Introduction

An increase in the number of nurses undertaking a PhD globally (Evans and Stevenson 2011) and strategies to develop programmes, for example, in countries such as South Africa (Comiskey 2015), together with the growth of the Professional Doctorate (Smith 2013) is helping nursing to be taken seriously as a research based profession in two key ways. Firstly, in developing an evidence base that can help the profession deliver on the drive to increase quality, innovation, productivity and preventative measures (Department of Health 2010). Secondly, by demonstrating its ability to engage in the metatheoretical dialogue of research in the same way as any other discipline.

While central to nursing doctoral studies, however, conceptual frameworks can be challenging for researchers and are under discussed in the nursing literature. More broadly, Leshem (2007) advanced that many doctoral students struggle to identify how their conceptual framework developed while Ravitch and Riggan (2012) expressed concern about the adequacy of conceptualisation. This timely article helps to redress these issues by advancing and explaining the conceptual framework as an essential tool to assist nursing doctoral students develop the architecture of their work by mapping out all aspects of their research design and by providing a structure for theorising. In other words, by outlining how conceptual frameworks map the ontological, epistemological and methodological foundations of the study. To facilitate understanding further these aspects of social theory and their inherent dichotomies are defined together with concomitant concepts to facilitate conceptual clarity in relation to paradigms. The latter are an important feature of conceptual frameworks

and thus of this article as they contextualise the various positions defined by the different aims, processes, terminology and indicators of knowledge they invoke and the purpose of their inclusion is to help nursing doctoral students achieve methodological precision.

Conceptual frameworks for doctoral research

Conceptual frameworks are acknowledged to be a key part or the 'core' (Smyth 2004) of a doctoral thesis and yet their nature and scope is seldom explained in full in the literature (Leshem and Trafford 2007). Hence, it can be difficult for novice researchers to grasp what is needed to develop this essential aspect of a doctoral study. Leshem (2007) found that doctoral students often struggle to identify what or how their frameworks develop, to see the conceptual links and thus progress beyond description. Paradoxically researchers often use conceptual frameworks to focus their work even if they do not consciously know they have one (Bordage 2009).

Various authors offer insight into the meaning and definition of the conceptual framework advancing them as "the researchers map of the territory being investigated" (Miles and Huberman 1994, p.33). They offer a lens to focus the work (Maxwell 2012) and as such provide an overview or 'matrix' (Smyth 2004) of what will be studied (Miles and Huberman 1994, Maxwell 2005). They also denote the 'assumptions' (Maxwell 2005), strategy (Leshem 2007), 'variables' (Miles and Huberman 1994, Holosko & Thyer 2011), 'relationships' ((Miles and Huberman 1994, Leshem and Trafford 2007) or underpinning concepts (Polit and Beck 2012) that connect the elements of a study. For Ravitch and Riggan (2012) conceptual frameworks assist the design of doctoral studies by helping to shape the research question, literature review and all issues relating to methodology, methods, data collection, data analysis and discussion. They view them as both a guide to and ballast for grounding the

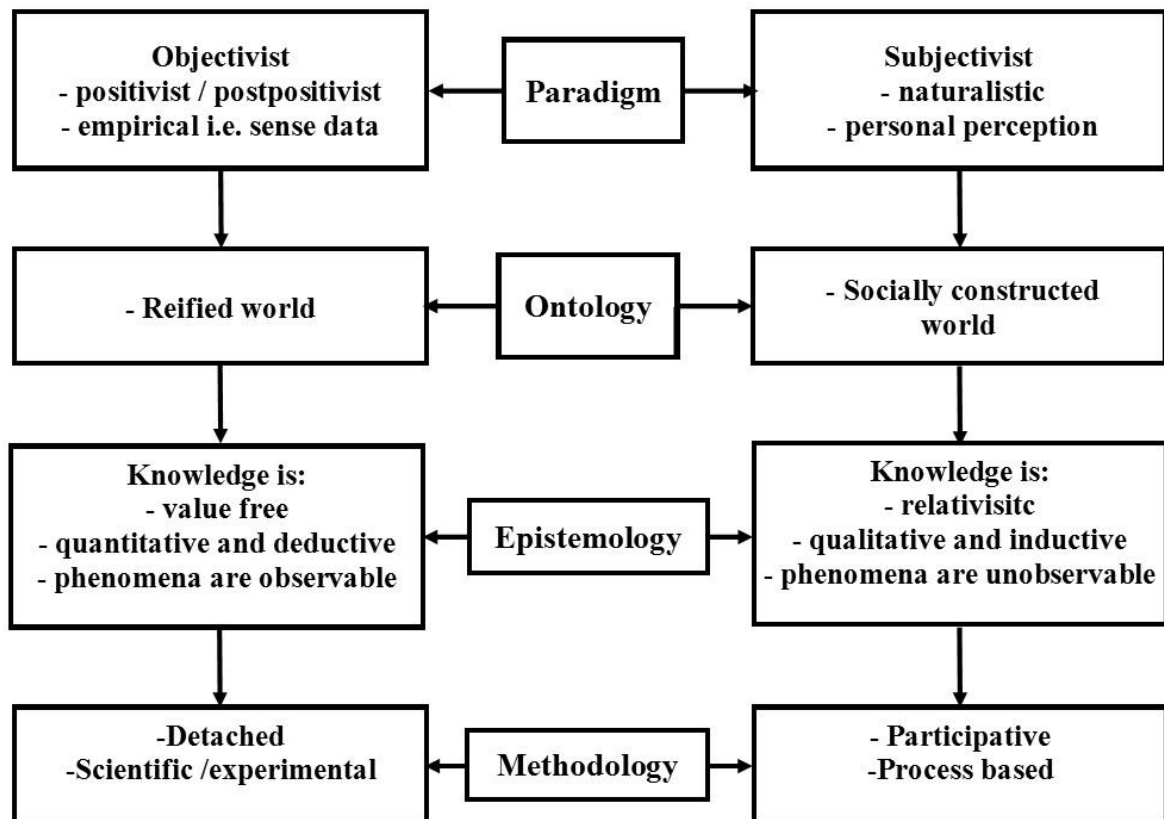work and suggest a correlation between underdeveloped conceptual frameworks and underdeveloped methodology.

In summary, conceptual frameworks are a tool that can help doctoral students and potentially other researchers structure their theorising and ideas and bring a sense of 'coherence' to the research (Leshem and Trafford 2007) thus helping to generate meta-theoretical congruence. In other words, they are a form of intellectual platform that helps ensure ontological and epistemological consistency by underpinning and contextualising all aspects of the research process and by illustrating the relationship between philosophical assumptions, theory and the area of study. As such conceptual frameworks help the doctoral student to demonstrate "intellectual and methodological rigor" (Ravitch and Riggan 2012, p.14) and to elucidate (Bordage 2009) the various elements to illustrate the mode of thinking about the project.

Miles and Huberman (1994) and Ravitch and Riggan (2012) contend that conceptual frameworks can be in descriptive text format or visual in the form of a 'conceptual map' (Ravitch and Riggan 2012). Miles and Huberman (1994) favour the latter mapped out on one page. They derive from experience and observation, other written work, reflection on experience and reading (Trafford and Leshem 2008) and may be referred to as theoretical rather than conceptual frameworks (Polit and Beck 2012). Doctoral students should expect to do numerous versions of conceptual frameworks (Miles and Huberman 1994) as the study evolves.

Research paradigms, ontology and epistemology

Conceptual frameworks are not constructed in a philosophical vacuum but relate to a research paradigm which regulates the research process (Weaver and Olsen 2006). The latter are metatheoretical by which we mean they are social theory constructions that transcend or go beyond any one theoretical standpoint, subject area or discipline. Although largely refuted these days and advanced as on a continuum rather than as 'purist' or distinct divisions (Onwuegbuzie 2002, Doyle, Brady and Byrne 2009), traditionally paradigms have been defined in terms of objectivist - subjectivist social theory dichotomies as illustrated in Fig. 1 which draws from the work of Campbell (1981), Burrell and Morgan (1979) and Guba and Lincoln (1989). Illustrating the paradigm debate in this way can be a useful starting point for interpreting and classifying the research perspective, and thus the conceptual framework, in relation to established, congruent and vertically interrelated assumptions on ontological (philosophical), epistemological (theory of knowledge), methodological and thus meta-theoretical positions.

Fig. 1. Objectivist & subjectivist paradigms

Objectivist - positivist / postpositivist - empirical i.e. sense data	← **Paradigm** →	Subjectivist - naturalistic - personal perception
- Reified world	← **Ontology** →	- Socially constructed world
Knowledge is: - value free - quantitative and deductive - phenomena are observable	← **Epistemology** →	Knowledge is: - relativisitc - qualitative and inductive - phenomena are unobservable
-Detached -Scientific /experimental	← **Methodology** →	- Participative -Process based

Once understood and conceptualised in this way the debate can move beyond the dichotomous objectivist and subjectivist positions to, for example, enumerate four paradigms (Creswell 2014). Creswell (2014) acknowledges that as in Fig. 1 much research does operate from an objective epistemic standpoint and an empirical, orthodox scientific and experimental approach but refers to this as a post-positivist rather than a positivist paradigm. Here theory and hypothesis testing and cause and effect relationships that are expressed statistically are central to the generation of knowledge but ontologically go beyond positivism to challenge the notion of universal truth and that reality can be fully known. This method of the natural sciences, which generates a particular type of knowledge (Tarlier 2005), is used in contemporary health care in the form of evidence based medicine.

Rather than the existence of one straightforward paradigm, for Creswell (2014) the subjectivist world view divides into the two constructivist and transformative paradigms. Constructivism seeks to understand the contextual meanings individuals attribute to their experience of social reality constructed through interaction with others which results in the inductive generation of theory or thematic understanding. This can also be understood as an interpretive perspective (Morgan 2007) where research seeks to understand the subjective interpretations participants give to their perceptions, feelings, thoughts and emotions (Drew 1989) in a world of multiple realities devoid of universal truth.

Creswell's (2014) transformative paradigm is concerned with the use of collaborative methods to find a way to understand issues affecting marginalised groups. It supports social mobilisation to change and empower the lives of research participants via raising consciousness about such issues as oppression, inequality and powerful institutional structures. For Schneider, Whitehead and Elliot (2007) this equates with the critical research tradition. Critical research focuses on social change and is concerned with the emancipation of research participants and of critiquing and challenging the social status quo and social division. The latter has been addressed, albeit in a limited way, in nursing through feminist theory and concomitant methodology.

Finally, Creswell (2014) refers to the pragmatism paradigm. For Rorty (1991) this paradigm represents a rejection of the artificial objectivist/subjectivist dichotomy. He is also concerned with the perception that the objectivist paradigm is the arbiter of truth and window to reality while the findings of humanist research are seen as unscientific and thus dubious and questionable. But he is similarly sceptical that the latter has a monopoly on "critical thinking" (Rorty 1991 p36). Rorty (1991) suggests a reconceptualisation in favour of a pragmatist approach to research that transcends philosophical affiliations and defined epistemological and ontological positions. Thus the pragmatist paradigm negates a focus on any one specific perspective or ways of doing research and places the emphasis on the problem or question utilising whatever data collection methods are needed to develop an understanding of the issue. Hence it is often associated with a mixed methods approach (Creswell 2014).

Paradigms then represent an explicit world view in relation to the generation of knowledge and this is expressed in their ontological, epistemological or at the very least in their methodological foundations. The use of conceptual frameworks in doctoral research helps make these perspectives transparent together with the more pragmatic focus and methods of the study. Thus conceptual frameworks are not random, free floating theoretical devices but theoretical maps that help doctoral students plot, anchor and illustrate the paradigmatic, ideological, metatheoretical and methodological perspectives and allegiances of their research.

Retroduction and abduction

An additional shortcoming of reducing the paradigm debate to objectivist and subjectivist dichotomies is that the concomitant reasoning of conceptual frameworks is limited to induction and deduction. This excludes the intersubjective and abductive processes of the pragmatist paradigm (Morgan 2007) and of the potential for retroduction. Inductive research involves a process of identifying associations in the data, categorising these and, when saturated, streaming the data thematically. Thus, inductive reasoning moves from the specific to the general (Polit and Beck 2010) and essentially describes the features and traits of people and their social world (Blaikie 2007). Conversely deductive research moves from general propositions to specific conclusions (Polit and Beck 2010). It involves a process of testing and corroborating or refuting confirmed findings, theories and hypotheses (Blaikie 2007).

Abduction and retroduction go beyond the undeviating and what Gilbert (2006 p207) refers to as the "binary divide between" induction and deduction and the acceptance, subject to methodological scrutiny for verification or statistical significance and the like being

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established, of findings to a more iterative way of working. Abduction is not just concerned with qualitative, narrative description and explanation of social phenomena or understanding 'everyday' encounters, events and occurrences (Gilbert 2006). It aims to uncover how participants construct the meanings they give to specific elements of their social reality and life experience (Blaikie 2007). This may lead to the generation of new social theory or the understanding of findings via theory already in place (Gilbert 2006). Retroduction is concerned not just to identify cause and effect relationships but to establish what underpins these, what creates invariability among phenomena and thus to work back from the findings and conclusions to establish the propositions and assumptions on which they are based (Blaikie 2007).

Conceptual frameworks and the researcher context

Conceptual frameworks are further shaped by methodological clarification of the relationship between the doctoral researcher and those being studied within the research field. For example, Blaikie (2007) recognises the two positions of research *outsider* and *insider*. With the former the researcher observes phenomena from a detached position and is separate from the research participants and the setting to help objectivity. Conversely an *insider* is a researcher who has a bond with the participants by virtue of having comparable qualities or life experiences (Blythe et al 2013) and who actively engages with those in the study and their environment to get a better sense of the issues (Blaikie 2007). While this might confer increased levels of "access", "acceptance", "trust" and "openness" (Dwyer and Buckle 2009 p58) this also has the potential to cause problems that the researcher needs to control for. Blythe et al (2013) identify these as participants making assumptions about what the researcher already knows, maintaining impartiality and managing emotions and expectations.

Lofman et al (2004) add that an *outsider* can be deemed an *insider* if they share the same profession as the participants as this affiliation can confer 'credibility'.

Providing transparency on the *outsider* or *insider* position of the doctoral researcher together with articulating the relationship between the ontological, epistemological and methodological perspectives and the inductive, deductive, retroductive or abductive approaches are important elements in constructing a conceptual framework to help ensure metatheoretical congruence.

Conclusion

Despite the wealth of information available on research methodology, study design and paradigms conceptual frameworks remain a challenge for some researchers (Leshem 2007). However, while central (Smyth 2004) to doctoral study they remain under discussed hence this article has sought to define these theoretical devices and contextualise them within social theory and the language of associated discourse. We have also sought to illustrate how conceptual frameworks are pivotal to nursing doctoral research because they help clarify, develop a deeper understanding of and map out the relationship between the research design and the ontological, epistemological and methodological foundations of the study to provide "intellectual and methodological rigor" (Ravitch and Riggan, 2012, p.14). Their use helps shape and integrate the various technical aspects (research question, literature review, data collection methods and data analysis) of a doctoral study (Ravitch and Riggan 2012). Finally, the use of conceptual frameworks in nursing doctoral studies helps the profession to be taken seriously as a research based discipline as it demonstrates the ability to engage in the meta-theoretical debate required of all doctoral researchers.

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