

# What does it mean to be a scientist–practitioner? Working towards a new vision

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I must create a system or be enslaved by another man's.

(William Blake)

Even when all the experts agree, they may well be mistaken.

(Bertrand Russell)

There can be few models of professional practice that have been subjected to such extensive scrutiny, such high levels of endorsement and such severe criticism as the scientist–practitioner model. However, despite the controversy which has surrounded this professional edifice, the last few years have witnessed a renewed interest in what it means to operate as a scientist–practitioner (Corrie and Callanan, 2000, 2001; Kennedy and Llewelyn, 2001; Manafi, 2004; Trierweiler and Stricker, 1998).

This re-emerging interest can be attributed to a number of factors. At the turn of the century, our professional lives are being shaped by an increasingly complex array of social, professional and political forces. These include substantial technological advances, an increased emphasis on consumer rights, the need to revise our theories of human experience in the light of cultural diversity and political issues relating to how (and which) psychological services are funded. We are, as Drabick and Goldfried (2000) observe, at a crucial point in our history, one which requires us to re-examine our identities, roles and activities in the light of those we work alongside. As part of this process of re-examination, we consider it vital to review our allegiance to the scientist–practitioner model and to ascertain if this framework can contribute to a robust future for our profession.

Of course, it is not the first time that psychology has faced such challenges. Over the course of its history, applied psychology has continually grappled with how best to respond to social need, how to define itself in ways that will ensure long-term survival and the extent to which it should aspire to the status of science or art. To address the questions that face us now, and to frame the chapters which follow we will, therefore, begin by revisiting some of the early influences on psychology's dialogues with science, dialogues from which a distinct vision of the scientist–practitioner model ultimately emerged. We also consider some of the opportunities

and challenges that have arisen from attempting to forge an integrated relationship between science and practice and how a lack of clarity surrounding definition and function have impacted on psychologists at both an individual and collective level.

Although there have been several historical reviews of the scientist–practitioner model (see Barlow *et al.*, 1984; Trierweiler and Stricker, 1998), we make no apologies for revisiting the origins of the debate once again. Psychology is committed to grounding its knowledge within developmental and contextual frameworks. Given that the scientist–practitioner model emerged within a distinct zeitgeist, revisiting its origins can help us appreciate more fully the enormity of the task that faced our predecessors, thus enabling us to see its strengths and limitations in better perspective.

### **THE BIRTH OF THE SCIENTIST–PRACTITIONER MODEL: A VERY BRIEF HISTORY**

The extent to which psychology should, or could, be scientifically driven is a debate that goes back to the dawn of its history. Both William James (1842–1910), credited with founding psychology in America, and Wilhelm Wundt (1832–1920), the founder of European psychology, had a keen interest in psychology’s relationship with science, albeit arriving at different conclusions about what the nature of this relationship should be.

Wilhelm Wundt’s vision of the science of psychology favoured experimentation. A physiologist by training, Wundt opened the first psychology laboratory in 1879 at the University of Leipzig in Germany where he and his colleagues inaugurated the scientific study of mental processes. Wundt believed that by identifying stimuli and reactions that could be measured, psychological processes could be open to experimental methods in a way that had formerly been considered impossible. It was this attempt to observe, measure and analyse phenomena such as thoughts and feelings under controlled conditions that marked European psychology’s radical departure from philosophy and paved the way for a new era of psychology as a scientific enterprise.

Unlike Wundt, who was concerned with the quest for ‘pure’ knowledge, James believed that a psychology grounded in science could not advance our understanding of human experience in any definitive sense. Concerned with the more cognitive and teleological conceptions of individuals, James favoured a holistic worldview that embraced philosophical pragmatism: that is, that the truth of an idea needed to be demonstrated in practice. Truth, for James, was always relative and its ultimate test was the extent to which ideas were useful. Leary (1992) highlights two major features of James’ perception of human understanding that are relevant to later debates about the scientist–practitioner model. The first is that all knowledge, including that derived from scientific data, is based on finding analogies or metaphors. The second is that analogies in any discipline, including science, should

always be changing rather than fixed. Scientific knowledge is simply one of many, inevitably incomplete, explanations of human experience.

Within educational psychology, the role of science had also been debated. In his historical review, Berliner (1993) highlights the contribution of the philosopher and early psychologist Johann Herbart (1776–1841) whose disciples claimed that science had a central role to play in shaping education and that teaching methods should be the subject of formal scientific investigation. Later contributors, such as G. Stanley Hall (1844–1924) de-emphasized science as a laboratory-based activity in favour of a science that took place in naturalistic settings and was open to all, whilst John Dewey (1859–1952) saw psychological knowledge as needing to be filtered through the wisdom of the practitioner. These perspectives differed from the later vision of educational psychology developed by Edward Lee Thorndike (1874–1947) whose faith in experimental science over the practical wisdom of teachers contributed to a dismissive outlook on the knowledge base of the practitioner.

Although these early debates about the relationship between science and practice formed an influential backdrop against which more modern conceptualizations emerged, the official birth of the scientist–practitioner model can be attributed to the now famous conference held at Boulder, Colorado, in 1949, whose delegates were credited with the vision of professional practice that subsequently emerged. Proposed as the most appropriate framework for the training and professional practice of the then emerging profession of clinical psychology (Raimy, 1950), its aim was to train psychologists to work as both practitioners and scientists. Through conducting research and applying the results to practice-related puzzles, the partnership between science and practice would ensure that psychologists achieved a rigour in their clinical work that typified the academic world. This would not only ensure the systematic advancement of the discipline in ways that could be shared with the wider scientific community, but would also enable psychology to respond effectively to matters of social concern.

The relevance of psychological knowledge to societal issues had, of course, been of interest prior to 1949. Both World Wars had played a key role in ‘midwifing’ applied psychology, involving psychologists in the selection and assignment of personnel to army positions and later, calling on psychologists to act as paid advisors to industry, government and the military (Murphy *et al.*, 1984). Following the Second World War there was a particular demand for practitioners who could assist with the rehabilitation of veterans and their reintegration into society. However, there were significant problems in applying existing psychological knowledge to the treatment of emotional distress and psychological disability. While there had been many contributions in the applied sphere up until the post-war era (including those in industrial, educational, and forensic areas), academic psychology had devoted its efforts principally to animal learning, resulting in a body of knowledge that could not be readily applied to social welfare (John, 1998).

These deficits led to a drive to create a new breed of psychologist who would be better equipped to respond to the health-care needs of the population. The creation

of such a practitioner was fuelled further by what Drabick and Goldfried (2000) identify as three pivotal developments:

- The introduction of a training program for clinical psychologists, instituted by the Veterans Administration which provided (1) financial support for those wishing to pursue a career in professional practice and (2) clinical experience through access to the Veterans Administration's treatment centres.
- The establishment, by the American Psychological Association, of a Committee on Training which provided the Veterans Association with information on training schemes that were eligible to participate in Veterans Administration programs.
- The provision of grants by the United States Public Health Service to ensure that professional training programs would become more widespread and accessible.

As Drabick and Goldfried observe, these developments proved to be something of a mixed blessing. Whilst providing an incentive for psychologists to embark upon a clinical career, training programmes began to flourish in an idiosyncratic and unregulated fashion. Psychologists learned their trade through apprenticeships with more experienced practitioners, whose work was seen to be predicated on tradition, precedent or preference, rather than on any rigorous knowledge base. The lack of a collective vision on how psychologists were to be trained and monitored caused professional practice to be viewed with a certain amount of suspicion, which would need to be addressed if professional psychology was to secure its place in the post-war era. (As an aside, it should be noted that this suspicion of clinical practice had been long-standing. The first psychological clinic had in fact been opened in Philadelphia in the US in 1896, under the auspices of Lightner Witmer who pioneered a 'clinical method'. Reisman (1991), however, notes that this method was not greeted favourably by the American Psychological Association, partly because it was deemed to depart too greatly from the model of scientific psychology dominant at that time and also because the science of psychology was considered too embryonic to risk innovating in such an apparently radical manner. It was some time before psychology, as applied to the clinical domain, would be recognized as having a credible knowledge base.)

In the light of these growing concerns about the place of psychology in society, systematic planning for the future of the profession became a necessity. Sponsored by The National Institute of Mental Health and the American Psychological Association, the Boulder Conference drew heavily on the previous work of David Shakow and his colleagues (Shakow *et al.*, 1947) whose report had emphasized the central roles of diagnosis, therapy and research. The delegates at Boulder were assigned the onerous task of assessing existing psychological provision and predicting what would be needed in the future. Spanning an intensive two-week period, the debates examined topics as varied as the core curriculum, the relevance of the curriculum to social issues, relationships with other professions, accreditation of training programmes and funding for students. Faced with such a

complex task, and in an attempt to secure the future of the profession, it is perhaps not surprising that the delegates arrived at a model which sought to furnish practice with the trappings of scientific respectability.

## **THE BRITISH VISION OF THE PARTNERSHIP BETWEEN SCIENCE AND PRACTICE**

At the same time as these developments were occurring in the USA, similar challenges were confronting psychologists in Britain. British psychologists also needed a distinct framework for guiding their work that could secure the place of psychology in a changing social climate. However, under the influence of Hans Eysenck, arguably the most influential proponent of the profession during the post-war period, the British vision of the scientist–practitioner model was somewhat different from its American counterpart.

Rather than emphasizing the need to combine research and clinical interventions in the service of social need in the way that had been envisioned by Shakow and his colleagues, the British scientist–practitioner model diminished the role of therapeutic practice. In a statement which personifies this position, Eysenck spoke of therapy as ‘essentially alien to the clinical psychologist’ (1949: 174). Interpreting the scientist–practitioner model in the light of rigorous empiricism, Eysenck believed that the profession should concern itself solely with research and diagnosis, leaving the delivery of therapeutic interventions to psychiatry. As he argued, ‘We must be careful not to let social need interfere with scientific requirements . . . Science must follow its course according to more germane arguments than possibly erroneous conceptions of social need’ (1949: 173).

The emphasis on scientism was also endorsed by M.B. Shapiro (1955, 1957), another influential figure during this period. Appointed by Eysenck to run the clinical department at the Institute of Psychiatry, Shapiro developed Eysenck’s vision of the clinical psychologist as diagnostician and researcher, emphasizing the study of the single case and the experimental method in the pursuit of empirically driven knowledge. Specifically, Shapiro pioneered a methodology which enabled assessment and conceptualization of psychiatric disorders in their clinical context. Its main assumption was that each client constituted a ‘scientific puzzle’ in his or her own right. Through applying general methods of experimental psychology in a special framework of learning theory, the psychologist could find ways to solve this puzzle.

Such a stance undoubtedly helped secure this branch of professional psychology as a scientific enterprise and, as in America, there were distinct political advantages from doing so. A direct appeal to the profession’s scientific status enabled psychology to justify itself as a social institution and attract the prestige necessary for its survival. The emphasis on expertise in research design and diagnosis ensured that psychology would have a unique role to play in post-war health care (John, 1984), albeit a different one from psychology in the USA.

Eysenck's rejection of therapeutic practice as a legitimate activity for the scientist-practitioner soon became problematic. The close relationship between psychology and developments within the British health-care system meant that the profession evolved more closely in accordance with social welfare priorities than Eysenck had envisaged. As the National Health Service principally required skilled practitioners, psychologists became increasingly involved in providing clinical interventions, rather than assessments and diagnoses. In contrast to the Institute of Psychiatry's model of rigorous empiricism, psychologists began to embrace approaches to intervention that were more traditionally psychotherapeutic in orientation. Eysenck (1952) subsequently ignited the debate on the question of whether psychotherapy worked and concluded that it did not. He actively promoted behaviour therapy as a more appropriate alternative for the scientist-practitioner and insisted that therapy should be based on sound experimental work and theory development (Eysenck and Martin, 1987; see Lane, 1990 for a summary of this argument). As behaviour therapy proved successful in treating a range of problems, this further eased the introduction of a therapeutic component into the British scientist-practitioner model of applied practice.

Despite the ways in which professional practice has subsequently evolved, the scientist-practitioner model undoubtedly presaged the development of a new mindset about the place of psychology in a changing world. To meet social need, psychologists would not only need to deliver effective interventions but also contribute to the development of the knowledge base itself. The relationship between research and practice was reciprocal but the superiority of science was nonetheless assumed (Peterson, 1991). A similar perspective arose within educational psychology, influenced by Thorndike's positive regard for science as providing a foundation for education (Berliner, 1993). As Pilgrim and Treacher (1992) observe, however, this vision of the scientist-practitioner model left a legacy of underlying tension between research and practice which has had implications for psychologists ever since.

## **A TROUBLED RELATIONSHIP: THE PROBLEM OF INCOMPATIBILITY**

It is one thing to espouse an ideal but quite another to implement it. Of all the criticisms levied against the scientist-practitioner model, perhaps the most resounding has been that it represents a vision of professional practice that can rarely, if ever, be fulfilled (Barlow *et al.*, 1984). This led Jones (1998) to argue that the scientific identity of the practitioner is in fact 'fraudulent' and should be abandoned in favour of a more honest account of how psychologists actually function. A similar case has been argued by Williams and Irving (1996) and Rennie (1994) who see the different priorities of scientist and practitioner as leading to an insurmountable rift in both activity and function.

One of the central difficulties in attempting to marry science and practice within

a single model of practice, as noted previously by William James, is that scientists and practitioners have fundamentally different priorities. Whilst the scientist is arguably concerned with knowledge that is rigorous, objective and generalizable, the practitioner is more concerned with knowledge that is subjective, holistic and applicable to the individual (Meehl, 1954; Coan, 1979). Indeed, as Trierweiler and Stricker (1998) point out, even the delegates at the Boulder Conference were acutely aware of the inherent difficulties of integrating science and practice within a single framework; it was not assumed that training psychologists in research and practice would be sufficient to ensure involvement in both at a post-qualification level.

The apparent rift between science and practice was addressed in a subsequent conference in 1973. In contrast to that at Boulder, the Vail Conference (Korman, 1974) de-emphasized the scientist–practitioner model in favour of a practitioner-oriented approach to training programmes for clinical psychologists. The central argument proposed was that doctoral dissertations needed to be relevant to the delivery of social welfare. As trainees principally needed to develop an awareness of research and to acquire the ability to evaluate its implications for practice, extensive training in the production of empirical work was deemed unnecessary. The focus needed to be on the application of knowledge rather than the detailed specifics of experimental design.

If the work of scientists and practitioners is underpinned by different assumptions and priorities, it is not surprising that attempts to conjoin them have been beset with difficulties. In the context of applied practice, concerns have been raised about the extent to which the scientist–practitioner model enables psychologists to develop practice-based skills. Pottharst (1973), for example, pointed out that as originally defined, the model paid insufficient attention to how students were to achieve competence in clinical work, a concern echoed by Rachman who warned of the potential danger of the ‘scientist . . . squeezing out the practitioner’ (1983: p.xiii). This concern has been shared by Sheehan (1994) who argues that the scientist–practitioner model fails to equip trainees with the prerequisite skills for effective professional functioning.

Additional confirmation of the difficulties embedded within the scientist–practitioner model has come from the world of practice itself. In considering what professional psychologists *actually* do (as opposed to what official discourse says they *should* do), it has been pointed out that many psychologists are unlikely to engage in research once qualified (Nathan, 2000; Head and Harmon, 1990), that professional psychologists often rank research as a lower priority than service-related commitments (Allen, 1985) and that they may not even feel a need to read research (Nathan, 2000). This would appear to be endorsed by the oft-quoted finding that, for many years, the modal number of publications for clinical psychologists was zero (Levy, 1962; Norcross *et al.*, 1989).

Nowhere is the hiatus between science and practice more succinctly summarized than by Matarazzo, whose disillusionment with science was captured in a survey of practitioners by Bergin and Strupp (1972) and which feels as heretical

today as it did then: 'even after 15 years, few of my research findings affect my practice. Psychological science per se doesn't guide me one bit . . . My clinical practice is the only thing that has helped me in my practice to date' (cited in Bergin and Strupp, 1972: 340).

Each of these critiques suggests the failure of science to inform the realities of practitioners' work. However, Dawes (1994) has argued that the converse is true: namely, that it is practitioners who have failed to pay sufficient heed to the scientific literature and in doing so have fallen short of their obligations to the societies they seek to serve. In his somewhat damning critique of professional practice, Dawes elevates the science–practice schism to the realms of professional responsibility. He argues that psychologists have consistently failed to use the research evidence to inform their work, relying instead on procedures of dubious validity such as professional experience and outdated technical procedures. As scientific knowledge about how to optimally address human needs is incomplete, he further argues that psychologists should restrict their work to areas where knowledge (particularly actuarial information) already exists.

A decade later, it would be difficult to argue convincingly that psychologists do not take account of the research literature in their work, particularly in the current climate which privileges the delivery of interventions that are informed by the available evidence (Department of Health, 1996, 1997). However, Dawes' argument remains persuasive by highlighting how, despite official endorsement of our allegiance to scientific knowledge, we often stray into territory that is far less rigorous.

It would seem, then, that claiming we are scientist–practitioners is not an entirely accurate representation of our roles and skills and that it may be time to replace this model with one that is more practitioner-oriented. However, others have warned of the danger of throwing out the baby with the bathwater and invite us to consider the relationship between science and practice anew. This is considered next.

## THE CASE FOR SAVING THE SCIENCE–PRACTICE PARTNERSHIP

Despite its contentious history, the scientist–practitioner model has retained its supporters. Many training programmes in both clinical (O'Sullivan and Quevillon, 1992) and counselling psychology in the USA (Baker and Benjamin, 2000; Vacc and Loesch, 1994) continue to operate along scientist–practitioner lines. Indeed, in their study investigating anticipated developments in clinical training amongst trainers, trainees and regional clinical psychologists in Britain, Kennedy and Llewelyn (2001) found strong support for the prediction that the scientist–practitioner model would continue to be a major framework for training, albeit tempered by models of evidence-based practice, critical analytical skills and generic professional competences. Moreover, as the field of professional psychology continues to grow, it is interesting to note that a number of newer



psychological professions such as counselling psychology (Woolfe and Dryden, 1996) and the psychology of coaching (Grant and Cavanagh, 2004) have chosen to embrace the scientist–practitioner model rather than promote an alternative.

These trends appear to be reflected in recent documentation by the British Psychological Society (2005) which, in detailing the subject benchmarks for psychology, identifies the scientist–practitioner model as central to the activity of applied practice. Within this framework, the emphasis is on the appropriate use of psychological knowledge in order to (1) deliver high quality client services; (2) work autonomously in complex settings and (3) draw upon psychological knowledge, skills, and theory to make professional judgements. Priority is given to the core skills of the applied psychologist (assessment, intervention and evaluation) and includes high levels of research skill and scholarship, as manifest in the ability to conduct relevant research and to apply research to practice.

A cynical view of these trends would be that, in the absence of any viable alternative, it would be professional suicide to state publicly that the scientist–practitioner model is unsustainable. However, there may be a more optimistic interpretation. For all its apparent flaws, it may be the case that embodied within the scientist–practitioner model are certain qualities that are deemed important for psychologists to retain.

Drabick and Goldfried (2000) amongst others (see Halgin, 1999; Nathan, 2000) have argued that the current professional climate necessitates our renewed commitment to the scientist–practitioner model so that we might distinguish ourselves from colleagues in medical, educational and social work settings. This echoes the earlier argument of Dosier (1947) who claimed that what makes psychology unique in comparison with medicine is its emphasis on research in conjunction with practitioner-based training.

It has also been proposed that the scientist–practitioner model represents a vehicle through which our knowledge of the human condition can systematically advance. Stoltenberg *et al.* (2000), for example, claim that the model provides a framework through which important scholarly and practice-based advances can continue to occur. In contrast to Matarazzo's dismissal of research as irrelevant to the practitioner's endeavours, Stoltenberg *et al.* argue that psychologists simply cannot be competent in the delivery of their practice unless they know how to evaluate it and that conducting one's own research is an essential precursor to understanding and utilizing the published research literature in an informed way. Thus, the scientist–practitioner model really represents what they term an integrated approach to knowledge.

Hoshmand and Polkinghorne (1992) have also suggested that separating science and practice creates an artificial distinction. However, the relationship between these two disciplines may take the form of more subtle synergies that are easy to overlook. Stricker (1992) argued this point convincingly when he highlighted that the impact of research on practice often occurs through an indirect 'meta-effect' whereby the research questions of one generation influence the professional developments of the next. Using psychotherapy outcome research as an example,

he describes how the early research questions about whether therapy ‘works’ and ‘which one works best’ subsequently gave rise to distinct new therapeutic techniques, as each therapeutic tradition attempted to display its superiority. Similarly, he argues that the paradoxical status of equivalence amongst the different psychotherapies established in the 1970s led to the development of new types of research questions to overcome uniformity which moved therapeutic practice towards a more prescriptive outlook.

In a similar vein, Belar and Perry (1992) have proposed that the scientist–practitioner model provides an invaluable framework for theory-building whereby, through a systematic approach to enquiry, random observations can be shaped into hypotheses that presage the development of new theories and interventions. The influence of science is not always instantaneous (perhaps that is why we often mistakenly believe it is not occurring) but shapes how psychologists work in more subtle ways.

## REDEFINING THE SCIENTIST–PRACTITIONER MODEL IN THE LIGHT OF MORE SUBTLE NUANCES

Recognition of a more complex relationship between our scientist and practitioner roles has given rise to a growth of interest in the different types of activities that might be encompassed under the scientist–practitioner umbrella. Crane and McArthur Hafen (2002) emphasize the scientist–practitioner model as integrating the three complementary roles of practitioner, consumer of research and producer of research. Unlike the evidence-based practitioner whose role is one of implementing specific interventions and consuming research to stay up to date, they propose that the scientist–practitioner is more concerned with integrating the consumption and production of research in practice with a distinct professional identity.

Milne *et al.* (1990) also point out that many of the debates which have discredited the scientist–practitioner model have relied on survey methods, which focus on a limited number of variables such as publishing quantitative studies in refereed journals. However, they argue that when a wider definition of research is adopted – a definition which encompasses publishing in non-refereed journals, preparing service evaluation documents, undertaking small-scale research projects and keeping up to date with scientific studies – a closer approximation to the ideal begins to emerge.

Intuitively, these broader definitions of the scientist–practitioner model make sense. Just as Stricker (1992) proposed that the research of one generation presages the practice-based developments of the next, so we could argue that a similar process occurs for each of us at an individual level. We can all, no doubt, identify some research study that either resonated with our own practice or struck us as completely irrelevant and which shaped our views about science and practice accordingly. Perhaps our choices around post-qualification specialization were also influenced by the current literature on outcome and effectiveness. Similarly,

our own experiences of conducting research, on whatever scale, have the power to shape our outlook on the services we provide. In other words, the relationship between science and practice may be alive and well. However, the way in which we have constructed the scientist–practitioner debate may have prevented us from studying the more subtle interplay that takes place between them, including our own individual constructions of what being a scientist–practitioner is all about.

In their qualitative study examining beliefs about research and the scientist–practitioner model in the context of ‘real-world’ practice, Corrie and Callanan (2001) found marked variations in how the scientist–practitioner model was defined, which could be placed on a continuum of closed to open definitions. The most closed definition related to a model of science that prioritized prediction and control and the use of statistical testing, whilst the most open definition conceptualized the scientist–practitioner model as a spirit of enquiry whereby psychological evidence could be used in a more holistic way, according to the needs of a given enquiry. These definitions played a key role in shaping perceptions of its value and led Corrie and Callanan to conclude that the scientist–practitioner model no longer represents a single way of working but comprises more idiosyncratic definitions, models of practice and systems of values which should become a focus of exploration, investigation and classification in their own right. A similar conclusion was reached by Manafi (2004) who also found that perceptions of the scientist–practitioner model were closely tied to psychologists’ epistemological assumptions. Higher levels of endorsement were associated with viewing the approach as an ‘integrative tool’ that permitted use of a range of methods and outlooks on knowledge which in turn promoted a mutually informative relationship between science and practice.

Of course, adopting a broader vision of the scientist–practitioner model raises further questions. As Milne *et al.* (1990) highlight, a more inclusive definition leads to very different impressions of its characteristics and functions. This leaves applied psychology with important questions including:

- What do practitioners mean when they define themselves as scientists?
- Who is entitled to use the title of scientist–practitioner? Should it be for everyone or reserved for those who have a specific status in relation to research (e.g. those producing data that can influence practice on a wide scale)?
- To what extent is it legitimate for the profession to encompass multiple definitions of the scientist–practitioner model and for each of us to carve out our own definitions according to the nature of our work and the values that underpin it?
- How do we protect our identities, roles and activities if we do not have recourse to one over-arching framework through which we can justify and publicize our work?

It would seem then, that a central task at the current time is to decide whether the scientist–practitioner framework represents a single model or a meta-model.

Each position has strengths and limitations. For example, aiming for one model may be simpler, clearer and potentially more rigorous. However, it may also result in a lack of flexibility and alienate a proportion of the profession in a way that seems to have been characteristic of the debate so far. Alternatively, construing it as a meta-model may offer maximum flexibility but lead to diluted versions that permit a loss of rigour in how we practise or even threaten our unique status among other professions. How we define the scientist–practitioner, and the extent to which it represents a single or meta-model are questions which, we believe, deserve our individual and collective attention as we contemplate the future of the profession.

### **SOME INITIAL THOUGHTS ON A SCIENTIST–PRACTITIONER MODEL FOR THE TWENTY-FIRST CENTURY**

Whatever our individual reactions to the outcome of the Boulder Conference, what is clear is that embedded within the scientist–practitioner model is a certain moral imperative to ensure optimum effectiveness. However, beyond this we can assume little consensus of definition, role or function. At the current time, there seems to be more than one way of being a scientist–practitioner (Kennedy and Llewelyn, 2001).

Different interpretations of the scientist–practitioner model are hardly surprising when we appreciate that the debate has often ‘lumped together’ myriad functions in a way that tends to confuse mission and method. Thus, the scientist–practitioner model has been described as a vehicle for protecting our unique identity and status; a framework for providing the profession with a clear direction; a way of making training and practice more uniform; a means of making practice socially relevant and protecting the public against poor practice and an approach to enquiry that can inform our practice in systematic ways. The above functions are not necessarily congruent, however. The matter is complicated still further in that the original debate was weighted heavily around clinical psychology. Yet applied psychology has expanded significantly since 1949. What is meant by science and practice in these contexts? Does science equate with scientism or do we need a broader interpretation of both science and practice to reflect the diversity of situation and context in which psychologists now find themselves?

These questions become even more significant when we appreciate that certain branches of professional psychology are starting to define and work towards the creation of a new type of practitioner, one which is based just as much on an individualized career pathway as it is on activity or role. One striking example of this is the introduction of the Register of Psychologists Specialising in Psychotherapy (British Psychological Society, 2003), which emphasizes career development as taking place through the personalization of knowledge. Rather than measuring applicants against a list of pre-established criteria, the process of registration seeks

to establish a ‘personal ownership’ of knowledge demonstrated through the overall coherence of an individual’s portfolio of career experiences.

These changes illustrate a growing interest in the development of a cohesive professional identity that capitalizes on personalized approaches to learning rather than criteria that are externally imposed. Within the context of these more individualized career pathways, we must think again about how we can arrive at a suitable and beneficial relationship with science.

The necessity of practice-led enquiry has been endorsed particularly strongly by counselling psychology which has actively promoted alternatives to the narrow definitions of science which have perpetuated the scientist–practitioner divide. Duerzen-Smith (1990), for example, has argued that psychology has traditionally organized itself around discovering objective facts rather than exploring what it means to be human, with all the dilemmas and choices that this entails. For her, psychology needs to embrace more fully its artistic and dialogic dimensions over and above what she sees as its preoccupation with overly narrow scientific principles. As a discipline strongly connected with humanistic values and principles, counselling psychology argues for a scientist–practitioner model that is practice-led, phenomenologically-focused, respectful of diversity and interested in the uncovering of subjective truths (Woolfe and Dryden, 1996).

This sentiment has been echoed within other branches of applied psychology. In clinical psychology, for example, Trierweiler and Stricker (1992) have introduced the concept of ‘the local clinical scientist’. As a form of professional identity, the local clinical scientist is construed as a ‘critical investigator’ who draws upon a range of knowledge (including research, theory, general knowledge of the world and personal experience) to develop hypotheses about clinical problems. The aim is both to facilitate understanding of human phenomena in the context of specific enquiries and also to encourage appreciation of how these phenomena relate to broader notions about the nature of science.

Within educational psychology, Berliner (1992) and Snow (1981) have argued that the task facing the profession is essentially one of ‘psychologizing’ about the educational issues with which real-world settings present us, rather than applying knowledge to people and situations in a linear fashion. Berliner (1992) argues that this requires us to bring psychological ideas to the problems encountered in the classroom, regardless of what those problems are.

Similarly, from an organizational perspective, Argyris (1999) remarks on the necessity of aiming for ‘actionable’ or ‘usable’ knowledge, which can assist practitioners in the process of implementing policies and procedures. The role of science, he argues, is not to provide definitive judgements but rather to make an offering to the practitioner in the form of hypotheses that are relevant to, and testable in, the organizational context in which they occur. Our science, it seems, needs to be increasingly practical.

Thus, despite its chequered history, we are witnessing a renewed allegiance to the scientist–practitioner model, at least in certain sectors of applied psychology practice. Amongst the diverse disciplines which make up the profession, there is a

growing awareness of the need to find a mid-point between the purely pragmatic and the experimentally rigorous, suggesting a more liberal, flexible and stakeholder-focused basis for our science. This implies that the scientist–practitioner model is a workable reality, albeit one that first requires a new vision of its aims and functions.

A suitable analogy for this process of ‘revisioning’ comes from Wheatley (1999) who, in her work on organizations, explains how a structure that is created in response to a profound sense of calling can gradually acquire a rigidity that impedes its effectiveness. When a structure reaches such a stage, it must fall apart in order to reorganize itself. If we apply this outlook to the scientist–practitioner debate we could argue that although developed with sound intentions, the model became a rod for our own backs which is now being deconstructed in order to reconfigure more adaptive versions that create a closer ‘fit’ with the realities of our work. Our task then changes. We can free ourselves from the notion that being a scientist–practitioner means working according to the dictates of any specific model or activity in favour of developing operational systems that enable us to organize and develop our skills in a systematic way. Through redefining the scientist–practitioner model as an operational system, we can perhaps move beyond the problematic legacy of the past, in order to construct a more helpful one for the future. Some of the different ways in which this might be achieved are explored in the chapters which follow.

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