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Future Perspectives on Employee Selection: Key Directions for Future Research and Practice

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Les recherches sur la sélection et l'évaluation sont abordées d'un point de vue tourné vers l'avenir. On recense quatre grand thèmes d'importance majeure dans le développement des futures recherches: la prédiction bimodale, l'adaptation polyvalente, les réactions et décisions pertinentes et les tensions entre la recherche et la pratique dans la sélection professionnelle. Pour chacun de ces thèmes, nous soulevons certains problèmes qui restent à traiter. On discute enfin des conséquences sur la pratique et les avancées actuelles dans le domaine de la sélection, traditionnellement l'une des plus actives des disciplines centrales de la psychologie internationales du travail.

A future-oriented perspective for selection and assessment research is presented. Four superordinate themes of critical import to the development of future research are identified: (i) bimodal prediction, (ii) multilevel fit, (iii) applicant reactions and decision making, and (iv) tensions between research and practice in employee selection. Under each theme we pose a number of outstanding questions for research. Implications for practice and the ongoing advancement of the sub-field of selection, traditionally one of the most robust core disciplines in international IWO psychology, are discussed.

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INTRODUCTION

Throughout the history of Industrial, Work and Organisational (IWO) psychology, issues of employee selection and assessment have featured prominently in the scientific and pragmatic agendas that fuse our discipline. Indeed, selection research has been one of the central pillars of the scientific foundations of IWO psychology in North America, Europe, and the rest of the world. Any retrospective of research in this area would doubtless suggest that it has remained robustly vibrant, topical, and multifaceted over several decades now (Viteles, 1932; Schmidt & Hunter, 1998; Salgado, 2001). The scale of the task facing any authors attempting a future-oriented, prospective review is therefore a daunting one. By necessity they will need to be highly selective in their coverage of trends and their review will, by default, reflect a priori value judgments, decisions, and their own proclivities to some extent. All of these points hold true for the present paper. However, we present here a constructively critical, prospective, state-of-the-science overview of selection research. Due to space limitations we have intentionally addressed overarching themes and issues; we have purposely not dropped our level of analysis to specific methods or techniques (for recent reviews see Borman, Hanson, & Hedge, 1997; Cooper & Robertson, 2002; Hough, 2001; Salgado, Viswesvaran, & Ones, 2001; Schmitt & Chan, 1998). In order to finalise these topics we reviewed three main sources of research publication and information elicitation in personnel selection. First, we overviewed recently published narrative reviews in personnel selection, from both the perspective of recruiter and applicant decision making (these included, Anderson, 2003; Cooper & Robertson, 2002; Hough & Oswald, 2000; Ryan & Ployhart, 2000; Salgado et al., 2001). This review also included covering meta-analytical study findings into selection method validity and reliability published over recent years (e.g. Schmidt & Hunter, 1998). Second, we contacted researchers internationally active in the field in order to obtain relevant in press, submitted, and in progress manuscripts (e.g. Ployhart & Schneider, in press; Ployhart et al., submitted; Salgado, Anderson, Moscoso, Bertua, & De Fruyt, in press, a; Salgado, Anderson, Moscoso, Bertua, De Fruyt, & Rolland, in press, b). Finally, we incorporated the recently published findings of Lievens, van Dam, and Anderson (2002) which presents a comprehensive review of future-oriented themes of importance as determined by a sample of personnel practitioners in Europe. From this review we identified four overarching issues that we argue in this paper will impact upon selection research and practice across all developed economies in the foreseeable future. IWO psychologists will therefore need to be cognisant of their effects and will need to critically examine existing epistemological assumptions, theories, and practices in employee selection. The four themes are:

1. Bimodal prediction
2. Multilevel fit in selection
3. Applicant reactions and decision making
4. Tensions between research and practice

For each of these overarching themes we pose a series of summary questions, which we perceive as critical to advancing our understanding of these issues. Moreover, within each theme we note major developments in the knowledge base to date, shortcomings in the coverage of existing studies, and key directions for future research.

BIMODAL PREDICTION

The first and perhaps most fundamental challenge concerns what Herriot and Anderson (1997) term “bimodal prediction”. Core assumptions in the predictivist paradigm in selection have been founded upon the relative stability of the job role being recruited for, against which the suitability of applicants is then evaluated (e.g. Guion, 1998). Rapidly changing organisational structures, flexible forms of work organisation, team-based structures, newly created jobs, and increasingly unpredictable future scenarios in organisations have all added immeasurably to job instability (Howard, 1995). In essence, the stability of the criterion space being selected for has, in many organisations and for many job families, been undermined. Formerly, selection psychologists were able to concentrate upon merely a unimodal conceptualisation of fit—person–job fit. Increasingly, they will first have to predict the likely composition of a job role, and only then begin to consider issues of person–job fit (i.e. “bimodal prediction”; Herriot & Anderson, 1997). Note that the use of this term differs from its use in a statistical sense. That is, “bimodal” does not refer to a split distribution upon a quantitative scale. Rather, “bimodal prediction” refers specifically to the need to first predict the likely components of a changeable work role, and only then being able to address issues of person–work role fit.

Given these sweeping and relatively rapid environmental changes, it has perhaps been inevitable that research and practice in selection has taken some time to catch back. Only recently have methods of future-oriented job analysis (FOJA) begun to be developed and used; questions over the relevance of longer-term predictive validity studies have been raised; emergent constructs such as innovation potential, flexibility, adaptability, openness to change, and trainability for future job skills have come to the fore in selection; and research adopting a bimodal conceptualisation of selection processes has begun to emerge (e.g. Chan, 2000; Ilgen & Pulakos, 1999; Murphy, 1999; Ployhart et al., submitted), but these are initial responses to these challenges. Against the historic backcloth of an impressive edifice of selection

research in the unimodal, predictivist paradigm, we believe that selection psychologists have much to do to respond in a professional and evidence-based manner to the challenges of bimodal prediction. Further signs that selection research has been making tangible advance in this regard stem from proposed models of job performance on the one hand (e.g. Campbell, 1990; Viswesvaran & Ones, 2000), and the expansion of conceptualisations of the criterion space to include organisational citizenship behavior and pro-social behavior as positive patterns of work behavior, and counter-productive behaviors as the opposite (e.g. Borman et al., 1997; Motowidlo, 2003). However, none of these models or conceptualisations has, to our knowledge, incorporated the necessity for adaptive or innovative behavior (for an exception see Johnson, 2003). Our scant understanding of adaptive performance in the workplace, and the increasing need for employees to improve routinised ways of working via creativity and innovation, is an area for future research to concentrate upon, we believe.

A final but wide-ranging issue is that of the importance of measurements of general mental ability (GMA or “g”) in selection within the context of changing work roles and task demands. That tests of cognitive ability have been found to be highly valid predictors of job performance and training success in large-scale meta-analyses in both the USA (e.g. Schmidt & Hunter, 1998), and more recently across European Union countries (Salgado & Anderson, 2002; Salgado et al., in press, a, in press, b), is a widely known finding in personnel selection. However, there has also been growing debate over the future role of GMA measures given these changes in work role requirements and job stability (Gottfredson, 2002). Our view is that measures of *g* are likely to remain at least as important in selecting new employees, if not even more so. GMA has been found to correlate strongly with divergent thinking abilities, for instance, allowing these individuals to cope better with a changing work role and also to be more adaptive and innovative. In a far less rule-governed, post-Taylorian workplace where individual employees have to “work smart” our presumption is that the importance of GMA is likely if anything to increase. It is therefore beholden upon HR practitioners to evaluate cognitive ability during the selection process and to give such measures appropriate weight in recruitment decisions. Future research will no doubt begin to examine the role of *g* in selecting employees for post-industrial workplaces, as of course meta-analytic summaries are dependent upon primary studies into criterion-related validity necessarily published over past years.

Taken together, the following research questions should be addressed under this heading of bimodal prediction: (1) How can organisations select members for highly changeable job roles, newly created jobs, and flexible forms of work organisation? (2) How can future-oriented job analysis techniques be developed to scope the likely future task elements and KSAOs

(Knowledge, Skills, Abilities, and Other characteristics) for changeable job roles? (3) To what extent can the traditional, predictivist paradigm in selection address increasingly unstable criterion measure problems? (4) What is the criterion-related validity of measures of cognitive ability in selecting for changeable work roles rather than for stable, rule-governed jobs?

MULTILEVEL FIT IN SELECTION

Congruent with our call for bimodal conceptualisation of selection processes is our second point that selection will become increasingly multilevel in its assessment concerns and criterion constructs. This challenge, we argue, will occur at two levels of fit: person–team (P–T) fit, and person–organisation (P–O) fit. We do, however, envisage several challenges of a statistical and measurement nature akin to those being grappled with in multilevel research designs in wider IWO psychology, especially those concerning P–T and P–O fit. Whereas the traditional model of selection has concentrated solely upon person–job fit, multilevel selection demands that practitioners attempt to optimise fit at all three levels simultaneously. We foresee three possible types of interaction effects:

1. *Complementary effects*—where the constructs being selected for at different levels are synonymous, complementary, or concomitant. For instance, where social skills at the person–job level of analysis are notably similar to the team working skills required for person–team fit.
2. *Neutral effects*—where constructs across different levels of analysis are orthogonal, and unrelated. An example is where declarative knowledge needed for job performance (P–J fit) is assessed in addition to personal values and attitudes needed to fit to the company culture (P–O fit).
3. *Contradictory effects*—where constructs across levels are negatively correlated, clash, or are conceptually opposing. For example, where high levels of independence of thought and thus propensity to innovate are needed for P–J fit, whereas value conformity and adherence to the company culture is desired at the P–O level of fit.

Table 1 presents some examples of likely interaction effects and predictor usage across P–J, P–T, and P–O fit. There is evidence that theory and research is already moving toward multilevel fit (e.g. Stevens & Campion, 1994; Schneider, Kristof-Brown, Goldstein, & Smith, 1997), but in our view not quickly enough to cope with demands from client organisations needing to base their selection procedures on multilevel constructs.

Where do theory, models of action, and empirical research fall short currently? First, there is a clear need for more macro-analytical theoretical models of selection for P–T and P–O fit (Schneider et al., 1997). Here we

TABLE 1
Multilevel Selection—Examples of Criterion Constructs, Predictor Methods, and Interaction Effects for a Fictitious Job Role

| | <i>Criterion constructs</i> | <i>Predictor methods</i> | <i>Interaction effects: some examples</i> |
|--------------------------------|--|--|--|
| <i>Person–Job Fit</i> | 1. Cognitive ability | GMA test Tests of specific cognitive abilities | Complementary [3,5], Neutral [2,6,8] |
| | 2. Sociability | Interviews Personality instrument | Complementary [6,7,10], Neutral [5,8,9,11] Contradictory [4] |
| | 3. Innovation potential | Personality instrument Leaderless group discussion at AC Interviews Situational judgment tests (SJTs) | Complementary [1,11], Neutral [5,8,9] Contradictory [4,11] |
| | 4. Detail consciousness in task performance | Work sample test Reference/Testimonials | Complementary [1,5] Neutral [7,8] Contradictory [3,6,7] |
| <i>Person–Team Fit</i> | 5. Expert knowledge relevant to team's present task | Unstructured interview Work sample test | Complementary [7] Neutral [8,9] |
| | 6. Teamworking skills | Led group discussion at AC References/Testimonials | Complementary [2,10], Neutral [1,8,9] Contradictory [4] |
| | 7. Team citizenship behavior | Leaderless group discussion at AC References/Testimonials | Complementary [2,7,9], Neutral [8,11] |
| <i>Person–Organisation Fit</i> | 8. Internalisation of core organisational values | Personal values inventory Unstructured interview Biodata inventory ("soft" items) | Complementary [9,10,11,6], Neutral [4] Contradictory [3] |
| | 9. Loyalty to organisation | Motivation questionnaire | Complementary [8,10,11,7], Neutral [1,5] |
| | 10. Ability to represent an organisation at external events | Presentation exercise at AC | Complementary [8,9,11,2,6], |
| | 11. Commitment to organisational goals as articulated in its mission statement | Unstructured interview at AC | Neutral [2,4] Contradictory [3] |

Notes: Interaction effects are suggested both within-level (e.g. cognitive ability and innovation potential interact in a complementary manner *within* P–J fit) and between-level (e.g. sociability in P–J fit and teamworking skills in P–T fit interact in a complementary manner *between* levels of analysis).

Note that this table presents examples of possible interaction effects for a fictitious job role. Depending on how these constructs are defined and operationalised, these effects will vary between organisations and between jobs in the same organisation, it can be argued.

envisage the criterion space shifting from formerly discrete, relatively stable, and normally micro-analytical constructs at the P–J level of analysis (e.g. tasks, competencies, models of job performance) to more fluid, amorphous, and multifaceted constructs in P–J and P–O fit (e.g. team climate, value fit, homogeneity of shared objectives). The latter are less easily measurable, dictate a shared perceptions approach to their measurement, and are thus open to differences in construal between different organisational informants. Extremely promising work in this regard is now in press by Rob Ployhart and Ben Schneider (Ployhart & Schneider, in press, a). Here, these authors compared and contrasted a selection procedure being undertaken by an organisation either from a traditional, P–J fit perspective, or from the perspective of multilevel fit and decision making. Asserting that job performance is moving away from a previously individual level of analysis to an increasingly team level (see also Herriot & Anderson, 1997), they describe a detailed case analysis of two fictitious organisations—one using traditional single-level selection and one using a multilevel approach. Second, pragmatic tools, methods and techniques are needed to facilitate selection for P–T and P–O fit in staff resourcing situations (Ployhart & Schneider, in press, b). The huge number of psychometric tests of cognitive ability and personality at the individual level of analysis developed by IWO psychologists over the years bears testimony to their unique expertise in this regard. Yet currently there are few robust measures available to practitioners to evaluate either P–T or P–O fit (for exceptions see Stevens & Campion, 1994; Burch & Anderson, 2004). Third, empirical research across the range of issues in P–T and P–O fit is called for, as are further applied studies to examine interaction effects between the levels of analysis we identify above. This will represent a quantum leap in the field of selection research, and one for which a crucial point of departure will be to develop validated models of performance regarding P–T and P–O fit. Given the more amorphous nature of these constructs it is likely that these models will be more ambiguous, less generalisable across different organisations, more culturally dependent within particular countries internationally, and thus more prone to situational specificity in their performance terms than traditional P–J models of job performance (e.g. Campbell, 1990; Viswesvaran & Ones, 2000).

In sum, we believe the following research questions to be of paramount importance: (1) How can organisations select for person–job (P–J), person–team (P–T), and person–organisation (P–O) fit concurrently? (2) How can theories and models of selection be expanded from the traditional single level of analysis (P–J fit) to incorporate notions of multilevel analysis and decision making? (3) In anticipating pragmatic challenges of complementary, neutral, and contradictory fit in interaction effects between these three levels of analysis, what advice can be given to selectors attempting to balance these multiple concerns?

APPLICANT REACTIONS AND DECISION MAKING

One of the most curious features of selection research over the years has been the plethora of studies adopting an organisational perspective, and in contrast, the paucity of applied research into applicant reactions and decision making. Our estimation would be that across all published studies into selection *per se*, less than 5 per cent have taken an applicant-oriented stance. Several key papers have noted this dysfunctional disparity (Iles & Robertson, 1997; Rynes, 1993; Murphy, 1986; Ryan & Ployhart, 2000; Anderson, 2001; Anderson, Born, & Cunningham-Snell, 2001), but still applicant perspective research remains woefully sparse. Given that IWO psychology is an applied *psychological* science it is surely appropriate for research to address the applicant's perspective in much greater detail, and in so doing, to begin to redress the imbalance which exists between organisational and applicant research currently.

A notable exception to this trend has been the long-established interest in recruitment, job search, and occupational choice (see Barber, 1998; Breugh & Starke, 2000; Cable & Turban, 2001; Highhouse & Hoffman, 2001, for recent reviews). However, this research provides a limited lens on the applicant's perspective—much of the research involves examinations of the recruitment process without considering its effects on applicants' perceptions of the selection process. The challenge for research in the future is to illuminate how applicants are impacted by organisational recruitment and selection procedures, how they reach decisions on whether or not to remain a candidate, and how this might affect their future job-related motivational states and expectations (e.g. Anderson, 2001, 2003; Ryan, 2001).

How can this be done? We believe that the first challenge for both researchers and practitioners consists of demonstrating that applicant perceptions really matter. In other words, more research should be devoted to prove that applicant perceptions have practical ramifications for organisations. Granted, previous studies have shown that applicant perceptions are related among others to test motivation, test performance, intentions to accept job, intentions to recommend the organisation to others, and perceived organisational attractiveness. However, most of these dependent variables are perceptions or intentions themselves. We feel that applicant perceptions will have a bigger impact on the field of personnel selection in years to come if more studies would link applicant perceptions to behavioral outcomes such as applicant withdrawal (e.g. Ryan, Sacco, McFarland, & Kriska, 2000), actual decisions to accept a job offer, etc. In a similar vein, we think that it is crucial that future studies examine the impact of applicant perceptions on criteria such as criterion-related validity, construct validity (i.e. nature of constructs measured) (see Schmitt, 2002), adverse impact, and even utility. Although a limited number of studies have provided evidence

for some of these links (e.g. Ryan, 2001; Schmit & Ryan, 1992), more research is needed to truly integrate the “soft” applicant perception criteria with the traditional “hard” validity and utility criteria. Although some might argue that it is somewhat ironic to promote the applicant’s perspective by tying this field more closely to traditional organisational criteria, we believe this opportunity should be taken to give the applicant’s perspective a more prominent place in the agenda of researchers and practitioners.

In sum, this general recommendation for the field of applicant perceptions and decision making can be divided into two specific research questions, namely: (1) How do applicants process information and reach outcome decisions in selection processes? (2) How do applicant perceptions relate to traditional criteria such as criterion-related validity, construct validity, adverse impact, and even utility?

TENSIONS BETWEEN RESEARCH AND PRACTICE

As we noted at the start of this paper, one of the defining characteristics of the selection field has been that it is a science-based professional practice. This is true internationally (Salgado et al., 2001; Salgado & Anderson, 2002), and it is a distinguishing feature of our discipline that we could ill afford to lose. Should this happen, the resultant *mêlée* of ill-grounded practice loosely coupled (or not) with irrelevant, pedantic research would not be a healthy one for our discipline. Regrettably, there have been unequivocal signs that research and practice have been edging further apart in IWO psychology more generally both in Europe and the USA (Sackett, 1994; Anderson, Herriot, & Hodgkinson, 2001). Clearly, this is also the case in personnel selection because personnel practices that are often not well supported by empirical research are often very popular whereas personnel practices that have been shown to be effective are less frequently used (Terpstra & Rozell, 1997; Anderson, in press).

Figure 1 presents an extension and extrapolation from Anderson et al.’s (2001) earlier model specifically in the context of selection research and practice. This simple 2×2 factorial puts forward two dimensions as being critically important—*practical relevance* and *methodological rigor*. Four quadrants describing four possible future research efforts are thus generated—*Popularist*, *Pragmatic*, *Pedantic*, and *Puerile Science*. We also note “cut-point” indicators along each dimension (e.g. the study is grounded upon current selection practice/theory, the study is valuable to selection researchers/practitioners). To briefly describe each quadrant, where practical relevance is high but methodological rigor is low, *Popularist Science* is generated. Here, studies address important and current themes but fail to do so with sufficient scientific rigor to permit any reliance to be placed upon their findings. Where both practical relevance and methodological rigor is high, *Pragmatic*

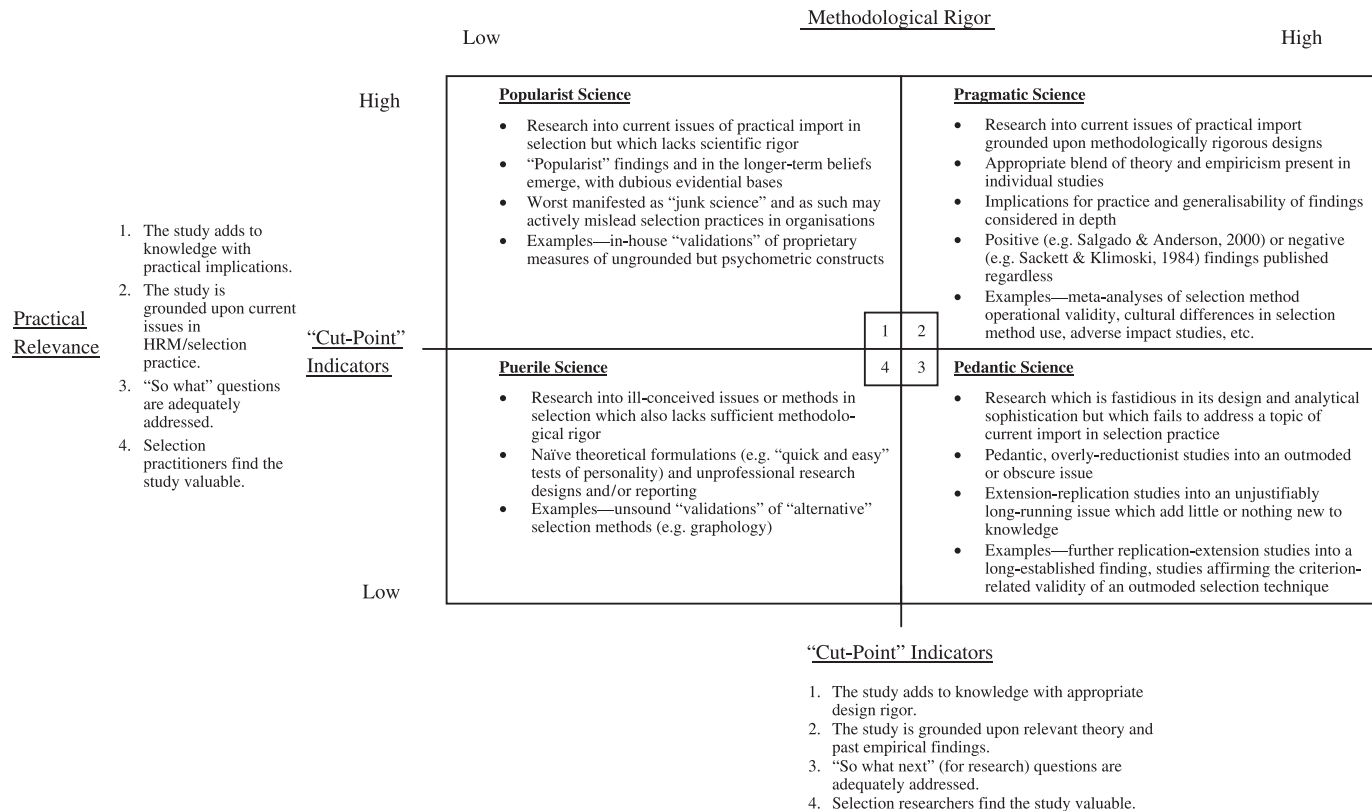


FIGURE 1. Types of research in selection psychology.
Source: Developed and extended from Anderson, Herriot, and Hodgkinson (2001).

Science is generated. Here, research findings of value to organisations, individuals, and society are generated based upon appropriately robust scientific designs. Where methodological rigor is high but practical relevance is low, Pedantic Science emerges. In this, case studies are meticulously designed and executed but may lack ecological validity or value in practice. Finally, where both relevance and rigor are unacceptably low Puerile Science is generated. The authors argue that only Pragmatic Science will serve the future of selection psychology, and notably that this will be the case for both practitioners and researchers alike.

Whereas our typology is rather simplified in some ways, it is intentionally provocative. In the context of IWO psychology generally, Anderson et al. argued that Popularist and Pedantic Science were becoming more prevalent, at the opportunity cost of immeasurably more valuable Pragmatic Science. In Figure 1, Pragmatic Science is defined as research that examines current issues of practical import and that is grounded upon methodologically rigorous designs. In addition, Pragmatic Science consists of an appropriate blend of theory and empiricism and considers the implications for practice in depth. Therefore, we clearly view the future of selection psychology as being served *only* by the latter.

Besides promoting Pragmatic Science, what are other ways and mechanisms to ensure stronger links between science and practice? The most traditional way consists of demonstrating to practitioners that sound selection practices indeed work. To this end, selection researchers should follow the direction taken by HRM researchers (e.g. Huselid, 1995; Huselid, Jackson, & Schuler, 1997) and link the adoption of sound selection practices not only to validity criteria but also to organisational-level measures of performance such as annual profits, sales, or turnover. To date, only a very limited number of studies have done this (e.g. Terpstra & Rozell, 1993). However, even this way of communicating selection interventions to practitioners might fail. Along these lines, Johns (1993) posits that we have typically placed too much emphasis on selection practices as rational technical interventions and therefore often fail to have an impact in organisations (e.g. attempts to “sell” utility information or structured interviews). Conversely, practitioners in organisations perceive the introduction of new selection procedures as organisational interventions that are subject to the same pressures (e.g. power games) as other organisational innovations. Although Johns’s article dates from 1993, we still feel that researchers have largely neglected to implement the underlying recommendations.

Similar to the previous themes, we formulate several research questions that sum up the main ideas in this section. These questions are: (1) Is there a dysfunctional divide between research and practice in selection? (2) If so, what professional and pragmatic mechanisms can be implemented to ensure synergistic exchange between the two wings of our discipline? (3) How best

can robust research inform professional practice, and likewise, how can developments in practice stimulate new research agendas in international selection psychology?

EPILOGUE

Research and practice in selection remain strikingly vibrant and healthy at the present juncture, so much so that in authoring this prospective review we often had the feeling of “standing on the shoulders of intellectual giants”, so to speak; such has been the contribution of scholars in this area in the past. Needless to say, we could have identified several other areas of active current research in selection, but for this overview brevity precluded such a more expanded analysis. For the future, and returning to our four key themes, we see an agenda dominated by the challenges of job changeability, multilevel criterion space, applicant perspectives and rights, tensions between science and practice, as well as internationalisation and new technology. For a sub-field whose *raison d'être* is future prediction, we are characteristically optimistic that selection researchers will respond proactively to these, and other, such challenges. It will certainly be interesting to return to this commentary in ten years' time and to reflect upon the impact of these issues and the responses of the field of selection psychology to them.

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