoc* Wilcoxon signed-rank tests were used to follow up this finding, with a Bonferroni correction applied so all effects are reported at a .008 level of significance. Effect sizes are signified by *r* in the results. Job relatedness-content for the NR test (*Mdn* = 5.00) was rated significantly lower than the CT test (*Mdn* = 6.00, *T* = 864.50, $p < .001$, $r = -.41$); the Interview (*Mdn* = 9.00, *T* = 249.50, $p < .001$, $r = -.77$) and the GE (*Mdn* = 8.00, *T* = 231.50, $p < .001$, $r = -.79$). Job relatedness-content for the CT test was rated significantly lower than the Interview (*T* = 359.00, $p < .001$, $r = -.74$) and the GE (*T* = 285.50, $p < .001$, $r = -.76$). There was no significant difference between ratings of job relatedness-content for the Interview and the GE (*T* = 1007.00, $p = .11$, $r = -.14$). This indicates that the numerical reasoning psychometric test is perceived to be the least job related in terms of content, followed by critical thinking.

Although there was no perceived difference between the Interview and group exercise, they were both perceived to be more job-related in terms of content than either of the two tests. This supports Hypothesis 3a.

5.7.2 Job relatedness-predictive

Friedman's ANOVA was also used to test whether there were differences in JR-predictive for each of the four selection methods used; this indicated that candidate's JR-predictive ratings for the selection methods was significantly different (χ^2 (3) = 122.51, p < .001). *Post hoc* Wilcoxon signed-rank tests were used to follow up this finding, with a Bonferroni correction applied so all effects are reported at a .008 level of significance with effect sizes signified by *r*. Job relatedness-predictive for the NR test (*Mdn* = 5.00) was rated significantly lower than the CT test (*Mdn* = 6.00, *T* = 441.00, *p* < .001, *r* = -.37); the Interview (*Mdn* = 7.00, *T* = 588.50, *p* < .001, *r* = -.65) and the GE (*Mdn* = 7.00, *T* = 641.50, *p* < .001, *r* = -.62). Job relatedness-predictive for the CT test was rated significantly lower than the Interview (*T* = 916.50, *p* < .001, *r* = -.52) and the GE (*T* = 989.00, *p* < .001, *r* = -.46). There was no significant difference between ratings of job relatedness-predictive for the Interview and the GE (*T* = 1334.00, *p* = .77, *r* = -.02). This indicates that NR is perceived to be the least job related in relation to predictive validity, followed by CT. Although there was no perceived difference between the Interview and GE, they were both perceived to be more job-related in terms of perceived predictive validity than either of the two tests. This supports Hypothesis 3b.

5.7.3 JR content vs. JR predictive within each test

For research question 1, Wilcoxon signed ranks were used to test for differences in job relatedness within each of the selection methods. Interviews were rated higher on JR-content (*Mdn* = 9.00) than they were on JR-predictive (*Mdn* = 7.00, *T* = 396.00, *p* < .001, *r* = -.70) and the Group Exercise was rated higher on JR-content (*Mdn* = 8.00) than on JR-predictive (*Mdn* = 7.00, *T* = 277.00, *p* < .001, *r* = -.68). There were no significant differences for the aspects of job relatedness for either than CT test (*T* = 1893.00, *p* = .25, *r* = -.10) or the NR test (*T* = 2106.00, *p* = .90, *r* = -.01). This

indicates that both the GE and Interview are perceived to be more content job-relevant than predictive job-relevant. Conversely, the two tests are perceived to be equally job relevant on both aspects (content and predictive).

5.7.4 Demographic group differences

In order to test whether there were demographic group differences in perceptions of the four selection methods on both perceived content and predictive validity, it was necessary to run a series of 2X2 ANOVAs. Once again, the minority ethnic groups were combined to form one "non-white" group. As explained in Study 2, ideally normal data is necessary, however, the ANOVA *F* test is known to be robust (e.g. Levine & Dunlap, 1982; Donaldson, 1968) and thus these were used in the following analyses. Table 5.1 displays the findings; results show no significant main effects for gender and ethnicity and no interactions between the two. This therefore suggests that ethnicity and gender are not determinants of job relatedness perceptions in this sample.

Table 5.1: Sample 3 ANOVA results for demographic group differences

	Gender		Ethnicity		Interaction	
	F	*p*	*F*	*p*	*F*	*p*
Shortlisting						
CT-content	0.15	.70	1.46	.23	0.02	.90
CT-predictive	0.10	.75	1.80	.18	1.80	.18
NR-content	0.02	.88	0.05	.82	1.68	.20
NR-predictive	0.10	.76	0.08	.78	0.42	.52
Assessment centre						
Int-content	0.12	.73	0.09	.77	2.25	.10
Int-predictive	0.07	.80	0.08	.78	1.58	.21
GE-content	1.76	.19	0.20	.66	1.09	.30
GE-predictive	0.04	.85	0.27	.60	0.54	.46

Note. df for all ANOVAs = 1,121. CT = Critical Thinking test; NR = Numerical Reasoning; Int = Interview; GE = Group

5.8 Discussion

In Sample 1 – the shortlisting stage of the GP selection process – results indicated that applicants perceived the job knowledge test (JKT) to be more job relevant than the situational judgment test (SJT). This may in part be due to the fact that the SJT was a recently-introduced selection method (Patterson et al, 2009), that assesses non-clinical, and possibly less familiar, domains such as integrity. In this context applicants are also likely to be less accustomed to SJT-style items and response formats. Consequently the SJT may appear to be less relevant than the JKT which assesses clinical knowledge and requires a clear right or wrong answer. Indeed this supports previous research (Truxillo & Hunthausen, 1999) where candidates had negative perceptions of unfamiliar test formats; and other research (Smither et al, 1993) suggesting that role-focused items are perceived as more job related than "abstract" items. Interestingly, these findings may pose what has been termed a 'justice dilemma' (Cropanzano & Konovsky, 1995) because the method with the highest criterion-related validity, the SJT (Patterson et al, 2009a; Patterson et al, 2009b), is the one that is perceived as less job relevant (Marcus, 2003). This suggests that interventions may be needed to inform candidates of the job relevance of newly-introduced and less familiar selection assessment methods.

In Sample 2 – the assessment centre stage of the GP selection process – results indicated that the simulated patient consultation (SPC) was perceived to be the most job-related selection method when compared to the group exercise and written exercise. In this context, the SPC is a high fidelity selection method as it closely resembles the work conditions (Chan & Schmitt, 1997). GPs give patient consultations on a daily basis and therefore this selection method gives candidates a realistic preview of the GP role (Patterson et al, *submitted*). It is perhaps not surprising therefore that the SPC is perceived as the most job related selection method in the assessment centre, since research suggests that high face validity is positively related to job relatedness perceptions (e.g. Rynes & Connerly, 1993; Moscoso & Salgado, 2004).

In Sample 3, findings indicated that candidates perceived the psychometric tests used at the shortlisting stage of the PH selection process, to be less job-related than the

selection methods used at the final stage assessment centre. In fact, the same pattern of results emerged for job relatedness in terms of perceived content and perceived predictive validity: the numerical reasoning test was considered the least job related, followed by the critical thinking test, and the group exercise and interview were considered the most job related (with no difference between the two). This supports previous research: on the whole interviews and work samples are positively received by candidates; whilst psychometric tests, as low fidelity methods, are less so (e.g. Carless, 2006; Elkins & Phillips, 2000; Lievens et al, 2003; Moscoso & Salgado, 2004; Nikolaou & Judge, 2007). Nevertheless, all findings outlined above should be tempered by the consideration that in absolute terms, perceptions were generally positive to all selection methods since the overall mean job relatedness for each method was greater than the scales' mid-points.

In examining the aspects of job relatedness (content and predictive) within each test, results suggested that selection methods themselves can be seen as more fair on some dimensions than others (e.g. Truxillo et al, 2001). In Sample 3, results suggested that the psychometric tests were perceived to be equally job related in terms of both content and perceived predictive validity; whilst the group exercise and the interview were perceived to be more job-related in terms of content than perceived predictive validity. This suggests that applicant perception research should examine both aspects of job relatedness in selection methods.

Finally, this research has shown no demographic group differences for perceptions of job relatedness for all the selection methods examined in this study. Thus, ethnicity and gender are not determinants of job relatedness perceptions in these samples. Indeed, given that these results were consistent across three different samples covering different selection processes and different stages of selection using a variety of methods; it is plausible that these findings may be generalisable. This supports Hausknecht et al's (2004) assertion that there is a near zero relationship between applicant perceptions and ethnicity. It should be noted however, that unlike previous research where the focus has been on Black-White ethnic group differences (e.g. Chan & Schmitt, 1997), the present research examined White versus non-White group

differences, where the non-White group was primarily composed of Asians. It may follow therefore that the present thesis is reflective of White versus Asian group differences. Nevertheless, these findings are positive from a practical perspective because no one particular group has more negative (or positive) perceptions of any of the selection methods.

5.8.1 Implications

This study has a number of implications relating to research and practice. Firstly, in relation to research, the field-based findings in this study are in fact relatively similar to those found in student-based samples. Indeed Sample 2 found that high fidelity work samples are perceived to be most job-relevant, whilst Sample 3 found psychometric tests to be received less positively than work samples supporting previous research (e.g. Elkins & Phillips, 2000; Hausknecht et al, 2004; Lievens et al, 2003; Moscoso & Salgado, 2004; Steiner & Gilliland, 1996). This implies that students may in fact rate hypothetical selection scenarios in a similar way to applicants experiencing these methods in operational selection settings, although further research comparing applicant and student samples would be needed to substantiate these findings. Nevertheless findings in this study may lend some external validity to previous lab-based settings.

Secondly, findings suggest that neither ethnicity nor gender are determinants of job relatedness perceptions, supporting previous meta-analytic findings (Hausknecht et al, 2004). Indeed, given the consistent findings across three samples, it is plausible that these findings are generalisable. This is also important from a practical point of view, because it suggests that job relatedness is not a function of ethnicity or gender for these particular selection methods.

Thirdly, results suggest that it is important to examine perceptions of other types of selection methods such as job knowledge tests, group exercises and SJTs (Anderson & Golsti, 2006). Future research should therefore aim to expand Steiner and Gilliland's (1996) list of 10 methods to include other methods of assessment, such as SJTs; or

indeed to expand the examination of "work samples" to include group, written and role play exercises, since the present study shows that different types of work samples are perceived as differentially job relevant by applicants, as was shown by sample 2 findings.

Fourthly, findings suggest that it may be important to examine methods in terms of both perceived content and predictive validity since this study has found that some methods can be perceived as more content than predictive validity (and it is plausible that in some contexts this could be the other way around). Future research should therefore aim to have separate measures to examine these aspects of selection methods, such as the SPJS (Bauer et al, 2001). Furthermore, the fact that candidates could differentiate between content and predictive validity has practical implications. Organisations should aim to provide candidates with information about how methods are job related in terms of both their content-relevance to the job and ability to predict future performance.

Finally, this study found that unfamiliar test formats (such as an SJT) can be less positively-received than familiar test formats with job-related items (e.g. Smither et al, 1993; Truxillo & Hunthausen, 1999). Previous research has shown that providing explanations to applicants about the selection methods could be a cost-effective way to positively influence perceptions (e.g. Truxillo, Bodner, Bertolino, Bauer & Yonce, 2009). Therefore study findings suggest that organisations should also give candidates information about the method in terms of response format to improve perceptions and reduce potential anxiety. This may have the added benefit of helping to avoid any potential justice dilemma issues.

5.8.2 Limitations

There are a number of potential limitations of the study presented in this chapter that should be noted. The first limitation is that a conclusive comparison of the selection methods was not possible because of the field nature of the research. The order of the tests could not be counterbalanced because administering methods in different orders to

applicants is impractical in a high-stakes selection situation (Truxillo et al, 2001). Thus it is possible that there were content or order effects. One clear advantage therefore of using experimental designs to examine applicant perceptions is that content and order effects can be controlled since laboratory settings allow manipulations that are not possible in operational settings (Carless, 2006; McCarthy et al, 2009; Truxillo et al, 2009).

Secondly, it may be somewhat of an over-generalization to suggest that one selection method is perceived more positively than another just because it is perceived to be more job-related. It should be noted that one selection method might be seen as more fair on some procedural dimensions (such as two-way communication) than another, and vice versa (as found by Truxillo et al, 2001). In this study, only one procedural dimension was assessed (perceptions of job relatedness) and thus results should be interpreted with this in mind.

Thirdly, due to the small absolute numbers within some of the ethnic groups (e.g. Black, Chinese); it was not possible to look at job relevance perceptions at the individual ethnic group level. Instead, this thesis focused on White versus non-White differences. Had the group sizes been larger, it would have been preferable to examine potential difference between all ethnic groups.

Finally, and perhaps most importantly, although this and other research has established that applicants react differently to different selection methods, it is still unclear as to what aspects of the method are responsible for these perceptions. This is because an inherent confound exists between the selection method and its content (Ryan & Huth, 2008; Schmitt & Chan, 1999; Truxillo & Hunthausen, 1999). For example, in Sample 3's examination of interview, group exercise and psychometric tests, the methods differed on the means of testing (e.g. task performance for the group exercise versus paper and pencil format for the psychometric tests); but they also differed in relation to the constructs being measured (for example interpersonal dimensions on the group exercise and numerical/verbal reasoning abilities on the psychometric tests). Consequently this study did not isolate these effects. One would need two different

selection methods measuring exactly the same content; or the same methods measuring different content in order to isolate these effects (see for example Chan & Schmitt, 1997). Although this may be somewhat difficult to do in operational selection settings, it could nevertheless be a direction for future research.

5.8.3 Summary

This study built on the previous two chapters by further exploring the data previously presented. Specifically, Study 3 examined selection methods and demographics as determinants of applicant perceptions. Findings indicated that the selection methods themselves, but not demographics, are key determinants of applicant perceptions. Thus the results of this study may lend support to previous lab-based research findings relating to selection methods themselves (e.g. Steiner & Gilliland, 1996). Although findings lend support to the previous body of research findings, it is unique in the fact that firstly, it examines applicant job relatedness perceptions of a variety of selection methods in operational high-stakes selection settings (which has scarcely been conducted); and secondly because the examination of selection methods included those that have rarely been considered, such as SJTs and different types of work samples, that is group, written, and simulation exercises (Anderson & Golsti, 2006).

The next chapter turns to an investigation of applicant fairness perceptions using a qualitative method of data collection. Since one aim of this thesis is to focus on the applicant's perspective and their experiences of the selection process, Study 4 examines the selection process using interviews to "hear from" from the candidate's viewpoint rather than using pre-established questionnaires.

Chapter 6: An investigation of the role of attributions in applicant perceptions of a selection process

6.1 Introduction

Authors (e.g. Schleicher et al, 2006; Marcus, 2003) have suggested that qualitative methods of data collection are needed to "hear from" those who are effected by selection processes. Therefore, this chapter presents an interview-based study conducted with candidates in an operational selection setting. The primary aim of this study was to examine the types of causal attributions that applicants made when they discussed their experiences during a selection process. Attributions were considered a useful tool to examine candidate perceptions of a selection process because they refer to the explanations made for a person's own and other's behaviour, and events that they observe or experience (Ployhart & Harold, 2004; Silvester, 2004). A secondary aim was to investigate the content of applicant attributions; that is, what topic the participant discussed in relation to their selection experience. In using interviews, data gathered is salient and personally relevant to the candidate (Gilliland, 1995) and explanations for events are provided from the candidate's, not the researcher's, point of view (Silvester, 2004; Schleicher et al, 2006).

The study presented in this chapter used a sample of candidates applying for Public Health (PH) posts in the NHS, in 2008. The selection process comprised three stages. Stage 1 eligibility checks and online application form; Stage 2 shortlisting using two tests: a Numerical Reasoning (NR)[11] and a Critical Thinking (CT)[12] test; and finally Stage 3, an assessment centre, involving a series of five panel interviews one of which included a presentation exercise (Pashayan et al, 2007). The study presented in this chapter used a sample of applicants who were interviewed following their participation in the shortlisting (stage 2) and assessment centre phases (stage 3).

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[11] The Numerical Critical Reasoning test (SHL).
[12] The Watson-Glaser Critical Thinking Appraisal test.

6.1.1 Attributions in selection research

Weiner's (1985; 1986) attribution model has been applied in selection research, where it has received increased theoretical attention since the early 1990s (Anderson et al, 2001). Since the model was originally designed to understand the attributions that people make in competitive environments and their consequences, it is perhaps not surprising that many studies have focused on interviewer attributions of interviewee behaviour (e.g. Silvester, 1997; Silvester et al, 2002; Silvester & Chapman, 1996). For instance, Silvester (1997) found that in graduate recruitment interviews, successful candidates were more likely to make internal, personal and controllable attributions for prior negative events. In a further study, Silvester and colleagues (2002) found that candidates conveyed more positive impressions when they made internal-controllable attributions for earlier negative events than either external-uncontrollable or internal-uncontrollable attributions. Additionally, candidates who described themselves as likely to use internal-controllable attributions were rated more positively by interviewers. Further studies have examined attributions in various other contexts, for example attributions made by sales people for successful and unsuccessful sales outcomes (e.g. Silvester, Patterson & Ferguson, 2003).

Attribution research has primarily focused on the interview as a method and has been from the point of view of the recruiter (Anderson et al, 2001). However, research is needed from the candidate's perspective too; candidates' attributions during selection may be determinants of fairness perceptions which, in turn, might influence behavioural outcomes (Ployhart & Harold, 2004). The following section explores why attributions may be considered important in the area of applicant perceptions.

6.1.2 Why attributions in applicant perception research?

According to attribution theorists, individuals take part in a process of sense-making in order to identify the causes of important events (Wong & Weiner, 1981). Given that selection processes are usually considered stressful and highly uncertain (Ployhart, Ehrhart & Hayes, 2005); experiencing one may prompt an attributional search. Indeed, some researchers (e.g. Harvey & Dasborough, 2006) suggest that negative outcomes

may trigger a more in-depth attributional evaluation than positive outcomes as they are less likely to be expected. There could be a number of causes attributed for particular events, and Weiner (1979; 1986) suggests that these causes can be classified along three dimensions. These dimensions are: *locus*, which refers to whether an event has occurred because of dispositional (internal) or situational (external) factors; *stability*, the extent to which a cause is seen to be either stable or unstable in the future, and *controllability*, which refers to the extent of control individuals perceive that they have over the outcome (Table 6.1 in the method section elaborates on these dimensions in the context of this research).

Attributions are a fundamental part of social perception, and the way in which an individual explains an event is likely to have an influence on subsequent judgements, affective reactions and behaviour (Fiske & Taylor, 1991; Silvester, 2004; Weiner, 1986). For example a candidate may attribute different causes for the reason they did not get a job offer: either *situational* causes such as biased selection methods (external attribution), or *dispositional* causes such as their own lack of ability (internal attribution; Ployhart & Harold, 2004). It follows therefore that the way in which the attribution is made can result in different affective, cognitive or behavioural outcomes (Weiner, 1985; 1986). For example, if the reason attributed is due to situational factors like biased methods, the candidate's motivation may increase but perceptions of the attractiveness of the organisation may reduce; conversely, if the cause attributed is due to dispositional factors such as lack of ability, the candidate's motivation may decrease, but perceptions of the attractiveness of the organisation may stay the same (Ployhart & Harold, 2004; Ployhart & Ryan, 1997). In fact, attributional research suggests that the causal dimensions are more strongly related to subsequent reactions, intentions and behaviours than the specific causes themselves (Russell, 1982; Weiner, 1986). In the context of applicant perceptions, this could suggest that a candidate's response to a situation during the selection process depends on their interpretation of it and the way they attribute the outcome, rather than their perceptions of procedural fairness *per se* (Ployhart & Harold, 2004). Thus applicants may alter their behaviour based on the attributions they make. This may be one reason why applicant perception research has generally not succeeded in establishing a clear link between procedural justice

perceptions and behavioural outcomes (Carless, 2003; Chan & Schmitt, 2004; Ployhart & Ryan, 1998; Sackett & Lievens, 2008; Truxillo et al, 2004).

Although not directly examined, results of some applicant perception research has been consistent with an attributional interpretation. For instance, Ployhart and Ryan (1998) explain their findings, where students perceived a positive inconsistency condition (that is, getting *more* time on a test than others) as equally fair as the consistent condition, by suggesting that applicants conduct a more thorough attributional search for the reasons underlying process unfairness when they were in the negative, rather than the positive, inconsistency condition (Wong & Weiner, 1981). In a further study, Ployhart and colleagues (1999) suggest a role for attributions in the interpretation of explanations given for not getting a job. The authors found that when a diversity justification was used, candidate self-perceptions were harmed when they were 'selected', but enhanced when they were 'rejected'. They suggest that this occurs because the diversity justification changes the locus of causality for the selection decision. Rejected applicants feel better because they know that the reason they did not get the job was not due to their ability (internal attribution), but rather due to an external and less personally-damaging factor. Additionally, a self-serving bias mechanism has been found to operate in a number of studies (e.g. Chan & Schmitt, 1997; Chan et al, 1998a; Chan et al, 1998b; Chan et al, 1997) where a positive perception-performance relationship has been found. It is suggested that this is because in anticipation of a negative result, such as performing badly on a selection test, candidates attribute an external cause for this and therefore are more likely to rate the process as unfair. As such, external attributions may be egoprotecting because negative outcomes are blamed on external rather than internal, dispositional factors (Schleicher et al, 2006).

Direct examination of attributions in applicant perception research has received very little attention, apart from two notable exceptions (Ployhart et al, 2005; Ployhart & Ryan, 1997). In the former study, Ployhart and colleagues (2005) investigated the psychological processes through which explanations for selection/rejection decisions influence behaviour. They propose attributions as the psychological mechanism that links explanations and perceptions. Using Kelley's (1967) covariation model to explain

their findings, they found that distinctiveness information (similarity to other organisations) predicted process fairness perceptions such that commonly-used methods were considered more fair. The authors also found that self-perceptions and organisational attractiveness were influenced by the consensus information provided (number of applicants accepted): selected applicants used low consensus information to increase self-perceptions and organisational attractiveness, whilst rejected applicants used this information to lower self-perceptions and organisational attractiveness. Findings were more or less consistent across two studies: a lab-based study with students and a field-based study with applicants. Ployhart et al (2005) suggest that the information given in selection/rejection letters is used by applicants to attribute either internal or external causes for the hiring outcome, which in turn leads to outcomes such as process, self and organisational perceptions. As such, one reason for explanations influencing behaviour is that the explanations cause the applicant to make an attributional search for the reason of the hiring decision. In the latter, field-based study, Ployhart and Ryan (1997) found that perceptions of outcome fairness were positively related to internal locus, stability and controllability. Individuals who intended to recommend the organisation to others and those who had positive self-assessed performance also perceived their selection as being due to internal and stable factors. Furthermore, selected applicants perceived the selection decision to be significantly more related to internal, stable and controllable causes than rejected applicants.

Recently, Ployhart and Harold (2004) proposed a new theory, the Applicant Attribution-Reaction Theory (AART), that integrates research and theory from applicant perceptions with literature from social psychology on attributions. Their theory proposes that what causes and explains applicant perceptions and the subsequent outcomes (cognitive, affective, behavioural) is attributional processing. Indeed the AART framework goes so far as to remove procedural justice perceptions as the determinants of applicant perceptions and replaces them with attributions. Thus their key point is that it matters less whether procedural justice dimensions are violated (or not) but rather how justice is perceived in relation to attributional dimensions. Therefore *attributions* are considered determinants of fairness perceptions. Ployhart

and Harold (2004) propose AART as an alternative theory to existing applicant perception frameworks, believing that attributions are fundamental to the formation of fairness perceptions. The implication therefore is that research to date has described the fairness process, but has done little to actually explain the underlying psychological mechanism. Frameworks such as Gilliland's (1993) organisational justice theory, although providing a strong theoretical foundation, have not given a sufficient psychological explanation of *how* applicant perceptions are formed and *why* they produce cognitive, affective and behavioural outcomes.

It is AART theory that provides the theoretical underpinning for examining applicant attributions in this chapter. Ployhart and Harold (2004) suggest that when individuals consider whether actions or processes during selection are fair, they assess whether an 'agent' can be held responsible for action/inaction, or whether situational factors are to blame. When outcomes are positive and/or procedures are fair, the tendency is for individuals to take responsibility for this and are more likely to suggest that they caused the outcome; thus, internal, stable and controllable attributions are made. Therefore, they propose that *"theoretically favourable reactions (e.g. fairness) should be due to internal, stable and controllable causes; and unfavourable reactions (e.g. unfairness) should be due to external, unstable and uncontrollable causes"* (p. 91). It should be noted that selection experiences may be considered either positive/negative *or* fair/unfair – just because an experience is considered negative, does not necessarily mean it is also considered unfair (Hausknecht et al, 2004). Therefore key to this study was examining whether internal, stable and controllable causes were related to positive or fair selection experiences; whilst also examining whether external, unstable and uncontrollable causes were related to negative or unfair selection experiences.

Traditionally, questionnaires such as the Attributional Style Questionnaire (ASQ: Peterson, Semmel, von Baeyer, Abramson, Metalsky, Seligman, 1982); Occupational Attributional Style Questionnaire (OASQ: Furnham, Sadka, Brewin, 1992) and the Causal Dimension Scale (CDS: Russell, 1982) have been used to investigate causal attributions. Indeed, the two studies examining attributions in applicant perceptions (outlined above; Ployhart et al, 2005; Ployhart & Ryan, 1997) used a questionnaire

method to examine attributions. From a researcher's perspective there are advantages offered by using questionnaires (ease of administration, consistency across participants); however, they have important limitations because attention is either focused on topics that the researcher considers important (in the case of ASQ/OASQ) or attributions only relate to the *primary* reasons for a given outcome (in the case of CDS). An alternative method of examining attributions involves the coding of spontaneously produced spoken attributions using the Leeds Attributional Coding System (LACS: Munton et al, 1999). The LACS method was originally designed as an ecologically-valid and less intrusive way of analysing attributions produced by family members during a therapy session; and was specifically devised as a way to code attributions that naturally occur in discourse (Silvester, 2004). It has been used in a number of research settings, including graduate recruitment interviews (Silvester, 1997) and evaluating culture change (Silvester et al, 1999). Since this chapter focuses on the perspective of the applicant and their *own experiences* of the selection process, interviews were used as a method to elicit attributions about the selection process and the LACS method was a useful and relevant method of analysis.

6.1.3 Setting the hypotheses

The nature of the research was primarily exploratory, to investigate the nature of attributions when candidates discussed positive/fair versus negative/unfair experiences during difference stages of a selection process. However, it should be noted that in this context candidates discuss experiences of the process, rather than actual outcomes as they do not yet know whether they have passed or failed the process. Furthermore, selection experiences were considered either positive/negative *or* fair/unfair; therefore, these were examined separately in the following two hypotheses:

Hypothesis 1: When candidates discuss positive experiences during different stages of a selection process, attributions made will be significantly more internal, stable and controllable than when negative experiences are discussed.

Hypothesis 2: When candidates discuss fair experiences during different stages of a selection process, attributions made will be significantly more internal, stable and controllable than when unfair experiences are discussed.

A secondary aim was to explore the actual content of what participants discussed relating to specific attributions. Therefore the following research question was posed:

Research question 1: in relation to attributions made, what is the actual content of what participants discuss?

Finally, this research explores applicant perceptions over time, specifically regarding the application, shortlisting and assessment centres stages of the selection process. Consequently, the temporal nature of applicant perceptions and associated attributions can be explored. Therefore the following research is posed:

Research question 2: do attributions change over time (application, shortlisting, assessment centre) for both positive/negative and fair/unfair experiences?

6.2 Method

6.2.1 Participants and procedure

Fifty-three participants were recruited from a pool of candidates applying for Public Health (PH) who gave their consent to be involved in this research following the first stage of the selection process. All 53 participants were emailed and invited to take part in the research on a voluntary basis; they were assured that information would be anonymous, used for research purposes only and not be used in any selection decision. Twenty-six participants responded (53% response rate) to say they would like to take part. All were interviewed via telephone following their participation in the second stage of the selection process (shortlisting), but before they received their results. Of these 26, 14 candidates made it through to the third stage of selection and were interviewed (via telephone) following their participation in the assessment centre, but before they received their results. Of the 26 participants that took part, 20 were female,

their mean age was 32.3 years, they had an average of 8.6 years work experience and ten had medical training as doctors. The participants' ethnic origins were as follows: White (N=21), Asian (N=3), Black (N=1) and Mixed (N=1). Note that the participants' pattern of responses on the quantitative evaluation questionnaire (similar to that used in study 3) was similar to the applicants in general. This signifies that there were no major differences in applicant perceptions between the response and non-response groups.

Telephone interviews were semi-structured and lasted between 18 and 35 minutes. All participants were told that the researcher was interested in their experiences and thoughts regarding the selection process that they had been through. Questions broadly related to how candidates felt about the application / shortlisting / assessment centre; what they thought of the process; what their experience was like and whether they thought it was fair (a full interview schedule can be found in Appendix 9.7; and a full transcript can be found in Appendix 9.8). All interviews were conducted *before* candidates had received their results so that pass/fail outcome did not influence their perceptions of the process. In total, 40 interviews were conducted and Figure 6.1 represents this process.

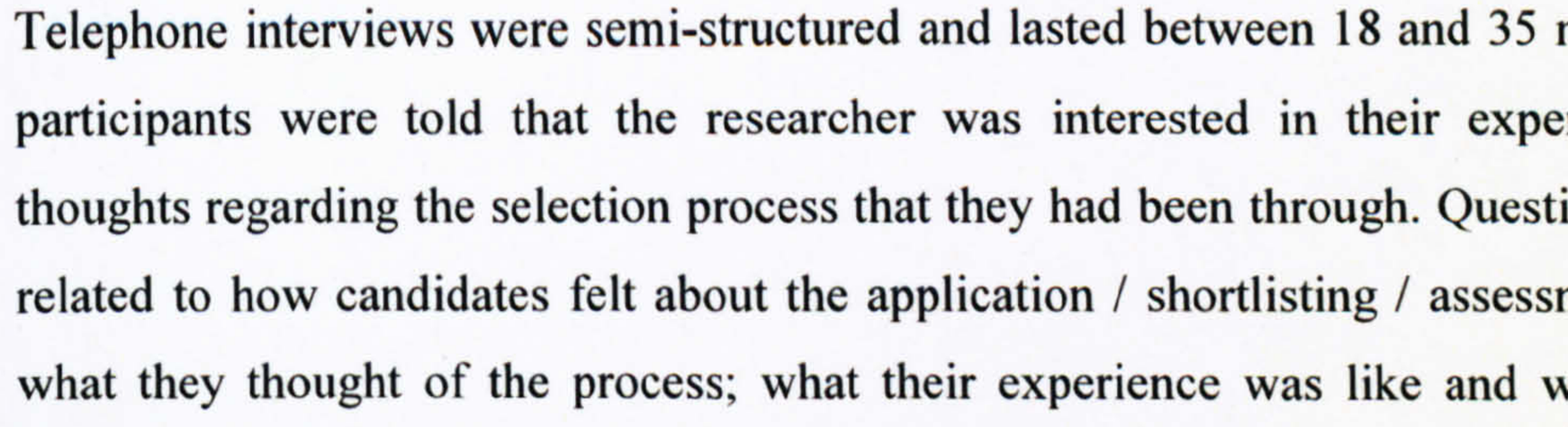


Figure 6.1: The three stages in the selection process and associated interviews

6.2.2 Analyses

Although the primary aim of this research was to analyse spontaneously-produced attributions, a secondary aim was to consider the content of these attributions; that is, what topic the participant discussed in relation to their selection experience. Therefore content analysis was conducted on the extracted attributions. The following sections outline firstly content analysis and secondly attributional analysis.

6.2.2.1 Content analysis

Content analysis involves categorising text, and the specific categories should be derived from theory (Mackenzie-Davey & Arnold, 2000). Therefore specific categories were created from Gilliland's (1993) organisational justice theory framework, for example, job relatedness, consistency and interpersonal treatment. In instances where the category did not relate directly to the framework, a new category was created, the label for which was agreed upon between the researcher and a second coder. Once all the extracted attributions were categorised by the researcher, the categorisation was checked for inter-rater agreement by a second psychologist. Agreement was achieved in 81% of cases (consistent with previous content analysis research, e.g. Mackenzie-Davey & Arnold, 2000). For those that did not achieve agreement initially, discussion between the two coders resulted in final categorisation.

6.2.2.2 Attributional analysis

Attributional analysis of the interview transcripts was conducted using the Leeds Attributional Coding System (LACS; Munton et al, 1999). It is a five-stage process in which the researcher identifies the source of attributions, extracts the attributions, identifies agents and targets, codes the attributions on the causal dimensions and finally analyses the data. The following sections outline these five stages.

Step 1: identify source of attributions

For this chapter, the sources of attributions were the semi-structured interviews conducted with participants as described above.

Step 2: extract attributions

All interviews were transcribed verbatim so that attributions could be extracted. Using Silvester's (2004, p. 231) definition, an attribution was identified as *'a statement that refers to a causal relationship where the speaker implies that a specific outcome is a consequence of a particular cause'*. For example, from one interview a specific outcome was "it was a pretty awful experience" and the cause in this instance was "because those psychometric tests are new to quite a lot of people". All attributions were extracted and coded from the speaker's perspective, even if they were considered

'wrong' or highly unlikely from the point of view of the researcher (Silvester, 2004). It is common convention to identify causal attributions by underlining the cause and then placing an arrow pointing in the direction of the outcome with a slash indicating where the outcome ends. To illustrate this, an interview excerpt is shown with extracted attributions beneath in Figure 6.2. The cause is underlined, and the end of the outcome shown with a slash. Note that it is LACS convention to describe the consequence of a cause as an 'outcome'. However, to aid clarity, the 'outcomes' in the attributions will be referred to as 'occurrence(s)' in the results section onwards, so as not to confuse this with an outcome of pass or fail in the context of selection.

Interview excerpt:

Interviewer: *How did you feel about the stage 2 assessment?*

Participant: */I don't think this was a fair way to select applicants* ← *because /I think it should be part of a whole variety of assessments* ← *because I don't think that people are really showing off the best of their ability. ...You need to have some, I mean these days everyone seems to be getting good grades otherwise you know I mean really, how do you choose between candidates?* → *that makes me wonder, is it a fair form of assessment?/. /I'm quite concerned that I'm not going to get through that stage* ← *because I don't feel I've done myself justice. I know /I have a lot to offer, but I don't think that exam is going to show the reviewers that* ← *because it hasn't given me the ability to show my true potential*

Extracted attributions

1. /I don't think this was a fair way to select applicants ← because I think it should be part of a whole variety of assessments
2. /[stage 2 selection] should be part of a whole variety of assessments ←because I don't think people are really showing off the best of their ability
3. ...how do you choose between candidates? → that makes me wonder, it is a fair form of assessment/
4. /I'm quite concerned that I'm not going to get through that stage ← because I don't feel I've done myself justice

5. /I have a lot to offer, but I don't think that exam is going to show the reviewers that
   ← because it hasn't given me the ability to show my true potential

Figure 6.2: Interview excerpt and associated extracted attributions

Step 3: coding agents and targets

After all attributions were extracted, the first stage of coding was to identify the 'Agent' and 'Target' for each attribution. An 'Agent' is defined as the person, group or entity identified in the cause of the attribution, whilst the 'Target' is defined as the person, group or entity identified in the outcome of the attribution (Silvester, 2004). In order to devise Agent and Target categories, three researchers (trained in using LACS) independently rated one third of the extracted attributions to identify Agents and Targets. The Agents and Targets that were identified were as follows:

1. Speaker
2. Application form
3. Psychometric test (numerical reasoning, critical thinking, or both)
4. Interviews
5. Selection process (may refer to general process, or either of the shortlisting / assessment centre phases)
6. Other candidates (either all candidates or a specific subsection, e.g. non-medics)
7. Employer / Organisation (including emails or communication *from* the organisation)
8. Recruiters
9. The position (i.e. the job to which applicants were applying)
10. Fairness

Step 4: coding attributional dimensions

The LACS considers five dimensions along which attributions can be coded: Internal-External; Stable-Unstable; Controllable-Uncontrollable; Global-Specific; Personal-Universal. However, since theory and research (e.g. Ployhart & Harold, 2004) suggest a role for the first three dimensions, the present study focused only on these. Definitions of each attribution dimension and examples are shown in Table 6.1;

definitions of dimensions were modified slightly in order to fit the research context. Following LACS guidelines, the attributions were coded from the point of view of the speaker so that the meaning that the individual wants to convey is coded, whether or not the researcher agrees with or believes the statement (Silvester, 2004). Each attribution was rated along a three-point scale where 1 = external, unstable, uncontrollable and 3 = internal, stable, controllable. As recommended by Silvester (2004), if it was not possible to code any attribution along any of the dimensions, this was taken to mean that the attribution was not clear; it was therefore not used in the analyses and coded as a '2' as the scale mid-point.

To aid further analyses, each attribution was also coded in terms of valency, which refers to whether the attribution outcome is negative or positive (Silvester, 2004). Those attributions relating to either a negative or undesired occurrence were coded as 1 = 'negative' and those attributions that referred to either a positive, neutral or desired occurrence were coded as 2 = 'positive'. Examining the positive-negative dimension of attributions was useful in this context for understanding attributional patterns.

For this chapter, the reliability of coding was assessed for each of the three dimensions and valency. A second coder (trained in using the LACS) independently rated a random sample of 200 extracted attributions, approximately one third of the data the transcripts to determine inter-rater agreement using Kappa co-efficient (Brennan & Prediger, 1981). Previous research generally demonstrates good levels of reliability, for instance Silvester (1997) reported the following Kappa scores: stable = 0.45; internal = 0.73 and control = 0.72. Table 6.1 displays Kappa values for each dimension, ranging from 0.71-0.93, indicating good levels of reliability (Fleiss, 1971) and comparable to those found in previous research using LACS (e.g. Silvester, 1997).

Step 5: analysis

The data were analysed using a variety of different statistical methods – ANOVA, *t*-tests and non-parametric Mann-Whitney U tests. These are all outlined in further detail in the results section that follows.

Table 6.1: Attribution dimensions, Kappa reliability data and examples of coded attributions

Dimension		Example
Stable-unstable *Kappa = 0.74*		
Stable	A cause is rated stable it if is likely to have an ongoing impact on the speaker's application	/[the Application Form] is different to what I've had in the past ← that's possibly because I come from a non-medical background and medics deal with this sort of thing more often
Unstable	A cause is rated as unstable if it is likely to be relatively short-lived or have little permanent effect on the application	/I felt that the location where [the shortlisting stage] was ... quite an awful environment ← because there was no natural light
Internal-external *Kappa = 0.74*		
Internal	A cause is coded internal if it originates within the applicant, such as their behaviour, characteristic or skill	/I had the opportunity to show what I can do [in the interviews] ← cos I guess I had more control, for my part personally
External	A cause is coded external if it originates outside the applicant, such as others' behaviour, situational constraints or circumstances	/I only got halfway through the numerical reasoning ← cos there was 20 questions in 20 minutes and I only completed 10
Controllable-uncontrollable *Kappa = 0.71*		
Controllable	An attribution is rated as controllable if the cause could (without effort) be changed by the speaker to produce a different outcome	/I think [the interview] gave you the opportunity to show your skills ← as it was up to you really to draw in ...what you thought about stuff
Uncontrollable	An attribution is rated as uncontrollable, if the speaker perceives the outcome not to be open to influence	/It has been an extremely long, drawn-out process like nothing I've experienced before ← cos what I have found the most difficult to accept is the lack of communication during the wait
Valency: positive-negative *Kappa = 0.93*		
Positive	Attributions referring to a positive, neutral or desired outcome	/Yes, [the application process has] been quite good ← because ... we were kept informed at every stage
Negative	Attributions referring to a negative or undesired outcome	/I've been in a kind of a downward spiral since ← as I've been thinking of all the questions I could've answered better

6.3 Results

6.3.1 Content analysis

Although the focus of this study was an attributional analysis, first a content analysis of the extracted attributions was conducted in order to give some idea of the types of themes that participants discussed. This content analysis is briefly presented and discussed, before the attributional analysis, which is the primary focus of this study.

The overall summary of the themes that were elicited during the content analysis is shown in Table 6.2, which summarises the themes by stage in the selection process. In Table 6.2, those themes that may be considered procedural justice rules (Gilliland, 1993) have been highlighted in bold with an asterix. Of the categories elicited relating to procedural justice rules, the most common theme related to job relatedness, specifically face validity. This theme occurred in reference to all three stages of the selection process, but is predominantly elicited during shortlisting. The second most commonly occurring theme was chance to perform, which participants discussed relating to each stage of the selection process. Both job relatedness relating to predictive validity and communication were the next most commonly occurring of the procedural justice themes; job relatedness/predictive validity was elicited only during shortlisting and assessment centre phases, whilst communication relating to all three stages. It is worthy of note that three of the least commonly-occurring themes related to Gilliland's (1993) procedural rules, that is, consistency, two-way communication and interpersonal treatment.

Further categories elicited did not relate to Gilliland's (1993) procedural justice rules. A commonly occurring theme related to candidate educational background. In particular, candidates commented on the difference between medic and non-medic applicants. This was particularly salient to non-medic applicants during the application stage as many felt that the application form had been designed for medically-trained applicants only. A further theme related to the test characteristic, specifically timing. This theme was elicited mainly during the shortlisting stage, and is likely due to the fact that one of the psychometric tests (numerical reasoning) had a strict time limit.

Another theme worthy of note related to ease of use of the technology. This was elicited regarding the application stage because applicants had to complete an online application form, and participants commented on the usability of the technology, both in reference to positive and negative experiences.

Table 6.2: Content analysis: frequency of themes by selection process stage

	Application	Shortlisting	Assessment centre	Total
***Job relatedness / face validity**	**16**	**105**	**30**	**151**
***Chance to perform**	**23**	**11**	**28**	**62**
Background / medic/non-medic	30	4	26	60
Test characteristic / timing	0	55	5	60
Technology / Ease of use	46	0	0	46
***Job relatedness / predictive**	**0**	**17**	**26**	**43**
***Communication**	**5**	**4**	**15**	**24**
Professional process	0	10	14	24
***Information known**	**0**	**9**	**14**	**23**
Test characteristic / difficulty	2	17	3	22
Background / Previous experience	5	8	5	18
Expectations	1	12	4	17
***Feedback**	**0**	**6**	**9**	**15**
Self-efficacy	0	12	3	15
Communication / consistent	0	0	12	12
***Consistency**	**0**	**3**	**9**	**12**
***Communication / two-way**	**0**	**2**	**5**	**7**
***Interpersonal treatment**	**0**	**0**	**3**	**3**

Note: The asterix (*) denotes themes relating to Gilliland's (1993) organisational justice theory model

6.3.2 Frequency of attributions

A total of 614 attributions were extracted from forty interviews, with an average of 15.4 attributions per interview (ranging from 13 to 28). Spoken attributions related to either one of the three stages of the selection process (application, shortlisting or

assessment centre). Table 6.3 displays the frequency of attributions extracted relating to the three stages of the selection process by both valence (positive or negative occurrence) and fairness (fair or unfair occurrence). The table illustrates that candidate attributions related to negative occurrences (N=383) much more frequently than positive occurrences (N=231), consistent with attribution theory that negative events are more likely to result in an attributional search than positive events (e.g. Weiner, 1986; Wong & Weiner, 1981). Additionally, in 216 attributions (35% of the total), candidates referred to something being either fair (N=110) or unfair (N=106).

Table 6.3: Attributions produced by candidates for each stage of the selection process by valence and fairness

	Valence			Fairness		
N (%)	Positive	Negative	**Total**	Fair	Unfair	**Total**
Application	49 (21.2%)	76 (19.8%)	125 (20.4%)	24 (21.8%)	8 (7.5%)	32 (14.8%)
Shortlisting	77 (33.3%)	199 (52.0%)	276 (45.0%)	38 (34.5%)	68 (64.2%)	106 (49.1%)
Assessment Centre	105 (45.5%)	108 (28.2%)	213 (34.7%)	48 (43.6%)	30 (28.3%)	78 (35.6%)
Total	**231**	**383**	**614**	**110**	**106**	**216**

6.3.3 Pre-analysis checks

All variables were first checked for normality. All causal dimensions were within acceptable skew and kurtosis limits (Field, 2005), but significant Kolmogorov-Smirnov results indicated deviations from normality. However, large sample sizes often show significant Kolmogorov-Smirnov results with only small deviations from normality (Field, 2005) and since skew and kurtosis values were within acceptable limits, it was decided that these data could be treated as relatively normal. In order to examine differences in attributions by stage in selection process and either fair/unfair or positive/negative occurrences, it was necessary to conduct a series of ANOVAs. These require further pre-analysis checks, in particular to examine whether the data meet the condition of sphericity. Unfortunately in all instances, Levene's test was significant indicating that this condition was not met and furthermore, group sizes were not equal.

The *F* test is not always robust with both variance heterogeneity and unequal group sizes (e.g. Rogan & Keselman, 1977) and there are two options when this occurs. The first option is to transform the data and the second option is to report significance at the 0.01 alpha level in order to minimise the possibility of Type 1 errors (Lindman, 1974). Since "normalising transformations" of skewed data may result in more problems than they solve, particularly because it is no longer possible to interpret data in terms of the original hypotheses (Games & Lucas, 1966), it was decided that rather than transforming the data, all results would be reported at the 0.01 level of significance to account for the possibility of Type I errors. Therefore findings should be interpreted with this caution in mind. The following sections deal with each hypothesis and causal dimension in turn.

6.3.4 Positive/negative occurrences stage of selection for causal dimensions

The first hypothesis suggested that positive occurrences would be related to internal, stable and controllable dimensions. There were three stages of the selection process to which candidates referred and the valence of the attributions could either refer to positive or negative occurrences. Therefore, a series of 3 X 2 factorial ANOVAs were conducted to examine how causal attributions differed based on valency and selection process stage; each will be considered in turn below. Effect sizes were calculated and signified by *r* in the reported results.

6.3.4.1 Internal-external (valency)

There was no main effect for stage of selection process, $F(2, 608) = .622$, $p = .54$. There was a significant main effect for valence, $F(1, 608) = 61.70$, $p < .001$, and a significant interaction between the two, $F(2, 608) = 4.98$, $p = .007$. In order to follow up this finding, independent sample *t*-tests were conducted. At the application stage, negative occurrences ($M = 1.21$, $SE = .07$) were significantly more external than positive occurrences ($M = 2.22$, $SE = .14$), $t(123) = -7.08$, $p < .001$, $r = -.54$. At shortlisting, negative occurrences ($M = 1.48$, $SE = .06$) were significantly more external than positive occurrences ($M = 1.87$, $SE = .11$), $t(274) = -3.28$, $p = .001$, $r = -.19$. At the assessment centre, negative occurrences ($M = 1.52$, $SE = .09$) were significantly more

external than positive occurrences (M = 2.02, SE = .10), $t(211)$ = -3.88, $p < .001$, r = -.26. Findings support the hypothesis. In short, for all three stages of the selection process negative occurrences were attributed to be more external than positive occurrences.

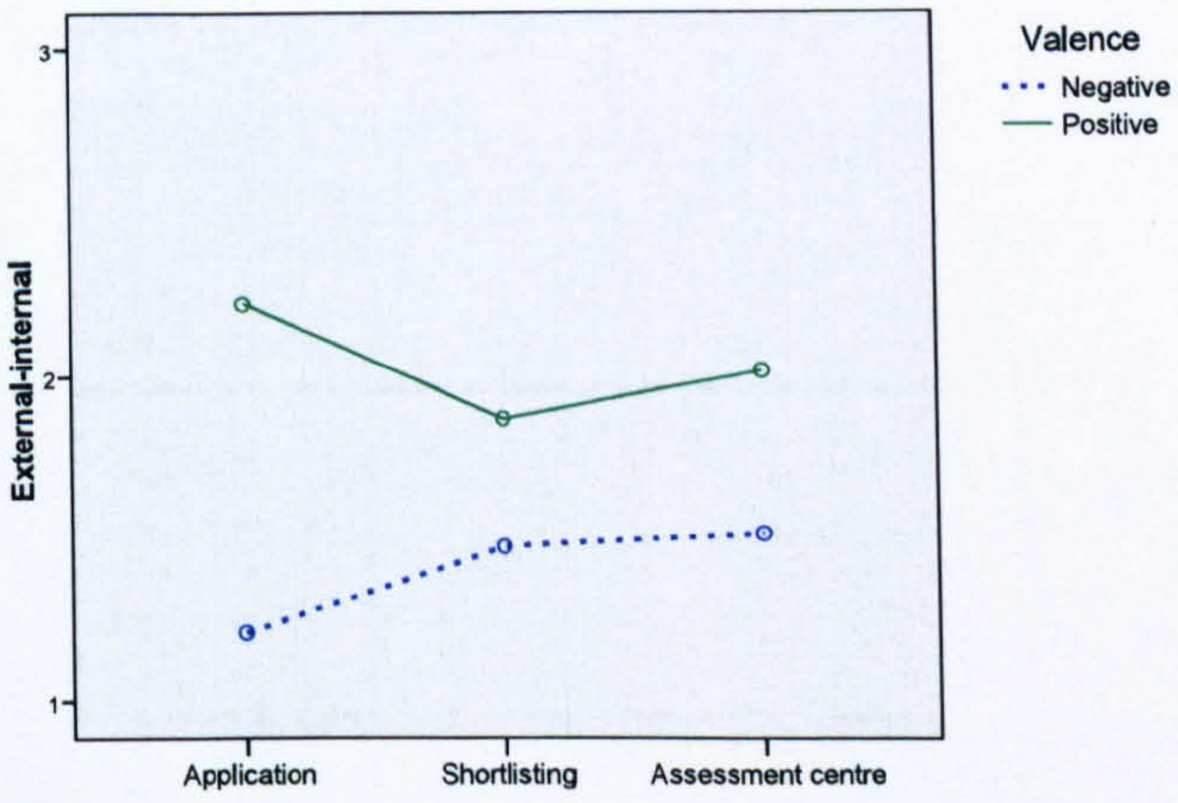


Figure 6.3: Negative/positive occurrences by stage of selection for internal-external dimension

6.3.4.2 Stable-unstable (valency)

There was a significant main effect for selection process stage, $F(2, 608) = 3.88$, p = .01, and a significant main effect for valence, $F(1, 608) = 15.88$, $p < .001$. There was no interaction between the two. In order to test the nature of these findings, follow up tests were conducted. In relation to stage of selection process, two one-way ANOVAs were conducted examining positive and negative valence in turn. When examining negative occurrences only, there was a significant effect for selection process stage, $F(2, 380) = 4.89$, $p = .008$. *Post hoc* t-tests were used, and findings indicated that the application stage was significantly more stable (M = 2.43, SE = .10) than both the shortlisting (M = 2.09, SE = .07), $t(273) = 2.81$, $p = .005$, $r = .17$ and assessment centre stages (M = 2.04, SE = .09), $t(182) = 2.96$, $p = .004$, $r = .21$. On the other hand, when examining positive occurrences there was no significant difference between selection stages, $F(2, 228) = 0.94$, $p = .39$.

In relation to valence, independent sample t-tests were conducted to follow up initial findings. Results indicated that at the application stage, negative occurrences (M = 2.43, SE = .10) were significantly more stable than positive occurrences (M = 1.94, SE

= .14), $t(123) = 3.07$, $p = .003$, $r = .27$. There was no significant difference at shortlisting or the assessment centre. Overall, findings were in the opposite direction to the hypothesis.

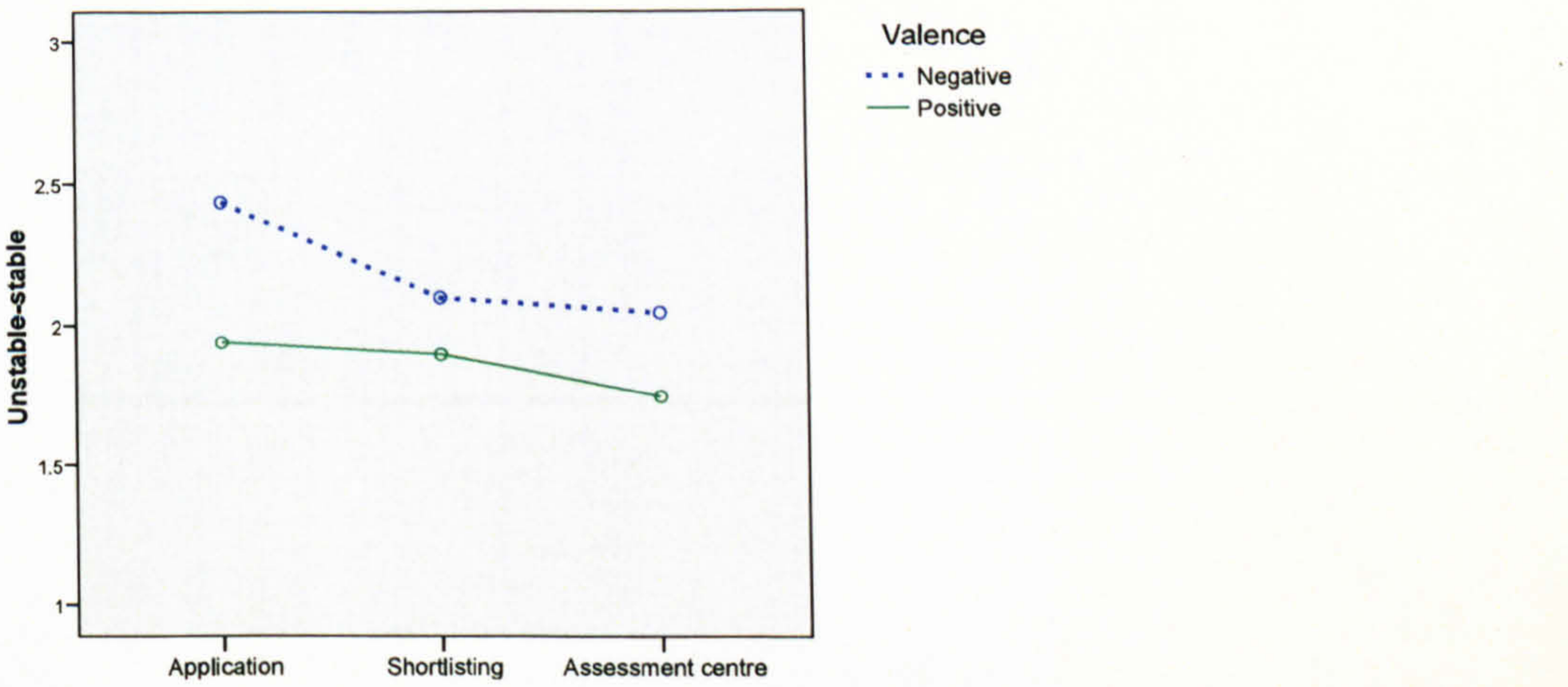


Figure 6.4: Negative/positive occurrences by stage of selection for stable-unstable dimension

6.3.4.3 Controllable-uncontrollable (valency)

There was no significant effect for stage of selection process, $F(2, 608) = 2.21$, $p = .11$; but there was a significant main effect for valence, $F(1, 608) = 124.02$, $p < .001$ and an interaction between the two, $F(2, 608) = 12.69$, $p < .001$. Independent sample *t*-tests followed up findings. At the application stage, negative occurrences ($M = 1.12$, $SE = .05$) were significantly less controllable than positive ones ($M = 2.51$, $SE = .12$), $t(123) = -11.89$, $p < .001$, $r = -.73$. At shortlisting, negative occurrences ($M = 1.45$, $SE = .06$) were significantly less controllable than positive ones ($M = 2.08$, $SE = .11$), $t(274) = -5.38$, $p < .001$, $r = -.31$. At the assessment centre stage, negative occurrences ($M = 1.41$, $SE = .08$) were significantly less controllable than positive occurrences ($M = 1.86$, $SE = .09$), $t(211) = -3.69$, $p < .001$, $r = -.24$. Findings support the hypothesis. In essence, for each stage of the selection process, negative occurrences were attributed as significantly less controllable than positive occurrences.

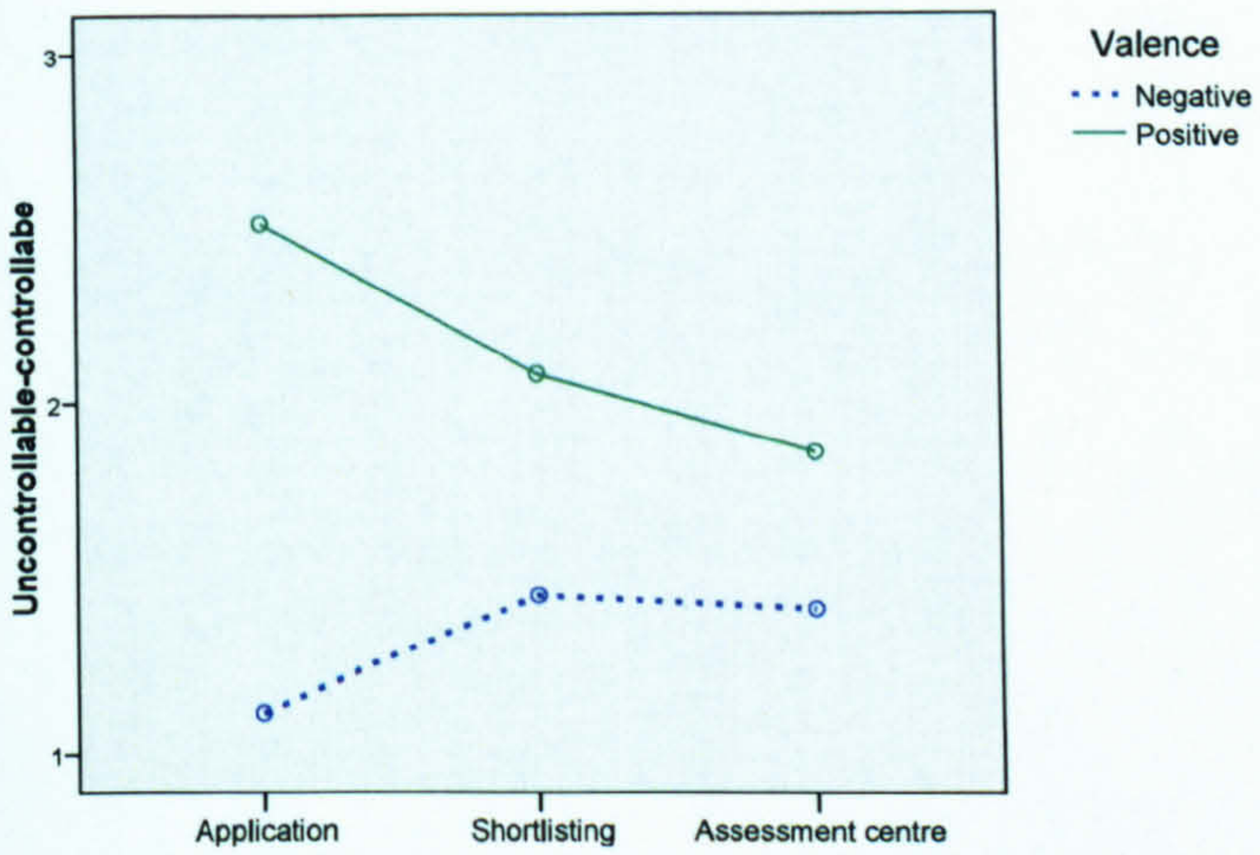


Figure 6.5: Negative/positive occurrences by selection stage for control-uncontrollable dimension

6.3.5 Fair/unfair by aspect of selection for causal dimensions

The second hypothesis proposed that 'fairness' would be related to internal, stable and controllable dimensions. In 35% (N=216) of the total number of extracted attributions, candidates commented on fairness, referring to occurrences that they thought were either fair (N=110) or unfair (N=106). Therefore, a series of 3 X 2 factorial ANOVAs were conducted to examine how causal attributions differed based on fair/unfairness and stage of selection process; each will be considered in turn below. Effect sizes were calculated and signified by *r* in the reported results.

6.3.5.1 Internal-external (fair/unfair)

There was a significant main effect for fair/unfair, $F(1, 210) = 15.13$, $p < .001$, but no significant main affect for aspect of selection process, $F(2, 210) = 1.56$, $p = .21$, and no interaction effect was found. In order to follow up this finding, independent sample *t*-tests were conducted. However, for the application stage it was necessary to conduct a non-parametric Mann-Whitney test to analyse differences between fair and unfair due to the overall sample size for this category being small (N=32; Field, 2005). Results indicated that at the application stage, unfair occurrences were significantly more external ($Mdn = 1.00$) than fair occurrences ($Mdn = 1.50$, $U = 96.00$, $p = .04$, $r = -.36$). Similarly, at the assessment centre stage, unfair occurrences ($M = 1.27$, $SE = .13$) were

significantly more external than fair occurrences (M = 2.00, SE = .15), t(76) = -3.49, p = .001, r = -.37. However, there was no significant difference at the shortlisting stage.

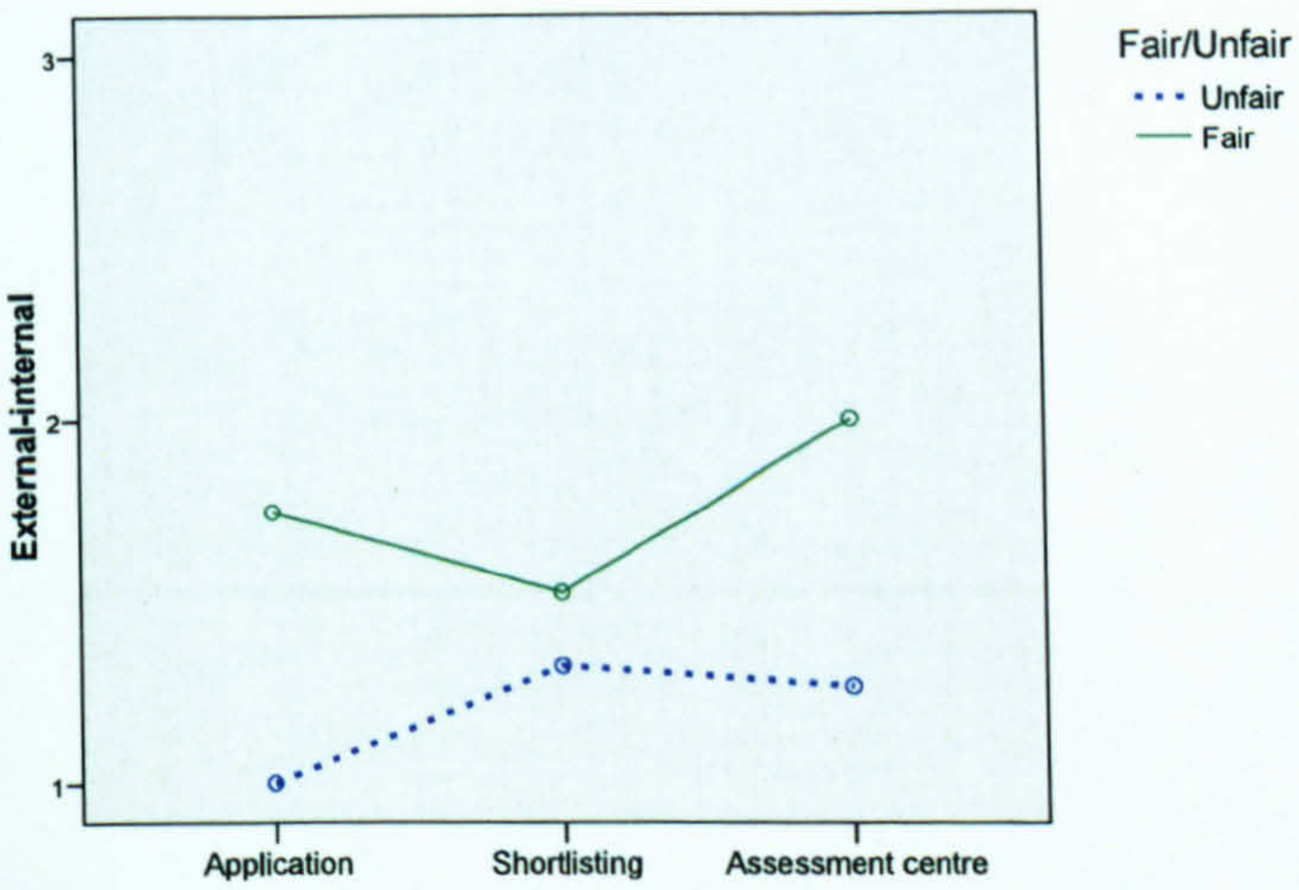


Figure 6.6: Fair/unfair by stage of selection for internal-external dimension

6.3.5.2 Stable-unstable (fair/unfair)

There was a significant main effect for aspect of selection process, F(2, 210) = 3.90, p = .01, and a significant main effect for fair/unfair, F(1, 210) = 14.65, p < .001. However, there was no interaction between the two. In order to test the nature of these findings, follow up tests were conducted. In relation to aspect of selection process, two one-way ANOVAs were carried out examining 'fair' and 'unfair' in turn. When considering unfairness, there was a significant effect for stage of selection, F(2, 103) = 4.19, p = .01. *Post hoc* t-tests were used, and findings indicated that the application stage was significantly more stable (M = 2.88, SE = .13) than the shortlisting stage (M = 2.13, SE = .11), t(74) = 2.23, p < .001, r = .25. There were no further significant differences. On the other hand, when considering instances of fairness there was no significant difference between any of the stages of selection, F(2, 107) = 2.01, p = .14.

In relation to fair/unfair, independent sample t-tests were conducted to follow up initial findings. For the application stage a non-parametric Mann-Whitney test was conducted. Results indicated that at the application stage, unfair occurrences were significantly more stable (Mdn = 3.00) than fair occurrences (Mdn = 2.50, U = 171.50, p = .05, r = -.35). At the assessment centre stage, unfair occurrences (M = 2.53, SE =

.14) were also significantly more stable than fair occurrences (M = 1.75, SE = .14), $t(76) = 3.77$, $p < .001$, $r = .40$. There was no significant difference at shortlisting.

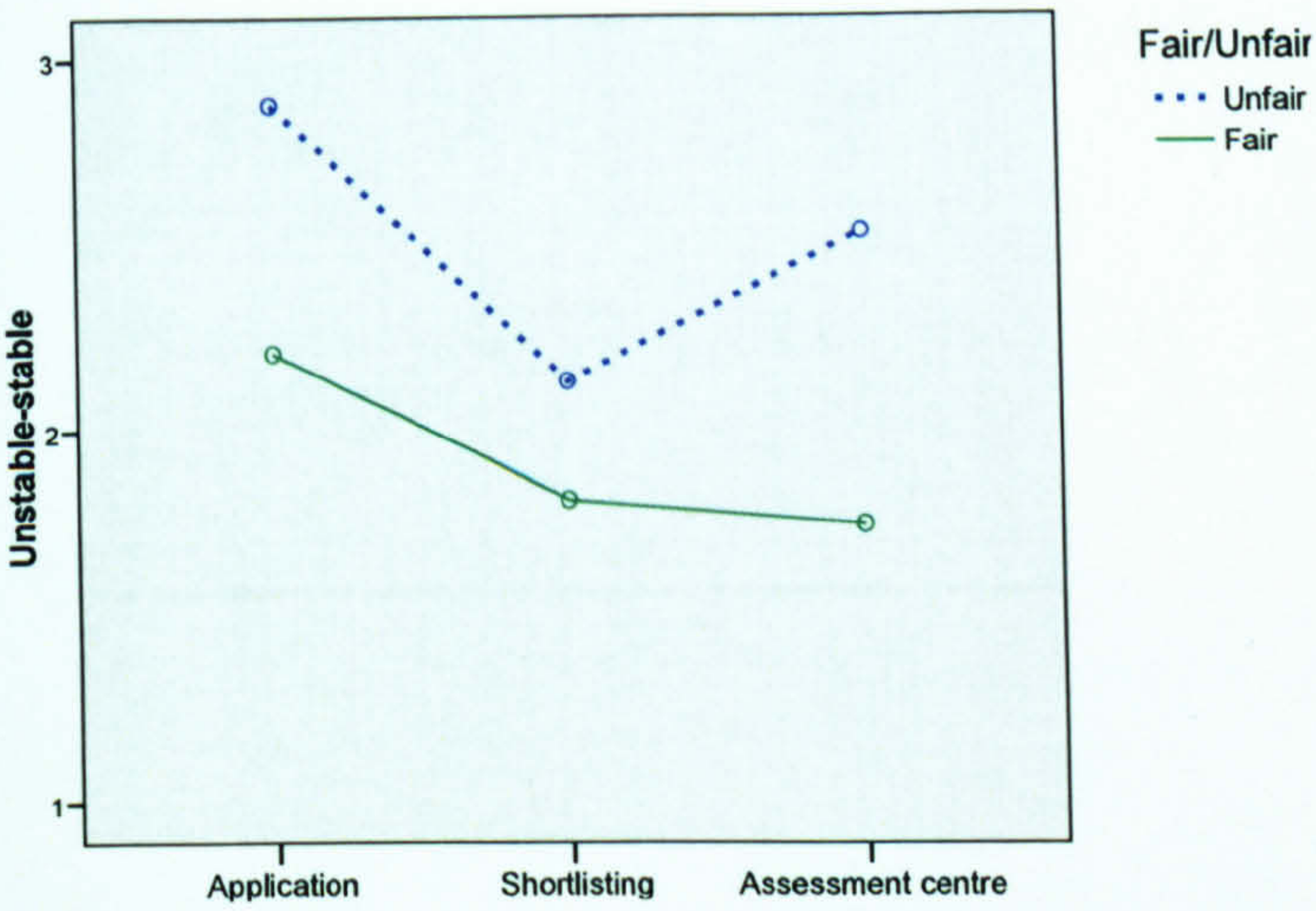


Figure 6.7: Fair/unfair by stage of selection for stable-unstable dimension

6.3.5.3 Controllable-uncontrollable (fair/unfair)

There was a significant main effect for fair/unfair, $F(1, 210) = 28.27$, $p < .001$, but no significant main affect for aspect of selection process, $F(2, 210) = 0.40$, $p = .67$; and no interaction effect was found. In order to follow up these findings, independent sample t-tests and a Mann-Whitney test were conducted. Results indicated that at the application stage unfair occurrences were significantly less controllable (Mdn = 1.00) than fair occurrences (Mdn = 3.00, U = 68.00, p = .001, r = -.57). Similarly, at the shortlisting stage, unfair occurrences (M = 1.29, SE = .09) were also significantly less controllable than fair occurrences (M = 1.74, SE = .15), $t(104)$ = -2.76, p = .004, r = -.26. Finally, at the assessment centre stage, unfair occurrences (M = 1.27, SE = .13) were significantly less controllable than fair occurrences (M = 1.73, SE = .14), $t(76)$ = -2.33, p = .02, r = -.26. In short, findings suggest that for each stage of the selection process, unfair occurrences are attributed to be significantly more uncontrollable than fair occurrences.

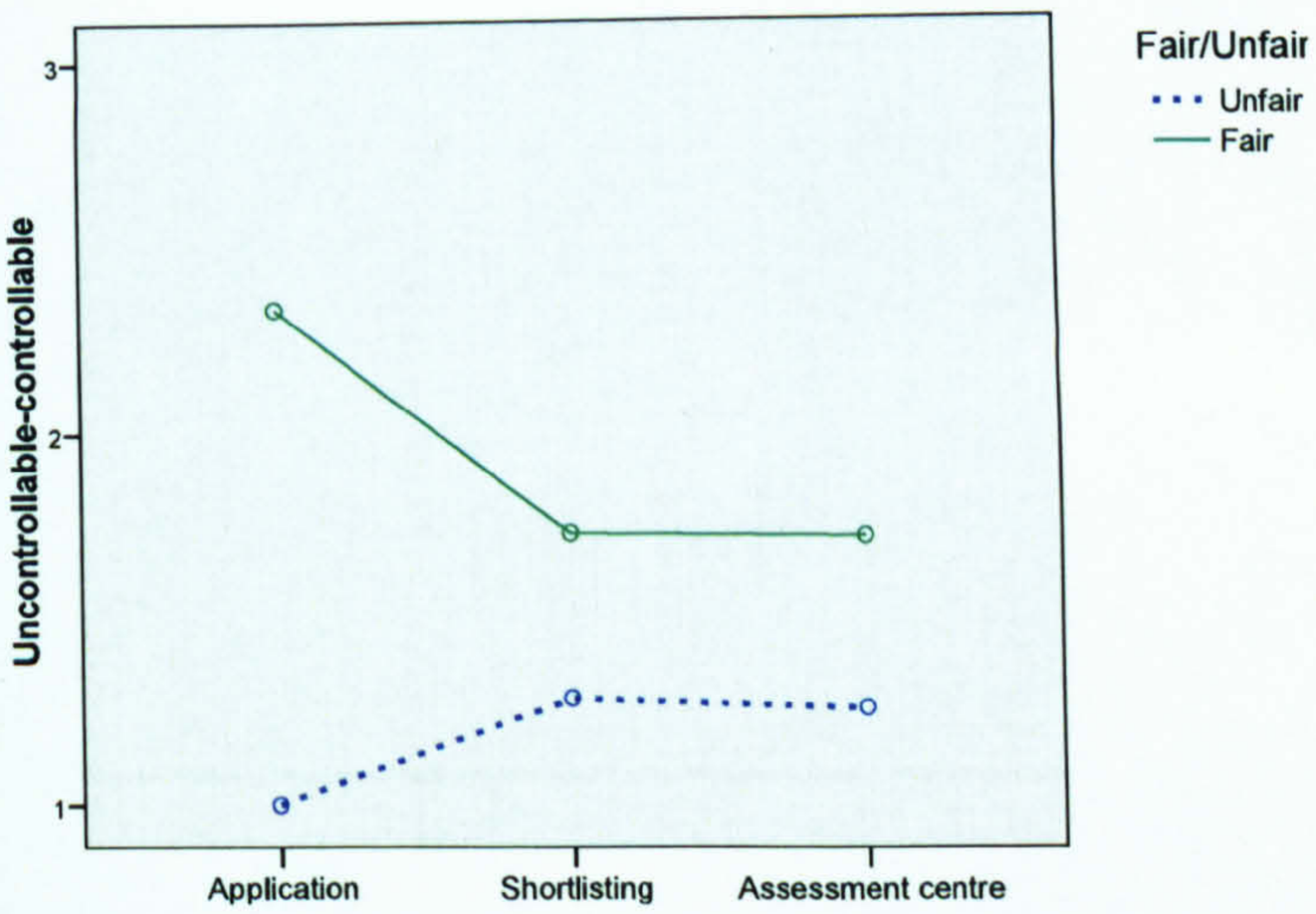


Figure 6.8: Fair/unfair by stage of selection for controllable-uncontrollable dimension

6.4 Discussion

This study is relatively unique in the area of applicant perception research since a qualitative methodology was used, and to the best of the author's knowledge, there exist only two other studies that have used qualitative methodologies (Gilliland, 1995; Schleicher et al, 2006). The main aim of the study was to explore what attributions candidates made when discussing their experience of a selection process and focused on positive/negative experiences and instances of (un)fairness. A secondary aim was to examine the content of these attributions. An initial content analysis indicated that candidates discussed more than just the procedural justice rules put forward by Gilliland (1993). In fact, issues such as candidate educational background and technology were discussed by candidates, showing that salient features of the selection experience did not always relate to Gilliland's (1993) procedural justice rules. Indeed, the process appeared to evoke perceptions that are much more complex than those captured using quantitative measures. These are explored further in the implications of this study (outlined later); but it is clear that further qualitative research is warranted in this area.

Second, the interview data was subject to an attributional analysis. The fact that candidates made more attributions focusing on negative experiences is noteworthy;

although perhaps not surprising since negative information is thought to be more salient to candidates than positive information (Harvey & Dasborough, 2006; Ployhart & Harold, 2004; Wong & Weiner, 1981). The main hypotheses explored in relation to attributions, were whether fair or positive occurrences were related to stable, internal and controllable causes (Ployhart & Harold, 2004). Overall, this study found that positive/fair occurrences were mainly attributed to unstable, internal and controllable causes; whilst negative/unfair occurrences were generally attributed to stable, external and uncontrollable causes. Additionally, the research explored whether attributions changed over the course of the selection process. Findings indicated that attributions relating to locus or controllability do not change over time for any of the fair/unfair or positive/negative occurrences. On the other hand, attributions relating to stability appeared to become less stable over time for negative/unfair occurrences. In particular, it appeared that the application form stage gave rise to the most stable attributions, but that there was little variability between shortlisting and assessment centre stages. In essence, one can conclude that on the whole, attributions do not change substantially over time. The following sections discuss each causal attribution in turn, highlighting key findings and their implications based on previous research.

6.4.1 Internal-external dimension

The internal-external dimension refers to the locus of the cause, being internal if it originates within the applicant (i.e. behaviour/personality) and external if it originates outside the applicant (i.e. others' behaviour or situational constraints; Silvester, 2004). This dimension may be particularly important for understanding applicant perceptions in a selection context because whether an occurrence is attributed to internal (e.g. low ability) or external (e.g. unfair processes) causes is thought to be important to an individual's subsequent affective reactions, attitudes and behavioural intentions (Weiner, 1985; 1986). In the present study, positive and fair occurrences were considered significantly more internal than negative/unfair occurrences, consistent with the hypothesis. To illustrate this, two extracted attributions are shown below.

Example explanation for a negative occurrence – where the causal attribution is external:

I didn't think that they prepared you very well for the actual test you that you were taking... → *so I didn't think that was very fair/*

Example explanation for a positive occurrence – where the causal attribution is internal:

I just did my best at it I suppose, → *so [the psychometric test] was good/*

This is a significant finding in applicant perception research since attributing negative/unfair occurrences externally and positive/fair occurrences internally indicates a self-serving bias. This occurs when individuals make situational (external) claims for negative/unfair occurrences and dispositional (internal) claims for positive/fair outcomes (Russell, McAuley & Tarico, 1987). It is in fact an attributional 'error' prevalent in applicant perception research (e.g. Chan & Schmitt, 1997; Chan et al, 1998a; Chan et al, 1997) and may provide an ego-enhancement mechanism leading to perceptions of unfairness of selection methods (an 'excuse') by applicants who feel they have not done well (McFarland & Ross, 1982; Schleicher et al, 2006; Weiner, 1986; Wong & Weiner, 1986). Attributions that blame negative outcomes on other people or situations may be less threatening to candidates' self-esteem (e.g. Higgins & Snyder, 1989). Self-serving biases may therefore serve as a buffer to protect individuals from lowered self-esteem and depression resulting from attributing unfavourable outcomes to internal causes (Weiner, 1986). If individuals are forced to come to terms with their responsibility for negative outcomes, it could result in decreased self-perceptions (Ployhart & Harold, 2004) or result in feelings of guilt and resignation leading to giving-up a goal (Weiner, Russell & Lerman, 1979).

On the other hand, by attributing negative occurrences to external factors such as unfair selection processes, the resulting affective outcome is likely to be anger or frustration towards the selection process, organisation, or organisational representatives (Weiner, 1985). This may indicate why there is a relationship between candidates' perceptions of unfair selection processes and lowered organisational attractiveness (e.g. Bauer et al, 1998). Therefore, a self-serving bias is adaptive from an individual's perspective because one's self-esteem is upheld, but is not so helpful from an organisation's

perspective because this may result in perceptions that selection methods are unfair and consequently result in reduced organisational attractiveness (Ployhart & Ryan, 1997).

6.4.2 Stable-unstable dimension

The stable-unstable dimension refers to how permanent or long lasting the speaker believes the attribution cause to be (Silvester, 2004) and in this study these were rated stable if they were likely to have an ongoing impact on the speaker's application. Findings indicated that in general candidates attributed both negative/unfair occurrences to be more stable than positive/fair occurrences, although this was significant for only the application and the assessment centre. To illustrate this, two extracted attributions are shown below.

Example explanation for a negative (unfair) occurrence – where the causal attribution is stable:
/that was you know, unfair ← cos ... the problem was with the drop down menus for the options, they were all medically-geared and yet this was apparently a non-medical application form

Example explanation for a positive occurrence – where the causal attribution is unstable:
/I had a great time [during the assessment centre] ← ...it's lovely to spend time thinking about [public health related] things in that way

The stable-unstable dimension is likely to be important in applicant perceptions because stability has an influence on an individual's expectancies relating to future outcomes (e.g. Sweeney, Anderson & Bailey, 1986). For instance in research examining applicant reasons for withdrawal from a selection process (e.g. Ployhart, McFarland & Ryan, 2002), findings indicated that the more unstable the cause, the greater were the re-application expectations. Stability also has affective implications, for instance hopelessness and resignation may be felt regarding a negative experience perceived to be due to stable causes, as is found in this study (Moore, 2000; Weiner, 1986; Weiner et al, 1979). In fact, findings in this study contradicted the hypothesis (based on prior research, e.g. Ployhart et al, 2005; Ployhart & Ryan, 1997) that negative/unfair occurrences would be more unstable than stable. A likely explanation

for this is that Ployhart and Harold's (2004) interpretation of Weiner's (1986) model suggests that stability will be related to a positive outcome (i.e. receiving a job offer). However, since the pass/fail outcome was not yet known to candidates in this study, data collection focused on positive/negative and fair/unfair *occurrences* during selection rather than candidate success *per se*. Therefore a slightly different description was assigned to the stable-unstable dimension in this chapter than the original Weiner (1986) definition (because the LACS method suggests that definitions should be modified to fit the research context). For instance, a cause was rated stable if it was likely to have an ongoing impact on the *speaker's application* whereas other definitions (e.g. Weiner, 1986) refer to stability as having an impact *in the future.* Thus, what may have been considered as stable in this chapter (e.g. the medical focus of the application form) would not necessarily have been considered stable according to Weiner's definition; because the application form's medical focus would not necessarily have had an impact in the candidate's *future.* On the other hand, negative occurrences during the application form stage may lead to applicants not getting through the process which *does* have a subsequent negative impact on career choices and thus may appear more stable than unstable to candidates. Consequently in the context of this research it was useful to interpret stability in this way since negative occurrences may have stable and long-lasting effects beyond the application.

Furthermore, Wiener (1985) hypothesises that a determinant of causal attributions for performance depends on an individual's expectation of success. Therefore if performance is much worse (or better) than anticipated, this can lead to an unstable attribution. This is supported by empirical research showing that as the difference between expected and actual performance on students' midterm exams increased, causal attributions became less stable (Russell et al, 1987). Therefore a second plausible explanation for the present findings is that postive/fair occurrences during the selection process were not consistent with candidate's expectations and therefore led to unstable attributions (Wong & Wiener, 1981).

A third possible explanation for findings contrary to previous research may relate to the way in which data were collected. Previous research has focused on a quantitative

examination of attributions and their relation to fairness, whilst this chapter has examined spontaneously-produced attributions elicited during an interview. In fact, Ployhart and Ryan's (1997) paper focuses only on the *primary* perceived reason for being selected or rejected which was then rated on the three causal dimensions. In the present context the focus was on spontaneously-produced attributions about candidates' experiences of the selection process, relating to positive/negative or fair/unfair occurrences. Nevertheless, it should be noted that the context specificity of attributions is not unusual; for instance Wong and Weiner (1981) found that following negative outcomes, students' focus was directed to internal controllable causes, whilst following positive outcomes, focus was directed to external uncontrollable causes; directly contrary to what researchers (e.g. Ployhart & Harold, 2004) might expect.

6.4.3 Controllable-uncontrollable dimension

The controllable-uncontrollable dimension relates to the perceived controllability of a cause and in this chapter an attribution was rated controllable if the cause could be changed by the speaker to produce a different outcome (Silvester, 2004). Findings indicated that for all aspects of the selection process, candidates attributed positive and fair occurrences significantly more controllable than negative or unfair occurrences, which supports the hypothesis. To illustrate this, two extracted attributions are shown below.

Example explanation for a negative occurrence – where the causal attribution is uncontrollable:
/I don't think I performed to the best of my ability [on the psychometric test] ← *due to the time constraints*

Example explanation for a positive occurrence – where the causal attribution is controllable:
/I felt the selection day was quite fair really ← *[as I had] much better opportunities to say what I wanted*

This dimension is important for applicants during a selection process because the perceived controllability of a cause influences a person's motivation to act upon or change future outcomes (Weiner, 1986). For example, research (e.g. Ployhart et al,

2002) has shown that when controllable causes are reported relating to the reason for withdrawing from a selection process, individuals held lowered re-application expectations. Additionally, controllability is linked to emotional reactions to success or failure (Weiner, 1985). For instance, if a negative event occurs, such as failing an interview, but it is thought to be inevitable regardless of the individual's effort or ability (e.g. processes that favoured other types of candidates) then the individual is less likely to experience negative feelings towards themselves, but is more likely to feel anger towards the organisation (Weiner, 1985; 1986). On the other hand, if a negative event occurs that is within a person's control, the individual is more likely to experience negative feelings. In other words, perceptions of controllability can lead to feelings of guilt (if internally attributed), or anger towards others (if externally attributed; Ployhart et al, 2002).

Additionally, perceived control over ones performance is likely to be associated with higher positive affect; whilst lack of control is likely to be related to negative affect (Bandura, 1991). This may be due to the fact that individuals who believe that they have control over their performance cope more effectively than those who do not (Bandura, 1991). Indeed, the perceived controllability of situations has been found to influence the types of coping strategies that individuals use in stressful circumstances, and is therefore important in adaptive processes (Aldwin, 1991). For example, in a training context, empirical research (Martocchio & Dulebohn, 1994) shows that when trainees received feedback framed in a way that attributed their performance to controllable factors, they had higher software efficacy which in turn related to increased learning. It follows therefore that attributing positive occurrences during a selection process to controllable causes may lead to positive affective, motivational and potentially behavioural outcomes.

6.4.4 Implications for research and practice

This research has a number of important research and practical implications. Firstly, the initial content analysis indicated that overwhelmingly, candidates discuss face validity of selection methods as a salient aspect of the selection process, consistent with

previous findings (Gilliland, 1995). This was followed by having the opportunity to demonstrate their range of knowledge skills and abilities. Practically, this may imply that organisations should ensure that they incorporate these two aspects in their selection processes. Additionally, this lends qualitative support to the findings in Study 2 where chance to perform and job relatedness-content were the most predictive of overall fairness perceptions.

Secondly, content analysis also indicated that there is more about a selection process to which candidates react than merely the selection methods themselves and procedural justice rules. In particular, aspects such as candidate educational background, a professional process, and the usability of online technology were salient features. It appears therefore that to some extent candidates compare themselves with other applicants when assessing their selection experience. Additionally, the salience of "technology" may have important practical implications for organisations. The Internet revolution has been a relatively recent phenomenon (Cascio & Aguinis, 2008a; Engardio, 2006) with many organisations now using their websites to recruit applicants (Chapman & Webster, 2001; Coyne, Warszta, Beadle & Sheehan, 2005; Pfieffelmann, Wagner & Libkuman, 2010). However, research evidence shows that poor navigation and usability of websites can have a detrimental effect on applicants being able to successfully submit online applications (Nielson, 2000). Despite the increase in the use of technology in selection, there has been little research focusing on applicant perceptions of such methods (Anderson, 2003; Truxillo et al, 2004). On the other hand, online testing has received research attention relating to the psychometric equivalence of internet versus paper-based testing format (e.g. Coyne et al, 2005). Indeed, the International Test Commission guidelines suggest that it is important to consider the technological aspect of online testing (e.g. Coyne & Bartram, 2006); but potentially organisations should consider the technology of all forms of internet-based recruitment activities, their ease of use, and the candidate experience of these (Ryan & Huth, 2008). In sum, research relating to applicant perceptions of online recruitment and selection is warranted.

Thirdly, also from a research perspective, attributional analysis findings suggest that applicants do take part in a process of sense-making in order to identify the causes of events during selection (Wong & Weiner, 1981). It therefore appears that experiencing a selection process prompts an attributional search and thus it may be important to examine attributions as potential *determinants* of applicant perceptions in selection contexts. This is perhaps not surprising since Weiner (1986) suggests that causal searches will be prompted for situations that are important, negative, or unexpected. In a selection context, first of all, the situation is likely to be important to individuals as they would have had to be at least somewhat interested to apply for the job in the first place; secondly, the outcome will be negative for those who do not get offered the job; and thirdly for some applicants there may be elements of the selection situation that are unexpected, relating either to an unexpected outcome, or to the selection methods and process itself (Ployhart & Ryan, 1997). Therefore, it seems reasonable that applicants will engage in a causal search during a selection process.

A fourth implication is that attributions made by applicants during selection might predict subsequent outcomes, according to attributional theory (Weiner, 1986). For example, in one study examining attributions (Ployhart & Ryan, 1997), an internal locus was found to positively predict recommendation intentions; and in a further study (Ployhart et al, 2002), individuals who made stable and controllable attributions for withdrawal also reported lower expectation that they would re-apply to the job, or one similar, in the future. Moreover, attribution theory suggests that the stability dimension relates most strongly to expectations of future success and behavioural intentions whilst the locus/controllability dimensions relate to self-perceptions and finally the controllability dimension relates to self-evaluations (Campbell & Martinko, 1998; Weiner, 1986; Wong & Weiner, 1981). All these outcomes are the types of consequences that have been examined in applicant perception research through a justice lens (e.g. Bauer et al, 2001; Chan et al, 1997), without much success of linking behavioural intentions to actual behavioural outcomes (Sackett & Lievens, 2008). Indeed, based on attribution theory the pattern of attributions for negative occurrences found in the present study (stable, external, uncontrollable) relates to feelings of 'hard requirements' or 'task difficulty' (Russell et al, 1987; Weiner, 1986) and is likely to

lead to emotions such as anger and or exacerbate feelings of stress (Harvey & Dasborough, 2006). Given that Weiner's (1986) attribution theory has received extensive empirical support, it is plausible that in order to explain the outcomes of applicant perceptions, researchers need to understand the attributions that applicants make in response to situations that occur during the selection process.

This leads onto a fifth implication. It is possible that, as suggested by Ployhart and Harold (2004) in relation to the AART theory, the link from applicant perceptions to affective, cognitive and behavioural outcomes may go via attributional processing. Thus AART may be a useful theoretical framework to examine applicant perceptions. Attribution theory could provide the psychological mechanism through which to examine the link to psychological and behavioural outcomes. This may lead to a better understanding of the underlying psychological mechanisms of applicant perceptions and in turn, it may be possible to better predict the likely consequences for both candidates and organisations.

Sixthly, results showed that applicants discussed negative occurrences more frequently than they discussed positive occurrences. This indicates that applicants appear to give more weight to negative than positive events in the selection process; and further, that negative occurrences are salient to applicants (Weiner, 1986). This has practical implications for organisations: they may need to "work hard" to ensure that applicants leave the process with positive perceptions; particularly since, by definition, more applicants will be rejected than selected by an organisation's selection process.

Finally, results suggest a self-serving bias where applicants take less responsibility for negative occurrences than is possibly warranted. By attributing negative occurrences to external factors such as unfair selection processes, the resulting affective outcome is likely to be anger or frustration towards the selection process, organisation, or organisational representatives (Weiner, 1985). From a practical perspective, this suggests that organisations may need to ensure that they provide sufficient situational information to achieve realistic candidate expectations to reduce potential attributional

errors and biases. For example, clear information as to why the particular selection methods are being used, and their content/predictive validity.

6.4.5 Limitations

There are a number of limitations of this research that should be noted. Firstly, the causal explanations provided by participants in this research related to one selection process and were specific to the methods, processes and the recruiting organisation. Therefore results may not be generalisable beyond this particular selection process. Indeed, one might argue that this research lacks practical utility since it was qualitative and therefore, less generalisable (Symon et al, 2000). However an alternative view is that this study is actually highly practical since it is grounded in the concerns and 'sense-making' of the applicants themselves.

Secondly, a potential criticism of this study is that asking candidates to discuss their experiences of a selection process may be open to impression management (Arnold & Feldman, 1981). Although candidates were assured that the researcher was independent from the selection process and that information would be anonymous and used for research purposes only; it is possible that some candidates were not as open and truthful as they could have been because this was a selection context where they wanted to convey particular impressions to decision-makers. However, given the high incidence of attributions made regarding negative occurrences, it is likely that participants felt free to report their genuine beliefs about the process.

Thirdly, the results for the present chapter relied on the accurate translation of causal attributions into causal dimensions. There is the possibility that this research may suffer from "fundamental attribution researcher error" (Russell, 1982, p. 1137) where the researcher and attributer may not necessarily agree on the meaning of a causal attribution, since the researcher could perceive the cause differently to the attributer (Weiner, 1986; Wong & Weiner, 1981). To reduce this error, researchers (e.g. Russell, 1982; Russell et al, 1987) propose using the causal dimension scale (CDS) where attributors themselves rate statements on causal dimensions. Although this method is

useful, if the CDS had been used it would have significantly reduced the number of attributions rated since the CDS focuses on *primary* causes rather than spontaneously-produced attributions. Furthermore, it would have been logistically impossible for participants to code their own (spontaneously-produced) statements in this context. Therefore, although this error may have been present (so results may have to be interpreted with this in mind), it is the researcher's belief that the correct approach was taken for this particular study and context. Additionally, in checking the reliability of each dimension the researcher ensured that there was at least good inter-rater reliability (Kappa values ranged from 0.71-0.93, indicating good reliability; Fleiss, 1971). Nevertheless, future research could be designed so that attributions can be coded by the attributors themselves.

Finally, in collecting data via interviews, this research was based on retrospective accounts and therefore relied on the individuals' memories since most data was collected at least a week following the selection process itself. Although all interviews were conducted within three weeks of the process, future research should aim to collect data immediately following the process in order to minimise potential memory limitations.

6.4.6 Summary

Despite the limitations of this study, the work has made a unique contribution in the area; firstly by examining applicant perceptions using a qualitative method to collect data and secondly by exploring the attributions applicants made in relation to the selection process. These results may provide an early step towards suggesting that attributions can be considered as determinants of applicant fairness perceptions; and taken together, the findings may suggest that an attribution framework could help to understand the psychological mechanisms underlying applicant perceptions.

The next chapter turns to a discussion of the whole research programme and explores the theoretical and practical implications of the research, considers its limitations and finally presents future research directions.

Chapter 7: General Discussion

This thesis has explored the determinants of applicant fairness perceptions in high-stakes selection settings, and specifically set out to answer the following research question:

"To what extent are person characteristics, selection methods, procedural justice rules and attributions determinants of applicant fairness perceptions in high-stakes selection settings?"

A first aim of this thesis was to populate research evidence into areas where it was currently lacking. In so doing, the extent to which person characteristics could be considered determinants of fairness perceptions was explored. This included an examination of so-called *'trait-like' variables* (e.g. Schmitt & Chan, 1999), including gender, ethnicity and candidate educational background; and *individual differences*, including personality, self-efficacy and cognitive ability. Additionally, *attributions* were explored as a potential psychological mechanism and determinant of fairness perceptions. In brief, findings from this programme of research showed that neither gender nor ethnicity were determinants of applicant fairness perceptions; but that candidate educational background, personality, self-efficacy and cognitive ability were. However, cognitive ability only exerted an influence on fairness perceptions when combined with candidate educational background. Furthermore, findings suggested that when candidates experience a selection process, it prompts an attributional search and thus attributions may also be determinants of fairness perceptions.

A second aim of this thesis, where research evidence already existed, was to extend findings to a different research context; that is, using field-based applicant in high-stakes selection settings. This included an examination of selection methods and procedural justice rules. Findings from this research indicated that selection method characteristics influence job-relatedness perceptions and on the whole supported previous lab-based findings. Procedural justice rules were also found to be important

determinants of fairness perceptions; however findings indicated that only job relatedness, chance to perform and communication were significant determinants of fairness perceptions. This somewhat contradicted previous research and may suggest that the other justice rules (information, consistency, treatment) were not important to the applicants in this research setting. Indeed, qualitative findings in Study 4 demonstrated that other aspects of a selection process (such as online technology) are indeed salient to applicants.

Figure 7.1 again presents the framework that was used as a means to examine the determinants of fairness perceptions within this research programme. As can be seen from this diagram, it shows that both job characteristics and organisational context variables may also be important predictors of fairness perception. Therefore the research aimed to control for these variables, first by drawing populations from one particular organisational context (the National Health Service) to control for the organisational context variables; and second by using samples from two particular selection processes and in doing so, controlling for the job characteristic variables.

The following sections will first briefly outline the four studies that were carried out in this research programme. This is followed by a general discussion of the theoretical implications of this thesis, examining the extent to which each of the determinants have been found to influence applicant fairness perceptions. Next, the practical implications are presented; then a summary of the main limitations of this research programme. Finally, the chapter ends with some suggestions for future research directions.

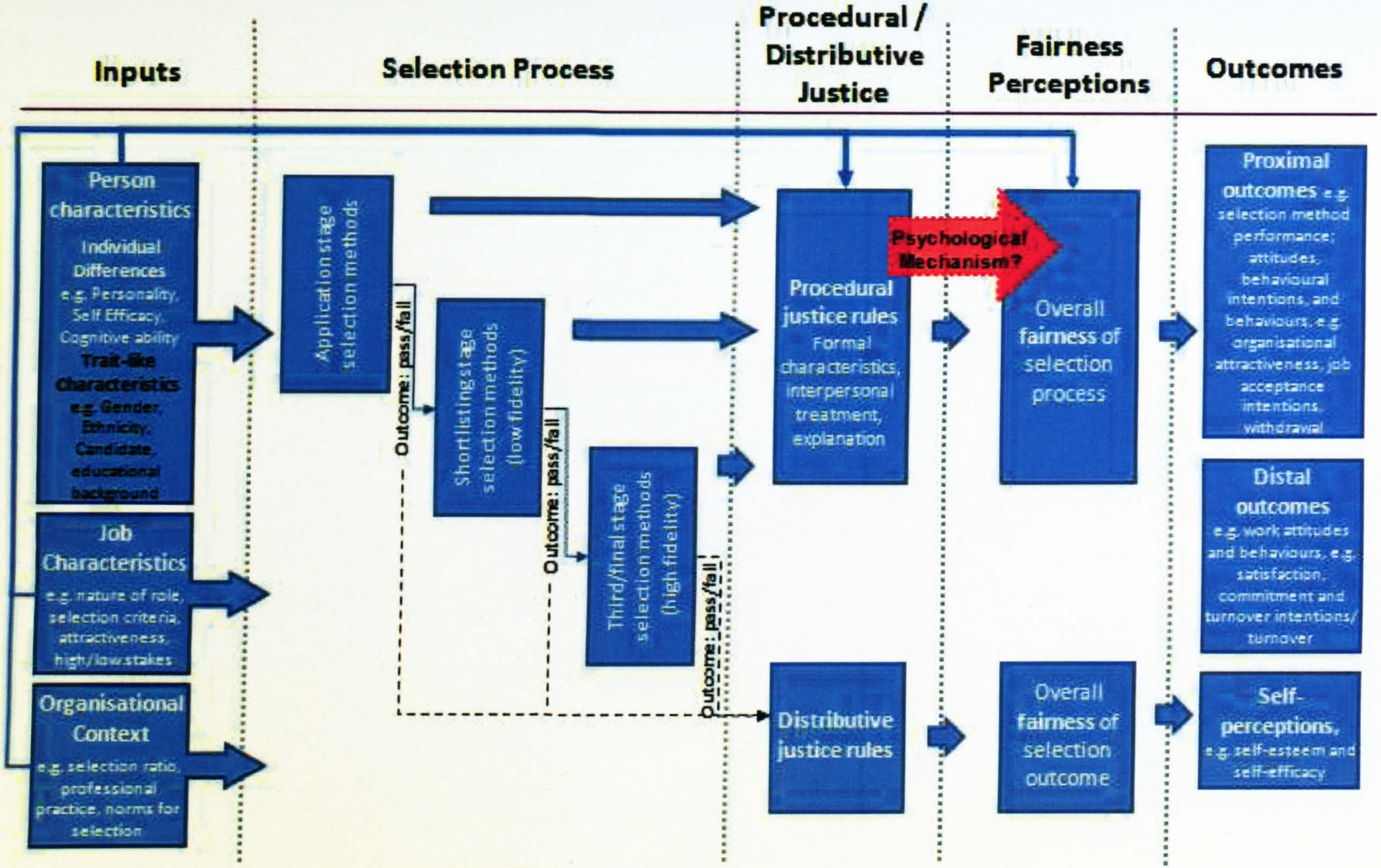


Figure 7.1: Framework for examining applicant perceptions in this thesis

7.1 Summary of results from empirical chapters

In total, four studies were carried out:

1. An investigation of the role of job relatedness, personality and self-efficacy in fairness perceptions;
2. An investigation of the role of procedural justice rules, cognitive ability and candidate educational background in fairness perceptions;
3. An investigation of job relatedness perceptions of selection methods in three field-based samples;
4. An investigation of the role of attributions in applicant fairness perceptions of a selection process.

The following sections briefly review the studies reported in this thesis, summarising key findings.

7.1.1 Study one: An investigation of the role of job relatedness, personality and self-efficacy in fairness perceptions

This study investigated job relatedness, personality variables and self-efficacy as determinants of process fairness perceptions.

The main findings in this study were:

- Sample 1: job relatedness perceptions (at T1) positively predicted process fairness perceptions (at T2); with the SJT predicting unique variance. Sample 2: job relatedness (at T1) positively predicted process fairness perceptions (at T2); however no single selection method predicted unique variance. For Sample 2, the outcome (pass/fail) was more significant in predicting process fairness.
- Personality variables added incremental variance in predicting process fairness beyond that accounted for by job relatedness perceptions, specifically emotional stability added unique variance. This finding was replicated across both samples.
- Findings indicated that occupational self-efficacy was not negatively influenced by failing the selection process. Instead, results showed that self-efficacy explains

variance in process fairness perceptions beyond that accounted for by job relatedness perceptions and personality, with findings replicating across both samples.

- This study was important for three main reasons: (1) findings demonstrated the importance of acknowledging the stage in the selection process because this may determine whether job relatedness or the outcome (pass/fail) is a more significant determinant of fairness perceptions; (2) although effect sizes were small, findings showed a role for individual differences in fairness perceptions, indicating that there may be a stable element to fairness perceptions; (3) results indicated that self-efficacy may be an important determinant of fairness perceptions, which may be particularly relevant in high-stakes selection settings.

7.1.2 Study two: An investigation of the role of procedural justice rules, cognitive ability and candidate educational background in applicant fairness perceptions

Study 2 built on the previous chapter by exploring other aspects of procedural justice in addition to focusing on job relatedness, and also examined the role of cognitive ability and candidate educational background in explaining applicant perceptions.

Findings indicated:

- The two stages of the selection process were perceived differently on procedural justice aspects: shortlisting was considered more consistent and rated more positively on information known than the AC, whilst the AC was rated higher on chance to perform and the process was rated fairer than shortlisting.
- Job relatedness, chance to perform and communication positively predicted perceptions of fairness at both stages of selection, but cognitive ability did not add incremental variance to this.
- Person characteristics variables (high/low cognitive ability and candidate educational background) and passing/failing the process interacted to influence the way in which procedural justice perceptions were rated; such that applicants with medical training and high cognitive ability, rated T1 procedural justice rules higher

than those with low cognitive ability. Conversely, those without medical training, but with high cognitive ability rated procedural justice rules consistently lower than the low cognitive ability group.

- The findings from this study were important for three main reasons: (1) contrary to expectations, not all the procedural justice rules influenced fairness perceptions; potentially this indicates that these rules are not always salient to applicants and that further qualitative research may be necessary to determine aspects of a selection process that *are* salient; (2) the two and three-way interactions found between variables (cognitive ability, candidate educational background, pass/fail) demonstrate that interactions may influence the potency of a variable's influence on fairness perceptions; (3) findings indicate that it is important for organisations to have a clear understanding of their applicant pool, because some types of applicants may need more information about selection methods/processes more than others.

7.1.3 Study three: An investigation of job relatedness perceptions of selection methods in three field-based samples

This study explored whether there were differences in job relatedness perceptions of a number of different selection methods and also examined whether applicant demographics were determinants of these perceptions.

The main findings in this study were:

- In Sample 1, the JKT was considered more job related than the SJT, whilst in Sample 2 the SPC was considered the most job related selection method as compared to the GE or WE. In Sample 3, the NR was considered least job related, followed by CT; the GE and interview were considered the most job related (with no difference between the two). Results were the same for job relatedness in terms of perceived content and predictive validity.
- Gender and ethnicity were not determinants of job relatedness perceptions. Findings indicated no demographic group differences in relation to job relatedness for all the selection methods examined in this study.

- These findings are important because: (1) they support previous lab-based findings that work samples are generally perceived to be more fair than psychometric tests, implying that students may rate hypothetical selection scenarios in similar ways to applicants experiencing the methods in a high-stakes selection setting; and (2) findings support meta-analytic assertions (Hausknecht et al, 2004) that there is a near zero relationship between gender/ethnicity and fairness perceptions.

7.1.4 Study four: An investigation of the role of attributions in applicant perceptions of a selection process

The primary aim of Study 4 was to examine the types of causal attributions applicants made when they discussed their experiences during a selection process. A secondary aim was to investigate the content of applicant attributions; that is, what topic the participants discussed in relation to their selection experience.

The main findings in this study were:

- The content analysis revealed that candidates discussed more than just the procedural justice rules put forward by Gilliland (1993). In fact, issues such as candidate educational background and technology were discussed by candidates.
- Positive/fair occurrences were mainly attributed to internal, unstable and controllable causes; whilst negative/unfair occurrences were generally attributed to external, stable and uncontrollable causes.
- The results are important because firstly they showed that applicants take part in a process of sense-making in order to identify the causes of events during selection. Experiencing a selection process prompts an attributional search and thus findings went some way towards suggesting that attributions may be considered determinants of fairness perceptions. Exploring attributions may lead to a better understanding of the underlying psychological mechanisms of applicant fairness perceptions. Secondly, findings showed that applicants react to more about a selection process than merely the selection methods and aspects of procedural justice.

7.2 General discussion and theoretical implications

Having outlined brief findings from each of the four studies, this chapter now turns to a general discussion of the theoretical implications of this thesis. The following sections explore the variables examined in this research programme and consider the extent to which they are determinants of fairness perceptions based on findings from this thesis. Essentially, this is a summary and extension of the research implications already considered in the individual chapters.

7.2.1 Person characteristics

A key aim of this research was to examine the extent to which person characteristics were determinants of fairness perceptions. Researchers have called for more research in this area (e.g. Hausknecht et al, 2004) and thus the present research programme has made a significant contribution to the applicant perception research by examining a number of key person-level variables. These were: gender, ethnicity, personality, self-efficacy, cognitive ability and candidate educational background. These are each considered in turn.

7.2.1.1 Gender

Gender has been a widely-examined demographic variable in organisational research (e.g. Davey, 1998; Gutek & Cohen, 1987; Viswesvaran & Ones, 2004), but research findings relating to fairness perceptions are mixed. Some research has found gender differences (e.g. Chapman & Ployhart, 2001) where women react more negatively than men to some types of unfairness; and other research has found no gender differences in fairness perceptions of selection methods (e.g. Carless, 2006; Ispas et al, 2010). In Study 3 however, no gender differences were found in relation to perceptions of job relatedness for all the selection methods examined. Thus, research findings lead to the conclusion that gender is *not* a determinant of applicant perceptions.

These findings might suggest that, as asserted by Lefkowitz (1994), when studies employ designs where potential covariates are controlled (such as educational level, perceived intrinsic job characteristics and organisational level or pay); gender

differences relating to job attitudes and reactions disappear. Indeed, Lefkowitz suggests that apparent male-female differences in attitudes and other reactions to their working environment are largely due to the spurious effects of other variables that co-vary with gender. Therefore the findings in this thesis may indicate that when certain covariates are controlled for (educational level, nature of the job role, conditions of external labour market, organisational context variables and so on), no gender differences are found in applicant perceptions of selection processes. This is something that may need to be considered, and potentially controlled for, in future research examining gender differences in applicant perceptions.

7.2.1.2 Ethnicity

Another determinant of applicant perceptions that has been suggested is ethnicity. Although previous research has shown ethnic group differences in test-taking attitudes (e.g. Arvey et al, 1990), test perceptions (e.g. Schmitt et al, 2004) and perceptions of importance of various aspects of selection methods (e.g. Viswesvaran & Ones, 2004); no ethnic differences have been found in relation to procedural justice perceptions (Chan et al, 1998b). Research findings in this thesis also suggest no ethnic differences in job relatedness perceptions for any of the selection methods examined, lending support to previous research (Chan et al, 1998b; Hausknecht et al, 2004; Zibarras & Patterson, 2009). Therefore it is concluded that ethnicity is *not* a determinant of applicant perceptions in this research programme.

It should be noted however, that previous research examining ethnic group differences in applicant perceptions has generally examined *test-taking motivation* in relation to *cognitive ability testing* (e.g. Chan et al, 1997); furthermore the focus has often been on Black-White ethnic group differences. In the current organisational context, it is highly plausible that general levels of test-taking motivation were high, given that the selection processes were so high-stakes (Carr & Patterson, 2009); although this cannot be corroborated since test-taking motivation was not measured. Furthermore, the present research focused on a number of different selection methods, in addition to cognitive ability tests. It is possible therefore that ethnic minorities' perceptions may be

more positive when motivation is high and when there are a variety of selection methods being used, as opposed to cognitive ability tests alone. It may follow therefore that a variety of selection methods should be used in order to improve ethnic minority perceptions of selection processes. The alternative explanation is that although this thesis focused on White versus non-White group differences, the non-White category was mainly composed of individuals with Asian ethnic origin. Therefore it is possible that current findings were more reflective of White versus Asian group differences, which is different to previous research (e.g. Chan & Schmitt, 1997; Schmit & Ryan, 1992).

Overall, the theory of *relational demography* (Tsui, Egan & O'Reilly, 1992; Tsui & O'Reilly, 1989) may plausibly explain the lack of demographic group differences. Relational demography proposes that *"individuals compare their own demographic characteristics with those of others in their social units to determine if they are similar or dissimilar in their demographic characteristics to the composition of the unit"* (Riordan & Shore, 1997, p. 342). The extent to which an individual is similar in demographic characteristics to the composition of the social unit is said to positively influence a person's work-related attitudes. It is possible that within this research programme, since the selection processes (or "work units") were composed of almost equal minority and majority groups (male/female and White/non-White), individuals were relatively similar in demographic terms to the rest of the applicants within each selection process. Thus, since the theory of relational demography proposes that it is relative, not absolute, demographic characteristics that predict an individual's work attitudes; it could be concluded that within the different social contexts of other selection processes, demographic group differences may be revealed. Nonetheless, given that these results were consistent across three different samples covering different selection processes and different stages of selection using a variety of methods, these findings *may* be generalisable to different selection contexts. However, further research would be necessary to substantiate these findings.

In sum, this research has shown no demographic group differences in relation to perceptions of job relatedness for all the selection methods examined in Study 3. From

the organisation's standpoint, since the NHS attracts and recruits a diverse range of applicants each year, these findings have positive practical implications. The fact that no one particular group has more negative (or positive) perceptions of any of the selection methods is important; furthermore this demonstrates the utility of ongoing evaluation from the applicants' perspective to ensure that no one group perceived the process to be significantly different to others (Patterson & Ferguson, 2007).

7.2.1.3 Individual differences – personality and self-efficacy

As mentioned in the first chapter, a limitation that has been noted several times (e.g. Anderson, 2003; Schmitt & Chan, 1999) is that individual differences in applicant perceptions have rarely been considered, despite frequent calls within the literature to do so (e.g. Ryan & Ployhart, 2000). Previous research suggests a role for personality as a determinant of fairness perceptions (e.g. Hausknecht et al, 2004) and these authors noted that research on personality variables has been limited and thus more research is warranted. Additionally, there has been a debate in the literature as to whether self-efficacy is better conceived of as a trait and therefore a determinant of applicant perceptions (e.g. Nikolaou & Judge, 2007; Ryan et al, 1996), or better conceived of as an outcome variable as suggested by Gilliland (1993).

Study 1 investigated whether personality variables predicted process fairness perceptions. Findings demonstrated that emotional stability accounted for variance in process fairness perceptions, beyond that accounted for by job relatedness perceptions. Although the effect sizes were small, findings were consistent across two field-based samples, and so could imply that there is a stable component to fairness perceptions. Individuals low on ES have been found to experience life events more negatively than others (e.g. Magnus et al, 1993) and are less able to cope effectively with stressful situations (Costa & McCrae, 1992). Furthermore, negative affectivity, which is comparable to low emotional stability (van den Berg & Feij, 2003), is predictive of high levels of work anxiety (Spector & O'Connell, 1994). Since selection processes are considered to be stressful by candidates (Truxillo et al, 2006), it is perhaps not surprising that emotional stability is positively related to applicant perceptions of

process fairness. As was considered in Study 1, this can be interpreted by considering fairness perceptions to be *characteristic adaptations* that develop through an applicant's interaction with the selection environment. An individual's *basic tendency* (or Big Five trait) relating to emotional stability positively influences the development of fairness perceptions. Findings support McCrae and Costa's (1999) assertion that low emotional stability (or neuroticism) is associated with pessimistic attitudes (McCrae & Costa, 1996; 1999; 2003).

Study 1 also investigated whether self-efficacy is better conceived of as a trait and therefore a determinant of applicant perceptions (that is, an independent variable), or better conceived of as an outcome (or dependent variable) as suggested by Gilliland (1993). Findings suggested that, self-efficacy was *not* an outcome negatively influenced by experiencing the selection process. This is contrary to previous research findings (e.g. Bauer et al, 1998) that have suggested *test-taking self-efficacy* is negatively influenced by failing a selection process. Test-taking self-efficacy relates to a person's evaluation of their ability to cope with the actual testing process (Bauer et al, 1998), which is a relatively context-specific construct (Ployhart & Ryan, 1997), and as such perhaps not surprisingly influenced by experiencing a selection process. It is therefore plausible that the findings in this thesis relate to the broader conceptualisation of self-efficacy, that is *occupational self-efficacy* (Schyns & von Collani, 2002), being used. Indeed, occupational self-efficacy is considered a global personality construct and assumed to a trait and therefore stable over time (Schyns & von Collani, 2002).

Findings could also, to some extent, be related to sample characteristics of this high-stakes selection process, and explained using Consistency Theory (Dipboye, 1977). For, perhaps the majority of applicants, not receiving a job offer may be at odds with their previous high academic success of gaining a place in medical school and subsequent academic achievements obtained throughout training and foundation programmes. Since Consistency Theory (Dipboye, 1977) suggests that people strive to maintain a positive self-image, when individuals have high self-perceptions they may reject negative feedback (that is, failing the selection process) because it is inconsistent with their self-image. Therefore, individuals who failed the selection process may have

discounted this to maintain a positive self-image and as such self-efficacy was not negatively affected by not being offered a post (Schleicher et al, 2006).

On the other hand, self-efficacy added incremental variance to process fairness beyond that accounted for by both job relatedness perceptions and emotional stability. Although effect sizes were again small, findings replicated across two samples, increasing the potential generalisability to other organisational settings. Significantly, results from this study showed that self-efficacy can be conceived of as a trait and therefore a determinant that *positively predicts* fairness perceptions. Although this study took a considerably different perspective from some authors (e.g. Bauer et al, 1998); it is nevertheless a view supported by other researchers (Nikolaou & Judge, 2007; Ryan & Ployhart, 2000). Thus Study 1 is unique in the fact that it was designed to explore both possibilities: self-efficacy as either a determinant or an outcome of fairness perceptions.

Self-efficacy relates to a person's evaluations of their ability to perform successfully in a variety of situations and generally, empirical research shows that self-efficacy relates positively to work attitudes such job satisfaction and also job performance (e.g. Judge et al, 2004; Judge & Bono, 2001). Individuals high on self-efficacy deal effectively with difficulties (Gist & Mitchell, 1992), persist when challenges arise (Myers, 1999), and are more likely than others to attain desired outcomes (Judge & Bono, 2001). Furthermore, substantial positive relationships have been found between occupational self-efficacy and internal locus of control (r = .49; Schyns & von Collani, 2002) supporting Bandura's (1977) assertion that people with high perceptions of self-efficacy tend to attribute favourable performance to internal factors such as personality or disposition. In fact, these findings may be explained by the self-serving bias mechanism: applicants who perceive that they have performed well during the selection process report higher favourability perceptions than those who perceive that they did not perform well (e.g. Chan & Schmitt, 1997; Chan et al, 1998a). If self-efficacy relates to how individuals *generally* feel about themselves (that is, better able to cope and perform successfully in a wide array of situations), then they may believe they will perform well during selection and therefore rate the process fairer. In sum, findings

from this thesis suggest that emotional stability and self-efficacy can be considered determinants of fairness perceptions at least to some extent. Future research should therefore aim to measure these constructs when examining applicant fairness perceptions.

7.2.1.4 Individual differences – cognitive ability

A further individual difference that has been suggested as a potential determinant of applicant perceptions is cognitive ability (e.g. Bauer et al, 2004). However, there has been scant empirical research examining the role of cognitive ability in fairness perceptions, although two studies indicate it might play a role (Bauer et al, 2004; Viswesvaran & Ones, 2004). The former study focused only on screening selection methods and for the latter, participants merely rated their perceptions of selection processes in general, rather than their experience of a specific selection process. As such, further research relating to cognitive ability was warranted. Therefore, Study 2 explored the role of cognitive ability by examining the extent to which cognitive ability added variance to fairness perceptions, over and above that already accounted for by procedural justice perceptions. Findings indicated that at both shortlisting and assessment centre stages, cognitive ability did not add incremental variance in explaining fairness perceptions, suggesting that perhaps it is not important in determinant perceptions of fairness. This is contrary to previous research (e.g. Viswesvaran & Ones, 2004), where cognitive ability was positively related to content perceptions (including job relatedness); but consistent with Bauer et al's (2004) findings, where cognitive ability was not related to structure fairness.

It could be reasoned that applicants with high cognitive ability are the most desirable candidates since they are likely to have the potential to be high performers on the job (Hunter, 1986; Schmidt, 2002). Since cognitive ability was not a predictor of fairness perceptions, it appears that the (potentially) most desirable candidates thought the process was neither more nor less fair than other candidates. Therefore, at first glance, it appears that the best candidates are not being put off the organisation through its selection process (Bauer et al, 2004).

7.2.1.5 Cognitive ability and candidate educational background

However, when cognitive ability is explored further in association with other key variables (that is, candidate educational background and pass/fail), another picture emerges. Study 2 also examined interactions between high/low cognitive ability, candidate educational background and pass/fail. This approach was taken because not only have authors suggested a role for candidate background in applicant perceptions (e.g. Anderson et al, 2001; Schmidt & Ryan, 1992), but also interaction effects are thought to provide interesting and potentially more externally valid findings (Chan & Schmitt, 2004). Indeed, findings from Study 2 showed that candidate educational background and cognitive ability significantly influenced the way in which procedural justice perceptions and fairness were rated.

This research is unique because it was designed to assess possible interaction effects. Indeed, this elicited important findings that demonstrated applicant perceptions can be a function of person characteristics that interact to influence procedural justice perceptions in different ways. This has important practical implications because it showed that the 'best' candidates (that is, with high cognitive ability) without medical training may to some extent be more 'put off' the organisation's selection process than candidates with medical training. Therefore results may suggest that the constructs of fluid and crystallised intelligence have differential effects on, and interact to influence, procedural justice perceptions. For example, the 'cognitive ability' measured in this study may be considered fluid intelligence, since the psychometric tests measured 'potential' (Pearson, 2008); whilst a person's educational background (that is, medical training) may be considered crystallized intelligence, since it is based on learning and experience (Cattell, 1963; Horn, 1968). This may imply that researchers should explore 'types' of intelligence to determine what influence they may have on procedural justice and fairness perceptions.

These findings are important theoretically, because not only does it suggest that applicant perceptions are extremely complex, but it also suggests that variables may

combine to influence (positively or negatively) the potency of applicant perceptions (Hausknecht et al, 2004). In fact, this is likely to be the reason why cognitive ability was found to be an important determinant of applicant perceptions when examined in combination with other variables, yet did not add incremental variance in predicting fairness perceptions when examined alone.

7.2.2 Selection methods

Perhaps the most explored determinant of applicant perceptions has been the selection methods themselves with variability found in the perceived fairness of different methods (e.g. Anderson & Witvliet, 2008). As previously outlined, findings generally indicate interviews, CVs and work samples are rated most favourably, whilst personal contacts, graphology and honesty tests are rated least favourably (e.g. Hülsheger & Anderson, 2009). However, one potential criticism of this body of work is that it has largely been dependent on student-based samples with relatively few field-based studies (e.g. Bauer et al, 1998).

However, findings from Study 3 were relatively similar to those found in student-based samples: high fidelity work samples were perceived as most job-relevant and psychometric tests were received less positively than work samples. This implies that students may in fact rate hypothetical selection scenarios in a similar way to applicants experiencing these methods in operational selection settings, although further research comparing applicant and student samples would be needed to substantiate these findings. Furthermore, results showed that unfamiliar test formats can be considered less job-relevant than those with familiar formats, also supporting previous research (e.g. Truxillo & Hunthausen, 1999). Therefore results suggest that the selection methods themselves are key determinants of job relatedness perceptions. Although thesis findings lend support to the previous body of research, the research is unique for two main reasons. First, applicant job relatedness perceptions were examined in operational, high-stakes, selection settings (which has scarcely been carried out); and second, the examination of selection methods included those methods that have rarely

been considered, such as SJTs and different types of work samples, that is group, written, and simulation exercises (Anderson & Golsti, 2006).

7.2.3 Procedural justice rules

Other determinants of applicant perceptions include the justice rules originally identified by Gilliland (1993; 1994). In this thesis two studies examined procedural justice rules as potential determinants of fairness. Study 1 presented two-wave longitudinal research using two applicant samples, extending previous cross-sectional research designs. Sample 1 entailed applicants during the shortlisting stage of selection and Sample 2 entailed applicants during the final, assessment centre stage. For both samples, findings indicated that job relatedness perceptions of selection methods measured at the time of testing were determinants of process fairness perceptions measured following outcome feedback (pass/fail). This study not only demonstrated the importance of conducting longitudinal research, but also the importance of considering the stage in the selection process. For Sample 2, findings indicated that even though the three selection methods made a joint contribution to predicting process fairness perceptions, no single selection method contributed unique variance. Furthermore, for this final stage of selection, passing the process was a more important determinant of process fairness than job relatedness perceptions of selection methods. On the other hand in Sample 1, passing or failing was not significant in predicting process fairness, whilst job relatedness perceptions were. Based on findings from this study, it can be concluded that job relatedness perceptions are important in determining fairness perceptions, particularly at early stages of a selection process. However, at later stages of a selection process, the outcome (pass/fail) becomes a more important determinant. This research is somewhat unique in the fact that two stages of one selection process were considered, and demonstrates that the stage in the selection process is an important variable to consider in applicant fairness perceptions, as asserted by other authors (Anderson, 2010; Hausknecht et al, 2004).

A further study (3) explored job relatedness and further procedural justice rules as determinants of fairness perceptions. Since participants were matched across two time

points (shortlisting and assessment centre), it was possible to compare applicants' perceptions following two stages of selection. Findings were more or less consistent at both shortlisting and assessment centre: job relatedness-content of the selection methods, chance to perform and communication were important in determining fairness perceptions. Interestingly, in contrast to much of the previous research, this study found that not all justice rules were determinants of overall fairness. Although this could have been due to the significantly skewed data; a plausible explanation is that the quantitative measure used (SPJS; Bauer et al, 2001) did not focus on aspects of the selection process that were salient to the applicants (Bartunek & Seo, 2002; Morgan & Smircich, 1980; Schmitt & Chan, 1999). This may significantly limit applicant perception research generally since there may be other, more important, issues that influence perceptions of fairness. In fact, Gilliland himself (1995) suggests that procedural justice rules are not weighted equally by applicants at all times. This may indicate that perceptions are more complex than those captured in the measures used in quantitative questionnaire research. In sum, based on findings from Study 2 and 3, it can be concluded that procedural justice rules are important in determining fairness perceptions; but, it is likely that they do not tell the 'whole story'.

In fact, findings from Study 4 indicate that this is indeed the case and shows another unique angle of this thesis: the use of qualitative methods to explore fairness perceptions, which has rarely been conducted. Although overwhelmingly, candidates discussed face validity of selection methods as a salient aspect of the selection process, followed by having the opportunity to demonstrate their range of knowledge skills and abilities; the content analysis actually showed that there is so much more about a selection process to which candidates react than merely the selection methods and procedural justice rules. In particular, aspects such as candidate educational background, and the usability of online technology were salient features. Thus there appears to be scope to examine applicant perceptions using more in-depth qualitative methodologies, not only to provide insight into the candidate's perspective (Marcus, 2003) and to explore the temporal evolution of applicant fairness perceptions (Bartunek & Seo, 2002), but also to inform the development of theoretical models and quantitative survey research (Ryan & Ployhart, 2000; Rynes, 1993a). Indeed, as

suggested by Rynes (1993a) qualitative research methods could be used to move beyond preconceived notions of what determines applicant fairness perceptions.

7.2.4 Attributions

Finally, chapter five examined the role of attributions in fairness perceptions. Findings from this study suggested that experiencing a selection process prompts an attributional search in candidates and therefore goes some way towards suggesting that attributions may be *determinants* of applicant perceptions in selection contexts. Therefore, it is possible that, as suggested by Ployhart and Harold (2004), the psychological mechanism through which applicant perceptions lead to affective, cognitive and behavioural outcomes may be attributional processing. This is significant because, according to attribution theory (Weiner, 1986), there are a number of possible outcomes of the attributions made by applicants during selection. For example, in one published study examining attributions (Ployhart & Ryan, 1997), an internal locus was found to positively predict recommendation intentions; and in a further study (Ployhart et al, 2002), individuals who made stable and controllable attributions for withdrawal also reported lower expectation that they would re-apply to the job, or one similar, in the future. Moreover, attribution theory suggests that the stability dimension relates most strongly to expectations of future success and behavioural intentions whilst the locus/controllability dimensions relate to self-perceptions and finally the controllability dimension relates to self-evaluations (Weiner, 1986; Wong & Weiner, 1981). All these outcomes are the types of consequences that have been examined in applicant perception research through a justice lens (e.g. Bauer et al, 2001; Chan et al, 1997), without much success of finding an association between fairness perceptions and actual behavioural outcomes (Sackett & Lievens, 2008).

The present research is therefore important because it shows that attribution theory could provide the psychological mechanism through which to examine the link to outcomes. This may lead to a better understanding and prediction of the likely consequences of fairness perceptions for both applicants and organisations. Additionally, this research is important because very few studies in organisational

psychology incorporate literature from social psychology; and findings may highlight the importance of taking a broader perspective when trying to understand applicant perceptions (Ployhart et al, 2003).

7.3 Practical implications

There are a number of practical implications arising from this thesis. Although they have been considered in the discussions of each chapter, they are considered here under the following broad headings: selection methods should be job-related; some applicants will leave the selection process with negative perceptions despite organisations' efforts; targeted interventions may be possible; continued evaluation of selection must include the applicants' perspective, and 'fairness' is likely to be important for applicant attraction.

7.3.1 Selection methods should be job-related

Findings from both studies 1 and 2 showed that job relatedness had a significant influence on fairness perceptions, even after controlling for whether the applicants passed or failed. Furthermore, Study 3 showed that applicants were able to distinguish between the job relatedness of a number of different selection methods. Additionally, not only were candidates able to differentiate between content and predictive validity, but findings also indicated a 'justice dilemma' (Cropanzano & Konovsky, 1995) because in one sample, the method with the highest criterion-related validity was perceived as least job relevant (Marcus, 2003). Furthermore, findings in Study 4 suggested that job relatedness was the most salient feature in a candidate's experience of a selection process. Therefore, job relatedness perceptions are clearly important for perceptions of fairness. Previous research (e.g. Truxillo et al, 2002; Lounsbury, Bowbrow & Jenson, 1989) also shows that presenting information to applicants regarding job-relatedness of selection methods influences the perceived fairness of the selection method, and providing explanations to applicants about the selection methods can be a cost-effective way to positively influence perceptions (e.g. Truxillo et al, 2009).

Taken together, therefore, findings suggests that (a) organisations should strive to ensure that their selection methods appear job related to applicants; (b) organisations should give candidates information about a selection method in terms of its relevance to the role (content-relevance to the job and ability to predict future performance); and (c) when using potentially less familiar methods, information should be provided regarding their format. Providing information to applicants is important because it may improve candidate perceptions and reduce potential anxiety; additionally, this is likely to be a cost-effective way to improve perceptions (Truxillo et al, 2004; Truxillo et al, 2009). This is essential when organisations introduce new methods of selection, or when methods considered unattractive by candidates are used (such as cognitive ability tests). Particularly because organisations using selection methods that are negatively perceived by applicants might find it harder to attract the best applicants and may be more likely to face negative public relations (Hausknecht et al, 2004). From an organisation's perspective, not only will this avoid potential "justice dilemma" issues, but research also suggests that applicant perceptions may impact the predictive validity of selection methods (e.g. Schmit & Ryan, 1992).

7.3.2 Some applicants will have negative perceptions, despite organisations' efforts

Findings from this thesis suggest that some applicants will leave selection processes with negative perceptions despite organisations' best efforts. There are a number of reasons for this. First, failing a selection process appears to have a significant negative influence on perceptions of process fairness, as found in Study 1, and supporting previous research (e.g. Bauer et al, 1998). By definition, in a selection process more candidates will be rejected than accepted; indicating that organisations will have to 'work hard' to overcome the disappointment that comes from being rejected from a highly desirable job. Indeed, organisations with high-stakes selection processes may have limited control in improving applicant perceptions because failing the process will negatively influence an applicant's fairness perceptions, whether or not selection methods are procedurally fair. However, organisations could make an effort to provide

personally relevant and developmental feedback to candidates in order to attenuate the negativity that comes from failing the process (Schmitt & Chan, 1999).

Second, Study 1 also showed that some types of candidates (e.g. low emotional stability and low self-efficacy) may react negatively to selection processes regardless of efforts to ensure that processes are perceived of as fair. To some extent, therefore, this may limit the control that organisations have to ensure applicants leave the process with positive perceptions, since there may be a role for stable individual differences in perceptions of fairness. Third, findings from Study 4 showed that applicants discussed negative occurrences more frequently than they discussed positive occurrences. This indicates that applicants may give much more weight to negative than positive events in the selection process; and further, that negative occurrences are more salient to applicants (Weiner, 1986). Fourth, Study 4 also suggested a self-serving bias where applicants take less responsibility for negative occurrences than is possibly warranted. From a practical perspective, organisations may need to ensure that they provide sufficient situational information to candidates to achieve realistic candidate expectations and reduce potential attributional errors and biases. In sum, all these findings suggest that there may be limits to what an organisation can do to improve perceptions – in short, some applicants will have negative perceptions, despite organisations' best efforts.

7.3.3 Targeted interventions may be possible

A further practical implication relating to the findings in this thesis is that in gaining greater conceptual clarity of the nature of applicant perceptions, organisations may be able to use interventions for candidates. That is, by gaining a clearer conceptual picture of the way in which candidates react to selection methods and selection processes, recruiters may be able to design targeted interventions to improve perceptions (Schmitt & Chan, 1999). For example, Study 1 showed that applicants with low self-efficacy and emotional stability may react less positively to selection processes than other candidates. Interventions may therefore be aimed at reducing potential anxiety by giving candidates as much pre-selection information as possible. Additionally, Study 2

showed that candidate educational background was a key determinant of perceptions. If organisations gain a clear understanding of their applicant pool in terms of background (such as education) they are in a better position to make choices about the format of the selection including how much and what information to give candidates prior to selection (Schleicher et al, 2006). For example, if members of a specific group tend to have more negative perceptions of a particular method of selection, then it may be possible to design targeted interventions focusing on information given prior to selection, such as explanations for the use of specific selection methods, its format, and its relation to the job role; or alternatively interventions may be aimed at improving interpersonal experiences (Hausknecht et al, 2004). These types of interventions may be particularly important in contexts where there are distinct types of candidates, since some groups may need specific information about the selection process and methods more than others.

7.3.4 Continued evaluation of selection must include the applicants' perspective

Overall, one key practical implication of this thesis is that it is important to examine selection from the applicants' perspective. Key to successful selection is the ongoing evaluation and monitoring of the quality of the process (Cascio & Aguinis, 2008a). Some organisations already conduct evaluation from the point of view of the organisation (e.g. predictive validation studies; Schmidt & Hunter, 1998), but it is recommended that selection should involve evaluation from both the organisation and the applicants' perspective (McCarthy et al, 2009; Patterson et al, *submitted*). This is important because regular monitoring of applicant perceptions can alert organisations to potential shifts in perceptions of the quality of the process, in terms of selection method content, job relevance or administration (McCarthy et al, 2009). This can subsequently prompt organisations to implement specific interventions, for example to increase information given to applicants about the types of selection method and reasons for their use (e.g. Patterson et al, *submitted*).

Indeed, the importance of continued evaluation of selection processes from the point of view of the applicant is highlighted in a model recently proposed by Anderson (2010).

Anderson asserts that if applicants perceive that they have been discriminated against during a selection experience, then they are more likely to initiate litigious case action against the offending organisation. Thus, if organisations are evaluating their selection processes from the applicants' viewpoint, they could be alerted to such potential issues.

7.3.5 Fairness likely to be important for applicant attraction

Fairness perceptions may be important for continued applicant attraction. Although attraction was not directly examined in this thesis, it is considered here because it may be particularly relevant in this type of health care setting. Since an organisation's image can be defined by their recruitment practices (e.g. Fielden & Dulek, 1982), and research suggests that applicants are more attracted to organisations with better reputations (Turban & Cable, 2003; Turban et al, 1998) and will apply to organisations that have desirable attributes (Terjesen et al, 2007), a fair selection process may positively influence an organisation's continued ability to attract the best applicants and recruit effectively within a given job market (Schmitt & Chan, 1999). The importance of this issue was highlighted by research suggesting that more qualified individuals are more likely to react to negative information about an organisation during selection since they have more options available to them (Rynes, Bretz & Gerhart, 1991). This may indicate that fair selection processes are necessary to reduce the likelihood of applicants self-selecting out of the process (Ryan et al, 2000).

Additionally, having a fairly-perceived selection process may help to instil a positive organisational climate and aid socialisation into the organisation (Anderson, 2001), and could potentially serve as a signal to applicants about what the organisation will be like (Phillips & Gully, 2002; Rynes, 1993a). Applicants may interpret the values of the organisation in the way they perceive 'signals' during the selection process (Ryan & Huth, 2008; Wiechmann & Ryan, 2003), and subsequently infer what the future working environment might be like (Tsai & Yang, 2010). Furthermore, an organisation's selection practices may become known within a particular community from which they recruit and this could either attract, or put off, future applicants; which could reduce the applicant pool (Chambers, 2002; McCarthy et al, 2009). The extent to

which a selection process puts off good applicants or reduces job acceptance rates will negatively influence the overall utility of the selection process (Murphy, 1986). In sum, these appear to be clear reasons relating to applicant attraction, for organisations to be concerned about fair selection methods.

7.4 Research limitations

As with most research, there are several potential limitations to the studies presented in this thesis. They include threats to both internal and external validity, which are discussed in the following sections.

7.4.1 Internal validity

The threats to the internal validity of research findings from this thesis relate to: lack of base-line variables; use of self-report data; measurement of personality in Study 1; lack of true comparison of selection methods and the inherent confound between selection method and its content.

In Studies 1, 2 and 3, participants did not complete applicant perception measures both before and after experiencing the selection methods and therefore participants' base-rate for these variables could not be controlled for. This may have confounded the researcher's ability to isolate the effects of applicant characteristics (Chan & Schmitt, 2004; Schmitt & Chan, 1999). However, some pre-test measures may have been meaningless, since candidates could not have assessed job relatedness perceptions or procedural justice rules *before* the selection process was completed. Nevertheless, Study 1 may have benefitted from applicants completing the self-efficacy questionnaire before the selection process. Therefore future research should aim to collect these data prior to candidates completing the selection methods.

A second research limitation relates to the fact that all the data collected in this thesis were self-reported, which has been noted as a general problem for research conducted in organisations (e.g. Podsakoff & Organ, 1986). Asking candidates to complete questionnaires (studies 1, 2 and 3), or discuss their experience (Study 4), regarding

selection processes may have been open to impression management (Ornes, 1962). Although candidates were assured that the researcher was independent from the selection process and that information would be anonymous and used for research purposes only; it is possible that some candidates were not as open or truthful as they could have been because this was a selection context where they wanted to convey particular impressions to decision-makers. Indeed, participants may have reacted to the research setting and context and responded in a socially desirable or acquiescent way (Elmes et al, 2006; Ornes, 1969). This may have resulted in the significantly skewed data in Study 3, which subsequently could have resulted in the non-significant findings, since lack of variance in data can be a problem for regression analyses (Aron & Aron, 2002). On the other hand, in Study 4 candidates spoke about negative occurrences more frequently than positive occurrences which may suggest that participants felt free to report their genuine beliefs about the process. A further issue relating to self-report data is that Study 4 relied on data collected via interviews which was based on retrospective accounts. This therefore relied on the individuals' memories since most data was collected at least a week following the selection process itself. Although all interviews were conducted within three weeks of the selection process itself, future research should aim to collect data immediately following the process in order to minimise potential memory limitations.

A third research limitation relates to how personality was measured in Study 1. Personality variables were measured using the pre-validated Single-Item Measure of Personality (SIMP; Woods & Hampson, 2004; 2005), which uses five single items with bipolar response scales to measure the Big Five personality factors. Personality could have been assessed using more widely-used measures of personality such as the 240-item NEO Personality Inventory and the condensed 60-item Five Factor Inventory. However, these were considered too long to complete and were impractical in this research setting because administrators were concerned with brevity of the questionnaire. Thus, a pragmatic approach needed to be taken and a measure was chosen that provided an acceptable balance between practical needs and psychometric concerns (e.g. Burisch, 1984; Robins et al, 2001). The SIMP (Woods & Hampson, 2005) was therefore deemed acceptable for use in this study. Nevertheless, it is

acknowledged that short measures of personality may lack the reliability of longer measures and furthermore, one cannot examine facet levels of personality, which is likely to be important for personality domains such as Conscientiousness (Hough, 1992; Moon, 2001). Therefore, future research should aim to use longer, fine-grained measures of personality to explore more specific associations between fairness and personality constructs.

A fourth research limitation relates specifically to Study 3 where a conclusive comparison of the selection methods was not possible because of the field nature of the research. The order of the tests could not be counterbalanced because administering methods in different orders to applicants was wholly impractical in a high-stakes selection situation (Truxillo et al, 2001). Thus it is possible that there were content or order effects. This is one benefit to laboratory-based research where it is possible to counterbalance the administration of different selection methods.

Furthermore, and perhaps more importantly, a fifth limitation relates to the lack of clarity regarding what aspects of the selection methods are responsible for applicant perceptions. This is because an inherent confound exists between the selection method and its content (Schmitt & Chan, 1999; Truxillo & Hunthausen, 1999). For example, in Study 3 sample 3's examination of interview, group exercise and psychometric tests, the methods differed on the means of testing (e.g. task performance for the group exercise versus paper and pencil format for the psychometric tests); but they also differed in the constructs being measured (for example interpersonal dimensions on the group exercise and numerical/verbal reasoning abilities on the psychometric tests). Consequently this study was not designed to isolate these effects. One would need two different selection methods measuring exactly the same content; or the same methods measuring different content in order to do so (see for example Chan & Schmitt, 1997). Although this may be somewhat difficult to do in operational selection settings, it could nonetheless be a direction for future research. One clear advantage therefore of using experimental research designs to examine applicant perceptions is that content and order effects can be controlled since laboratory settings allow manipulations that are

less possible in operational settings (Carless, 2006; McCarthy et al, 2009; Truxillo et al, 2009).

7.4.2 External validity

As well as considering issues of internal validity, this thesis can be evaluated in terms of threats to its external validity. Essentially, the primary concern is whether findings can be generalised to other settings and applicant populations (Elmes et al, 2006). It should be noted that some of the selection methods examined in this thesis were created for specific selection processes, General Practice (GP) and Public Health (PH), and so to the extent that other selection methods are similar, these results are likely to be generalisable. Furthermore, the PH selection process included 'off the shelf' psychometric tests which were developed for use in a variety of organisational contexts including commercial, industrial and public sector organisations (Pearson, 2008) and as such, findings may generalise across different organisational contexts. Indeed, it is relatively common to find selection processes with psychometric tests, interviews and group exercises (Zibarras & Woods, 2010) and so to the extent that other selection processes are similar, these results might be generalisable. In addition, as the research was carried out in a health care setting, it may be possible that some findings are specific to this context. Whether this influenced the results could only be addressed by replicating the studies in different organisations. Therefore it is recommended that future research includes an examination of the determinants of fairness perceptions. In particular, this may establish the extent to which personality; self-efficacy; cognitive ability and other person characteristics are determinants of fairness perceptions in different organisational settings.

A further limitation that may restrict the external validity of these findings relates to the fact that the samples could have potentially been unrepresentative. Indeed, it is suggested (e.g. Rosenthal & Rosnow, 1965) that individuals who volunteer to take part in research may differ from those who do not volunteer, in terms of being better educated, having a higher need for approval and being better adjusted. These characteristics of volunteers could have potentially influenced the way participants

reacted to the research context and could limit the generalisability of the results (Elmes et al, 2006). However, in terms of education, most of the samples used in this context were relatively homogeneous in terms of educational attainment (at least educated to University degree level). Furthermore, steps were taken to ensure that there were no differences between response and non-response groups in terms of gender, ethnicity and age. Nevertheless, there is no guarantee that the applicants that took part in the research did not differ on variables such as need for approval and adjustment. Future research would have to measure these variables in order to establish this.

7.5 Directions for future research

In the preceding sections some suggestions for future research directions were commented upon, based on the limitations of the present thesis. These include measuring base-rate variables; using longer measures of personality such as the NEO PI-R; isolating method/content effects of selection methods, and gathering more research in different organisational settings to increase the weight and body of the research relating to the determinants of applicant fairness perceptions. This section, however, takes a broader view and outlines some key areas for future research based on, but going beyond, the findings from this thesis.

7.5.1 Explore other variables and contexts

This thesis has indicated that a number of key determinants should be considered in future research in order to gain greater conceptual clarity of applicant fairness perceptions. These include personality, self-efficacy, cognitive ability and candidate educational background. It is suggested that other variables and contexts are explored in relation to applicant perceptions research, since empirical research shows further variables may also be important in explaining the phenomenon of fairness. These include person-related variables such as test-taking motivation (e.g. Chan et al, 1998; McCarthy et al 2009); pre-test expectations (Anseel & Lievens, 2009; Bell, Ryan & Wiechmann, 2004); and organisation-related variables such as type of work, organisational reputation, pay and job security (Carless, 2003). Additionally, researchers such as Anderson (2010) and Hausknecht and colleagues (2004) suggest a

number of potential moderators, such as available job alternatives, that should also be explored. Thus it is recommended that future research should consider additional person- and organisation- related variables and examine these together in the same studies to explore the relative impact that they have on fairness perceptions.

Secondly, a future research direction relates to an examination of different organisational, cultural and economic contexts and how these shape applicant perceptions (Morgeson and Ryan, 2009). It is worthy of note that most of the applicant perception research has taken place in the US. Indeed, findings in other areas of organisational research indicate cultural differences in work attitudes such as organisational citizenship behaviours (e.g. Coyne & Ong, 2007), which may suggest that there will also be cultural differences in perceptions of fairness. Furthermore, more applicant perception research has taken place in public sector organisations, in particular in police-force settings (see Table 2.1 for details of organisational contexts); studies involving applicants from private organisations are barely represented (Hausknecht et al, 2004). Although this thesis took place also in a public sector context, it is still relatively unique: firstly, it took place in the UK and secondly it took place in a health care context where there is currently a dearth of applicant perception research (Patterson & Ferguson, 2007). Ideally, future research should aim to sample a range of different organisational contexts in different countries; both private and public sector organisations and different organisation sizes including small and medium sized enterprises (SMEs). This may be important in the UK since over 99% of the organisations are classified as SMEs employing less than 250 individuals (Department for Business, Innovation and Skills, 2008). In sum, the aim should be to explore applicant perceptions with samples that are more representative of the applicant population as a whole.

A further context in which to explore applicant fairness perceptions is the employee promotion context (Ford et al, 2009). This may be important because those who are 'rejected' may be worse off than during a selection process since they have existing relationships with the organisation and remain within the organisation following the outcome. It is likely therefore that they may have stronger attitudes and behaviours

where 'rejection' may lead to other outcomes such as withdrawal of effort, lower satisfaction, psychological contract breach (Ford et al, 2009; Conway & Briner, 2005) or perceived job discrimination (Anderson, 2010).

7.5.2 Expanding research methods

This thesis has employed a multi-method approach to data collection and has clearly shown the importance of both longitudinal and qualitative research. These are both considered as further research directions below.

7.5.2.1 Further longitudinal research

This thesis highlighted the importance of examining applicant perceptions longitudinally, and it is suggested that future research should aim to be longitudinal. Applicant perceptions were examined using two-wave longitudinal research; and findings indicated that perceptions differed depending on what stage in the selection process the data were collected. However, more research is warranted and future directions could explore how applicant perceptions change and develop in relation to various stages in the selection process (Hausknecht et al, 2004), and in particular the extent to which applicant perceptions are stable over time (Chan & Schmitt, 2004). Furthermore, longer-term impact and outcomes of applicant exposure to different selection methods can be examined (Anderson & Goltsi, 2006; Sackett & Lievens, 2008). Longitudinal studies of applicants subsequently on the job could also be used to examine the assertion that perceptions formed during selection influence later on-the-job attitudes and behaviours (Gilliland, 1993); that is, an examination of whether there is a relationship between fairness perceptions during selection and subsequent distal outcomes such as job performance, commitment and turnover.

Additionally, researchers could consider the whole attraction, recruitment, selection and socialisation process. This may help to isolate factors that influence overall applicant perceptions to an organisation at specific stages in the process (Schmitt & Chan, 1999). For example, prior to the selection process, job seekers typically know relatively little about a specific organisation and therefore may rely on various "cues"

to make inferences about its values, culture and attributes of the job (Reeve & Schultz, 2004; Rynes et al, 1991). Such cues may interact with contextual and individual factors so that job seekers form initial impressions of the organisation and attitudes (Anderson, 2001; Reeve & Schultz, 2004). Indeed initial research indicates that information placed in recruitment advertisements (such as the kinds of selection methods used) significantly influences applicants' evaluations of intent to apply and perceptions of organisational attractiveness (Reeve & Schultz, 2004). This may be explained using signal theory (Spence, 1973) which proposes that job seekers exposed to information cues that trigger positive beliefs or attitudes will evaluate the organization as more attractive and have greater intentions to apply for the job than individuals for whom the cues trigger negative beliefs or attitudes. Organisational justice may also have a role in shaping the psychological contract that begins to form at this initial pre-entry phase; and may evolve throughout selection and socialisation (e.g. Anderson, 2010; Anderson et al, 2001; Hülsheger & Anderson, 2009). Further, longitudinal research is necessary to explore and understand the phenomena and issues that make up the dynamic environment of pre-entry applicant experiences (Herriot & Anderson, 1997).

7.5.2.1.a Tracking rejected candidates and those who withdraw from the process

A further avenue for longitudinal research is to track rejected candidates and those who withdraw from the process. First, in relation to rejected candidates, by definition most applicants will be rejected from selection processes and Study 1 established the importance of pass/fail in predicting process fairness perceptions. Thus, examining the rejected applicant group may be important to reveal behavioural outcomes such as re-application among rejected applicants (e.g. Gilliland et al, 2001) and applicant propensity to initiate legal proceedings (Anderson, 2010) or outcomes such as stress and well-being (e.g. Hülsheger & Anderson, 2009). In examining rejected applicants, research may indicate that some justice rules are more important than others (such as feedback) and therefore steps could be taken to mitigate the negative perceptions that candidates may have about failing a selection process. Additionally, given that it is likely to be rejected applicants whose negative perceptions lead to litigation or further negative outcomes, studying this group will have practical implications as well

(Schleicher et al, 2006). Moreover, if future research does turn to promotional contexts (as suggested by Ford et al, 2009), exploring the perceptions of 'rejected' applicants may be particularly important since these individuals remain within the organisation.

Secondly, future research could examine candidates who withdraw from the selection process to determine what influence fairness has on these decisions. Future work could build on studies that have examined applicant withdrawal (e.g. Ryan et al, 2000; Ployhart et al, 2002) in contexts other than the police force. Indeed, research examining applicants' attributions for the reasons they withdraw from a selection process may be a particularly fruitful direction for future research (e.g. Ployhart et al, 2002). Withdrawal research is important from an organisation's perspective: it is important to retain applicants throughout the selection process since losing good applicants can have a detrimental effect on the utility of the process (Murphy, 1986). Few studies have examined those applicants who self-select out of the process; however, initial findings suggest that procedural justice violations may not be the primary reason for why individuals withdraw from a selection process (e.g. Ployhart et al, 2002; Ryan et al, 2000). Thus further research is needed.

7.5.2.2 Further qualitative research

This thesis has shown that qualitative research methods are important and researchers should consider using qualitative approaches to understand applicant fairness perceptions (e.g. Schleicher et al, 2006). This thesis has shown that to some extent quantitative questionnaire measures with pre-defined variables are limited because it is implicitly assumed, not only that the researcher and participants assign similar meaning to the variables (Bartunek & Seo, 2002), but also that these variables are salient to the participants (e.g. Symon et al, 2000). Thus using pre-defined variables alone may omit salient aspects of a selection process; and findings from both studies 2 and 4 indicated that this is likely to be the case. Indeed, the very nature of the phenomenon under investigation may challenge the utility of pre-defined variables; thus quantitative research methods may have an important, yet only partial, role to play in understanding the process of why fairness occurs (Morgan & Smircich, 1980).

It appears that qualitative research methods could be used in two key areas. Firstly, further research can be conducted to explore Gilliland's (1993) organisational justice theory. As Study 4 showed, applicants appear to react to more about a selection process than merely the methods used, or associated justice rules (Chan & Schmitt, 2004). To draw out one salient issue, in Study 4 content analysis showed that aspects such as a website's usability appear important. Gilliland's framework was proposed nearly 20 years ago, and since then there have been significant changes in the organisational landscape (Cascio & Aguinis, 2008a; 2008b; Landy & Conte, 2009) with the Internet revolution being a key development. Therefore, it is clearly plausible that other aspects of a selection process may be salient to today's applicant: qualitative research methods could be used to explore whether this is the case to move beyond preconceived notions of what determines applicant fairness perceptions (Rynes, 1993a).

Secondly, although quantitative research has been extremely useful in establishing clear links between procedural justice dimensions and applicant fairness perceptions (e.g. Bauer et al, 1998), there has been less research examining the underlying psychological mechanisms involved in applicant perceptions. Thus qualitative research methods could be used, not only to examine why and how applicant fairness perceptions occur, but also to provide an understanding of the underlying dynamics and sense-making associated with, and temporal evolution of, applicant fairness perceptions (Bartunek & Seo, 2002). Although Study 4 was a first step towards exploring the attributional processes that occur during selection, it is suggested that this is examined in further qualitative research. Future research could establish a link between individual differences, attributional processing and outcomes of fairness perceptions, as suggested by Ployhart and Harold (2004).

7.5.3 Explore selection processes perceived as *un*fair

As has been considered previously, one possible limitation of applicant perception research (including in the present thesis) is that selection processes perceived as *fair* are most likely to be examined in research. This was highlighted by the significantly

skewed data in Study 2; that is, in general applicants positively endorsed the selection process. This is not unusual because, as Truxillo et al (2004, p. 41) point out, *"In most studies... mean ratings on [applicant perception] scales tend to be on the positive side – the most negative ratings recorded are actually towards the middle of the rating scale... very few applicants indicate that they have been unfairly treated"*. However, it may be important for researchers to also explore issues and selection processes perceived as *unfair*. Instances of injustice may be important to determine subsequent attitudinal and behavioural outcomes and furthermore, justice violations may have a stronger influence on reactions and subsequent outcomes than satisfaction of justice principles (Chan & Schmitt, 2004; Gilliland, 1993; Truxillo et al, 2004). Research is therefore needed to clearly differentiate between justice and injustice; this includes their conceptualisation, measurement and what influence these constructs might have on applicant perceptions (Chan & Schmitt, 2004). It is likely that justice and injustice will be associated with different outcomes, for example litigious behaviour is potentially only likely in instances of extreme injustice (Anderson, 2010; Truxillo et al, 2004). It is important to understand and clarify this distinction because it is plausible that selection situations considered unfair, and instances of injustice, might have significant negative psychological effects on applicants' well-being (e.g. Anderson, 2004; Anderson & Goltsi, 2006; Gilliland, 1993).

7.5.4 Integrate with other areas of psychology to take a broader perspective

As was noted in the literature review, there has been a heavy emphasis on exploring applicant perceptions within an organisational justice perspective (Gilliland, 1993), with few attempts to examine other types of perceptions (Ployhart et al, 2002; Ployhart & Ryan, 1997). Although this work has informed much of our understanding of the area of applicant perceptions, it may be necessary to expand the theoretical scope for future research to better understand the phenomenon of 'fairness' (Hausknecht et al, 2004). There is a plethora of evidence to suggest that procedural justice rules influence applicants' fairness perceptions (e.g. Gilliland, 1994): indeed, the body of research that exists on applicant perceptions (outlined in chapter 1) has succeeded in establishing relationships, but the underlying psychological mechanisms of *why* these perceptions

occur are less well understood. Some authors (e.g. Ryan & Ployhart, 2000) suggest that perceptions other than fairness should be considered since it is unlikely that applicants always view selection through a justice lens. For example fairness is conceptually different to 'preference'; that is a candidate may prefer a selection method whilst still acknowledging that it is less fair (such as unstructured interviews), or dislike a particular process, but not necessarily view it as unfair (Hausknecht et al, 2004; Ryan & Ployhart, 2000).

Therefore a direction for future research is to integrate organisational justice theory and applicant perceptions with other areas of psychology to take a broader perspective. As Myers (1999) suggested, researchers should bring more 'psychology' into the candidate perspective of selection since perceiving events that occur during selection is by definition likely to be 'in the eye of the beholder' and therefore likely to be interpreted by two people very differently. It is therefore suggested that researchers should move towards exploring the psychological mechanisms that underlie applicant perceptions of a selection process and to understand how these operate (McCarthy et al 2009; Ployhart & Harold, 2004). Study 4 went some way towards exploring attribution theory as a psychological mechanism to explaining applicant fairness perceptions; however, this is a first step and furtlier research is warranted. It was the aim of Study 4 to draw in a topic from social psychology, attributional theory (Wiener, 1985; 1986), to explore applicants' perceptions of a selection process. Indeed, this study established that experiencing a selection process prompts an attributional search in candidates and therefore suggests that attributions may be *determinants* of applicant perceptions in selection contexts.

It is suggested that future research could consider further exploration of attributions in the context of selection fairness perceptions. There are a number of potential avenues, including: the use of other attributional models to explain findings (e.g. Kelley, 1973); an examination of attributions at an individual level post outcome feedback; an investigation of candidate's attributions about their *performance* during a selection process; and finally further consideration of selection methods in terms of their

underlying attributions dimensions of locus, stability and controllability; rather than fairness perceptions per se (Ployhart & Harold, 2004).

7.5.5 The need to establish the practical importance of applicant perceptions

As was mentioned in the first chapter, researchers need to establish the importance of applicant perceptions in selection (Lievens et al, 2002). An examination of the determinants of applicant perceptions was focused on, and this was considered important for two main reasons, firstly because the determinants of applicant reactions have been researched to a lesser degree than the outcomes (Chan & Schmitt, 2004), and secondly because it was reasoned that a better insight into the determinants of applicant perceptions is required before understanding what these will have on various outcomes. Indeed, this may enable researchers to "focus down" applicant perception models, as has recently been proposed by Anderson (2010). Nevertheless, it is acknowledged that further research is needed to examine the outcomes of applicant reactions, going beyond basic applicant perceptions and preferences to longer-term outcomes, decision making, expectations and potentially, the development of the psychological contract (Chan & Schmitt, 2004; Hülsheger & Anderson, 2009). The research relating to the applicant perspective of selection will have a much greater influence on selection research if applicant perceptions can be linked to behavioural outcomes including withdrawal from the selection process and decision-making regarding accepting a job (Anderson et al, 2004). However, as Ryan and Huth (2008, p.129) suggest, *"the lack of evidence is not because studies do not support such links, but because such studies are so rarely conducted. Before concluding that applicant perceptions do not matter much, we need considerable [sic] more research employing behavioural criteria"*.

7.6 A final note

In summary, the present research programme has successfully explored the determinants of fairness perceptions in high-stakes selection settings; this has resulted in greater conceptual clarity of what determines fairness perceptions, which should subsequently lead to better understanding of the effects of fairness on various outcomes in future research. There may also be ethical implications for continuing to examine

applicant fairness perceptions in selection. It has been suggested that the human perspective at work is important and furthermore, that organisational psychologists should convince organisations to promote fairness in their selection systems simply because it is the right thing to do (Greenberg, 2009). After all, we are bound by codes of ethics; thus we should promote justice and fair selection processes in organisations because we bear some ethical and social responsibility for the influence that selection processes have on applicants (Schmitt & Chan, 1999). This echoes Hülsheger and Anderson (2009) who suggest that we must continue our study of the impact of selection processes on applicants for the sake of the applicants' well-being; the so-called negative psychological effects of selection (Anderson 2004). Therefore, despite inconsistent and sometimes contradictory findings, it is important to consider fairness and more broadly, applicant perceptions because psychologists have an ethical obligation to do so.

8 References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*(5), 888-918.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Aldwin, C. M. (1991). Does age affect the stress and coping process? Implications of age differences in perceived control. *The Journal of Gerontology, 46*(4), 174-180.

Anderson, N. (2001). Towards a theory of socialization impact: Selection as pre-entry socialization. *International Journal of Selection and Assessment, 9*(1-2), 84-91.

Anderson, N. (2003). Applicant and recruiter reactions to new technology in selection: A critical review and agenda for future research. *International Journal of Selection and Assessment, 11*(2-3), 121-136.

Anderson, N. (2004). Editorial - the dark side of the moon: Applicant perspectives, negative psychological effects (NPEs), and candidate decision making in selection. *International Journal of Selection and Assessment, 12*(1-2), 1-8.

Anderson, N. (2005). Relationships between practice and research in personnel selection: Does the left hand know what the right hand is doing? In A. Evers, N. Anderson & O. Voskuijl (Eds.), *International handbook of selection.* (1st ed.). Oxford: Blackwell Publishing.

Anderson, N. (2010). Perceived job discrimination (PJD): Toward a model of applicant propensity to case initiation in selection. *International Journal of Selection and Assessment.* (in press).

Anderson, N., Born, M., & Cunningham-Snell, N. (2001). Recruitment and selection: Applicant perspectives and outcomes. *Handbook of Industrial, Work, and Organizational Psychology, 1*, 200–218.

Anderson, N., & Ostroff, C. (1997). Selection as socialization. In N. Anderson, & P. Herriot (Eds.), *International handbook of selection and assessment*. London: Wiley.

Anderson, N., Silvester, J., Cunningham-Snell, N., & Haddleton, E. (1999). Relationships between candidate self-monitoring, perceived personality, and selection interview outcomes. *Human Relations, 52*(9), 1115-1131.

Anderson, N., & Witvliet, C. (2008). Fairness reactions to personnel selection methods: An international comparison between the Netherlands, the united states, France, Spain, Portugal, and Singapore. *International Journal of Selection and Assessment, 16*(1), 1-13.

Anderson, N. (1992). Eight decades of employment interview research: A retrospective meta-review and prospective commentary. *European Work and Organizational Psychologist, 2*(1), 1-32.

Anderson, N., & Goltsi, V. (2006). Negative psychological effects of selection methods: Construct formulation and an empirical investigation into an assessment center. *International Journal of Selection and Assessment, 14*(3), 236-255.

Anderson, N., Herriot, P., & Hodgkinson, G. P. (2001). The practitioner-researcher divide in industrial, work and organizational (IWO) psychology: Where are we now, and where do we go from here? *Journal of Occupational and Organizational Psychology, 74*(4), 391-411.

Anderson, N., Lievens, F., van Dam, K., & Ryan, A. M. (2004). Future perspectives on employee selection: Key directions for future research and practice. *Applied Psychology, 53*(4), 487-501.

Anseel, F., & Lievens, F. (2009). The mediating role of feedback acceptance in the relationship between feedback and attitudinal and performance outcomes. *International Journal of Selection and Assessment, 17*(4), 362-376.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40*(4), 471-499.

Arnold, H. J., & Feldman, D. C. (1981). Social desirability response bias in self-report choice situations. *Academy of Management Journal, 24*, 377-385.

Aron, A., & Aron, E. N. (2002). *Statistics for psychology*. New Jersey: Prentice Hall.

Arvey, R. D., Strickland, W., Drauden, G., & Martin, C. (1990). Motivational components of test taking. *Personnel Psychology, 43*(4), 695-716.

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

Bandura, A. (1990). Selective activation and disengagement of moral control. *Journal of Social Issues, 46*(1), 27-46.

Barber, A. E., Wesson, M. J., Roberson, Q. M., & Taylor, M. S. (1999). A tale of two job markets: Organizational size and its effects on hiring practices and job search behavior. *Personnel Psychology, 52*(4), 841-867.

Bartunek, J. M., & Seo, M. G. (2002). Qualitative research can add new meanings to quantitative research. *Journal of Organizational Behavior, 23*(2), 237-242.

Bauer, T. N., Maertz, C. P., Dolen, M. R., & Campion, M. A. (1998). Longitudinal assessment of applicant reactions to employment testing and test outcome feedback. *Journal of Applied Psychology, 83*, 892-903.

Bauer, T. N., Truxillo, D. M., Sanchez, R. J., Craig, J. M., Ferrara, P., & Campion, M. A. (2001). Applicant reactions to selection: Development of the selection procedural justice scale (SPJS). *Personnel Psychology, 54*(2), 387-419.

Bauer, T. N., Truxillo, D. M., Paronto, M. E., Weekley, J. A., & Campion, M. A. (2004). Applicant reactions to different selection technology: Face-to-face, interactive voice response, and computer-assisted telephone screening interviews. *International Journal of Selection and Assessment, 12*(1-2), 135-148.

Bell, B. S., Ryan, A. M., & Wiechmann, D. (2004). Justice expectations and applicant perceptions. *International Journal of Selection and Assessment, 12*(1-2), 24-38.

Bertolino, M., Steiner, D. D., & Verdi, V. G. (2007). Fairness reactions to selection methods: An Italian study. *International Journal of Selection and Assessment, 15*(2), 197-205.

Billsberry, J. (2007). *Experiencing recruitment and selection.* Chichester: John Wiley & Sons.

Bipp, T. (2010). What do people want from their jobs? The big five, core self-evaluations and work motivation. *International Journal of Selection and Assessment, 18*(1), 28-39.

Bobko, P., Roth, P. L., & Potosky, D. (1999). Derivation and implications of a cognitive ability, alternative predictors, and job performance. *Personnel Psychology, 52*, 561-589.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579-616.

Boorman, S. (2009). *NHS health and well-being review.* Retrieved January 15th 2010: http://www.nhshealthandwellbeing.org/InterimReport.html

Borman, W. C., Hanson, M. A., & Hedge, J. W. (1997). Personnel selection. *Annual Review of Psychology, 48*(1), 299-337.

Breaugh, J. A., & Starke, M. (2000). Research on employee recruitment: So many studies, so many remaining questions. *Journal of Management, 26*(3), 405-434.

Brennan, R. L., & Prediger, D. J. (1981). Coefficient kappa: Some uses, misuses, and alternatives. *Educational and Psychological Measurement, 41*(3), 687-699.

Bretz, R. D., Ash, R. A., & Dreher, G. F. (1989). Do people make the place? an examination of the attraction-selection-attrition hypothesis. *Personnel Psychology, 42*, 561-581.

Brooks, M. E., Guidroz, A. M., & Chakrabarti, M. (2009). Distinction bias in applicant reactions to using diversity information in selection. *International Journal of Selection and Assessment, 17*(4), 377-390.

Burisch, M. (1984). Approaches to personality inventory construction. *American Psychologist, 39*(3), 214-227.

Burns, G. N., Siers, B. P., & Christiansen, N. D. (2008). Effects of providing pre-test information and preparation materials on applicant reactions to selection procedures. *International Journal of Selection and Assessment, 16*(1), 73-77.

Cable, D. M., & Judge, T. A. (1996). Person-organization fit, job choice decisions, and organizational entry. *Organizational Behavior and Human Decision Processes, 67*(3), 294-311.

Cable, D. M., & Judge, T. A. (1997). Interviewers' perceptions of person-organization fit and organizational selection decisions. *Journal of Applied Psychology, 82*(4), 546-561.

Campbell, C. R., & Martinko, M. J. (1998). An integrative attributional perspective of empowerment and learned helplessness: A multimethod field study. *Journal of Management, 24*(2), 173.

Carless, S. A. (2003). A longitudinal study of applicant reactions to multiple selection procedures and job and organizational characteristics. *International Journal of Selection and Assessment, 11*(4), 345-351.

Carless, S. A. (2006). Applicant reactions to multiple selection procedures for the police force. *Applied Psychology, 55*(2), 145-167.

Carr, V., & Patterson, F. (2009). Developing assessment centre methodologies for high-stakes selection: Implications for policy. *Division of Occupational Psychology Conference,* Blackpool, UK.

Cascio, W. F., & Aguinis, H. (2008a). Staffing twenty-first-century organizations. *The Academy of Management Annals, 2*(1), 133-165.

Cascio, W. F., & Aguinis, H. (2008b). Research in industrial and organizational psychology from 1963 to 2007: Changes, choices, and trends. *Journal of Applied Psychology, 93*(5), 1062-1081.

Cattell, R. B. (1963). Theory of fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology, 54*(1), 1-22.

Chambers, B. A. (2002). Applicant reactions and their consequences: Review, advice, and recommendations for future research. *International Journal of Management Reviews, 4*, 317-333.

Chan, D., & Schmitt, N. (1997). Video-based versus paper-and-pencil method of assessment in situational judgment tests: Subgroup differences in test performance and face validity perceptions. *Journal of Applied Psychology, 82*(1), 143-158.

Chan, D., Schmitt, N., DeShon, R. P., Clause, C. S., & Delbridge, K. (1997). Reactions to cognitive ability tests: The relationships between race, test performance, face validity perceptions, and test-taking motivation. *Journal of Applied Psychology, 82*(2), 300-309.

Chan, D., Schmitt, N., Jennings, D., Clause, C. S., & Delbridge, K. (1998a). Applicant perceptions of test fairness: Integrating justice and self-serving bias perspectives. *International Journal of Selection and Assessment, 6*(4), 232-239.

Chan, D., Schmitt, N., Sacco, J. M., & DeShon, R. P. (1998b). Understanding pretest and posttest reactions to cognitive ability and personality tests. *Journal of Applied Psychology, 83*(3), 471-485.

Chan, D. (1997). Racial subgroup differences in predictive validity perceptions on personality and cognitive ability tests. *Journal of Applied Psychology, 82*(2), 311-320.

Chan, D., & Schmitt, N. (2004). An agenda for future research on applicant reactions to selection procedures: A construct-oriented approach. *International Journal of Selection and Assessment, 12*(1-2), 9-23.

Chapman, D. S., & Ployhart, R. E. (2001). Gender and perceptions of justice violations in the magnitude of perceived injustice. *Symposium Presented at the 16th Annual Meeting of the Society for Industrial and Organizational Psychology,* San Diego, CA.

Chapman, D. S., & Webster, J. (2001). Rater correction processes in applicant selection using videoconference technology: The role of attributions. *Journal of Applied Social Psychology, 31*(12), 2518-2537.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum Associates.

Cohen, P., Cohen, J., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Conner, M., & Sparks, P. (1996). The theory of planned behaviour and health behaviours. *Predicting Health Behaviour, 28*(15), 121-162.

Conway, N., & Briner, R. B. (2005). *Understanding psychological contracts at work: A critical evaluation of theory and research.* Oxford: Oxford University Press.

Cook, T. D., Campbell, D. T., & Shadish, W. (2006). *Experimental and quasi-experimental designs for generalized causal inference.* Boston, New York: Houghton Mifflin.

Costa, P. T., & McCrae, R. R. (1992). *NEO PI-R professional manual.* Odessa, FL: Psychological Assessment Resources.

Coyne, I., & Bartram, D. (2006). Design and development of the ITC guidelines on computer-based and internet-delivered testing. *International Journal of Testing, 6*(2), 133-142.

Coyne, I., & Ong, T. (2007). Organizational citizenship behaviour and turnover intention: A cross-cultural study. *International Journal of Human Resource Management, 18*(6), 1085-1097.

Coyne, I., Warszta, T., Beadle, S., & Sheehan, N. (2005). The impact of mode of administration on the equivalence of a test battery: A quasi-experimental design. *International Journal of Selection and Assessment, 13*(3), 220-224.

Cropanzano, R., & Konovsky, M. A. (1995). Resolving the justice dilemma by improving the outcomes: The case of employee drug screening. *Journal of Business and Psychology, 10*(2), 221-243.

Cunningham-Snell, N., Anderson, N., & Fletcher, C. (1999). A longitudinal analysis of procedural justice at an assessment centre. the immediate, intermediate and long-term impact. *Paper Presented at the International Round Table on Innovations in Organizational Justice.* Nice, France.

Davey, F. H. (1998). Young women's expected and preferred patterns of employment and child care. *Sex Roles, 38*(1), 95-102.

De Vaus, D. A. (2002). *Surveys in social research* (5th ed.). London: Routledge.

De Wolff, C. J. (1993). The prediction paradigm. In H. Schuler, J. L. Farr & M. Smith (Eds.), *Personnel selection and assessment: Individual and organizational perspectives* (pp. 253-261)

Department for Business, Innovation and Skills. (2009). *Small and medium-sized enterprise (SME) statistics for the UK and regions 2008.* Retrieved January 22nd 2010 from http://stats.bis.gov.uk/ed/sme/smestats2008-ukspr.pdf

Derous, E., & De Witte, K. (2001). Looking at selection from a social process perspective: Towards a social process model on personnel selection. *European Journal of Work and Organizational Psychology, 10*(3), 319-342.

Derous, E., De Witte, K., & Stroobants, R. (2003). Testing the social process model on selection through expert analysis. *Journal of Occupational and Organizational Psychology, 76*(2), 179-199.

Derous, E., Born, M. P., & Witte, K. D. (2004). How applicants want and expect to be treated: Applicants' selection treatment beliefs and the development of the social process questionnaire on selection. *International Journal of Selection and Assessment, 12*(1-2), 99-119.

Dipboye, R. L. (1977). A critical review of Korman's self-consistency theory of work motivation and occupational choice. *Organizational Behavior and Human Performance, 18*, 108-126.

Dipboye, R. L., & Flanagan, M. F. (1979). Research settings in industrial and organizational psychology. *American Psychologist, 34*(2), 141-150.

Donaldson, T. S. (1968). Robustness of the F-test to errors of both kinds and the correlation between the numerator and denominator of the F-ratio. *Journal of the American Statistical Association, 63*(322), 660-676.

Elkins, T. J., & Phillips, J. S. (2000). Job context, selection decision outcome, and the perceived fairness of selection tests: Biodata as an illustrative case. *Journal of Applied Psychology, 85*(3), 479-484.

Elmes, D. G., Kantowitz, B. H., & Roediger III, H. L. (2006). *Research methods in psychology*. Belmont, CA, USA: Thomson Learning Inc.

Engardio, P. (2006). The future of outsourcing. *Business Week, 30*, 50-64.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage Publications Ltd.

Fielden, J. S., & Dulek, R. (1982). What rejection letters say about your company. *Business Horizons, 25*(5), 40-45.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition*. Oxford: Blackwell publishing Ltd.

Fleiss, J. L. (1971). Measuring nominal scale agreement among many raters. *Psychological Bulletin, 76*(5), 378-382.

Fleiss, J. L. (1981). The measurement of interrater agreement. *Statistical Methods for Rates and Proportions*, 212-236.

Ford, D. K., Truxillo, D. M., & Bauer, T. N. (2009). Rejected but still there: Shifting the focus in applicant reactions to the promotional context. *International Journal of Selection and Assessment, 17*(4), 402-416.

Freese, L. (1980). Formal theorizing. *Annual Review of Sociology, 6*(1), 187-212.

Furnham, A., Sadka, V., & Brewin, C. R. (1992). The development of an occupational attributional style questionnaire. *Journal of Organizational Behavior, 13*(1), 27-39.

Games, P. A., & Lucas, P. A. (1966). Power of the analysis of variance of independent groups on non-normal and normally transformed data. *Educational and Psychological Measurement, 26*(2), 311-327.

Gamliel, E., & Peer, E. (2009). Effect of framing on applicants' reactions to personnel selection methods. *International Journal of Selection and Assessment, 17*(3), 282-289.

Gilliland, S. W. (1994). Effects of procedural and distributive justice on reactions to a selection system. *Journal of Applied Psychology, 79*(5), 691-701.

Gilliland, S. W. (1995). Fairness from the applicant's perspective: Reactions to employee selection procedures. *International Journal of Selection and Assessment, 3*(1), 11-18.

Gilliland, S. W., Groth, M., Baker, R. C., Dew, A. F., Polly, L. M., & Langdon, J. C. (2001). Improving applicants' reactions to rejection letters: An application of fairness theory. *Personnel Psychology, 54*(3), 669-704.

Gilliland, S. W. (1993). The perceived fairness of selection systems: An organizational justice perspective. *The Academy of Management Review, 18*(4), 694-734.

Gilmore, D. C., Stevens, C. K., Harrell-Cook, G., & Ferris, G. R. (1999). Impression management tactics. In M. Harris, & R. W. Eder (Eds.), *The employment interview handbook* (pp. 321-336). London: Sage publications.

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *The Academy of Management Review, 17*(2), 183-211.

Glass, G. V., Peckham, P. D., & Sanders, J. R. (1972). Consequences of failure to meet assumptions underlying the fixed effects analyses of variance and covariance. *Review of Educational Research, 42*(3), 237-288.

Goldberg, L. R. (1992). The development of markers for the big-five factor structure. *Psychological Assessment, 4*(1), 26-42.

Goldman, B. M. (2001). Toward an understanding of employment discrimination claiming: An integration of organizational justice and social information processing theories. *Personnel Psychology, 54*, 361-386.

Goldsmith, M. (2009). Talent on demand. *Business Week, 4th December 2009.* Retrieved January 27th 2010 from: http://www.businessweek.com/managing/content/jan2009/ca20090127_544971.htm

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the big-five personality domains. *Journal of Research in Personality, 37*(6), 504-528.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26*(3), 499-510.

Greenberg, J. (1987). A taxonomy of organizational justice theories. *The Academy of Management Review, 12*(1), 9-22.

Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management, 16*(2), 399-432.

Greenberg, J. (2009). Everybody talks about organizational justice but nobody does anything about it. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 2*(2), 181-195.

Guion, R. M. (1989). Comments on personnel selection methods. In M. Smith, & I. T. Robertson. (Eds.), *Advances in selection and assessment*. New York: John Wiley & Sons.

Gutek, B. A., & Cohen, A. G. (1987). Sex ratios, sex role spillover, and sex at work: A comparison of men's and women's experiences. *Human Relations, 40*(2), 97-115.

Guion, R. M. (1998). Some virtues of dissatisfaction in the science and practice of personnel selection. *Human Resource Management Review, 8*(4), 351-365.

Harris, L. (2000). Procedural justice and perceptions of fairness in selection practice. *International Journal of Selection and Assessment, 8*(3), 148-157.

Harvey, P., & Dasborough, M. T. (2006). Consequences of employee attributions in the workplace: The role of emotional intelligence. *Psicothema, 18*, 145-151.

Hausknecht, J. P., Day, D. V., & Thomas, S. C. (2004). Applicant reactions to selection procedures: An updated model and meta-analysis. *Personnel Psychology, 57*(3), 639-683.

Herriot, P., & Anderson, N. (1997). Selecting for change: How will personnel and selection psychology survive? In N. Anderson, P. Herriot (Eds.), *International Handbook of Selection and Assessment*. Chichester: John Wiley & Sons.

Herriot, P. (1989). Selection as a social process. In M. Smith, & I. T. Robertson (Eds.), *Advances in selection and assessment*. New York: John Wiley and Sons.

Herriot, P. (1992). Selection: The two subcultures. *European Work and Organizational Psychologist, 2*(2), 129-140.

Herriot, P. (1993). A paradigm bursting at the seams. *Journal of Organizational Behavior, 14*(4), 371-375.

Herriot, P. (2002). Selection and self: Selection as a social process. *European Journal of Work and Organizational Psychology, 11*(4), 385-402.

Higgins, R. L., & Snyder, C. (1989). Excuses gone awry: An analysis of self-defeating excuses. In R. C. Curtis (Ed.), *Self-Defeating Behaviors: Experimental Research, Clinical Impressions, and Practical Implications.* New York: Plenum Press.

Highhouse, S. (2008). Stubborn reliance on intuition and subjectivity in employee selection. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 1*, 333-342.

Hodgkinson, G. P., & Payne, R. L. (1998). Graduate selection in three European countries. *Journal of Occupational and Organizational Psychology, 71*(4), 359-365.

Horn, J. L. (1968). Organization of abilities and the development of intelligence. *Psychological Review, 75*(3), 242-259.

Hough, L. M. (1992). The" big five" personality variables - construct confusion: Description versus prediction. *Human Performance, 5*(1/2), 139-155.

Hough, L. M., & Oswald, F. L. (2000). Personnel selection: Looking toward the future--remembering the past. *Annual Review of Psychology, 51*(1), 631-664.

Hulsheger, U. R., & Anderson, N. (2009). Applicant perspectives in selection: Going beyond preference reactions. *International Journal of Selection and Assessment, 17*(4), 335-345.

Humphrey, S., Dowson, S., Wall, D., Diwakar, V., & Goodyear, H. M. (2008). Multiple mini-interviews: Opinions of candidates and interviewers. *Medical Education, 42*(2), 207-213.

Hunter, J. E. (1986). Cognitive ability, cognitive aptitudes, job knowledge, and job performance. *Journal of Vocational Behavior, 29*(3), 340-362.

Iles, P. A., & Robertson, I. T. (1989). The impact of personnel selection procedures on candidates. In P. Herriot (Ed.), *Handbook of assessment in organizations*. Chichester: John Wiley & Sons.

Iles, P. A., & Robertson, I. T. (1997). The impact of personnel selection procedures on candidates. In N. Anderson, & P. Herriot (Eds.), *International handbook of selection and assessment*. Chichester: Wiley.

Imada, A. S., & Hakel, M. D. (1977). Influence of nonverbal communication and rater proximity on impressions and decisions in simulated employment interviews. *Journal of Applied Psychology, 62*(3), 295-300.

Ispas, D., Ilie, A., Iliescu, D., Johnson, R. E., & Harris, M. M. (2010). Fairness reactions to selection methods: A Romanian study. *International Journal of Selection and Assessment, 18*(1), 102-110.

John, O. P., & Srivastava, S. (1999). The big-five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality theory and research.* New York: The Guilford Press.

Johns, G. (2001). In praise of context. *Journal of Organizational Behavior, 22*(1), 31-42.

Judd, C. M., McClelland, G. H., & Culhane, S. E. (1995). Data analysis: Continuing issues in the everyday analysis of psychological data. *Annual Review of Psychology, 46*(1), 433-465.

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*(3), 530-541.

Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*(4), 797-807.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits--self-esteem, generalized self-efficacy, locus of control, and emotional stability--with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), 80-92.

Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*(1), 17-34.

Judge, T. A., Van Vianen, Annalies E. M., & De Pater, I. E. (2004). Emotional stability, core self-evaluations, and job outcomes: A review of the evidence and an agenda for future research. *Human Performance, 17*(3), 325.

Kaplan, A. (1964). *The conduct of inquiry*. New York: Harper & Row.

Keenan, T. (1995). Graduate recruitment in Britain: A survey of selection methods used by organizations. *Journal of Organizational Behavior, 16*(4), 303-317.

Kent, R. A. (2001). *Data construction and data analysis for survey research.* Hampshire, UK: Palgrave Macmillan.

Kelley, H. H. (1967). Attribution theory in social psychology. *Nebraska Symposium on Motivation, 15,* 192-238. University of Nebraska Press.

Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist, 28*(2), 107-128.

King, N. (2004). Using interviews in qualitative research. In C. Cassell, & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 11-22). London: Sage Publications Ltd.

Kluger, A. N., & Rothstein, H. R. (1993). The influence of selection test type on applicant reactions to employment testing. *Journal of Business and Psychology, 8*(1), 3-25.

Konovsky, M. A. (2000). Understanding procedural justice and its impact on business organizations. *Journal of Management, 26*(3), 489-511.

Konovsky, M. A., & Organ, D. W. (1996). Dispositional and contextual determinants of organizational citizenship behavior. *Journal of Organizational Behavior, 17*, 253-266.

Kumar, K., Roberts, C., Rothnie, I., du Fresne, C., & Walton, M. (2009). Experiences of the multiple mini-interview: A qualitative analysis. *Medical Education, 43*, 360-367.

LaHuis, D. M. (2005). Individual differences in applicant reactions: A job-search perspective. *International Journal of Selection and Assessment, 13*(2), 150-159.

Landy, F. J., & Conte, J. M. (2009). *Work in the 21st century: An introduction to industrial and organizational psychology* (3rd ed.). NJ, USA: Wiley-Blackwell.

Landy, F. J., Shankster, L. J., & Kohler, S. S. (1994). Personnel selection and placement. *Annual Review of Psychology, 45*(1), 261-296.

Lefkowitz, J. (1994). Sex-related differences in job attitudes and dispositional variables: Now you see them,... *The Academy of Management Journal, 37*(2), 323-349.

Levine, D. W., & Dunlap, W. P. (1982). Power of the F test with skewed data: Should one transform or not. *Psychological Bulletin, 92*(1), 272-280.

Lievens, F., van Dam, K., & Anderson, N. (2002). Recent trends and challenges in personnel selection. *Personnel Review, 31*(5-6), 580-601.

Lievens, F., De Corte, W., & Brysse, K. (2003). Applicant perceptions of selection procedures: The role of selection information, belief in tests, and comparative anxiety. *International Journal of Selection and Assessment, 11*(1), 67-77.

Lievens, F., Peeters, H., & Schollaert, E. (2008). Situational judgment tests: A review of recent research. *Personnel Review, 37*(4), 426-441.

Lievens, F., & Sackett, P. R. (2007). Situational judgment tests in high-stakes settings: Issues and strategies with generating alternate forms. *Journal of Applied Psychology, 92*(4), 1043-1055.

Lindman, H. R. (1974). *Analysis of variance in complex experimental designs*. New Jersey, USA: Erlbaum.

Lounsbury, J. W., Bobrow, W., & Jensen, J. B. (1989). Attitudes toward employment testing: Scale development, correlates, and "known-group" validation. *Professional Psychology: Research and Practice, 20*(5), 340-349.

Macan, T. H., Avedon, M. J., Paese, M., & Smith, D. E. (1994). The effects of applicants' reactions to cognitive ability tests and an assessment centre. *Personnel Psychology, 47*(4), 715-738.

Mackenzie-Davey, K. M., & Arnold, J. (2000). A multi-method study of accounts of personal change by graduates starting work: Self-ratings, categories and women's discourses. *Journal of Occupational and Organizational Psychology, 73*(4), 461-486.

Magnus, K., Diener, E., Fujita, F., & Pavot, W. (1993). Extraversion and neuroticism as predictors of objective life events: A longitudinal analysis. *Journal of Personality and Social Psychology, 65*, 1046-1046.

Marcus, B. (2003). Attitudes towards personnel selection methods: A partial replication and extension in a German sample. *Applied Psychology, 52*(4), 515-532.

Marcus, B. (2009). 'Faking' from the applicant's perspective: A theory of self-presentation in personnel selection settings. *International Journal of Selection and Assessment, 17*(4), 417-430.

Martocchio, J. J., & Dulebohn, J. (1994). Performance feedback effects in training: The role of perceived controllability. *Personnel Psychology, 47*(2), 357-373.

McCarthy, J., Hrabluik, C., & Jelley, B. (2009). Progression through the ranks: Assessing employee reactions to high-stakes employment testing. *Personnel Psychology, 62*(4), 793-832.

McCourt, W. (1999). Paradigms and their development: The psychometric paradigm of personnel selection as a case study of paradigm diversity and consensus. *Organization Studies, 20*(6), 1011-1034.

McCrae, R. R., & Costa Jr, P. T. (1999). A five-factor theory of personality. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality* (2nd ed.). London: The Guilford Press.

McCrae, R. R., & Costa, P. T. (1996). Toward a new generation of personality theories: Theoretical contexts for the five-factor model. In J. S. Wiggins (Ed.), *The five factor model of personality*. London: The Guilford Press.

McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective* (2nd ed.). London: The Guilford Press.

McFarland, C., & Ross, M. (1982). Impact of causal attributions on affective reactions to success and failure. *Journal of Personality and Social Psychology, 43*(5), 937-946.

McManus, I. C., Keeling, A., & Paice, E. (2004). Stress, burnout and doctors' attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates. *BMC Medicine, 2*, 1-12.

Michaels, E., Handfield-Jones, H., & Axelrod, B. (2001). *The war for talent*. Boston: Harvard Business School Press.

Miles, J., & Shevlin, M. (2001). *Applying regression & correlation: A guide for students and researchers*. London: Sage Publications Ltd.

Moon, H. (2001). The two faces of conscientiousness: Duty and achievement striving in escalation of commitment dilemmas. *Journal of Applied Psychology, 86*(3), 533-540.

Moore, J. E. (2000). Why is this happening? A causal attribution approach to work exhaustion consequences. *The Academy of Management Review, 25*(2), 335-349.

Morgan, G., & Smircich, L. (1980). The case for qualitative research. *The Academy of Management Review, 5*(4), 491-500.

Morgeson, F. P., & Ryan, A. M. (2009). Reacting to applicant perspectives research: What's next? *International Journal of Selection and Assessment, 17*(4), 431-437.

Moscoso, S., & Salgado, J. F. (2004). Fairness reactions to personnel selection techniques in Spain and Portugal. *International Journal of Selection and Assessment, 12*(1-2), 187-196.

Motowidlo, S. J., Dunnette, M. D., & Carter, G. W. (1990). An alternative selection procedure: The low-fidelity simulation. *Journal of Applied Psychology, 75*(6), 640-647.

Munton, A. G., Silvester, J., Stratton, P., & Hanks, H. (1999). *Attributions in action: A practical approach to coding qualitative data*. Chichester: John Wiley & Sons.

Murphy, K. R. (1986). When your top choice turns you down: Effect of rejected offers on the utility of selection tests. *Psychological Bulletin, 99*(1), 133-138.

Myers, D. G. (1999). *Social psychology* (6th ed.). London: McGraw-Hill.

Nagy, M. S. (2002). Using a single-item approach to measure facet job satisfaction. *Journal of Occupational and Organizational Psychology, 75*(1), 77-86.

Nikolaou, I., & Judge, T. A. (2007). Fairness reactions to personnel selection techniques in Greece: The role of core self-evaluations. *International Journal of Selection and Assessment, 15*(2), 206-219.

Nielsen, J. (2000). *Designing web usability*. Indianapolis, US: New Riders Publishing.

Nielsen, K., Yarker, J., Randall, R., & Munir, F. (2009). The mediating effects of team and self-efficacy on the relationship between transformational leadership, and job satisfaction and psychological well-being in healthcare professionals: A cross-sectional questionnaire survey. *International Journal of Nursing Studies, 46*(9), 1236-1244.

Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist, 17*(11), 776-783.

Ostberg, D. E., Truxillo, D. M., & Bauer, T. N. (2001). Effects of pre-test information on applicants' perceptions of selection fairness. *Symposium Presented at the 16th Annual Meeting of the Society for Industrial and Organizational Psychology,* San Diego, CA.

Pashayan, N., Duff, C., & Mason, B. W. (2007). Selection into specialty training in public health: Performance of the medical training application service shortlisting. *Journal of Public Health, 29*(4), 331-337.

Patterson, F., Baron, H., Carr, V., Plint, S., & Lane, P. (2009a). Evaluation of three short-listing methodologies for selection into postgraduate training in general practice. *Medical Education, 43*(1), 50-57.

Patterson, F., Carr, V., Zibarras, L., Burr, B., Berkin, L., Plint, S., Irish, B., & Gregory, S. (2009b). New machine-marked tests for selection into core medical training: Evidence from two validation studies. *Clinical Medicine, 9*(5), 417-420.

Patterson, F., & Ferguson, E. (2007). *Selection into medical education and training.* Edinburgh: Association for the Study of Medical Education.

Patterson, F., Ferguson, E., Lane, P., Farrell, K., Martlew, J., & Wells, A. (2000). A competency model for general practice: Implications for selection, training, and development. *The British Journal of General Practice, 50*(452), 188.

Patterson, F., Ferguson, E., Norfolk, T., & Lane, P. (2005). A new selection system to recruit general practice registrars: Preliminary findings from a validation study. *British Medical Journal, 330*(7493), 711-714.

Patterson, F., Zibarras, L. D., Carr, V., Irish, B., & Gregory, S. (submitted). Evaluating candidate reactions to selection practices using organisational justice theory. *Submitted to Medical Education.*

Pearson. (2008). *W-GCTA and RANRA user guide*. London: Pearson Education Ltd.

Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The attributional style questionnaire. *Cognitive Therapy and Research, 6*(3), 287-299.

Peterson, R. A. (2001). On the use of college students in social science research: Insights from a second-order meta-analysis. *Journal of Consumer Research, 28*(3), 450-461.

Pfeffer, J. (1993). Barriers to the advance of organizational science: Paradigm development as a dependent variable. *The Academy of Management Review, 18*(4), 599-620.

Pfieffelmann, B., Wagner, S. H., & Libkuman, T. (2010). Recruiting on corporate web sites: Perceptions of fit and attraction. *International Journal of Selection and Assessment, 18*(1), 40-47.

Phillips, J. M., & Gully, S. M. (2002). Fairness reactions to personnel selection techniques in Singapore and the United States. *The International Journal of Human Resource Management, 13*(8), 1186-1205.

Ployhart, R. E., & Ryan, A. M. (1997). Toward an explanation of applicant reactions: An examination of organizational justice and attribution frameworks. *Organizational Behavior and Human Decision Processes, 72*(3), 308-335.

Ployhart, R. E., & Ryan, A. M. (1998). Applicants' reactions to the fairness of selection procedures: The effects of positive rule violations and time of measurement. *Journal of Applied Psychology, 83*(1), 3-16.

Ployhart, R. E., Ryan, A. M., & Bennett, M. (1999). Explanations for selection decisions: Applicants' reactions to informational and sensitivity features of explanations. *Journal of Applied Psychology, 84*, 87-106.

Ployhart, R. E., Ehrhart, K. H., & Hayes, S. C. (2005). Using attributions to understand the effects of explanations on applicant reactions: Are reactions consistent with the covariation principle? *Journal of Applied Social Psychology, 35*(2), 259-296.

Ployhart, R. E., & Harold, C. M. (2004). The applicant attribution-reaction theory (AART): An integrative theory of applicant attributional processing. *International Journal of Selection and Assessment, 12*(1-2), 84-98.

Ployhart, R. E., McFarland, L. A., & Ryan, A. M. (2002). Examining applicants' attributions for withdrawal from a selection procedure. *Journal of Applied Social Psychology, 32*(11), 2228-2252.

Ployhart, R. E., & Ryan, A. M. (1998). Toward an explanation of applicant reactions: An examination of organizational justice and attribution frameworks (vol 72, pg

308, 1997). *Organizational Behavior and Human Decision Processes, 74*(1), 88-88.

Ployhart, R. E., Ziegert, J. C., & McFarland, L. A. (2003). Understanding racial differences on cognitive ability tests in selection contexts: An integration of stereotype threat and applicant reactions research. *Human Performance, 16*(3), 231-259.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management, 12*(4), 531-544.

Potosky, D., Bobko, P., & Roth, P. L. (2005). Forming composites of cognitive ability and alternative measures to predict job performance and reduce adverse impact: Corrected estimates and realistic expectations. *International Journal of Selection and Assessment, 13*(4), 304-315.

Randall, R., Davies, H., Patterson, F., & Farrell, K. (2006). Selecting doctors for post-graduate training in paediatrics using a competency-based assessment centre. *Archives of Disease in Childhood, 91*, 444-448.

Randall, R., Stewart, P., Farrell, K., & Patterson, F. (2006). Using an assessment centre to select doctors for postgraduate training in obstetrics and gynaecology. *The Obstetrician & Gynaecologist, 8*(4), 257-262.

Reeve, C. L., & Schultz, L. (2004). Job-seeker reactions to selection process information in job ads. *International Journal of Selection and Assessment, 12*(4), 343-355.

Riordan, C. M., & Shore, L. M. (1997). Demographic diversity and employee attitudes: An empirical examination of relational demography within work units. *Journal of Applied Psychology, 82*(3), 342-358.

Riordan, C. M., Weatherly, E. W., Vandenberg, R. J., & Self, R. M. (2001). The effects of pre-entry experiences and socialization tactics on newcomer attitudes and turnover. *Journal of Managerial Issues, 13*(2), 159-176.

Robertson, I. T., & Kandola, R. S. (1982). Work sample tests: Validity, adverse impact and applicant reaction. *Journal of Occupational Psychology, 55*(3), 171-183.

Robertson, I. T., Iles, P. A., Gratton, L., & Sharpley, D. (1991). The impact of personnel selection and assessment methods on candidates. *Human Relations, 44*(9), 963-982.

Robertson, I. T., & Makin, P. J. (1986). Management selection in Britain: A survey and critique. *Journal of Occupational Psychology, 59*(1), 45-57.

Robertson, I. T., & Smith, M. (2001). Personnel selection. *Journal of Occupational and Organizational Psychology, 74*(4), 441-472.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin, 27*(2), 151-161.

Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers*. Oxford: Blackwell Publishing.

Rogan, J. C., & Keselman, H. J. (1977). Is the ANOVA F-test robust to variance heterogeneity when sample sizes are equal?: An investigation via a coefficient of variation. *American Educational Research Journal, 14*(4), 493.

Rosenthal, R., & Rosnow, R. L. (1965). The volunteer subject. *Human Relations, 18*(4), 389-406.

Rosse, J. G., Miller, J. L., & Stecher, M. D. (1994). A field study of job applicants' reactions to personality and cognitive ability testing. *Journal of Applied Psychology, 79*(6), 987-991.

Rousseau, D. M. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements*. London: Sage publications.

Rousseau, D. M. (2001). Schema, promise and mutuality: The building blocks of the psychological contract. *Journal of Occupational and Organizational Psychology, 74*(4), 511-541.

Rousseau, D. M., & Greller, M. M. (1994). Human resource practices: Administrative contract makers. *Human Resource Management, 33*(3), 385-401.

Russell, D. (1982). The causal dimension scale: A measure of how individuals perceive causes. *Journal of Personality and Social Psychology, 42*(6), 1137-1145.

Russell, D. W., McAuley, E., & Tarico, V. (1987). Measuring causal attributions for success and failure: A comparison of methodologies for assessing causal dimensions. *Journal of Personality and Social Psychology, 52*(6), 1248-1257.

Rust, J., & Golombok, S. (1999). *Modern psychometrics: The science of psychological assessment* (2nd ed.). London: Routledge.

Ryan, A. M., & Huth, M. (2008). Not much more than platitudes? A critical look at the utility of applicant reactions research. *Human Resource Management Review, 18*(3), 119-132.

Ryan, A. M., Greguras, G. J., & Ployhart, R. E. (1996). Perceived job relatedness of physical ability testing for firefighters: Exploring variations in reactions. *Human Performance, 9*(3), 219-240.

Ryan, A. M., Sacco, J. M., McFarland, L. A., & Kriska, S. D. (2000). Applicant self-selection: Correlates of withdrawal from a multiple hurdle process. *Journal of Applied Psychology, 85*(2), 163-179.

Ryan, A. M., & Ployhart, R. E. (2000). Applicants' perceptions of selection procedures and decisions: A critical review and agenda for the future. *Journal of Management, 26*(3), 565-606.

Rynes, S. H. (1993a). Who's selecting whom? effects of selection practices on applicant attitudes and behaviours. In N. Schmitt, & W. Borman (Eds.), *Personnel selection.* San Francisco, CA: Jossey-Bass.

Rynes, S. L. (1993b). When recruitment fails to attract: Individual expectations meet organizational realities in recruitment. In H. Schuler, J. L. Farr & M. Smith (Eds.), *Personnel selection and assessment: Individual and organizational perspectives* (pp. 27-40). Hillsdale, NJ: Lawrence Erlbaum Associates.

Rynes, S. L., Bretz, R. D., & Gerhart, B. (1991). The importance of recruitment in job choice: A different way of looking. *Personnel Psychology, 44*(3), 487-521.

Rynes, S. L., & Connerley, M. L. (1993). Applicant reactions to alternative selection procedures. *Journal of Business and Psychology, 7*(3), 261-277.

Sackett, P. R., & Larson, J. R. (1990). Research strategies and tactics in industrial and organizational psychology. In M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.

Sackett, P. R., & Lievens, F. (2008). Personnel selection. *Annual Review of Psychology, 59*, 419-450.

Sanders, K., van Riemsdijk, M., & Groen, B. (2008). The gap between research and practice: A replication study on the HR professionals' beliefs about effective human resource practices. *International Journal of Human Resource Management, 19*(10), 1976-1988.

Scarpello, V., & Campbell, J. P. (1983). Job satisfaction: Are all the parts there. *Personnel Psychology, 36*(3), 577-600.

Schaufeli, W. (1988). *Unemployment and psychological health: An investigation among Dutch professionals.* Unpublished PhD, University of Groningen, Groningen, The Netherlands.

Schinkel, S., van Dierendonck, D., & Anderson, N. (2004). The impact of selection encounters on applicants: An experimental study into feedback effects after a negative selection decision. *International Journal of Selection and Assessment, 12*(1-2), 197-205.

Schleicher, D. J., Venkataramani, V., Morgeson, F. P., & Campion, M. A. (2006). So you didn't get the job... now what do you think? examining opportunity-to-perform fairness perceptions. *Personnel Psychology, 59*(3), 559-590.

Schmidt, F. L. (1988). The problem of group differences in ability test scores in employment selection. *Journal of Vocational Behavior, 33*(3), 272-292.

Schmidt, F. L. (2002). The role of general cognitive ability and job performance: Why there cannot be a debate. *Human Performance, 15*(1/2), 187-210.

Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*(2), 262-274.

Schmidt, F. L., Ones, D. S., & Hunter, J. E. (1992). Personnel selection. *Annual Review of Psychology, 43*(1), 627-670.

Schmit, M. J., & Ryan, A. M. (1997). Applicant withdrawal: The role of test-taking attitudes and racial differences. *Personnel Psychology, 50*(4), 855-876.

Schmit, M. J., & Ryan, A. M. (1992). Test-taking dispositions: A missing link? *Journal of Applied Psychology, 77*(5), 629-637.

Schmitt, N., & Chan, D. (1999). The status of research on applicant reactions to selection tests and its implications for managers. *International Journal of Management Reviews, 1*(1), 45-62.

Schmitt, N., Oswald, F. L., Kim, B. H., Gillespie, M. A., & Ramsay, L. J. (2004). The impact of justice and self-serving bias explanations of the perceived fairness of different types of selection tests. *International Journal of Selection and Assessment, 12*(1-2), 160-171.

Schneider, B., Kristof-Brown, A., Goldstein, H. W., & Smith, D. B. (1997). What is this thing called fit. In N. Anderson, & P. Herriot (Eds.), *International handbook of selection and assessment* (2nd ed.). Chichester: John Wiley & Sons.

Schneider, B. (1978). Person-situation selection: A review of some ability-situation interaction research. *Personnel Psychology, 31*(2), 281-297.

Schneider, B. (1987). The people make the place. *Personnel Psychology, 40*(3), 437-453.

Schneider, B. (2001). Fits about fit. *Applied Psychology an International Review, 50*(1), 141-152.

Schneider, B., Goldstein, H. W., & Smith, D. B. (1995). The ASA framework: An update. *Personnel Psychology, 48*(4), 747-773.

Schuler, H. (1993). Social validity of selection situations: A concept and some empirical results. In H. Schuler, J. L. Farr & M. Smith (Eds.), *Personnel selection and assessment: Individual and organizational perspectives*. Hillsdale, NJ: Lawrence Erlbaum.

Schyns, B., & von Collani, G. (2002). A new occupational self-efficacy scale and its relation to personality constructs and organizational variables. *European Journal of Work and Organizational Psychology, 11*(2), 219-241.

Searle, R. H. (2003). *Selection and recruitment: A critical text*. Milton Keynes: The Open University.

Seymour, R. T. (1988). Why plaintiffs' counsel challenge tests, and how they can successfully challenge the theory of "validity generalization". *Journal of Vocational Behavior, 33*, 331-364.

Shackleton, V., & Newell, S. (1991). Management selection: A comparative survey of methods used in top British and French companies. *Journal of Occupational Psychology, 64*(1), 23-36.

Shore, L. M., & Tetrick, L. E. (1994). The psychological contract as an explanatory framework in the employment relationship. *Trends in Organizational Behavior, 1*, 91-109.

Shore, L. M., & Barksdale, K. (1998). Examining degree of balance and level of obligation in the employment relationship: A social exchange approach. *Journal of Organizational Behavior, 19*, 731-744.

Silverman, D. (2005). *Doing qualitative research* (2nd ed.). London: Sage Publications Ltd.

Silvester, J. (1997). Spoken attributions and candidate success in graduate recruitment interviews. *Journal of Occupational and Organizational Psychology, 70*(1), 61-73.

Silvester, J. (2004). Attributional coding. In C. Cassell, & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research*. London: Sage Publications.

Silvester, J., Anderson-Gough, F. M., Anderson, N., & Mohamed, A. R. (2002). Locus of control, attributions and impression management in the selection interview. *Journal of Occupational and Organizational Psychology, 75*(1), 59-76.

Silvester, J., & Chapman, A. J. (1996). Unfair discrimination in the selection interview: An attributional account. *International Journal of Selection and Assessment, 4*, 63-70.

Silvester, J., Patterson, F., & Ferguson, E. (2003). Comparing two attributional models of job performance in retail sales: A field study. *Journal of Occupational and Organizational Psychology, 76*(1), 115-132.

Smith, M., & Abrahamsen, M. (1992). Patterns of selection in six countries. *The Psychologist, 5*, 205-207.

Smither, J. W., Reilly, R. R., Millsap, R. E., Pearlman, K., & Stoffey, R. W. (1993). Applicant reactions to selection procedures. *Personnel Psychology, 46*, 49-76.

Soper, D. S. (2008). *Post-hoc statistical power calculator (online software)*. Retrieved November 16th 2008, from http://www.danielsoper.com/statcalc/calc09.aspx

Spector, P. E., & O'Connell, B. J. (1994). The contribution of personality traits, negative affectivity, locus of control and type A to the subsequent reports of job stressors and job strains. *Journal of Occupational and Organizational Psychology, 67*(1), 1-12.

Steele-Johnson, D., Osburn, H. G., & Pieper, K. F. (2000). A review and extension of current models of dynamic criteria. *International Journal of Selection and Assessment, 8*(3), 110-136.

Stees, Y., & Turnage, J. J. (1992). Video selection tests: Are they better? *Paper Presented at the Society for Industrial and Organizational Psychology,* Montreal, Canada.

Steiner, D. D., & Gilliland, S. W. (1996). Fairness reactions to personnel selection techniques in France and the united states. *Journal of Applied Psychology, 81*(2), 134-141.

Sutton, G., & Griffin, M. A. (2004). Integrating expectations, experiences, and psychological contract violations: A longitudinal study of new professionals. *Journal of Occupational and Organizational Psychology, 77*(4), 493-514.

Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly, 40*(3), 371-384.

Sweeney, P. D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review. *Journal of Personality and Social Psychology, 50*(5), 974-991.

Symon, G., Cassell, C., & Dickson, R. (2000). Expanding our research and practice through innovative research methods. *European Journal of Work and Organizational Psychology, 9*(4), 457-462.

Tarique, I., & Schuler, R. (2008). Emerging issues and challenges in global staffing: A north American perspective. *International Journal of Human Resource Management, 19*(8), 1397-1415.

Taylor, M. S., & Bergmann, T. J. (1987). Organizational recruitment activities and applicants' reactions at different stages of the recruitment process. *Personnel Psychology, 40*(2), 261-285.

Tekleab, A. G., Takeuchi, R., & Taylor, M. S. (2005). Extending the chain of relationships among organization justice, social exchange, and employee reactions: The role of contract violations. *The Academy of Management Journal, 48*(1), 146-157.

Terjesen, S., Vinnicombe, S., & Freeman, C. (2007). Attracting generation Y graduates. *Career Development International, 12*(6), 504-522.

Thornton, G. C. (1993). The effect of selection practices on applicants' perceptions of organizational characteristics. In H. Schuler, J. L. Farr & M. Smith (Eds.),

Personnel selection and assessment: Individual and organizational perspectives (pp. 57-67)

Tipton, R. M., & Worthington, E. L. (1984). The measurement of generalized self-efficacy: A study of construct validity. *Journal of Personality Assessment, 48*(5), 545-548.

Tooke, J. (2008). *Independent inquiry into modernising medical careers.* Retrieved August 12th 2009, from http://www.mmcinquiry.org.uk

Truxillo, D. M., Bauer, T. N., Campion, M. A., & Paronto, M. E. (2002). Selection fairness information and applicant reactions: A longitudinal field study. *Journal of Applied Psychology, 87*(6), 1020-1031.

Truxillo, D. M., Bauer, T. N., & Sanchez, R. J. (2001). Multiple dimensions of procedural justice: Longitudinal effects on selection system fairness and test-taking self-efficacy. *International Journal of Selection and Assessment, 9*(4), 336-349.

Truxillo, D. M., Bodner, T. E., Bertolino, M., Bauer, T. N., & Yonce, C. A. (2009). Effects of explanations on applicant reactions: A meta-analytic review. *International Journal of Selection and Assessment, 17*(4), 346-361.

Truxillo, D. M., & Hunthausen, J. M. (1999). Reactions of African American and white applicants to written and video-based police selection tests. *Journal of Social Behavior and Personality, 14*(1), 101-112.

Truxillo, D. M., Steiner, D. D., & Gilliland, S. W. (2004). The importance of organizational justice in personnel selection: Defining when selection fairness really matters. *International Journal of Selection and Assessment, 12*(1-2), 39-53.

Truxillo, D. M., Bauer, T. N., Campion, M. A., & Paronto, M. E. (2006). A field study of the role of big five personality in applicant perceptions of selection fairness,

self, and the hiring organization. *International Journal of Selection and Assessment, 14*(3), 269-277.

Tsai, W. C., & Yang, I. W. F. (2010). Does image matter to different job applicants? the influences of corporate image and applicant individual differences on organizational attractiveness. *International Journal of Selection and Assessment, 18*(1), 48-63.

Tsui, A. S., Egan, T. D., & O'Reilly, C. A. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly, 37*(4), 549-579.

Tsui, A. S., & O'Reilly, C. A. (1989). Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads. *Academy of Management Journal, 32*(2), 402-423.

Turban, D. B., & Cable, D. M. (2003). Firm reputation and applicant pool characteristics. *Journal of Organizational Behavior, 24*(6), 733-751.

Turban, D. B., Forret, M. L., & Hendrickson, C. L. (1998). Applicant attraction to firms: Influences of organization reputation, job and organizational attributes, and recruiter behaviors. *Journal of Vocational Behavior, 52*(1), 24-44.

van den Berg, P. T., & Feij, J. A. (2003). Complex relationships among personality traits, job characteristics, and work behaviors. *International Journal of Selection and Assessment, 11*(4), 326-339.

Van Vianen, A. E. M. (2005). A review of person-environment fit research: Prospects for personnel selection. *Handbook of Selection, Blackwell Publishing, Oxford,* , 419-439.

Van Vianen, A. E. M., Taris, R., Scholten, E., & Schinkel, S. (2004). Perceived fairness in personnel selection: Determinants and outcomes in different stages of the

assessment procedure. *International Journal of Selection and Assessment, 12*(1-2), 149-159.

Van Vianen, A. E. M. (2000). Person-organization fit: The match between newcomers' and recruiters' preferences for organizational cultures. *Personnel Psychology, 53*(1), 113-149.

Viswesvaran, C., & Ones, D. S. (2004). Importance of perceived personnel selection system fairness determinants: Relations with demographic, personality, and job characteristics. *International Journal of Selection and Assessment, 12*(1-2), 172-186.

Wanous, J. P. (1978). Realistic job previews: Can a procedure to reduce turnover also influence the relationship between abilities and performance? *Personnel Psychology, 31*(2), 249-258.

Wanous, J. P. (1992). *Organizational entry: Recruitment, selection, orientation, and socialization of newcomers*. London: Prentice Hall.

Wanous, J. P., & Colella, A. (1989). Organizational entry research: Current status and future directions. *Research in Personnel and Human Resources Management, 7*, 59-120.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82*(2), 247-252.

Wanous, J. P. (1988). *Organizational entry research: Current status and future directions* College of Business, Ohio State University.

Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review, 14*(4), 516-531.

Weick, K. E. (1995). What theory is not, theorizing is. *Administrative Science Quarterly, 40*(3), 385-390.

Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology, 71*(1), 3-25.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*(4), 548-573.

Weiner, B. (1986). Attribution, emotion and action. In R. M. Sorrento, & T. E. Higgins (Eds.), *Handbook of motivation and cognition* (pp. 281-312). London: John Wiley.

Weiner, B., Russell, D., & Lerman, D. (1979). The cognition-emotion process in achievement-related contexts. *Journal of Personality and Social Psychology, 37*(7), 1211-1220.

Wiechmann, D., & Ryan, A. M. (2003). Reactions to computerized testing in selection contexts. *International Journal of Selection and Assessment, 11*, 215-229.

Williams, D., Duff, C., Patterson, F., Kerrin, M., Zibarras, L. D., & Mason, B. (2009). Selecting the right people: Using job analysis to develop a competency model. *Poster Presentation at AMEE Conference*, Malaga, Spain.

Wong, P. T. P., & Weiner, B. (1981). When people ask "why" questions, and the heuristics of attributional search. *Journal of Personality and Social Psychology, 40*(4), 650-663.

Woods, S. A., & Hampson, S. E. (2004). Single-item measures for the big five personality factors: Validation data from an organisational sample. *Paper Presentation at the Division of Occupational Psychology Conference*, Warwick, UK.

Woods, S. A., & Hampson, S. E. (2005). Measuring the big five with single items using a bipolar response scale. *European Journal of Personality, 19*(5), 373-390.

Wyatt, M. R. R., Pathak, S. B., & Zibarras, L. D. (2010). Advancing selection in an SME: Is best practice methodology applicable? *International Small Business Journal, 28,* 258-273.

Zibarras, L. D., & Patterson, F. (2009). Applicant reactions, perceived fairness and ethnic differences in a live, high-stakes selection context *Paper Presentation at the Division of Occupational Psychology Conference,* Blackpool.

Zibarras, L. D., & Woods, S. A. (2010). A survey of UK selection practices across different organization sizes and industry sectors. *Journal of Occupational and Organizational Psychology, 83,* 499-511.

9.1 Appendix 1: Study 1, sample 1 questionnaire (T1)

This form asks about your experience of the assessment process for GP. **The answers you give <u>do not</u> form part of the selection process,** they are to help us improve the system in the future. The answers you give are **confidential** and will be used for evaluation purposes only. Completion of this form is voluntary. Please answer each question by circling the appropriate number according to the scale provided. Thank you for completing this form.

Age: _____ **years**	**Gender:** Male Female
Ethnic origin: White ☐ Asian ☐ Black ☐ Mixed ☐ Chinese ☐ Other ☐	

<u>Section 1: GP Stage 2 Shortlisting Papers</u>

This section concerns the 2 elements of the GP Stage 2 assessment: a) Clinical Problem Solving and b) Professional Dilemmas

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

1.	The content of the **Clinical Problem Solving** paper was relevant to General Practice	1	2	3	4	5
2.	The content of the **Clinical Problem Solving** paper seemed appropriate for the entry level I was applying for	1	2	3	4	5
3.	The content of the **Clinical Problem Solving** paper appeared to be fair	1	2	3	4	5
4.	A person who scored well on the **Clinical Problem Solving** paper will be a good GP	1	2	3	4	5
5.	The content of the **Professional Dilemmas** paper was relevant to General Practice	1	2	3	4	5
6.	The content of the **Professional Dilemmas** paper seemed appropriate for the entry level I was applying for	1	2	3	4	5
7.	The content of the **Professional Dilemmas** paper appeared to be fair	1	2	3	4	5
8.	A person who scored well on the **Professional Dilemmas** paper will be a good GP	1	2	3	4	5

<u>Section 2: About you</u>

On a scale of 1 (Not at all true) – 6 (Completely true), please indicate the extent to which you agree with each of the following statements:

		Not at all true -- Completely true					
1.	I have a strong belief in my competence generally	1	2	3	4	5	6
2.	If I am under pressure at work, I can usually think of something to do	1	2	3	4	5	6
3.	I am confident in my abilities to learn new skills	1	2	3	4	5	6
4.	When I am confronted with a problem in my job, I can usually find several solutions	1	2	3	4	5	6
5.	My past experiences in my job have prepared me well for my future career	1	2	3	4	5	6
6.	I feel prepared to meet most of the demands in my job	1	2	3	4	5	6

How much does each description sound like you?

*Below are three pairs of descriptions. Circle **one number** on each scale to indicate how much you think each description sounds like you.*

Generally, I see myself as:

Someone who is sensitive and excitable, and can be tense	1	2	3	4	5	6	7	8	9	Someone who is relaxed, unemotional, rarely gets irritated and seldom feels blue
Someone who likes to plan things, likes to tidy up, pays attention to details, but can be rigid or inflexible	1	2	3	4	5	6	7	8	9	Someone who doesn't necessarily work to a schedule, tends to be flexible, but disorganised and often forgets to put things back in their proper place
Someone who is a practical person who is not interested in abstract ideas, prefers work that is routine and has few artistic interests	1	2	3	4	5	6	7	8	9	Someone who spends time reflecting on things, has an active imagination and likes to think up new ways of doing things, but may lack pragmatism

9.2 Appendix 2: Study 1, sample 1 questionnaire (T2)

Thank you very much for agreeing to take part in follow-up evaluation work for GP Stage 2 Assessment. We really value your views.

The answers you give do not form part of the selection process, they are to help us improve the system in the future. Completion of this form is voluntary. All responses will be confidential and will be used for evaluation purposes only. All analyses will be conducted at the group level and not on any one individual response.

1. Have you been selected for further consideration at the Stage 3 selection centre?
Yes No

Section 1: Your perceptions of shortlisting assessment

On a scale of 1 (strongly disagree) to 5 (strongly agree), please rate the extent to which you agree with each of the following eight statements:

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

1.	Whether or not I advanced to the Stage 3 selection centre, I feel that using the Stage 2 assessment papers to select people is fair.	1	2	3	4	5
2.	Whether or not I advanced to the Stage 3 selection centre, I am satisfied with the use of the Stage 2 assessment papers.	1	2	3	4	5
3.	Overall, I feel the Stage 2 assessment papers were fair.	1	2	3	4	5
4.	I felt good about the way the Stage 2 assessment was conducted and administered.	1	2	3	4	5

Section 2: You as a person

The following questions are about you as a person. On a scale of 1 (Not at all true) – 6 (Completely true), please indicate the extent to which you agree with each of the following statements:

	Not at all true ------- Completely true					
1. I have a strong belief in my competence generally	1	2	3	4	5	6
2. If I am under pressure at work, I can usually think of something to do	1	2	3	4	5	6
3. I am confident in my abilities to learn new skills	1	2	3	4	5	6
4. When I am confronted with a problem in my job, I can usually find several solutions	1	2	3	4	5	6
5. My past experiences in my job have prepared me well for my future career	1	2	3	4	5	6
6. I feel prepared to meet most of the demands in my job	1	2	3	4	5	6

9.3 Appendix 3: Study 1, sample 2 questionnaire (T1)

This form asks about your experience of the selection process for GP. **The answers you give do not form part of the selection process,** they are to help us improve the system in the future. The answers you give are **confidential** and will be used for evaluation purposes only. Completion of this form is voluntary. Please answer each question by circling the appropriate number according to the scale provided. Thank you for completing this form.

Age: _____ years				**Gender:**	Male	Female
Ethnic origin:	White ☐	Asian ☐	Black ☐	Mixed ☐	Chinese ☐	Other ☐

Section 1. GP Stage 3 Selection Centre Exercises

This section concerns the 3 exercises you completed during the 2008 GP Stage 3 selection centre.

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

Group Exercise					
1. The content of the **Group Exercise** was clearly related to the job	**1**	**2**	**3**	**4**	**5**
2. The content of the **Group Exercise** seemed appropriate for the entry level I am applying for	**1**	**2**	**3**	**4**	**5**
3. The content of the **Group Exercise** appeared to be fair	**1**	**2**	**3**	**4**	**5**
4. A person who scored well on the **Group Exercise** will be a good GP	**1**	**2**	**3**	**4**	**5**
Simulation					
5. The content of the **Simulation** was clearly related to the job	**1**	**2**	**3**	**4**	**5**
6. The content of the **Simulation** seemed appropriate for the entry level I am applying for	**1**	**2**	**3**	**4**	**5**
7. The content of the **Simulation** appeared to be fair	**1**	**2**	**3**	**4**	**5**
8. A person who scored well on the **Simulation** will be a good GP	**1**	**2**	**3**	**4**	**5**
Written Exercise					
9. The content of the **Written Exercise** was clearly related to the job	**1**	**2**	**3**	**4**	**5**
10. The content of the **Written Exercise** seemed appropriate for the entry level I am applying for	**1**	**2**	**3**	**4**	**5**
11. The content of the **Written Exercise** appeared to be fair	**1**	**2**	**3**	**4**	**5**
12. A person who scored well on the **Written Exercise** will be a good GP	**1**	**2**	**3**	**4**	**5**

Section 2: About you

On a scale of 1 (Not at all true) – 6 (Completely true), please indicate the extent to which you agree with each of the following statements:

	Not at all true - Completely true					
1. I have a strong belief in my competence generally	**1**	**2**	**3**	**4**	**5**	**6**
2. If I am under pressure at work, I can usually think of something to do	**1**	**2**	**3**	**4**	**5**	**6**
3. I am confident in my abilities to learn new skills	**1**	**2**	**3**	**4**	**5**	**6**
4. When I am confronted with a problem in my job, I can usually find several solutions	**1**	**2**	**3**	**4**	**5**	**6**
5. My past experiences in my job have prepared me well for my future career	**1**	**2**	**3**	**4**	**5**	**6**
6. I feel prepared to meet most of the demands in my job	**1**	**2**	**3**	**4**	**5**	**6**

How much does each description sound like you?

*Below are three pairs of descriptions. Circle **one number** on each scale to indicate how much you think each description sounds like you.*

Generally, I see myself as:

Someone who is sensitive and excitable, and can be tense	1	2	3	4	5	6	7	8	9	Someone who is relaxed, unemotional, rarely gets irritated and seldom feels blue
Someone who likes to plan things, likes to tidy up, pays attention to details, but can be rigid or inflexible	1	2	3	4	5	6	7	8	9	Someone who doesn't necessarily work to a schedule, tends to be flexible, but disorganised and often forgets to put things back in their proper place
Someone who is a practical person who is not interested in abstract ideas, prefers work that is routine and has few artistic interests	1	2	3	4	5	6	7	8	9	Someone who spends time reflecting on things, has an active imagination and likes to think up new ways of doing things, but may lack pragmatism

9.4 Appendix 4: Study 1, sample 2 questionnaire (T2)

Thank you very much for agreeing to take part in follow-up evaluation work for GP Stage 3 Assessment. We really value your views.

The answers you give do not form part of the selection process, they are to help us improve the system in the future. Completion of this form is voluntary. All responses will be confidential and will be used for evaluation purposes only. All analyses will be conducted at the group level and not on any one individual response.

1. Have you been selected for a GP post?

Yes No

Section 1: Your perceptions of shortlisting assessment

On a scale of 1 (strongly disagree) to 5 (strongly agree), please rate the extent to which you agree with each of the following eight statements:

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

1.	Whether or not I was accepted for a GP post, I feel that using the Stage 3 selection centre exercises to select people is fair.	1	2	3	4	5
2.	Whether or not I was accepted for a GP post, I am satisfied with the use of the Stage 3 selection centre exercises.	1	2	3	4	5
3.	Overall, I feel the Stage 3 selection centre exercises were fair.	1	2	3	4	5
4.	I felt good about the way the Stage 3 selection centre exercises were conducted and administered.	1	2	3	4	5

Section 2: You as a person

The following questions are about you as a person. On a scale of 1 (Not at all true) – 6 (Completely true), please indicate the extent to which you agree with each of the following statements:

	Not at all true -------- Completely true					
1. I have a strong belief in my competence generally	1	2	3	4	5	6
2. If I am under pressure at work, I can usually think of something to do	1	2	3	4	5	6
3. I am confident in my abilities to learn new skills	1	2	3	4	5	6
4. When I am confronted with a problem in my job, I can usually find several solutions	1	2	3	4	5	6
5. My past experiences in my job have prepared me well for my future career	1	2	3	4	5	6
6. I feel prepared to meet most of the demands in my job	1	2	3	4	5	6

9.5 Appendix 5: Study 2, T1 questionnaire

This questionnaire asks about your experience of the assessment centre process for public health specialty training. **The answers you give DO NOT form part of the selection process,** they are to help us improve the system in the future. The answers you give are **CONFIDENTIAL** and will be used for evaluation purposes only. Completion of this form is voluntary. Please answer each question as indicated. Thank you for completing this form.

Background Information

Candidate Number[13]						
Age:	_____ years	**Gender:**	Male		Female	
Ethnic origin:	White ☐	Asian ☐	Black ☐	Mixed ☐	Chinese ☐	Other ☐
How many years previous work experience do you have?	_____ years	**Do you have a medical background?**	Yes / No			

Section 1: Stage 2 Assessment Papers

This section concerns the 2 elements of the Stage 2 assessment: a) Critical Thinking; b) Numerical Reasoning.

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

a) Critical Thinking

1. The content of the **Critical Thinking** paper was clearly related to public health	**1**	**2**	**3**	**4**	**5**
2. A person who scored well on the **Critical Thinking** paper will be a good public health trainee	**1**	**2**	**3**	**4**	**5**
3. It would be clear to anyone that the **Critical Thinking** paper is related to the public health trainee job	**1**	**2**	**3**	**4**	**5**
4. Doing well on the **Critical Thinking** paper means a person can do the public health job well	**1**	**2**	**3**	**4**	**5**

b) Numerical Reasoning

1. The content of the **Numerical Reasoning** paper was clearly related to public health	**1**	**2**	**3**	**4**	**5**
2. A person who scored well on the **Numerical Reasoning** paper will be a good public health trainee	**1**	**2**	**3**	**4**	**5**
3. It would be clear to anyone that the **Numerical Reasoning** paper is related to the public health trainee position	**1**	**2**	**3**	**4**	**5**
4. Doing well on the **Numerical Reasoning** paper means a person can do the public health job well	**1**	**2**	**3**	**4**	**5**

[13] This information will only be seen by the Public Health evaluation team to evaluate the selection process

Section 2: Stage 2 Assessment Overall

This section concerns your experience of the 2009 Stage 2 assessment process as a whole

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

1. I understood in advance what the Stage 2 assessment processes would be like	1	2	3	4	5
2. I knew what to expect on during the Stage 2 assessment today	1	2	3	4	5
3. I had enough information about what the format of the tests would be	1	2	3	4	5
4. I could really show my skills and abilities through the Stage 2 assessment	1	2	3	4	5
5. The Stage 2 assessment allowed me to show what my job skills are	1	2	3	4	5
6. The Stage 2 assessment gave applicants the opportunity to show what they can really do	1	2	3	4	5
7. I was able to show what I can do during the Stage 2 assessment	1	2	3	4	5
8. The assessment tests were administered to all applicants in the same way	1	2	3	4	5
9. There were no differences in the way the Stage 2 assessment tests were administered to different applicants	1	2	3	4	5
10. Test administrators made no distinction in how they treated applicants	1	2	3	4	5
11. I was treated politely during the Stage 2 assessment process	1	2	3	4	5
12. The test administrators were considerate during the Stage 2 assessment	1	2	3	4	5
13. The test administrators treated applicants with respect during today's Stage 2 assessment	1	2	3	4	5
14. The Stage 2 assessment staff put me at ease when I took the test	1	2	3	4	5
15. I was satisfied with my treatment during Stage 2 assessment	1	2	3	4	5
16. There was enough communication during the Stage 2 assessment process	1	2	3	4	5
17. I was able to ask questions about the Stage 2 assessment	1	2	3	4	5
18. I am satisfied with the communication that occurred during the testing process	1	2	3	4	5
19. I would have felt comfortable asking questions about the Stage 2 assessment if I had any	1	2	3	4	5
20. I was comfortable with the idea of expressing my concerns at the test site	1	2	3	4	5

Section 3: Perceptions of the selection process so far

Thinking about the overall selection process, please rate the following questions on a scale of:

1=not at all → 10=extremely

1. The overall fairness of the selection process so far	1	2	3	4	5	6	7	8	9	10

Thank you for completing this form

9.6 Appendix 6: Study 2, T2 questionnaire

This questionnaire asks about your experience of the assessment centre process for public health specialty training. **The answers you give DO NOT form part of the selection process,** they are to help us improve the system in the future. The answers you give are **CONFIDENTIAL** and will be used for evaluation purposes only. Completion of this form is voluntary. Please answer each question as indicated. Thank you for completing this form.

Background Information

Candidate Number[14]	☐
Age: _____ years	**Gender:** Male ☐ Female ☐
Ethnic origin:	White ☐ Asian ☐ Black ☐ Mixed ☐ Chinese ☐ Other ☐
How many years previous work experience do you have? _____ years	**Do you have a medical background?** Yes / No

Section 1: Stage 3 Selection Centre Interviews and Group Exercise

This section concerns the 2 main elements of the Stage 3 assessment: a) Interviews; b) Group Exercise.

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

a) Interviews (four panels)

1.	The content of the **Interviews** were clearly related to public health	1	2	3	4	5
2.	A person who scored well on the **Interviews** will be a good public health trainee	1	2	3	4	5
3.	It would be clear to anyone that the **Interview** questions were related to the public health trainee position	1	2	3	4	5
4.	Doing well on the **Interviews** means that a person can do the public health job well	1	2	3	4	5

b) Group Exercise

1.	The content of the **Group Exercise** was clearly related to public health	1	2	3	4	5
2.	A person who scored well on the **Group Exercise** will be a good public health trainee	1	2	3	4	5
3.	It would be clear to anyone that the **Group Exercise** is related to the public health trainee position	1	2	3	4	5
4.	Doing well on the **Group Exercise** means a person can do the public health job well	1	2	3	4	5

[14] This information will only be seen by the Public Health evaluation team to evaluate the selection process

Section 2: Stage 3 Selection Overall

This section concerns your experience of the 2009 Stage 3 selection process as a whole

1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

1. I understood in advance what the Stage 3 assessment processes would be like	1	2	3	4	5
2. I knew what to expect during the Stage 3 assessment today	1	2	3	4	5
3. I had enough information about what the format of the interviews/exercise would be	1	2	3	4	5
4. I could really show my skills and abilities through the Stage 3 assessment	1	2	3	4	5
5. The Stage 3 assessment allowed me to show what my job skills are	1	2	3	4	5
6. The Stage 3 assessment gave applicants the opportunity to show what they can really do	1	2	3	4	5
7. I was able to show what I can do during the Stage 3 assessment	1	2	3	4	5
8. The assessment tests were administered to all applicants in the same way	1	2	3	4	5
9. There were no differences in the way the Stage 3 assessment tests were administered to different applicants	1	2	3	4	5
10. Test administrators made no distinction in how they treated applicants	1	2	3	4	5
11. I was treated politely during the Stage 3 assessment process	1	2	3	4	5
12. The test administrators were considerate during the Stage 3 assessment	1	2	3	4	5
13. The test administrators treated applicants with respect during today's Stage 3 assessment	1	2	3	4	5
14. The Stage 3 assessment staff put me at ease when I took the test	1	2	3	4	5
15. I was satisfied with my treatment during Stage 3 assessment	1	2	3	4	5
16. There was enough communication during the Stage 3 assessment process	1	2	3	4	5
17. I was able to ask questions about the Stage 3 assessment	1	2	3	4	5
18. I am satisfied with the communication that occurred during the testing process	1	2	3	4	5
19. I would have felt comfortable asking questions about the Stage 3 assessment if I had any	1	2	3	4	5
20. I was comfortable with the idea of expressing my concerns at the test site	1	2	3	4	5

Section 3: Perceptions of the selection process so far

Thinking about the overall selection process, please rate the following questions on a scale of:

1=not at all → 10=extremely

1. The overall fairness of the selection process so far	1	2	3	4	5	6	7	8	9	10

Thank you for completing this form

9.7 Appendix 7: Study 4 interview schedule

Interview questions following shortlisting:

1. Were you accepted to attend the shortlisting stage? Did you attend?

2. Overall, how have you felt about the application process so far?
    a. *Prompts:* Anything you liked / didn't like? Why?

3. How did you feel about completing the online application?
    a. What did you think of it?
    b. *Prompts:* Did you think it was fair? Why?

4. How did you feel about the shortlisting stage?
    a. What did you think of it?
    b. *Prompts:* Did you think it was fair? Why?

5. How do you feel about the information provided to you before each stage of assessment?
    a. *Prompts:* Useful, sufficient, more / less of anything?
    b. What, if any, information did you use to help you complete each stage?

6. Is there anything more you'd like to add about your experience of the selection process so far?

Interview questions following assessment centre:

1. How did you feel about the assessment centre you attended?
    a. What did you think of it?
    b. *Prompts:* Did you think it was fair? Why?

2. Overall, how do you feel about the selection process as a whole?
    a. What did you think of it?
    b. *Prompts:* Did you think it was fair? Why?

3. Is there anything more you'd like to add about your experience of the selection process overall?

9.8 Appendix 8: Study 4 example interview transcript

Interview 38 (Interviewer comments in bold)

Thank you very much for taking part in this interview. I just have a few questions for you today. Firstly, how did you feel about the assessment centre you attended?

Well, before actually, I think I last spoke to you when I'd just attended the…

…The shortlisting.

…The shortlisting… That's it. Well firstly there was a huge lack of communication between actually finding out we'd actually got through to the… next stage; the actual selection centre because it was about a month… cos I took it at the end of February and it got to sort of like, the end of March beginning of April and the next stage was meant to be happening between 3rd and 18th April as it said on the national website so it was a bit kind of 'oh, do I ring up, do I not?' so I eventually rang the help line to say I haven't heard. I just assumed that oh, I must not have got through then, I hadn't heard, cos they didn't actually give us a time that they would let us know when they would let us know but I thought it would've been before the next stage started. That was a long time and I think… it was a case of maybe it was because the national were having to communicate with the local cos then we got our invite to the next stage from the local team.

OK. So when did you find out then?

I found out probably about the… 4th/5th April. It was definitely around the 3rd April start date. …That's why, when you emailed, I didn't know if I was through or not

So that must've been a little bit…?

… so it was a bit kind of, I think it was probably better if they would've said "we will not be letting you know until so and so a date" or "it will be after this" just so it was, so you weren't thinking am I through am I not so and actually, when it got to when the actual next stage started, I thought 'ooh, I better ring up' and now I've spoken to a few people and they also rang up as well cos they just didn't know.

Oh really?

So that was the first thing! And, cos I kept checking, you know, there's the online...The kinetic… I kept checking that tracker and that wasn't updated so… we didn't know for four weeks. I think it would've been better if they would've said 'It's going take a long time to do

this. We'll let you know... by this date'. So actually, that was just before I got to the... selection centre. When I did though, I was sent a letter by the local team. Mine was Cheshire and Holton hospital, North Cheshire NHS Trust. When I got the letter and I was told when my interview was; the night before my interview, I also got an email from the national, from the national system to say 'choose a time for your interview'. It was very inconsistent between the local and the national because I know one guy who arrived at the selection centre the day I arrived. He said he'd been told he was on the Wednesday but then he got an email the night before from the national to say said it was the Tuesday. I don't know whether other locals have had this problem: liaising with the national/local. But, I think it, obviously, when you're quite stressed and you've got an interview to go to, and you're thinking... 'oh, one says this; one says that' ...It also said that it would only take an hour but then I knew from my letter that it was going to be... well that it was going to be a reasonable amount of time; half a day just reading from the national thing you see so... that was bad! [Laughs]. This was actually before you actually get into the selection centre. ...What else is there? So it's really the lack of sort of correspondence and also the waiting to find out and also you felt like... you felt quite bad that you had to kind of ring and say 'what's happening, what's happening?' Cos you don't want to ring too much. You don't... You're in a recruitment process; you don't want to keep.....hassling them just in case they 'Ooh...' So, I mean, I only rang twice but I know other people rang a few more times to find out 'what does this mean?'... And then, I'm trying to think what... there was something else... oh and when we actually got our letters saying that we were through to the next round, the final round, it just said, well on the national website, it said the final round was going to be, I think it was an interview and a group exercise and a presentation and on the letter we received it was just 'your interview will start at 8.45' so I thought, OK, interview. So I think it was... we didn't really know what... different things said at different points to what was going on so... And there wasn't a group exercise when we got there anyway!... so it seemed as if why did they say that? You sort of take off the national website, the faculty website: You take that to be, that's the recruitment process but then it was a bit...

So when you actually arrived...?

When I actually arrived... I mean I got there half an hour before because I thought, well... I expect, I suppose from the letter I expected, well it doesn't matter what the national site said 'interview at a quarter to nine' but then it was actually just to get there at ... so I arrived there at quarter past eight, half an hour before and then was told 'ooh, we're not ready for you now'. So that was a little bit kind of... maybe if they would've put... 'You just need to arrive at that

time. No need to arrive half an hour before'. Because there was sort of, there were five of us arriving at that time: a little cohort who were going to go through it together. So once you actually got there after, at quarter to nine, it was... OK... I think once it got going, it was a bit better and you sort of knew what you were all doing kind of thing. So I think there were a lot of people coming from obviously... with it only being held there. Obviously they had people who were going to do the interviews from all over the area and some of the admin assistants didn't know whether we were interviewers or interviewees... so I was asked whether I was an interviewer or an interviewee... so was a little disconcerting when you arrived there.

So the actual testing centre itself, how did find that?

I mean, I suppose, awful to go through but... I suppose, looking back on it, it was probably... It was what I expected as in... well it was quite fair I suppose. Well, I didn't really know what to expect but after I came out of it I thought well, 'yeah. That's what a selection centre is like' kind of thing. So maybe just a bit more kind of... not; obviously you can't tell people what they're going to get but just to say 'it will be a series of interviews and it'll last half a day' so then you've got an idea that you'll have to do different things without but.. you can't obviously tell people what they're going to do but... ...I suppose it's difficult cos yes and no cos obviously you're in a kind of in a kind of stressed state and things. It is... I suppose it's fair that everybody did the same process and we all had... the same thing regardless of your background. I suppose I don't know what they've done in the past and I don't know what they're going to do in the future so...

And do you think you that it was fair?

I think yes I could show my skills because actually most of the stuff I answered the questions by was from my experience of it. Obviously, I'd prepared different things for, the interview based around the competencies... I used a little bit of what I prepared but a lot of it was from my own work experience and things that sort of came to mind, I suppose... I suppose when we all came out we were all expecting more of a... competency-based questions rather than I suppose a... they were all scenario-based. But I mean that was fair cos that's just what an interview's like. You never get what you expect. But I thought it the interview was relevant to public health as the topics they used were relevant. I'm not sure... you always come out thinking 'Oh I should've said this; I wish I would've done this; I wish I would've done that.' I mean the... the topics were relevant. I'm trying to think what... I mean when we went in, the very first station when we had to prepare the presentation and review the paper. I think the verbal instructions were slightly different than the instructions written on the paper... so I was

thinking that's not so fair 'Ooh, I kept referring back to the paper sort of thing so whether it would just be better to read out... cos a lot of places just read it out what's on the sheet. It wasn't so different but it was a little bit...

I suppose it can throw you in that kind of situation can't it?

I think I sort of... well, I suppose it's a lot to do with my own work experience really, as well as the selection centre but I suppose it did give an idea of the sort of... the variety and the breadth of topics you would cover in training. The stations did cover a lot of different things from health protection; child health so sort of... so not just... it wasn't sort of purely medical.

Great. And that's kind of really all I want to ask you today but have you got anything else to add about your experience of the selection process overall?

To be honest, the main thing is just the communication really... I think the consistency between the national and the local. I think if that would've worked better, we would've known after we went for the test, we would've known, you'll know by a certain date or even just within this week, it was just everyone kept looking and think 'why haven't I heard?' and then obviously, being invited to selection centre it was if the local one talked to the national one or vice versa... Just cos you get one thing from one and one from the other and I just took it from the local one cos that was the interview I was going to but some people might not and think... I think the main thing; in general the recruitment process has been the same as I suppose a graduate recruitment process would be. I suppose it's just not been as slick with the communication. So like, I went into the NHS recruitment scheme... a few years ago and... that was a lot more kind of 'within these dates in your diary, look. Within these dates, look'. So... And that would probably be helpful for future applicants just to have a bit more information. Not to be kept wondering...

Thanks a lot. Goodbye.