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Qualitative research in physical therapy: A critical discussion on mixed-methods  
research

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### Abstract

This paper critically discusses mixed methods research. A case is first offered as to why it is relevant for physical therapists to engage with the mixing of quantitative and qualitative methods and engage in debates about the intermingling of these techniques. Next, to provide a context for critical discussion several paradigms are outlined. Following this, two positions on mixed methods research are discussed. These are a pragmatist position and a purist position. The paper closes by suggesting that physical therapy researchers consider adopting the role of a connoisseur in order to engage with the critical issues emerging in mixed method research.

Keywords: qualitative research; mixed methods; pragmatism; purism.

For the first time in its four editions, *The SAGE Handbook of Qualitative Research* (Denzin & Lincoln, 2011a) recently dedicated a chapter to mixed methods. According to Creswell and Plano Clark (2011), mixed methods research is a type of research that includes collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. For example, within physical therapy, Camp, Appleton, and Reid (2000) used a close-ended survey and semi-structured interviews to examine the impact of a structured pulmonary rehabilitation program on quality-of-life with chronic obstructive pulmonary disease. Moreover, Rauscher and Greenfield (2009), along with Shaw, Connelly, and Zecevic (2010) offered an argument for the place of mixed methods research as an effective means of supporting evidence-based practice in physical therapy.

According to Rauscher and Greenfield (2009) mixed methods research in physical therapy is valuable because of the high-quality inferences it yields and the overall complexity revealed. For them, the strength of mixing qualitative methods with quantitative methods also lies in its ability to cross-validate results and offset the limitations of using only one methodological approach. Moreover, physical therapy is a health care profession responsible for restoring function in patients who frequently present complex movement impairments that are influenced by ongoing social and personal factors. As such, for Rauscher and Greenfield, “mixed methods research provides physical therapists with opportunities to broaden their scope and depth of understanding patients’ illness, injury, and rehabilitation” (p. 92). Similarly, and more recently, Shaw et al. (2010) proposed that mixed methods research can provide research evidence that integrates the multiple concerns and practice paradigms of a physical therapy “clinician better than either qualitative or quantitative methodology in isolation” (p. 511).

It would seem, then, that researchers in physical therapy would do well to turn to mixed methods research and get the best of ‘both worlds’. If combining two methods produces higher quality research than one, mixing qualitative with quantitative methods is the obvious direction to take. More is better. However, is it? Is the mixing of methods this straightforward? The purpose of this paper is to offer a critical discussion of mixed methods research. This is of significant relevance, we believe, for physical therapists at this point in time. Within physical therapy there have been increasing calls for mixed methods research (e.g., Rauscher & Greenfield, 2009). Yet, although there are critical discussions on this kind of research outside physical therapy, within the physical therapy literature they are relatively rare. What papers there are on mixed methods instead largely aim to provide a rationale for the place of mixing quantitative and qualitative methods in physical therapy and celebrate it. This is not to say there is complete critical silence on this kind of research (e.g., Shaw et al., 2010). On the rare occasions when critiques of mixed methods are presented within the physical therapy literature they are mostly cursory. What is therefore needed within physical therapy is work that delves deeply into the critical waters of mixed methods and asks questions of this kind of research along the way. This is not to argue against mixed methods research. Rather, it is to say that without critical discussion there is a risk of simply (re)producing a celebratory discourse on mixing methods and, in turn, overlooking critical and complex matters that need to be engaged with to develop our understandings of mixing methods.

Engaging in critical discussion of mixed methods within physical therapy is also highly relevant for the future of qualitative research. As Denzin (2009, 2010) suggested, the increasing emphasis in universities and by governments on science-based research (SBR), or what is also known as science, technology, engineering, and

mathematics research (STEM), has meant that quantitative methods are often elevated above qualitative methods. For example, the ‘gold standard’ or ‘best’ study design for evaluating interventions is deemed to be the randomized control trial (RCT). The term ‘best’, of course, implies a hierarchy of methods and the focus often continues to be placed on RCT’s. Likewise, consider the words of the Primary care editor of the British Medical Journal (BMJ).

My first impression, and I risk a flood of angry rapid responses, is to ask how much more qualitative work we need in this field. While we do publish qualitative studies in the BMJ, we look for works that give particular insights that add significantly to current knowledge and are of importance to our general clinical readership. To use a term from the qualitative literature, I think we may have reached saturation. Qualitative research, in particular, has been very successful in raising awareness of suffering and helped our understanding of the human and personal dimension – there have been very important insights. We now need to look at what we can do about it-measuring the effectiveness of interventions. (Domhnall Macauley, Primary care editor, BMJ, 19 April 2011, cited in Audrey, 2011).

For Denzin (2009, 2010), like us (e.g., Smith, 2010; Sparkes & Smith, 2009; forthcoming; Phoenix, 2010; Phoenix & Smith, 2011) and others (e.g., Hesse-Biber, 2010; Lincoln, 2010), the elevation of quantitative methods above qualitative methods – and the underestimation of the scope and contribution of qualitative research - should not mean that qualitative researchers adopt a victim narrative. It doesn’t call for us to wallow in a belief that our work is misunderstood by all natural scientists. Nor however should the elevation of quantitative methods above qualitative methods mean that qualitative researchers inevitably jump into bed with quantitative

researchers and immediately offer our services to do mixed methods research. This is because, as Denzin warned, there is the danger that qualitative research is reduced to being a servant of SBR or STEM work. There is likewise the risk of the terms of the conversation being set by those who are not experts in qualitative research. As such, Denzin proposed, qualitative researchers need to take responsibility themselves by not only doing high quality qualitative research per se, but also engaging in critical dialogue about mixed methods work. The voices of researchers working within the field of physical therapy, we would suggest, should be part of any dialogue on mixed methods.

#### A critical consideration of mixed methods

Set against this background, in what follows we first contextualize the critical discussion on mixed methods by describing various paradigms. Next, two positions on mixed methods – pragmatism and purism - are outlined and critically discussed with reference to paradigmatic assumptions. We conclude by suggesting that mixed methods research should continue, but for it to develop in nuanced ways researchers within physical therapy need to engage more with some complex issues.

*Paradigms: From post-positivism, to critical realism, to interpretivism, to critical participatory inquiry*

The whole issue of mixed method research is highly contested. This has led to heated debates across a number of disciplines. At the heart of this contestation is the commensurability question surrounding paradigms. As commonly used in the methods and methodology literature, a paradigm is a “set of *basic beliefs* (or metaphysics) ... a *worldview* that defines, for its holder, the nature of the ‘world’, the individual’s place in it, and the range of possible relationships to that world and its parts” (Guba & Lincoln, 1994, p.107). At the most general level, there are various

paradigms, that is, worldviews that guide action. These include 1) post-positivism; 2) critical realism; 3) interpretivism, or what is at times called constructionism; and 4) critical participatory inquiry. Importantly, the basic beliefs of each paradigm require researchers to respond to some fundamental questions concerned with ontology (What kind of being is the human being? What is the nature of reality?) and epistemology (What is the relationship between the inquirer and the known?) (Denzin & Lincoln, 2005). Methods, in contrast, denote the practical means by which data are identified, collected, and analyzed. Drawing on Lincoln, Lynham, and Guba (2011), Schwandt (1997), Smith (1989, 1993, 2009), Smith and Deemer (2000), and Sparkes and Smith (forthcoming), we now describe the various paradigms and in so doing highlight differences between them.

*Post-positivism* refers to a paradigm that responds to the *ontological* question by adopting *subtle realism* and *epistemological* questions regarding the nature of the relationship between the knower or would-be knower by adopting a *modified dualist/objectivist* epistemology. In terms of ontology, post-positivism refers to the assumption that there is an *external* reality that can be (probabilistically) apprehendable. That is, a single reality exists and there is a real world externally out there independent of our interest in or knowledge of that world. This is a world that can be known, at least in principle, approximately as it really is. The reality is ‘out there’, external to the researcher, existing prior to his or her interest in it, awaiting discovery. It imposes itself on individual consciousness from without, and is driven by immutable natural laws and mechanisms that can never be fully apprehended, only approximated. The goal of quantitative research informed by post-positivism is, therefore, to formulate rules beyond time and space in order to control and predict as best as possible. The aspiration is for theory-free knowledge.

A *dualist* and *objectivist* position refers to the assumption that the researcher and the researched 'object' are independent entities, and that the researcher is capable of studying the object without influencing it or being influenced by it. That is, the knower can stand outside of what is to be known, values can be suspended in order to understand, and 'true objectivity' or something very close to it is possible as long as the researcher adopts a distant, detached, non-interactive posture, as if looking at the world through a one-way mirror. To reduce or eliminate then the potential dangers of values introducing 'bias' to the proceedings, quantitative researchers, advocate the use of technical procedures, as these are neutral and objective. Post-positivism adopts a *modified* version of this dualist and objectivist position described in that dualism is largely abandoned as not possible to maintain, but objectivity remains a 'regulatory ideal' and replicated findings are deemed *probably* true.

*Critical realism*, or what is more loosely referred to as neorealism, is like post-positivism in that it responds to *ontological* questions by announcing that there is a real world out there independent of our interest in, or knowledge of that world that can be known as it really is - at least in principle (in critical realism this is termed *transcendental realism*). As Denzin and Lincoln (2011b) commented, "Critical realists agree with the positivist that there is a world of events out there that is observable and independent of human consciousness" (p. 11). However, as they also suggested, they disagree with the positivists on an epistemological level when they commit to the belief that "Knowledge about this world is socially constructed" (p. 11). In this sense, critical realism believes in a *subjectivist* and *constructionist epistemology*. That is, there can be no separation of the researcher and the researched. Values inescapably mediate and shape what is understood. The knower and the known are interdependent and fused together in such a way that the 'findings' are the creation of the process of

interaction between the two. Our practices, hypotheses, and background knowledge all strongly shape what we know and how. Therefore, unlike those researchers who adopt a dualist and an objectivist position, researchers who commit to a constructionist epistemology believe there can be no theory-free knowledge and we have to live with this as finite beings.

In contrast to post-positivism, but like critical realism, *interpretivism* subscribes to a *subjectivist* and *constructionist epistemology*. However, the *interpretivists* also differ from both the post-positivists and critical realists in terms of how they answer ontological questions. For qualitative researchers who commit to interpretivism, there is a belief in an *internal/relativist* view of reality. That is, ontologically interpretivists conceive social reality as multiple, subjective, and existing in the form of mental and discursive constructions. This however does not mean that the interpretivists reject any notion of a physical world out there independent of them. In a very common sense way, the interpretivists accept that there is a real material world. But, as Smith (1989) noted, whilst physical things do exist independent of ourselves, interpretivists stress the mind plays a foundational role in the shaping or constructing of social reality, and therefore what exists “is not independent of, but in a very significant sense is dependent on our minds” (p. 74). Again, let us be clear. This does not mean that the mind ‘creates’ the world of objects or what people say or what people do. Rather, it means that how we give meaning to objects and how we interpret the movements and utterances of other people in terms of the motivations and meanings we assign to them are shaped by the determining categories of the mind and our discursive resources. As Rorty (1989) put it:

We need to make a distinction between the claim that the world is out there and the claim that truth is out there. To say that the world is out there, that it is

not our creation, is to say, with common sense, that most things in space and time are the effects of causes which do not include human mental states. To say that truth is not our there is simply to say that where there are no sentences there is no truth, that sentences are elements of human languages, and that human languages are human creations (pp. 4-5).

This issue is well illustrated by Dingwell (1992) in his reflections on the notion of disease.

This point is important in understanding the boundaries between social and natural scientific studies in medicine. There are no diseases in nature, merely relationships between organisms ... Diseases are produced by the conceptual schemes imposed on the natural world by human beings, which value some states of the body and disvalue others. This is not to say that biological changes may not impose themselves on us, but rather that the significance of those changes depends upon their location in human society. The normal physiology of ageing is relevant in very different ways to an East African herdsman who sees it as a mark of advancing status, power and sexual attractiveness and to a Californian actress who sees it as the beginning of her decline as a social being. (p. 165)

Accordingly, unlike post-positivism and critical realism, interpretivism assumes *both* an internal/relativist view of reality and a constructionist epistemology. Further, in interpretivism, the process of inquiry is a matter of interpreting the interpretations of others. The aim of research is to focus on the particular ways in which people construct their meanings of a given phenomenon, seeking to expand the understanding of the phenomenon through the individual case. The job of qualitative researchers who subscribe to interpretivism is to acknowledge and report these

different realities, relying on the voices and interpretations of the participants through extensive quotes, presenting themes that 'reflect' the words and actions of the participants, and advance evidence of different perspectives on each theme.

Finally, *critical participatory inquiry* adopts a belief in *constructionist epistemology*. Thus, this paradigm differs from post-positivism, but is similar to interpretivism and critical realism. What separates critical participatory inquirers from the interpretivist and critical realist inquirers is that some commit to a dualist/objective/transcendental ontology whereas others believe in an internal/relativist view of reality. Moreover, for critical researchers, achieving a correct understanding of individuals' meanings is only a necessary preliminary to social inquiry and not the whole substance of their theoretical enterprise. They argue that to focus only on the subjective meanings of action tends to imply that social reality is nothing over and above the way people perceive themselves and their situation. However, for them, social reality is not simply structured by concepts and ideas but is also structured and shaped by historical forces as well as economic and material conditions. Importantly, these things also structure and affect the perceptions and ideas of individuals so that 'reality' may be misperceived as a consequence of the operation of various ideological processes. Thus, uncovering these processes and explaining how they can condition and constrain interpretations of reality are vital requirements. As such, critical researchers see much qualitative research as suffering from 'macro blindness' in that it tends to ignore the unequal power the relationships within which people operate when their realities are constructed in terms of social class, gender, sexual orientation, disability, race, ethnicity, and religion, and so tells us little about how individual and group behaviour is influenced by the way that society is organized. In this regard, the central line of tension between critical

researchers and other forms of inquiry that are informed by interpretivism is in the call to action. This call might be in terms of internal (individual) transformation or external social transformation

Indeed, the key difference that separates critical participatory inquiry from the other interpretivism, as well as the other two paradigms, lies in the researchers explicit goals to generate social change and emancipate. As Schwandt (1997) noted, a critical social science aims to integrate theory and practice in such a way that “individuals and groups become aware of the contradictions and distortions in their belief systems and social practices and are then inspired to change those beliefs and practices” (p. 24). For him, this critical social science is also practical and normative and not merely descriptive. It rejects the possibility of a disinterested social scientist and “is orientated toward social and individual transformation” (p. 24).

While there are a number of critical theories that inform the critical paradigm, another core idea is that knowledge is structured by existing sets of social relations. The aim of a critical methodology is to provide knowledge which engages the prevailing social structures. These social structures are seen by critical researchers, in one way or another, as oppressive structures. As such, one of the central intentions of critical is *emancipation*. That is, enabling people to gain the knowledge and power to be in control of their own life. Thus, the language and intent of this approach is overtly political, and seeks to dig beneath the surface of historically specific, oppressive, social structures to focus on moments of domination, ideology, hegemony, and emancipation in social life with a view to instigating both individual and social change.

*Mixed methods and never the twain shall meet? Pragmatism and purism*

As noted, mixed-method research is highly contested. At the heart of this contestation, is the commensurability question surrounding paradigms. For one family of researchers, paradigms *are* “commensurable; that is, they are retrofitted to each other in ways that make simultaneous practice of both possible” (Lincoln et al., 2011, p. 169). Such a family, or position, that argues paradigms are commensurable has been termed pragmatism. In physical therapy, as Shaw et al. (2010) noted, “pragmatism provides a strategy to integrate principles from each of a critical, interpretive, and scientific/positivist paradigm to more optimally inform practice” (p. 512). Pragmatism has its historical roots in the ideas of John Dewey and others, and in relation to mixed methods favours a ‘what-works’ approach to develop better understandings of phenomena. It attends, as Shaw et al. proposed, to the practical nature of reality, finding truth in the solutions of problems, and discovering the consequences of actions and objects. They suggested that pragmatism permits the use of many different methods to obtain knowledge claims that have utility in informing physical therapy practice, as it takes the research question, or the problem, as the most important determinant of the research design. Mixed methods research allows the integration of analytical results from both qualitative and quantitative data collection methods into convergent conclusions for a research study. Shaw et al. further argued that this combination of qualitative and quantitative lines of inquiry through a pragmatist position permits a more comprehensive approach to a research question that is based on the complexity and context of physical therapy practice.

Also within physical therapy similar points were made by Rauscher and Greenfield (2009) in relation to mixed methods research. For them, “Careful consideration and explicit articulation of a project’s purpose constitutes the *first* step in deciding on a mixed methods plan” (emphasis added; p. 93). Next, they proposed

that, in mixed-methods research the researcher must make three key decisions before deciding which design strategy is most appropriate for a project. They are (1) the priority given to the quantitative and qualitative methods and data, (2) the sequence of implementation of methods for data collection, and (3) the phases in which the data and findings will be integrated. Rauscher and Greenfield then added, “Underlying the choices regarding each of these factors is the aim of the overall project” (p. 93). In such ways, as Bryman (2007) noted, “epistemological and ontological issues have been marginalized to a significant extent as pragmatism has emerged as a major orientation to combining quantitative and qualitative research” (p. 17).

Accordingly, for pragmatists, the basic differences between paradigms are deemed commensurable. As a consequence, the epistemological and ontological differences between paradigms do not really matter. What matters for proponents of a pragmatist position instead is the purpose of the research and the methods used to meet it.

However, for others termed *purists*, when it comes to the mixing of methods, epistemology and ontology do matter. For those that adopt a purist position, a pragmatic position to mixed-methods is deeply questionable as different paradigms are incommensurable. For example, post-positivists contend that because the whole point of research is the pursuit of truth (however difficult it is to get at) then if true from false knowledge claims cannot be sorted out, then there is no point to doing social research. One key way to sort out trustworthy from untrustworthy claims, and to validate research for the post-positivists, is through the proper use of methods as these are objective or can get us to close to the reality as it truly is (Smith, 1993).

However, the interpretivists counter this. For them, methods are not neutral or objective but instead are themselves a product of social and cultural influences

(Sparkes, & Smith, 2009; Smith, 2009). MacKenzie (1981) argued that even statistics, seemingly most neutral/objective tool in the social researchers bag, are socially constructed within the context of certain value orientations to accomplish particular goals (see pp.153-182 for MacKenzie's discussion of the dispute between Pearson and Yule on different interests-different statistics). Thus, for the interpretivists, methods cannot sort out trustworthy from untrustworthy claims (as post-positivists desire). This doesn't though mean people can stop talking about truth and so on. They can continue to talk about the truth but, for interpretivists, as long as it is recognized that the concept is a matter of time and place contingent agreement and not one that can be referenced to depicting reality as it really is (Smithh, 1993; Smith & Deemer, 2000).

In addition to these tensions over what methods can achieve, for purists the issue of commensurability cannot be swept under the carpet as to do so risks the methods tail wagging the dog. For purists, methods are simply methods. They are practical ways to help construct meaningful realities. Following the logic of justification, what matters are not can methods be mixed, but rather the researchers' ontological and epistemological assumptions that these techniques, procedures, and strategies are based on (Smith, 1993; Smith, 2007). In other words, paradigmatic questions concerning ontology and epistemology matter because they underpin methods, coming then before, and always informing, issues such as the study's purpose, or which design strategy is most appropriate for a project. Given this, for purists, researchers must take epistemology and ontology very seriously. They cannot be brushed under the carpet.

Furthermore, the mixing of methods in one project is problematic for purists when critical realist researchers are added into the mixture of post-positivist quantitative and interpretivist qualitative research. For instance, with respect to

ontological differences between interpretivism and post-positivism or critical realism, on the side of the latter two paradigms there is the claim that there must be something outside of ourselves - an independently existing social reality - which researchers can call upon to sort out different claims to knowledge. The interpretivists argue back that the ultimate implication of no theory-free knowledge is that social reality cannot accomplish the task required of it by post-positivists; once one climbs aboard the train of a fallible epistemology there is, as Smith (1993) put it, no station at which to get off that can be anything more than arbitrarily chosen. Thus, for the interpretivist their ontological position would be considered incommensurable with the post-positivist or critical realist view of reality.

The interpretivist would also likely to be unconvinced by the critical realist attempt to couple together a dualist/objective/transcendental/neorealist ontology with a constructionist epistemology and thereby salvage, as interpretivists see it, some remnants of the empiricist project (Smith & Deemer, 2000). The dual commitment to, on the one hand, believing there is an independent existing reality out there that at least in principle can be known and, on the other hand, the idea that we can never know if we have depicted this reality as it really is, for interpretivists, an untenable position. That is to say, for the interpretivist, a critical realist cannot have it both ways. Such a balancing act between believing there is a reality independent of them that in principle can be known as it is whilst also saying that knowledge is social constructed is philosophically not tenable (see Smith & Deemer, 2000). To escape this untenable position, the critical realist researcher has eventually to go in one of two directions, the interpretivist would argue. Either the critical realist must allow their ontology of realism to override their interpretivist epistemology of constructionism, or they accept that interpretivism looms far larger in their formulations than they realize

or would desire (Smith & Deemer, 2000; Sparkes & Smith, 2009). In accepting this, they end up very much looking very much like an interpretivist, not a critical realist. Critical realists would however disagree. They might say that in practice they are committed to the idea there is a reality physical out there independent of their knowledge of it. But in the same breath they state they're equally committed to the idea that they can never know if, or, when, they have accurately depicted that reality. There is no big problem with this. It works, and it is good science. But no matter who is 'right' or 'wrong', we still arrive back at the same issue. There is incommensurability between the critical realists and the interpretivists. This can also deepen when the goals of the research and the researcher role are examined.

The goal of inquiry for the post-positivist is 'prediction and control', for the interpretivist and critical realist it's 'understanding the natural setting', and for the critical participatory inquirer it is about 'empowerment and emancipation'. Further, the researcher's role within post-positivist quantitative research is that of 'disinterested scientist' whereas for the qualitative researcher who subscribes to interpretivism or critical realism the same role becomes that of 'passionate participant'. Thus, adding further difficulty to integrating paradigms is the researcher's role. In critical participatory inquiry the role is of a 'transformative intellectual' who operates as an advocate and an activist. Accordingly, how can a researcher be in one mixed methods study *simultaneously* all disinterested, passionate, and morally implicated in not just the research, but producing change too? How can they *at once* seek to control, understand, and emancipate? For purists, this is all problematic. Or, at the very least, mixed methods researchers grounded in pragmatism have yet to provide convincing arguments as well as practical examples in action as to

how this can all be done. Incommensurability is, in other words, still an important matter.

This is supported by Lincoln (2010). Although she is not against utilizing a variety of methods when appropriate to accomplish some purpose, and has done so countless times, she does have concerns about mixing paradigms or metaphysical models. This is particularly so when the simplistic declaration is made by some mixed methods advocates that one's philosophical belief system are deemed meaningless or irrelevant. For her, the research we do is always already theory laden. Therefore, efforts to claim that it is not, by arguing that incommensurability is not an issue if one just declares themselves as a pragmatist, "are both naive and fraudulent...We do not do ourselves, or our work, or our students any service when we fail to make the premises, assumptions and paradigmatic bases of our work clear, or worse yet, pretend we have no premises, assumptions, or paradigmatic bases" (p. 7).

According to Lincoln (2010), the espoused pragmatism of the mixed-methods approach that argues that philosophies, paradigms and metaphysics do not matter, might well be part of a larger group who seek to surveil, contain and discipline qualitative research. Her argument with the mixed-methods theorists is not that they mix methods but that the pragmatism claimed by some of them rests at the enacted level only. As such, "The mixed methods pragmatists tell us nothing about their ontology or epistemology or axiological position" (p. 7). Yet as Lincoln emphasizes, paradigms and metaphysical *do* matter.

They matter because they tell us something important about *researcher standpoint*. They tell us something about the researcher's proposed *relationship to the Other(s)*. They tell us something about what the researcher thinks *counts as knowledge*, and *who can deliver the most valuable slice of*

*this knowledge*. They tell us how the researcher intends to *take account of multiples and contradictory values* she will encounter. (Emphasis in original; Lincoln, 2010, p. 7.)

It would appear that for pragmatists paradigms are commensurable. But for purists they are incommensurable. Thus, the purist mixed method researcher needs to grapple with, rather than sidestep, some important matters about epistemology and ontology. The contested nature of mixed methods is given extra force when one considers the following arguments. First, methods don't emerge out of thin air. They are informed by, and extend out of, particular theoretical sensibilities. Thus, theory is also vital when considering mixed methods research. As Silverman (2000) put it, "neither quality nor choice of method is ever purely a technical matter. Our theoretical orientation, whether explicit or implicit, is what drives our research" (p. 283). This has some significant implications for researchers seeking to mix methods whilst minimizing the importance of theory.

As case in point it would be untenable to mix qualitative methods informed by a discursive theoretical sensibilities (Potter & Hepburn, 2008) with a quantitative study grounded in cognitive theories (e.g. self-determination theory). This is because the former critiques cognitive views of science. A discursive qualitative researcher takes a radically different approach to understanding human lives in which, for instance, attitudes about engaging in rehabilitation are not held in a person's head as cognitivism would theorize them, but instead performed in interaction with physical therapists. Given this, to ignore or relegate theory, to simply brush these aside because they interfere with a 'what works approach', is problematic for a purist. An untenable position is produced when mixed methods research is based on different/competing ontological, epistemological or theoretical foundations and, as such, serious doubts

are raised about the legitimacy of the research, how results can be theoretically interpreted in a plausible and coherent manner, and, for example, how one assesses the quality (e.g., credibility, trustworthiness, validity) of mixed methods research.

Second, researchers, like Bryman (2007) and Coleman, Guo, and Dabbs (2007), have seen little evidence of mixed methods researchers genuinely integrating their findings, or paying sufficient attention to the writing up of qualitative research findings in nuanced ways. One consequence of this is what Hesse-Biber (2010) described as ‘methodological orthodoxy’. For her, this orthodoxy currently favours, “quantitative methodologies, with a mixed methods praxis that positions qualitative methods second and quantitative methods as primary with an overall mixed methods design that is in the service of testing out quantitatively generated theories about the social world” (p. 455). In favouring quantitative methods, qualitative research is thus not given equal status. There is as a consequence the danger of this kind of research being seen as ‘second class’ in the research community or reduced to a method that services the needs of more important quantitative methods.

In a similar vein, Denzin (2010) argued that, with few exceptions, the mixed methods discourses have been shaped by a community of post-positivistic scholars who have moved back and forth between quantitative and qualitative research frameworks. Along the way, he suggested, they have found utility in qualitative methodologies and have sought to bring them into studies that are most often framed by the use of quantitative, experimental, or survey methods. He noted that seldom have these scholars been trained in, or identified with, qualitative methodologies and yet these same people are now seeking to determine and distort how qualitative work is conducted via a discourse that introduces and validates a post-positivistic language. For him, this language says that anybody can use any method because methods are

simply tools rather than forms of performative and interpretive practice. He concluded: “Unlike the poaching of animals, there is nothing illegal about methodological poaching, but it does have some negative consequences” (p. 420).

### Conclusions

So, where does all this leave physical therapists interested in mixed methods research and qualitative research in particular? For us, like Lincoln (2010), it leaves us with a belief that paradigms do matter. But, this does not mean that mixing methods should never be done; they can. Our point is that researchers, including those in physical therapy, need to grapple with some very complex issues if they are to advocate or engage in mixed methods research. Indeed, little is said about *how* “pragmatism provides a strategy to integrate principles from each of a critical, interpretive, and scientific/positivist paradigm to more optimally inform practice” (Shaw et al., 2010, p. 512). Detailed discussions from pragmatists within physical therapy about how and *why* paradigms are commensurable are still lacking. Equally, purists in physical therapy might in the future consider discussing mixed methods from a different angle. For example, a discussion might revolve around how and why methods can be mixed whilst ensuring – if possible - paradigmatic commensurability. Discussion is also needed on the thorny issues surrounding the holy trinity of validity, generalizability, and reliability (see Sparkes & Smith, forthcoming).

As part of all this, researchers within physical therapy would do well to assume the responsibility to listen carefully, and to attempt to grasp what is being expressed and said in different positions so that informed discussions can develop. In many ways, then, this is a call for the qualities of connoisseurship. For Eisner (1991), this involves the ability to make fine-grained discriminations among complex and subtle qualities, “Connoisseurship is the art of appreciation. It can be displayed in any

realm in which the character, import, or value of objects, situations, and performances is distributed and variable” (p. 63). He emphasized that the term *appreciation* should not be conflated with ‘a liking for’.

There is no necessary relationship between appreciating something and liking it. To appreciate the qualities of wine, a book, or a school means to experience the qualities that constitute each and to understand something about them. It also includes making judgements about their value. One can appreciate the weaknesses of an argument, a teacher, or a poem as well as their strengths. Nothing in connoisseurship as a form of appreciation requires that our judgements be positive. What is required (or desired) is that our experience be subtle, complex, and informed. (Eisner, 1991, pp. 68-69)

We hope this paper has helped in the process of connoisseurship. Of course, connoisseurship is not easy. As part of the process, researchers need to risk one’s prejudices and, equally, be open to be persuaded. But, for us, this is a moral obligation. A dialogue around the use of mixed-methods is vital to the goal of raising researcher self-awareness as well as to the future development of mixed methods research in physical therapy. We would hope that this paper has encouraged such a dialogue.

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