

RESEARCH REPORT

Scientist versus Practitioner – An abridged meta-analysis of the changing role of psychologists

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This study investigated factors of conflicting expectations and roles of the current psychology practitioners, as well as how these factors were associated with the founding principles of the scientist-practitioner model. Data were gathered from ten published journal articles and then interpreted using an abridged meta-analysis methodology. Results revealed: (a) the scientist-practitioner model needs to adapt to survive, preferably with the aim of becoming more versatile; (b) The majority of graduate level clinical psychology training programs are based on a flawed version of the scientist-practitioner model, which renders the training inadequate and ineffective; (c) The identity of clinical psychology should remain firmly grounded in mental health care, and so not encroach on the territory of any other psychological divisions. Implications of these findings and suggestions for psychology practitioners are also discussed.

Keywords: changing roles; psychology practitioner; training programme; scientist-practitioner model

Introduction

Beginning in the late 20th century, there has been a growing trend within the numerous divisions of psychology to incorporate the reflexive, introspective examinations of their foundations and origins into regular conferences and “special edition” journals (Kendall, 2006). There are various critical historical examinations of the development of each psychological division, as well as critical re-examinations of core training methods and guidelines that have aimed to produce more effective methods of training for psychologists entering the new professional world.

Within clinical psychology, in particular, such examinations and re-evaluations (e.g., National Health Service, 2007) have taken on a larger purpose; developing into a vast body of work that has scrutinized the foundations and core principles of the division, attempting to identify and chronicle the significant events that are responsible for the formation of clinical psychology. This body of work illustrates the growing concern, within the global profession of clinical psychology, that the role and position, both within psychology itself, as well as other mental health professions, and also within the global perception of professions.

More specifically, members of the clinical psychology profession are becoming increasingly concerned over both the actual and perceived effectiveness and viability of the longstanding training methods given their modern applications, as this has a direct effect

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on the role of the clinical psychologist within the modern mental health care system, and also as a separate and distinct division within psychology.

The perceived role and importance of the clinical psychologist has been questioned in recent years by the media, which has reported the contributions of clinical psychology, in a mental health capacity, in a negative light, often putting the blame for recent acts of, allegedly preventable, violence by those in the mental health care system on the incompetence of clinical psychologists (Hollins, 2007; Nevin, 2007). Recent budget problems that have occurred within the NHS have also highlighted the uncertain future of the role of the clinical psychologist as it is currently understood; there is a perceived superfluous nature of clinical psychology within the NHS, which is evident when budget problems are resolved through the downsizing of mental health facilities, usually beginning with the lesser qualified clinical psychologists (Moloney, 2007).

Yet despite the abundance of research into resolve these and many other issues that have emerged regarding the clinical psychology profession, there has been relatively few of the proposed solutions that have been acted upon, despite compelling evidence that they could improve the current situation. The vast majority of such suggestions have emerged from studies that have begun with at least a brief examination of the historical origins of clinical psychology, before going on to discuss the training methods and philosophies. In line with this, the current study will follow this precedent, and offer a brief, critical description of the history of the profession of clinical psychology, before discussing the major training model used in graduate programs throughout the world.

An overview of clinical psychology

Psychology as a profession has always acknowledged its history, perhaps more so than any other profession to date; yet up until recently this acknowledgement has been one of a sterile, positivistic nature, in contrast to the self-aware, reflexive, critical examination that has become one of the principle foundations of such divisions as feminist and community psychology, but is slowly spreading throughout the other division alongside the recent movement away from traditional positivist approaches to psychological research (e.g., Apfelbaum, 1992).

This new awareness and appreciation of the necessity of critical understandings of the history of psychology and its many divisions was highlighted by Harris (1997) in his critique of the biased and limited historical overviews that had existed previously, which also detailed the negative and detrimental effects these types of biased overviews have had on the development, interpretation and practice of psychology.

Yet even the biased historical accounts have been connected to the growing sense of importance attached to the understanding of the profession of clinical psychology above all other divisions of psychology (Brems, Thevenin, & Routh, 1991). This is often attributed to the fact that the personal history of a practicing clinical psychologist can have profound effects on their professional performance, and that this so-called “phenomenon” (Brems et al., 1991, p. 3) could also occur on a larger scale with the profession of clinical psychology. The history of the development of the profession has often been cited as having affects on current practices (Kendall, 2006), a phenomenon that has often been personified and described, in psychoanalytic terms, as a young adult whose personality has been dictated by its childhood (Brems et al., 1991).

The origins of the clinical division are rather unique within the broader psychology profession; emerging from a fusion of the academic and scientific practices that were

prevalent at the beginning of the 20th century. Witmer (1896, as cited in Coolican et al., 1996) introduced the term “clinical psychologist” during the development of the first abnormal psychology testing clinics in the US. It was more than 50 years before similar clinics began to emerge within the UK.

This temporal disparity in the development of the foundations of clinical psychology remains throughout the early advancements of the profession, with many of the significant developments occurring within the US, in the American Psychological Society (APS) and the American Psychological Association (APA) (e.g., Albee, 1970; Brems et al., 1991), before being transferred and adapted in the UK by the British Psychological Society (BPS).

The works of Freud and other psychoanalysts (e.g., Bengtson & Marshik, 2007; Freud, 1910) are often described as having an “immeasurable” (Brems et al., 1991, p. 20) affect on clinical psychology but it is the profession’s firm grounding as a science that has had the most profound affect. Prior to the Second World War, clinical psychologists were mostly involved in psychometric testing, and the methods used to train them were almost identical to those used for experimental psychologists.

However, after the Second World War, the influx of cases of posttraumatic stress disorder (PTSD) in soldiers returning from the war saw the demand for mental health professionals increase dramatically; this led to the acknowledgement of clinical psychologists as mental health professionals, and their training began to incorporate the necessary skills required for treatment and assessment (Miller, 1946, 1947).

This post-war expansion also saw the negation of the PhD as a necessary professional requirement for qualification as a clinical psychologist, which had two main effects; an increase in the amount of people being recognized as mental health professionals, and also an increase in the number of people choosing clinical psychology as a profession.

There were two particular texts at this time that became highly influential for both training and practicing clinical psychologists; Hunt’s (1944) analysis of the interaction between behavioural disorders and personality, and Roger’s (1951) book on client-centred therapy. These offered one of the first real alternatives to Freud’s psychoanalysis (Freud, 1910), which had been the dominant method of therapy for the less severe psychological disorders.

This post-war transformation of the profession was also a period in which the structure and definition of the role of the clinical psychologist had no general consensus. Miller (1947) attempted to attach a definition to the new profession, describing the clinical psychologist as having responsibilities in the diagnosis, treatment and research of psychological disorders. This conceptualization remained intact until a second period of transformation, occurring throughout the 1960s and 1970s, when long-held scientific, and even social, paradigms were being challenged; and new research, combined with a changing political environment, helped herald a new set of paradigms (Kuhn, 1970).

One of the first acknowledgements of the vacillating nature of the profession in this era was Albee’s (1970) presidential address, which described clinical psychology as entering a “paradoxical phase in its development where its problems of identity and relevance threaten it with extinction at the same time that its opportunities seem boundless” (Albee, 1970, p. 1071). He went on to make several suggestions aimed at maintaining the profession; the primary one being the perpetuation of the scientist-practitioner model (sometimes referred to as the Boulder model, after the APA conference in Boulder, Colorado, where it was introduced), and did not propose any considerable alterations to the traditional training methods that had been in place since its proposition in the 1940s (Raimy, 1950).

The development of the scientist-practitioner model in the history of clinical psychology

The importance Albee (1970) attached to the scientist-practitioner model has been reflected in numerous studies and texts, and there appears to be a general consensus that the scientist-practitioner model is the motivating force behind the training and professional practice of clinical psychology (e.g. Brems et al., 1991; Coolican et al., 1996, Kendall, 2006).

Many of the principles incorporated into the scientist-practitioner model originated from an earlier report by the first APA committee that had been appointed to monitor the graduate training requirements in clinical psychology. Commonly known as the Shakow report (after the committee chairman David Shakow; APA Committee on Training in Clinical Psychology, 1947), the report made several recommendations in regards to the application process for graduate students, as well as the content of graduate training programs. The report stated that graduate training should cover six core areas; general psychology, related disciplines, psychodynamics of behaviour, diagnostic methods, research method, and therapy.

This “ideal curriculum” foreshadows the central themes of the scientist-practitioner model that would be publicly endorsed two years later at the APA’s Boulder conference. The foundation of the scientist-practitioner model is the notion that from the beginning of their graduate education, a student’s training should have an equal emphasis on the sets of skills relevant to both the research and application of clinical psychology.

This structure seemed to correspond with the paradigm of the larger environment of professional psychology at that time; a period in which scientific advances and the improvements of humanity were of increasing focus (e.g., Walker, 1970). Put briefly, the paradigm responsible for the training philosophies and expectations, which are still largely in use today, has remained a central component in the scientist-practitioner model despite the fact that the external paradigm of both the encompassing psychology profession and the larger environment in which the model operates has shifted dramatically.

This is not the only conflict that surrounds the scientist-practitioner model; a more pertinent conflict comes from the model’s basic assumption that a single clinical psychologist can divide their professional duties equally between the scientific pursuit of knowledge, usually through research, and the application of knowledge through practice within a mental health setting. One problem with this assumption is that the aptitude and motivation for engaging in research is not necessarily compatible with the aptitude and motivation for applied clinical work.

This is an issue that has concerned clinical faculties since the introduction of the scientist-practitioner model (Clark, 1957), and has often led to a debate over where or not training programs based on the scientist-practitioner model can actually produce this, apparently ideal, type of clinical psychologist (the scientist-practitioner; Frank, 1984). There has been much research that has attempted to explore this issue by examining the way in which those trained using the scientist-practitioner model spend their professional time (e.g., Beutler, Williams, Wakefield, & Entwistle, 1995).

The majority of these studies conclude, as Beutler et al. (1995) do, that there are relatively few, if any, clinical psychologists who manage to divide their professional careers in line with the scientist-practitioner model. Beutler et al.’s (1995) findings support earlier inferences that, despite the perpetuation of the scientist-practitioner model being the ideal template of clinical psychologists, there is no one psychologist who possesses equal measures of both components.

There have been several possible rationales suggested to explain this conflict between training ideals and professional realities, with the primary explanation being that it is the time demands associated with the activities and responsibilities of the scientists and the practitioners within clinical psychology that causes the discrepancy. The time constraints and pressures that affect by an individual clinical psychologist make it extremely difficult for them to engage in both applied and research-based work; creating a form of dissonance between what their training model has told them is required of them and the realities they face once they are qualified and begin their professional careers.

This dissonance has been described as “complex and often hostile relationship” (Beutler et al., 1995, p. 984), and such relationships are often viewed as indicators of failing theories. Yet this is not necessarily the case, and the call to abandon the scientist-practitioner model should not be blindly followed. The longevity of the model in training programs is evidence of its applicability, and should provide motivation for the adaptation rather than the abandonment of the model. However, there are still changes that need to be made in order to ensure that an altered scientist-practitioner model could meet the demands and requirements of the current paradigms surrounding not only the clinical psychology profession, but also the mental health settings and the larger social and political environment.

In order to accomplish this transition effectively, each of these paradigms need to be identified, along with the relationships between them, a task that has yet to be undertaken, at least partly because of the monumental nature of establishing three distinct paradigms, but also because the clinical psychology profession has been in a state of unsteady flux since the 1970s; many of the issues highlighted by Albee (1970) remain unresolved, and the declining social image of the contributions and value of clinical psychology (e.g., Hollins, 2007) has resulted in fresh debates over the continued existence of clinical psychology as a separate division within psychology as well as its position as a mental health service.

Aims of this study

The current study aims to explore these factors of conflicting expectations, graduate training dissonance, paradigms and the apparent role of the clinical psychologist in the modern environment, as well as how each of these factors relates to the founding principles of the scientist-practitioner model, and, hopefully, develop a accurate view of modern clinical psychology, its limitations and its possible future direction. In a sense, the objective of the current study is to evaluate modern clinical psychology in a similar way that Albee (1970) has previously.

Method

Design: Meta-analysis

In order to accomplish the research aims aforementioned, an abridged meta-analysis methodology was adopted, which involves gathering the findings from previous studies for systematic integration and accumulation. However, there is no single fixed technique, and the exact operational procedure used often relies on the specific circumstances of the research (Marks & Sykes, 2004). The basic premise of the adaptation of this method is that instead of extracting relevant statistical data from previous studies, emergent themes are extracted before being coded in a way that allows for statistical analysis.

Inclusion criteria and searching procedure

The sources for the meta-analysis consisted of ten articles, which were published in a variety of psychology journals; Himelein and Putnam, 2001; Kenkel, DeLeon, Albino, and Porter, 2003; Koch, 2005; Arnett, 2005; King, 2006; O'Donovan and Dyck, 2005; Routh, 2000; Donn, Routh, and Lunt, 2000; Cassin, Singer, Dobson, and Altmaier, 2007; Baker and Benjamin Jr, 2000. These articles were all obtained from the Internet database (PsycARTICLES, 2007) and were selected through the application of two search parameters (see Appendix I for further details). This systematic review of the potential sources was based on a procedure outlined by Mark and Sykes (2004), which was specifically designed for the search and review of Internet-based databases.

Data coding and entry

The thematic analysis was based on a process outlined by Joffe and Yardley (2004), and was aimed at extracting emergent themes that discussed or referred to one or more of the following areas; the scientist-practitioner model, graduate training programs, the shifting perceptions and paradigms of clinical psychology as a profession, and the perceived role of the clinical psychologist in the modern environment. These four research areas formed the basis of the thematic analysis, the structure that the superordinate themes were based.

The researcher, prior to beginning of the thematic analysis, read each source article individually. The initial coding involved each article being searched for key sentences/paragraphs that demonstrated a relationship or emergent theme that related to one or more of the four research areas. Once identified, these sentences/paragraphs were coded according to which of the four research areas they related to.

This initial coding method was applied to all ten sources before the second stage of coding began. After the emergent themes of each source were established they were transferred into a "master list" of all emergent themes (see Table 1). This was done so that the occurrence of each emergent theme could be identified, both within individual articles and overall, and also so that any similarities among them could be examined.

Table 1. Sample of extraction.

Extract from the master list of all emergent themes
<ol style="list-style-type: none"> 1. Most professional training programs use the scientist-practitioner model. 2. Giving each component equal emphasis is a challenge to psychology departments. 3. Effective teachers are those who maintain involvement in clinical work. 4. The lack of rewards for clinical practice in university settings leads to more students pursuing research-oriented positions. 5. Academic clinical psychologists spend most time teaching, then research-related activities, with actual clinical activities taking up about 12% of the time. 6. 92% of academic clinical psychologists spend at least some time per week on their own research. 7. "Scientist" aspect is often emphasized more. 8. Demographic factors do no differ greatly between practicing and non-practicing clinical psychologists. 9. Nearly 50% of non-practicing clinical psychologists have no interest in practical work. 10. Psychologists attracted to academic jobs may be more scientifically minded.

Source: Himelein and Putnam (2001).

The emergent themes were then clustered together according to their research area, which became the superordinate themes; then patterns within these were identified and became the subordinate themes (see Table 2). Both the superordinate and subordinate themes were then coded and transferred to the SPSS software to allow for statistical analysis of their occurrences and the exploration of any differences between them.

Results

The data here was subjected to two separate forms of analysis; a *thematic analysis*, which detailed the relationships between the four research areas, nine superordinate themes, and the 21 subordinate themes (see Table 2); and a *statistical analysis*, more specifically, basic frequency analyses were conducted on the research areas and superordinate themes, and several *Chi-square* analyses, which aimed to determine if there were any significant differences between subordinate themes.

Table 2. Coding scheme.

<i>Scientist-Practitioner Model</i> [†]	<i>Graduate Training Programs</i>
1. Overall opinion of the scientist-practitioner model a. beneficial to clinical psychology b. detrimental to clinical psychology 2. Future of the model a. the scientist-practitioner model should adapt b. the scientist-practitioner model should be abandoned 3. Synonymous with graduate training programs a. scientist-practitioner model based programs b. non-scientist-practitioner model based programs	1. Congruence with clinical psychologist's roles a. adequate preparation for realities of the profession b. inadequate preparation for realities of the profession 2. Overall effectiveness of the graduate training programs a. effective in educating clinical psychologists b. ineffective in educating clinical psychologists
<i>Paradigms/Perceptions of the Profession</i>	<i>Modern Role</i>
1. The scientist-practitioner model a. the ideal clinical environment b. more versatility needed 2. Clinical identity a. mental health care b. health care c. multidisciplinary/interdisciplinary obligations	1. Clinical psychology's setting a. university setting b. hospital setting c. private setting d. business setting 2. Scientist-practitioner model a. demand for researchers b. demand for practitioners

[†]Coding: Research areas (italic font); Superordinate Themes (words with numbers); and Subordinate Themes (words with letters).

Thematic analysis

The preliminary examination of the ten sources resulted in the identification of 153 separate sentences/paragraphs that related to the research areas. It was found that only six of these were illustrative of a single research area; this usually creates problems in standard thematic analyses, because superordinate themes are required to act as dividers of topics (Joffe & Yardley, 2004), and if the research areas overlap to such an extent as to infer a complex interrelationship, there is little prospect of the superordinate themes being completely distinct.

This illustrates the complex nature of the issues at centre of the current study; while earlier being defined as separate research areas, the initial examination of the sources suggests that they are in fact interrelated. The chosen sources themselves arrive at a general consensus regarding the moderational nature of the research areas. An area of statistical analysis, and one that was conducted prior to the second stage of thematic analysis, examined the one hundred and fifty-three sections in relation to the frequency of the association with the research areas and the superordinate themes (see Tables 3 and 4).

Each superordinate theme will be discussed in terms of the subordinate themes that comprise them, along with their interrelationships to each other, prior to the presentation of the statistical analyses. The identification of superordinate and subordinate themes was arranged according to the research areas, and the details of each will therefore be presented in the same order.

Overall opinion of the scientist-practitioner model

The primary superordinate theme was identified within the “scientist-practitioner model” research area, and appeared in all of the sources, usually during the introductory section,

Table 3. Frequency of the research areas.

	Scientist-practitioner model	Graduate training programs	Paradigms/perceptions of the profession	Modern role
Occurrence [†]	59.5%	64.7%	70.6%	49.0%

[†]The occurrence frequency is presented as a percentage of the 153 initial sections extracted from the ten sources.

Table 4. Frequency of the superordinate themes.

	Occurrence [‡]
Overall opinion of the scientist-practitioner model	8.9%
Future of the model	7.4%
Synonymous with scientist-practitioner model	7.2%
Congruence with clinical psychologist’s roles	8.9%
Overall effectiveness of the graduate training programs	8.0%
The scientist-practitioner model	6.7%
Clinical identity	18.6%
Clinical psychology’s setting	12.0%
Scientist-practitioner model	8.0%

[‡]The occurrence frequency is presented as a percentage of the 153 initial sections extracted from the ten sources.

which is indicative of the highly influential nature of the model on the academic study of clinical psychology. This superordinate theme was divided into two main subordinate themes, based upon the nature of the opinions expressed by the authors within the sources, which represent opposing viewpoints; that the model was beneficial to clinical psychology, or detrimental.

Beneficial to clinical psychology

This first subordinate theme is based on numerous instances present, throughout the sources, that describe or suggest the viewpoint that the scientist-practitioner model is beneficial to the clinical psychology profession. This is a generalized category; looking at the overall opinions within each source, and were not always specific evaluations of the scientist-practitioner model. These opinions usually occurred as comments on the success or effectiveness of the application of the scientist-practitioner model, and did not necessarily mention the scientist-practitioner model itself. An example of this is taken from the Himelein and Putnam (2001) source:

The best clinical research is informed by practice. When scientists stop practicing, their research is likely to become increasingly divorced from the needs and concerns of real-world practitioners” (Himelein & Putnam, 2001, p. 541)

This extract, while not directly mentioning the scientist-practitioner model itself, does discuss the applications and the rationale behind the model, as well as illustrating its benefits and usefulness. This example is representative of the majority of those within the “beneficial to clinical psychology” subordinate theme, which comprises the majority percentage of the *overall opinion of the scientist-practitioner model*, 52.2% in total. The remaining 47.8% is comprised of the following subordinate theme, “detrimental to clinical psychology”.

Detrimental to clinical psychology

This subordinate theme represents the opposing perspective that the scientist-practitioner model has, and will continue to, have a maladaptive affect on the profession of clinical psychology. As with the previous subordinate theme, and with all those that follow, evidence for this subordinate theme was found in numerous instances throughout the sources, all of which described the negative affects that the scientist-practitioner model has had, and will continue to have, on the clinical psychology profession. These opinions usually occurred in the form of criticisms and examples of the unsuccessful application of the scientist-practitioner model, without necessarily mentioning the scientist-practitioner model itself. The example for this subordinate theme is taken from the Kenkel et al. (2003) source:

an unwillingness to be open to innovation surely will lead to staleness, rigidity, and the ultimate demise of any enterprise, including educational programs (Kenkel et al., 2003, p. 804)

This extract was included in some of the other subordinate themes because it deals with the training of clinical psychologists and the future of such training; it was also included in this particular subordinate theme because of the fact that the vast majority of graduate training programs, both in the United Kingdom (UK) and the USA, are based on the scientist-practitioner model (e.g., BPS, 2007b), and therefore the Kenkel et al. (2003) extract also implies the detrimental nature of the scientist-practitioner model.

Other common rationales given in the ten sources for this negative perspective on the scientist-practitioner model include its incongruence with the current mental health cares system and the difficulties surrounding the adequate training of graduate students in line with the model.

Future of the scientist-practitioner model

This second superordinate theme is also from within the “scientist-practitioner model” research area, and appeared in all of the sources. It usually occurred in the final sections that summarized the implications of each article in terms of its impact on the area of clinical psychology. Rather than detail each individual strategy, those mentioned within the sources have been grouped into two broad categories, representing opposing viewpoints about the scientist-practitioner model; that the model should be adapted to modern demands on the profession, or that it should be abandoned altogether.

The scientist-practitioner model should adapt

This subordinate theme consists of the statements that represent the strategies and viewpoints gathered from within the ten sources that, collectively, recommend that the scientist-practitioner model should be adapted so that it better suits the modern demands on clinical psychology. Evidence for this subordinate theme includes suggestions regarding a reassessment of the balance of the scientist-practitioner model in graduate training programs. An example of this subordinate theme is taken from the Himelein and Putnam (2001) source:

A bolder version of the Boulder model might be to acknowledge the fact that some clinicians are largely scientists and some clinicians are largely practitioners and to integrate both types into the academic environment (Himelein & Putnam, 2001, p. 542)

This extract expresses the common recommendation that the scientist-practitioner model needs to acknowledge the fact that the ideal division it represents cannot exist within the individual clinician, yet its overall effectiveness is still being recognized in such calls for its adaptation. Other common suggestions for the adaptation of the scientist-practitioner model include dividing its two components into completely separate schools of training, and even that it should retain its original qualities but change where it is targeted; Himelein and Putnam (2001) suggest that the future of the scientist-practitioner model could lie in its application to undergraduate-level psychology students, which would allow graduate clinical psychology training to focus on the separate professional aspects.

This subordinate theme comprises 89.5% of the *future of the model* superordinate theme. The remaining 10.5% consists of the following subordinate theme, “the scientist-practitioner model should be abandoned”.

The scientist-practitioner model should be abandoned

This subordinate theme consists of the statements that represent the strategies and viewpoints gathered from within the ten sources that, collectively, recommend that the scientist-practitioner model should be abandoned all together to make way for new alternative models that claim to be able to better prepare clinical psychology graduate students for the multifaceted nature of the profession. Evidence for this subordinate theme

includes several propositions for new models, most of which involve the inclusion of principles from other professional areas. An example of this subordinate theme is taken from the King (2006) source:

... to see psychology and psychologists front and centre in health care now and in the future, as scientists, practitioners, policy-makers, entrepreneurs, and leaders (King, 2006, p. 55)

This is a typical example of the rationale behind the call to abandon the scientist-practitioner model, illustrating the increasingly complex nature of the expectations placed on clinical psychology.

Synonymous with graduate training programs

This final superordinate theme was also identified within the “scientist-practitioner model” research area, and appeared in all of the sources; but this superordinate theme, and its subordinate themes, is also present in the “graduate training programs” research area. Its occurrence was usually associated with the discussion of the structure and/or effectiveness of graduate clinical psychology training. It should also be noted that this superordinate theme represents the perceived relationship between the scientist-practitioner model and graduate level clinical psychology training programs, and is not based on any statistical data regarding the official content and basis of graduate level clinical psychology training programs. This superordinate theme was also divided into two main subordinate themes that represented the two opposing viewpoints expressed within the sources; that the model was the basis of training programs, or not.

Scientist-practitioner model-based programs

This first subordinate theme is based on numerous instances present, throughout the sources, which describe or suggest the viewpoint that the scientist-practitioner model forms the basis of graduate level clinical psychology training programs. This category was comprised of the occurrences, within the ten sources, of statements and/or examples of graduate level clinical psychology training programs being directly linked to and founded on the scientist-practitioner model. These statements did not necessarily directly relate such training programs to the scientist-practitioner model, with the majority of them discussing the difficulties with training the separate principles and the shortcomings of graduate training for those specialising as either a scientist or a practitioner. An example is taken from the Arnett (2005) source:

the scientist-practitioner model is actually being taught currently in psychology graduate schools (Arnett, 2005, p. 206)

This extract is just one of many that links the scientist-practitioner model to the graduate training of clinical psychologists, and the “scientist-practitioner model-based programs” subordinate theme comprises 76.9% of the *synonymous with graduate training programs* superordinate theme. The remaining 23.1% consists of the following subordinate theme, “non-scientist-practitioner model-based programs”.

Non-scientist-practitioner model-based programs

This subordinate theme consists of the statements that represent the contrasting viewpoint that the graduate training programs are not necessarily based on the

scientist-practitioner model. Evidence regarding this subordinate theme includes various statements that question the balance of the scientist-practitioner model within training programs, which has been noted as causing an imbalance in training. An example of this subordinate theme is taken from the Cassin et al. (2007) source:

different degrees should be used to distinguish programs that emphasised research training (PhD) from those that emphasised the training of practitioners (PsyD) (Cassin et al., 2007, p. 27)

This example expresses the common argument that the scientist-practitioner model, as it currently stands, should not form the basis of graduate training and that this distinction is present, at least to a small extent, in training programs within the USA; yet even these owe their origins to the scientist-practitioner model.

Other common rationales given in the ten sources for this negative perspective on the scientist-practitioner model include its incongruence with the current mental health cares system and the difficulties surrounding the adequate training of graduate students in line with the model.

Congruence with clinical psychologists' roles

This was the first superordinate theme identified solely within the “graduate training programs” research area, and appeared in all of the sources. Its occurrence was usually associated with the evaluations of the effectiveness of graduate level training programs. This superordinate theme was divided into two main subordinate themes that represented the two opposing viewpoints expressed within the sources; that the graduate training programs are adequate preparation for the realities of the profession, or that they are not.

Adequate preparation for realities of the profession

This subordinate theme is based on instances within all ten sources that describe or suggest the belief that graduate training programs, as they currently exist, are at least adequate preparation for expectations and realities of the profession. This category was developed from the occurrences, within the ten sources, that discussed the congruence of graduate training programs with the realities of the profession. While this could also be considered a indicator of the effectiveness of a training program, efficacy forms the second superordinate theme in this research area. An example is taken from the O'Donovan and Dyck (2005) source:

A clinical education is designed among other things, to increase students' clinical knowledge...conditions that cause,maintain, and change maladaptive behaviour. It is also designed to increase students' practice ability...to apply clinical knowledge effectively in their work with clients (O'Donovan & Dyck, 2005, p. 286)

This extract illustrates the general sentiment of this subordinate theme, however there are few examples of this theme within the ten sources; it comprises only 28.6% of the *congruence with clinical psychologists' roles* superordinate theme. The remaining 71.4% consists of the following subordinate theme, “inadequate preparation for realities of the profession”.

Inadequate preparation for realities of the profession

This subordinate theme is comprised of statements representing the alternative viewpoint that graduate level training programs inadequately prepare students for the realities of the

clinical psychology profession. Evidence for this subordinate theme is comprised of statements that refer to the limitations and short fallings of current training programs. An example of this subordinate theme is taken from the Arnett (2005) source:

the skills of many doctoral-level clinical psychologists graduating today from our graduate schools are significantly out of sync with the needs now required of psychologists (Arnett, 2005, p. 205)

This example expresses the common concern that the demands and realities of the clinical psychology profession have changed considerably over time, while the training programs have failed to adjust with them. There are several possible reasons given for this, some of which overlap with both the “scientist-practitioner model” and “modern role” research areas; a common rationalization is that because the majority of graduate training programs are based on the scientist-practitioner model, which has remained almost unchanged for the past fifty years, an incongruence have developed because changes have occurred in the reality of the profession.

Overall effectiveness of the graduate training programs

This is the second superordinate theme identified solely within the “graduate training programs” research area, and appeared in all of the sources. While congruence with the profession could be considered a dimension of a graduate program’s effectiveness, it has already been discussed as a separate superordinate theme. This is because previous research has suggested that, of all the factors that contribute to the overall effectiveness of a graduate training program, it is “congruence with the realities of the profession” that is best suited for individual examination (e.g., Kendall, 2006). It was mentioned, at least briefly, in all of the sources. This superordinate theme was divided into two subordinate themes, representing the opposing views that graduate training programs are either effective or ineffective at educating future clinical psychologists.

Effective in educating future clinical psychologists

This subordinate theme’s basis includes instances within all ten sources that focus on or suggest the positive, effective nature of graduate training programs in relation to the education of future clinical psychologists. This theme was developed from the instances within the ten sources that discussed or described the positive aspects of graduate training programs in relation to the long-term education of clinical psychologists. Examples for this are taken from the Cassin et al. (2007) and the Kenkel et al. (2003) sources:

training supervisors encourage students to diversify their skill sets beyond psychological assessment and psychotherapy to enhance their marketability and future career opportunities (Cassin et al., 2007, p. 35)

Professional psychology’s educators must instil in their students a commitment to lifelong learning (Kenkel et al., 2003, p. 802)

These extracts illustrate two measures of a graduate training program’s effectiveness; that they imbue the students with a range of skills that allows them to adapt to the demands of a variety of applications, and should introduce student to an internal motivator and sense of self-discipline that has previously been associated with academic psychologist. This subordinate theme comprises only 31.4% of the *overall effectiveness of the graduate training programs* superordinate theme. The remaining 68.6% is the ‘ineffective in educating future clinical psychologists’ subordinate theme.

Ineffective in educating future clinical psychologists

This subordinate theme represents the alternative, and majority, viewpoint that graduate level training programs ineffectually educate future psychologists, leaving them ill-prepared for the demands of the profession. Evidence for this subordinate theme is comprised of statements that refer to the limitations of current training programs and the problems faced by newly qualified clinical psychologists. An example of this subordinate theme is taken from the Koch (2005) source:

few programs expose their students to the...impact of mental health problems (Koch, 2005, p. 43)

This illustrates what is considered a common shortfall of graduate level training programs; there is a general consensus between the ten sources that such training programs are ineffective in educating future psychologists to all of the potential applications and impacts of their profession.

The scientist-practitioner model paradigm

This is the first superordinate theme to occur within the “paradigms/perceptions of the profession” research area, and appeared in each of the ten sources. Despite dealing with the scientist-practitioner model, it was not included in the “scientist-practitioner model” research area because it is specifically concerned with how it is perceived in relation to the professional environment of clinical psychology. That is, rather than viewing the scientist-practitioner model as a guideline for training and individual professional practice, this particular superordinate theme views the model in terms of the perceived overall roles that clinical psychologists should fulfil. This superordinate theme was divided into two subordinate themes; that it is perceived as the ideal clinical environment, or that more versatility is required.

The ideal clinical environment

This subordinate theme is one that supports the scientist-practitioner model as a template for the profession, and was compiled from numerous instances throughout all of the sources that are indicative of this positive perception. Examples of this are taken from the Donn et al. (2000) and Cassin et al. (2007) source:

... the split of the larger field of psychology into the American Psychological Society, which is more academically oriented, and the APA, which is more practice-oriented (Donn et al., 2000, p. 425)

clinical psychologists function in a variety of realms ... ranging from the academic/scientific to the clinical/professional (Cassin et al., 2007, p. 27)

These extracts illustrate that the perceived ideal clinical environment is one that mirrors the principles of the scientist-practitioner model. This subordinate theme comprises only 36.7% of the *paradigms/perceptions of the profession* superordinate theme, indicating that it is a minority viewpoint. The remaining 63.3% is the “more versatility is required” subordinate theme.

More versatility is required

This subordinate theme represents the alternative viewpoint that both the paradigm and the perception of the clinical psychology profession need to encompass more versatility.

Evidence for this subordinate theme comes from statements that discuss the alternatives views of the profession, the apparent paradigm shift towards a more diverse profession, and comments regarding the profession's openness to innovation. An example of this subordinate theme is taken from the King (2006) source:

the skills of the entrepreneur and the leader, psychologists will be equipped not simply to react to marketplace changes in health care (King, 2006, p. 53)

This extract represents the recurring opinion that clinical psychology should broaden its current paradigms and scope of influence, and while there is relatively little consensus regarding the precise nature of this (i.e., what areas clinical psychology should broaden into), the call for increased versatility is widespread.

Clinical psychology's identity

This is the second superordinate theme identified within the 'paradigms/perceptions of the profession' research area, and appeared in all of the sources; but this superordinate theme, and its subordinate themes, is also present in the "modern role" research area. It focuses on the identity of clinical psychology within the psychology profession, rather than within the larger professional world. This superordinate theme was divided into three subordinate themes derived from an overview of the suggestions and statements made within the sources; firstly, that the identity of clinical psychology should lie within mental health care; secondly, that it should lie within general health care; and thirdly that it should lie within more multidisciplinary/interdisciplinary fields.

Mental health care

This subordinate theme represents the collection of descriptions that suggest the perception that the identity of clinical psychology lies within mental health care, regardless of the specifics of the role of clinical psychologists. An example of this is taken from Cassin et al. (2007) source:

Clinical psychology developed in response to mental health movement (Cassin et al., 2007, p. 27)

Perhaps, the simplest illustration of the subordinate theme, clearly showing that the perceived identity of clinical psychology is embedded in mental health care, which is in congruence with the profession's historical origins (e.g., Brems et al., 1991). This subordinate theme comprises 43.8% of the *paradigms/perceptions of the profession* superordinate theme, which makes it, proportionally speaking, the majority perception. The two remaining subordinate themes, general health care and multidisciplinary/interdisciplinary fields, comprise 25.1% and 31.2% respectively.

General health care

This is the second subordinate theme within the *clinical psychology's identity*, and is representative of the perception of clinical psychology's identity in relation to a more general health care capacity, as opposed to the previously discussed mental health care identity. Evidence for this subordinate theme comes in the form of comments and descriptions that discuss the apparent shift in the perceived paradigm of clinical

psychology's focus broadening to encompass issues more directly related to general health. An example of this subordinate theme is taken from the Arnett (2005) source:

clinical psychology is transitioning from being a largely mental health profession to a broader health discipline that encompasses both mental and physical health (Arnett, 2005, p. 203)

This extract provides a clear illustration of the apparent shift in long-held paradigms about the perceived identity of clinical psychology; it acknowledges the mental health origins of the profession, while describing the need to expand into a more general practice.

Multidisciplinary/interdisciplinary fields

This is the third subordinate theme within the *clinical psychology's identity*, and is representative of the perception of clinical psychology's identity in a more multidisciplinary and/or interdisciplinary capacity. Evidence for this subordinate theme includes several areas and descriptions that consider the development of clinical psychology's identity into one that operates entirely within multidisciplinary teams developed to deal with both mental and general health issues. An example of this subordinate theme is taken from the Baker and Benjamin Jr. (2000) source:

... issues of relationships with other disciplines (psychiatry, nursing, social work, and school, counselling, and personnel psychology) (Baker & Benjamin, 2000, p. 246)

This example clearly specifies a potential combination that could comprise the proposed multidisciplinary/interdisciplinary approach to clinical psychology's identity, however this is not a definite formula, and many other combinations are discussed throughout the ten sources.

Clinical psychology's setting

This is the second superordinate theme to occur within the "modern role" research area, but is the first that is exclusive to it, and appeared in each of the ten sources. It refers to the settings that the sources describe modern clinical psychology being a part of and/or belong to. This superordinate theme was divided into four subordinate themes, developed in response to those settings discussed by the sources; firstly, that the setting of clinical psychology should be within universities and similar academic environments; secondly, that it should be within hospital/institutional settings; thirdly, that it should lie within a more private setting, with individual clinicians developing their own practices; and finally, that clinical psychology belongs in a more business-like setting.

University setting

This subordinate theme represents the instances throughout all ten sources that indicated the setting for clinical psychology is within universities and academic settings. This is incongruent with the practical, mental health side of clinical psychology, which, in the United Kingdom, requires a setting similar to the National Health Service. An example of this subordinate theme is taken from the Himelein and Putnam (2001) source:

Clinical faculty increasingly attach more significance to research ... in academic departments" (Himelein & Putnam, 2001, p. 541)

This illustrates the recurring notion that academic environments such as university settings are the ideal locations for clinical psychology to flourish. However, this contradicts earlier themes that have stressed the importance of maintaining a strong clinical practice. This subordinate theme comprises 29.8% of the *clinical psychology's setting* superordinate theme. The three remaining subordinate themes, hospital/institutional, private, and business settings, comprise 19.2%, 25.5% and 25.5% respectively.

Hospital/institutional setting

This is the second subordinate theme within the *clinical psychology's setting* superordinate theme, and represents the notion that the appropriate setting for clinical psychology is within hospitals and/or institutions, which suggests a more applied, practice-based approach to the profession, and was discussed in most of the sources. An example of this subordinate theme is taken from the King (2006) source:

... it is better to address the task of translating scientific knowledge from the laboratory to the practice domain (King, 2006, p. 55)

As with many examples within this superordinate theme, this extract is fairly abstract in its reference to a hospital setting being most desirable for clinical psychology. This theme becomes clearer on reading larger portions of the source, which makes concise evidence difficult to extract. The general premise of this subordinate theme, however, is that in order to be most effective in the field of mental health, clinical psychology should operate from a hospital/institutional setting in order to maximize its availability to those who would require its help.

Private setting

This is the third subordinate theme within the *clinical psychology's setting* superordinate theme, and is similar to the previously discussed subordinate theme of “hospital/institutional setting” in the sense that it does suggest that a clinical practice should be maintained, but that this practice would be best suited to private practice, ran by clinical psychologists themselves. An example of this subordinate theme is taken from the Cassin et al. (2007) source:

After clinical careers, independent practice is becoming one of the biggest applications of clinical psychology training (Cassin et al., 2007, p. 36)

This extract shows the growing trend within clinical psychologists to begin their own practices; while this would allow for increased specialization, there is always the risk that the cost involved in utilizing private services is too high for some of the most “at risk” groups, and therefore this particular subordinate theme is not discussed as an ideal setting, merely as an emerging alternative.

Business setting

This is the fourth and final subordinate theme within the *clinical psychology's setting* superordinate theme, and is based on the instances within the ten sources that suggest that the preferable setting for clinical psychology is within a

business environment. An example of this subordinate theme is taken from the Kock (2005) source:

...the potential of psychology as a knowledge industry except when it occurs within the confines of academia (Koch, 2005, p. 41)

This extract illustrates the notion that clinical psychology has the potential to expand from simply research and practice, but to become a separate business and/or industry, much like psychoanalysis has become in the USA.

Current demand for scientists and practitioners

This is the third superordinate theme to occur within the “modern role” research area, and the second that is exclusive to it, and appeared in each of the ten sources. It was developed in response to the occurrence of statements and descriptions within the sources that referred to the demand for clinical psychologists to fulfil different roles. This superordinate theme was divided into two subordinate themes that broadly represent the roles discussed by the sources as being in demand; the role of the clinical researcher and the clinical practitioner.

Demand for researchers

This subordinate theme represents the instances throughout all ten sources that described the modern demand in clinical psychology for researchers. This demand, however, does not express the view that clinical psychologists should all be researchers, rather it describes what the current demands placed on the modern clinical psychology profession require. An example of this subordinate theme is taken from the King (2006) source:

Because of the underdeveloped state of both Psychology and Clinical Psychology, research is by far the most important responsibility of the clinical psychologist (King, 2006, p. 54)

This is a clear example of the underlying rationale of the assertion that there is a greater demand for clinical researchers; in order to further develop, and ensure the future of the profession, an increase in specialized clinical researchers is required. This subordinate theme comprises 43.2% of the ‘*current demand for scientists and practitioners*’ superordinate theme, with the remaining subordinate theme, demand for practitioners, comprising 56.8%.

Demand for practitioners

This is the second subordinate theme within the *current demand for scientists and practitioners* superordinate theme, and represents the opposing view that the modern clinical environment requires more practitioners, rather than researchers. An example of this subordinate theme is taken from the Himelein and Putnam (2001) source:

...jobs are far more plentiful in practice than in research” (Himelein & Putnam, 2001, p. 541)

While this extract may not appear to describe the current demand for practicing clinical psychologists, in stating that clinical practitioner positions are “plentiful”, there is the suggestion that such positions are available because the demand for practitioners outweighs the current availability.

Throughout the examples and illustrations of this subordinate theme there is a general assumption that in order to reassert itself as a unique and valuable profession, clinical psychology must demonstrate its applicability and value in such a way as to attain public acknowledgement, as well as that of other professionals.

Further analysis

To determine whether or not there were any significant differences between the frequencies of the subordinate themes within each superordinate theme, a series of Chi square tests were used. For the sake of clarity, only significant differences were presented here.

Scientist-practitioner model research area

The Chi square analysis of the two subordinate themes, “scientist-practitioner model should adapt” and “scientist-practitioner model should be abandoned”, within this superordinate theme revealed that there was a highly significant difference between the frequencies of occurrence ($\chi^2(1)=23.684$, $p<0.000$), suggesting that the prominent demand is for the adaptation of the model.

Scientist-practitioner model & graduate training programs research areas

Synonymous with graduate training programs

The Chi square analysis of the two subordinate themes, “scientist-practitioner model based programs” and “non-scientist-practitioner model based programs”, within this superordinate theme revealed that there was a very significant difference between the frequencies of occurrence ($\chi^2(1)=11.308$, $p<0.001$), suggesting that the prominent interpretation is that graduate training programs are based on the scientist-practitioner model.

Graduate training programs research area

Congruence with clinical psychologists' roles

The Chi square analysis of the two subordinate themes, “adequate preparation for realities of the profession” and “inadequate preparation for realities of the profession”, within this superordinate theme revealed that there was a moderately significant difference between the frequencies of occurrence ($\chi^2(1)=7.714$, $p<0.005$), suggesting that the prominent perspective is that graduate training programs inadequately prepare students for the role of clinical psychologist.

Overall effectiveness of the graduate training programs

The Chi square analysis of the two subordinate themes, “effective in educating future clinical psychologists” and “ineffective in educating future clinical psychologists”, within this superordinate theme revealed that there was a significant difference between the frequencies of occurrence ($\chi^2(1)=4.829$, $p<0.028$), suggesting that the prominent interpretation is that graduate training programs are ineffective overall.

Paradigms/perceptions of the profession research area

The scientist-practitioner model paradigm

The Chi square analysis of the two subordinate themes, “ideal clinical environment” and “more versatility is required”, within this superordinate theme revealed that there was a very significant difference between the frequencies of occurrence ($\chi^2(1)=6.898$, $p=0.009$), which suggests that the prominent paradigm regarding the scientist-practitioner model is that it requires more versatility.

Paradigms/perceptions of the profession & modern role research areas

Clinical psychology's identity

The Chi square analysis of the three subordinate themes, “mental health care”, “general health care” and “multidisciplinary/interdisciplinary fields”, within this superordinate theme revealed that there was a very significant difference between the frequencies of occurrence ($\chi^2(2)=12.286$, $p=0.002$), suggesting that the prominent perception of clinical psychology's identity lies within mental health.

Modern role research area

Clinical psychology's setting

The Chi square analysis of the four subordinate themes, ‘university setting’, ‘hospital/institutional setting’, ‘private setting’ and ‘business setting’, within this superordinate theme revealed that there was no significant difference between the frequencies of occurrence ($\chi^2(3)=1.085$, $p=0.781$), suggesting that while the four settings are all acknowledged, there is no single one that is prominent.

Discussion

This study revealed that the current environment surrounding clinical psychology has become fraught with uncertainties and divisions regarding key aspects of the profession. On the one hand, the findings suggest that the scientist-practitioner model, which forms the basis of clinical psychology (Raimy, 1950), needs to be adapted in order to maintain a positive influence in clinical psychology. In contrast, however, the findings also suggest that the graduate training programs, which are based on the scientist-practitioner model, inadequately prepare their students for the realities and demands of the clinical psychology profession. The implications of these will be discussed further in relation to the research areas they belong to.

The scientist-practitioner model

Overall opinion of the scientist-practitioner model

The lack of significant difference between the two subordinate themes suggests that there is no one prominent opinion regarding the scientist-practitioner model; rather there are psychologists who believe the model is beneficial and those who believe it is detrimental, and neither perspective holds a majority.

Future of the scientist-practitioner model

The subordinate themes herein were found to have the highest level of significant difference, suggesting that there is a prominent consensus that the scientist-practitioner model should be adapted to meet the demands of modern clinical psychology, thereby increasing its effectiveness. One such suggested adaptation would be to widen the application of the model, from being the ideal of the individual, to being the overall ideal of the profession.

Graduate training programs*Congruence with clinical psychologists' roles*

The dominant viewpoint expressed within superordinate theme is one that perceives current graduate training programs to be incongruent with the roles of clinical psychologists, and are therefore provide inadequate training.

Overall effectiveness of graduate training programs

Almost an extension of the previous superordinate theme, this particular superordinate theme supports the previous dominant viewpoint that current graduate training programs are ineffectively training students for the expectations, demands and skills required.

The scientist-practitioner model & graduate training programs*Synonymous with graduate training programs*

The significant difference found within this superordinate theme illustrates the influence of the scientist-practitioner model, because it is perceived as being the basis of the majority of graduate level clinical psychology training programs. It is possible that this is the underlying reason for the prominent negative opinions regarding graduate training programs; this study found that the dominant perception of the scientist-practitioner model is that it requires adaptation for it to be fully beneficial to modern clinical psychology, and with most graduate training programs being based on this currently flawed model, it is reasonable to assume that the perceived shortcomings of graduate training programs is directly related to the limitations of the model.

Paradigms/perceptions of the profession*The scientist-practitioner model paradigm*

The current study found that the paradigm surrounding the scientist-practitioner model appears to be undergoing a shift, and while the outcome of paradigm shifts cannot be accurately predicted (Kuhn, 1970), there was a dominant general demand for increased versatility within the model, although the specific suggestions within the ten sources varied considerably. Increasing the versatility of the model could form one aspect of the overall adaptation, which was also found to be a dominant theme.

Paradigms/perceptions of the profession & modern role*Clinical psychology's identity*

Of the three separate fields that were discussed within the ten sources as relating to the perceived identity of modern clinical psychology, mental health care was the found to be

statistically dominant ($p < 0.002$). This is reflective of the origins of clinical psychology, which began as a strict mental health profession (Albee, 1970), and shows that despite the instances throughout the sources that discuss both general health care and multidisciplinary teamwork as possible perceived identities, there is still a strong inclination to keep clinical psychology's identity firmly within mental health care.

Modern role

Clinical psychology's setting

There were four settings discussed throughout the sources, however there was no significant difference between them. This could be the result of two potential circumstances; firstly, that modern clinical psychology operates within many different settings, and clinical psychologists who work within the NHS usually belong to a multidisciplinary team (NHS, 2007); secondly, that the focus of clinical psychology has broadened considerably since its inception, resulting in a dispersion of its traditional settings.

Current demand for scientists and practitioners

The lack of significant difference between the two subordinate themes suggests that there is no discernable difference in the "type" of clinical psychologist currently in demand, and the frequency of the subordinate themes is relatively equal, suggesting that there is an even demand for clinical psychologists in general.

Implications and limitations

The objective of this study was to examine the current environment and circumstances surrounding clinical psychology by exploring four main areas within the clinical psychology profession; the scientist-practitioner model, graduate training programs, paradigms and perception of the profession, and the modern role of the clinical psychologist. This study investigated issues of conflicting expectations, graduate training dissonance, paradigms and the apparent role of the clinical psychologist in the modern environment, as well as how each of these factors relates to the founding principles of the scientist-practitioner model, using ten published journal articles as sources. A thematic-based meta-analysis methodology was utilized. The significant findings were the following; the scientist-practitioner model needs to adapt to survive, preferably with the aim of becoming more versatile; the majority of graduate level clinical psychology training programs are based on a flawed version of the scientist-practitioner model that renders the training inadequate and ineffective; and that the identity of clinical psychology should remain firmly grounded in mental health care, so not encroach on the territory of any other psychological divisions. Implications of the findings and suggestion for future research are discussed.

This study revealed the differences between the academic opinions on several key themes, which can act as indicators of the potential future paradigm that will surround and encase clinical psychology. The main implications all appear to be linked to the scientist-practitioner model; the issues surrounding the inadequate and ineffective graduate level clinical psychology training programs could potentially be resolved by re-evaluating and adapting the scientist-practitioner model which forms the basis of the majority of them,

and this should, in turn, begin to resolve some of the issues surrounding clinical psychology's identity and setting.

The latter issue, of clinical psychology's identity and setting, is one of particular importance given the current trend in academic publications to discuss the potential amalgamations of the divisions of clinical psychology and either health or counselling psychology (e.g., Arnett, 2005; Cassin et al., 2007). The prevailing perspective found in the current study is, however, that clinical psychology should remain a separate division, and should work towards fortifying its identity and perceived value within mental health (e.g., Brems, Thevenin, & Routh, 1991).

The current study, however, does have its limitations; primarily in its methodology. While the use of a systematic review as the basis for a thematic meta-analysis allowed for increase validity and applicability of the findings (Joffe & Yardley, 2004), it also limited the accuracy; by requiring the use of broad research areas, rather than specific research questions, and emergent themes, the current study was unable to gather detailed information and/or clarification on issues raised. One possible way to minimize this particular limitation in future research that uses a similar methodology would be to increase the sample size, therefore increasing the likelihood of finding more appropriate, detailed data.

The coding system that was developed and applied by the researcher is also a limitation of the current research; due to time and funding constraints, it was not fully tested for reliability. If the study was to be repeated, or its methodology utilized in future research, the coding system should be subjected to a test of inter-rater reliability (e.g., Joffe & Yardley, 2004) before being applied to new sources of data.

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Appendix I

Inclusion criteria and searching procedure

The Internet database PsycARTICLES (PsycARTICLES, 2007) was used for two reasons; the extensive number of relevant journal articles available through the subscription of the researcher's institution to the database, and the effective nature of the database's 'advanced search' function. The search parameters developed by the researcher, to allow for effective exploration of the available journal articles for those most relevant for inclusion, were applied to the database's 'advance search' function (Marks & Sykes, 2004).

The initial parameter used was the publication date of the articles; all potential sources were required to have been published within the last ten years. This parameter was included to increase the overall relevance of the final sources, and also to provide an accurate representation of the current paradigm surrounding the profession of clinical psychology. The second search parameter was that the articles contained at least two of the following key terms; clinical psychology, clinical training, scientist-practitioner model, and professional role. It had been concluded from the literature review conducted at the beginning of the current study that these key terms best described the areas of interest that were at the centre of this research.

Once these parameters had been applied to the PsycARTICLES database advanced search, the researcher examined the abstracts of the articles recovered individually in order determine which were most appropriate to the adapted thematic-based meta-analysis methodology. This 'appropriateness' was defined by one basic factor; the number of potential interpretations and opinions each article appeared to contain that related to the overall focus of the current study.

