Ways of knowing: realism, non-realism, nominalism and a typology revisited with a counter perspective for nursing science

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In this paper, we reconsider the context of Barbara Carper’s alternative ways of knowing, a prominent discourse in modern nursing theory in North America. We explore this relative to the concepts of realism, non-realism and nominalism, and investigate the philosophical divisions behind the original typology, particularly in relationship to modern scientific enquiry. We examine forms of knowledge relative to realist and nominalist positions and make an argument ad absurdum against relativistic interpretations of knowledge using the example of Borge’s Chinese Emporium of Benevolent Knowledge. We propose a contentious postpositivist practical classification for nursing knowledge that demonstrates and supports the idea that knowledge has both individual and subjective components. This classification supports the practical application of nursing knowledge within the paradigm of realist postpositivist science.

Key words: epistemology, nursing knowledge, nursing philosophy, nursing science, ontology, postpositivism, ways of knowing.

THE RISE OF ALTERNATIVE EPISTEMOLOGIES

One of the more popular lines of thought that is frequently expressed in nursing is the notion that there are different ways of knowing in the explanation of phenomena. This idea, that there are different ways of knowing things is certainly not new and forms the basis of any philosophical and epistemological argument about the nature of knowledge and justified belief. However, the principle that multiple forms of knowledge should be regarded as equally valid as forms of explanation is a more modern proposition, arising from the postmodern movement of the 1970s, and contemporary American Pragmatism (Kagan et al. 2009). Carper’s four different ways of knowing (empirical, ethical, personal and aesthetic) was developed in this manner and is often used as an epistemological basis for nursing knowledge (Carper 1978). This approach adopts a rejection of scientific realism and embraces nominalist perspectives, and so the theoretical justification behind this particular framework is worth re-exploring; at the very least to avoid it becoming another form of dogma within the profession as these arguments have become a central discourse in nursing (McKenna, Cutliffe and McKenna 1999; Kenney 2002, 303; Locsin and Purnell 2009, 251).

REALIST, NOMINALIST AND NON-REALIST PERSPECTIVES OF KNOWLEDGE

Carper’s typology rests upon a nominalist perspective of inquiry. A full discussion of realism, nominalism and non-realism is beyond the scope of this paper as there are many forms such as naïve realism (the senses provide direct
awareness of the external world: BonJour 2013), moral realism (ethical propositions can represent truth: Brink 1989), transcendental realism (the scientific study of reality requires phenomena to have manipulable internal mechanisms that can be actualized to produce specific outcomes: Bhaskar 1975) and irrealism (the existence of multiple actual worlds: Goodman 1978), to name but a few. Scientific realism represents a philosophical field that has vast amounts written about it, and it is clearly linked to older philosophical views including empiricism, rationalism and positivism. Nevertheless, it is important to review the key arguments and distinctions here, as they are fundamental in understanding arguments about the generation of knowledge behind Carper’s typology.

**Scientific realism**

The thoughts behind realism go back to the ancient Greeks and were discussed by Socrates, Plato (Platonic thinking holds that abstract ideas define concrete realities) and Aristotle, among others (Russell 1972). Scientific realism represents the view that we ought to believe in a shared mind-independent (or objective) reality that includes both observable and unobservable phenomena (Klee 1997; Sankey 2006, 2008). However, realism really became the dominant philosophy of science following the demise of antirealism and the logical positivists in the 1950s, when doubts arose about their mutually exclusive separation of objects and theories in describing the world (Kuhn 1970; Klee 1997; Garrett 2013).

Scientific realism presents two fundamental positions. First, that the essence of things is objective and given in nature, and even though our perceptions of them may be subjective, they continue to exist outside our perception. Therefore, the world as described by empirical science represents a mind-independent (often called objective) real world that we should be able to describe by using scientific theories. Second, that scientific inquiry will eventually produce theories analogous to ideal scientific theories that accurately describe phenomena. For some realists, an ideal scientific theory has also been described as one where the things described by it exist objectively and independent of the thinker and claims made in the explanatory theory are considered true (in the sense they accurately explain a phenomenon, given our existing knowledge). Therefore, there is good reason to believe in the theory (Leplin 1997; Chakravartty 2011).

Another important aspect often argued by scientific realists is that the universe contains things that can all be described in scientific terms and science strives for explanations that apply universally. Universals are characteristics or qualities that things commonly hold, and as such are repeatable or recurrent entities (e.g. blood pressure, the colour red, curly hair, mammals). Universals are often considered a fundamental feature of scientific realism, although not all proponents would agree. So, realism is then rather more complex than it may at first appear, as it involves both the description of things that represent the world accurately and the notion of mind-independent truths.

Various arguments have been advanced in support of scientific realism over the years, such as the no miracles argument (Van Fraassen 1980) offered by Roy Bhaskar and Hilary Putnam in 1975 (Bhaskar 1975; Putnam 1975; Musgrave 2006; Porta and Keating 2008, 78). Putnam wrote: ‘the positive argument for realism is that it is the only philosophy that doesn’t make the success of science a miracle.’ Putnam later revised his earlier ideas on scientific realism and moved away from universals, arguing it does not make sense to say that the terms of one theory refer to real things, whereas the terms of another do not, or that one theory rather than another is absolutely true, or true by virtue of there being a unique correspondence between the terms in which it is expressed (Putnam 1995). For example, if we consider the concept of pain, there are a number of theoretical models that are compatible with an explanation of the phenomenon and, for Putnam, an assumption that one specific model will give a complete truthful or final representation would be considered a practical limitation, given the nature of evolution and knowledge development. These ideas were later developed as a form of pragmatist argument (see below), but Putnam remains a defender of scientific realism in what he calls ‘natural realism’ that rejects an ‘interface conception’ of the mind with reality asserting that human perception and cognition spread all the way to real objects themselves. Other scientific realists, notably Boyd (1989), adopted logically similar versions of the no miracles argument. Boyd argues that the operational success of a theory lends credence to the idea that its unobservable aspects exist, because they were the basis on which the predictions were originally made.

**Nominalism**

On the other hand, philosophers have frequently criticized the value of scientific realism and empirical explanations to adequately describe the universe, particularly, using ontological (the nature of being) and epistemological arguments about whether universal truths exist (Klima 2013). The terms antirealism and nominalism are often used synonymously to describe the positions that contest the existence of objective
truths and the principle of a mind-independent reality (Gonzalo 2011). John Stuart Mill suggested an early version proposing there was nothing universal except names, hence the prefix ‘nomin’- (Mill 1843/1991). Nominalist critics often argue that scientific realism, as in all other forms of explanation, requires us to accept truths on the basis of the abstract conceptualizations of things (known as abstract objects).

Abstract objects are complex to define, but can be considered entities which have no physical form, and do not exist at any particular time or place, but rather exist as a type of thing (as an idea). For example, philosophically the concepts of justice or quality are considered abstract objects, whereas things that have a specific form such as a sports car or a white wine are considered concrete objects.

The problem with universals that nominalists often challenge is their technical ontological status, particularly the argument as to whether universals exist independently of things or if they are simply convenient ways of finding likeness between particular items that are completely different (Feyerabend 1975/2010, 1987). This has led philosophers to raise questions. If universals, or abstract objects, do exist where do they exist, within the thing (known as in re), only in the minds of people or in some separate metaphysical domain separate from the entity they apply to (known as ante rem: Klima 2013)?

Like realism, many different varieties of nominalism have been developed (Andreski 1972; Hacking 1999; Braver 2007). We have intuitionists (antirealists in respect to mathematical objects) who suggest the existence of mathematical objects is dependent on our ability to prove them, idealists (ideализm) who suggest that all reality, as we know it, is fundamentally mentally constructed, and phenomenalists (phenomenalism) who hold the view that physical objects do not exist as things in themselves but as perceptual or sensory phenomena (such as specific colours or tastes). Generally, nominalist positions hold that concepts of the existence of objects are particular to the individual, and reality constructed by the individual, and so do not accept the notion of true or false statements that verify the existence of universal entities or theories (Feyerabend 1987; Lipton 2004). Philosophically, nominalists challenge the existence of either universals or abstract objects and supports relativistic explanations of knowledge.

Non-realism

Finally, a number of non-realist empirical philosophical approaches to science have also been suggested over the years. These are often referred to as empirical non-realism (or simply non-realism). These generally accept the principles of a common shared reality inherent in scientific realism, but have treated its nature and the notions of universal truths and theories differently.

Ernst Mach, for example, put an instrumentalist empirical position forward as an alternative to scientific realism. His pragmatic view (see below) was that a concept or theory should be evaluated by how effectively it explains and predicts phenomena, rather than how accurately it describes a mind-independent reality (Blackmore 1972). In a related approach, Percy Bridgeman suggested that in order to explain a concept, we must have a method of measurement for it, by which we mean any concept is nothing more than a set of operations (Bridgeman 1927).

Thomas Kuhn characterized scientific inquiry as competing paradigms, and his work has had a strong influence on opponents of scientific realism. He gave his work an antirealist element by denying the idea that theories could be regarded as more or less close to the truth, as they changed with different scientific paradigms. (Kuhn 1962). This has led many to claim his work supports postmodern nominalism (Kuhn 1970; Rorty 1999). Nevertheless, Kuhn supported the notion of a shared common reality and the principles of empiricism, and that changes in scientific paradigms occurred through a conversion process with faith in the future ability of a paradigm to make successful truth-claims about reality (Scheffler 1982; Duchinsky 2007). However, like Ernst Mach, he saw science as a problem-solving activity, with its emphasis on truth and reality diminished, and outcomes being regarded as more important. In this sense, his ideas can be argued as closer to empirical and are better associated with non-realism (Sankey 2008). Similarly, Bas Van Fraassen has suggested that the aim of science is not to find true theories, but only theories that are empirically adequate (Van Fraassen 1980).

The latest form of non-realist explanation is that of complexity science. Under the rubric of complexity theory, different kinds of complex systems have been studied, compared, contrasted and mathematically modelled. As a result, an abstract understanding of systems that spans the physical, biological and social sciences has been postulated. Complexity scientists’ support empiricism, but argue that generally nature is not amenable to the reductionist methods of traditional science, because nature is made up of what complexity scientists’ call non-linear, complex adaptive systems (Calliers 2005). These non-realist perspectives are distinct from nominalist approaches, in that they represent epistemological arguments that accept the principal value of an empirical basis for evidence. They represent a form of postpositivist thinking.
One aspect that is regularly discussed in these debates is that science itself is culturally derived. Modern science, despite having obvious multiple historical origins from around the world, is often subject to the criticism of ‘Euro-centrism’ in its approach. The European tradition is argued as seeing itself as objective observers, standing back and separated from the world rather than other cultural perceptions of being integral within it (James 1972). In recent years, there has been a move in many disciplines to account for this in a more integrative science that borrows from more traditional cultural perceptions and expresses itself in systems approaches. Proponents of this have promoted a greater sense of holism in science, placing greater emphasis on relationships rather than cause and effect. These approaches have been seen in a number of fields, notably in both health and earth sciences with examples such as Integrative Oncology (SIO 2013) and Transformative Earth Science (Harding 2009). However, these approaches neatly sidestep the philosophical issues of realism and nominalism by simply avoiding taking a position. However, they do promote acceptance of perception through our intuitive faculties and a mind-body approach that certainly seems to lean towards the nominalist arguments.

**CARPER’S TYPOLOGY OF WAYS OF KNOWING**

Barbara Carper’s typology from the late 1970s is the classic example used in the promotion of alternative epistemological understanding in nursing (Carper 1978). Her ideas were certainly influenced by the postmodern neo-American pragmatists as a philosophical movement (and likely also feminist pragmatist ideas) of the late 20th century (Seigfried 1996; Warm and Schroeder 1999). Therefore, it is also worth exploring the genealogy of her ideas.

**Pragmatism and neo-pragmatism**

Charles Sanders Peirce is recognized as the originator of pragmatism, arguing that any theory that proved itself more successful in predicting and controlling our world than others could be considered to be more valuable and nearer the truth (Peirce 1878). For example, the theory of the heart as a pump in a cardio-vascular system proved more effective in treating illness, than the early Egyptian belief that the heart (rather than the brain) was the source of human wisdom. This pragmatic view focused on the outcomes of scientific research and theories as the key focus of their practical value as knowledge.

Later work by the American William James recognized this conceptualization, but emphasized the context of inquiry as an important influence in the conduct of scientific work, and that the value of any truth was dependent upon its use to the person who held it (James 1906).

Another view of pragmatism (and one that is probably more congruent with modern science) is that of the American John Dewey. Dewey viewed knowledge as arising from an active adaptation of humans to their environment, and in a state of flux rather than fixed and immutable, but was not as pluralist or relativist as James’ views. He stated that ‘value was not a function not of whim, nor purely of social construction’ (Dewey 1925). Dewey also supported the importance of experimental inquiry, and argued the value of practical knowledge resulted from establishing correlations between events, with experimentation. Dewey held that ideas were simply instruments, or tools, that humans used to make sense of the world.

Another early supporter of these ideas was Jane Addams, a philosopher and social reformer. However, Addams’ main role in the development of American pragmatism was focused on developing a social philosophy infused with a class and gender consciousness. Addams represents an early incarnation of the feminist pragmatist movement and in terms of the generation of knowledge her conceptions were more aligned with James’ ideas in that the social setting of inquiry affected the nature of knowledge and its value to particular social groups (Elshtain 2002).

These early pragmatist thinkers have become known as the classical pragmatists (Hookway 2013). However, there has been an emergence of a newer postmodern neo-pragmatism (Hillis Collins 2011) developed by the American philosopher Richard Rorty that was stimulated by the work of John Dewey, Martin Heidegger, Willard Van Orman Quine, Ludwig Wittgenstein, Wilfrid Sellars, and Jacques Derrida. Rorty developed a distinctive and controversial form of pragmatism that involved abandoning the view of thought or language as a mirror of a reality or external world, arguing that truth was not about accuracy or representing reality, but was part of a social practice and language was what served our purposes in a particular time (Rorty 1979; Hill Collins 2011). They rejected an external view of the world, where objective knowledge is achieved through singular truthful accounts of phenomena, but instead propose that there are multiple truths. Feminist pragmatists have also taken up these arguments.

Similar new ideas on pragmatism have also been argued by Putnam (as noted earlier) and Quine (1951), although neither identify themselves as neo-pragmatists.
In some ways, it can be argued that American neo-pragmatism has become more embedded in ontological arguments rather than epistemological ones, and today the label of ‘pragmatism’ in nursing has become more synonymous with a postmodern nominalist position and explaining phenomena in terms of the socio-cultural considerations used to justify the generation of knowledge and its value. Although the focus has been on positive optimistic interpretations (Rorty 1979; Hill Collins 2011; Kagan et al. 2009), essentially proponents argue that one can analyse an event from differing personal and social perspectives, and so technically any means to a practically demonstrable outcome can used as a justification, and represent a valid explanatory framework (with varying forms of this argument). This is very different from modern postpositivist scientific pragmatism that argues for consideration of competing hypotheses and for the selection of a best empirical evidence explanatory framework that works in practice (while not necessarily regarding this as truth, but as a practical working state of knowledge). The only real similarity between these very different forms of pragmatism is the focus on practical outcomes and action (praxis).

Four forms of knowing

Carper drew on the postmodern neo-American pragmatist ideas that knowledge generation was influenced by the community of inquirers, and particularly their ethics, aesthetics, and personal experiences as intersecting influences in their community of inquiry. Like many nursing researchers of her time, she adopted a nominalist stance and proposed a creative typology of fundamental ways of knowing that classifies the different sources from which knowledge and beliefs can be derived. This was specifically applied to nursing knowledge (as a selective community of practice) accepting the postmodern pragmatic notion that the acquisition of knowledge occurs differently in different communities or cultures. The resulting typology is seldom used outside of the nursing profession, and Carper identified four specific ‘patterns of knowing’:

- **Empirical**: Experiential knowledge from scientific inquiry, or other external sources, that can be empirically verified.
- **Ethical**: Attitudes and knowledge derived from an ethical framework, including an awareness of moral questions and choices.
- **Personal**: Knowledge and attitudes derived from personal self-understanding. ‘Personal knowledge is involved with the knowing, encountering and actualizing of the concrete, individual self.’
- **Aesthetic**: Knowledge derived from an appreciation of the nature and art of nursing. ‘An aesthetic experience involves the (immediate) creation and/or appreciation of the situation’. This involves empathic knowledge, including imagining one’s self in the patient’s position, and creativity in the response.

It can also be seen that this classification arose as a reaction against empirically derived knowledge, and scientific nursing, by emphasizing that more personal attitudes and intuitive aspects of knowledge were also important to consider. This certainly appears reasonable in terms of explaining personal human experience, but let us explore the justification for the typological divisions further.

**Empirical knowing and realism**

Empirical knowledge is straightforward to understand as it also forms the basis of traditional scientific realist argument. Modern ideas of empirical knowledge developed in the early-to-mid-17th century as a response to the rationalism espoused by René Descartes and Benedict de Spinoza (Markie 2013). While the rationalists held that knowledge was attained through the operations of the mind, empiricists such as Francis Bacon, John Locke, George Berkeley and David Hume argued that all knowledge was in fact based on experience and was best attained through human perception of the world and phenomena arising within it through sensory experience (Bonjou 1998). These were notions originally considered by ancient Sumerian and Mesopotamian peoples, in classical Greece, and by Leonardo da Vinci and still later by Isaac Newton (Lindberg 2007; Garrett 2013). Empiricism is based on the principle that we know things because we have experience of them and can verify them to be true through such experience.

These are not antediluvian arguments and remain contemporary and in many ways just as controversial today. As we explored earlier, philosophers in the 20th and 21st centuries have vigorously debated the empiricist argument. The key difference between rationalist and empiricist positions is over how we gain knowledge. Rationalists hold that some propositions are knowable by us by intuition alone and others are knowable by being deduced from intuited propositions, known as the intuition/deduction thesis (Markie 2013). Chomsky (1979) Deleuze and Guattari (1988) have all argued that empiricism is a dogma that leads to a separation of mind and body and that this is unacceptable and that one cannot under-
stand the mind through simple human biology. On the other hand, Bertrand Russell and even Dawkins (1998) have both been protagonists of a more contemporary rationalism based on observable evidence. Russell (2004) argues that the mind has two faculties: cognitive and affective. The cognitive faculty entails intelligence, and the affective faculty denotes our instinctive part, or various feelings, cravings, impulses, motives, and desires. Russell was of the opinion that the instinctive part gives us our goals and intelligence supplies the means to achieve those goals. The positivist empirical perspective is that much more is observable and calculable today than in the past, but that cognitive and affective processes underpin the generation of empirical knowledge. Modern empirical knowledge is seen as based on rationalism, but not consequent from it, as knowledge generation is still seen as being best derived from experience.

Ethical, personal and aesthetic knowing and rationalism

Carper’s other three forms of knowing (identified above) all resort to a traditional rationalism that involves subjective and creative interpretation and a nominalist perspective. This presents us with some logical difficulties, as the problem arises that, while arguably, these are all forms of knowledge generation, they cannot be distinctly separated so easily, and all of them require us to accept some form of relativistic thinking. This does not mean they are not valid forms of knowledge, but it does lead to some problems when we attempt to use this framework to support practical health interventions.

Ethical knowledge, for example, requires us to make judgments on what is right or wrong. We know that notions of morality and ethics vary with different cultures, and that science has very little to say about what is right or wrong. We all possess knowledge of what we consider is right or wrong, but this really comes from a range of complex socio-cultural and personal beliefs. For example, in North America and the UK, most of society considers female circumcision (female genital mutilation) or the idea of exhuming dead relatives for a family celebration morally wrong, and this is reflected in the social and legal frameworks. However, in some African cultures such as in Nigeria and Madagascar, such things are culturally acceptable. Hence, ethical knowledge relies on diverse moral frameworks, and thus can be regarded as a relative form of knowledge.

The same goes for personal knowledge, that is knowledge of self from personal self-experience. I may have personal experience of my own thoughts or behaviours, such as how I react to stress, or even of my own personal physiology, such as how I react to certain foods. I may also have personal experience of things that are not quantifiable or are not experienced by others. I might feel the spiritual significance of an event such as some form of message from my ancestors or from a personal deity, for example. However, if no one else experiences this, or feels that way, then that is my individual experience, and again is relative to everyone else’s experience of the world. Personal self-knowledge is largely subjective by its very nature. It works as an explanation of the self-perception for the individual, and so for explaining why we feel as we do, and how we relate to things, and to others (intersubjectivity) it has value, particularly for social interaction (particularly important in nursing). It can be argued that a person becomes more self-aware and develops personal knowing through intersubjective events, and it can help provide inductive insights. However, for everyday practical issues, personal knowing is limited in terms of being able to explain other shared experiences or phenomena, as we cannot verify our personal knowing is the same as anyone else without resorting to other methods to acquire knowledge. The extreme form of this position (solipsism) is to consider that as all knowledge is processed by the human mind; it is also possible that only one’s mind actually exists. Overall, personal knowing may be useful, but has a serious practical deficiency as we know that the human mind can be easily deceived or erroneous, so we must treat personal knowledge with caution.

This would also seem to apply to aesthetic knowledge; knowledge of the immediate or empathic knowing is based on intuitive and abductive reasoning processes, which we know are flawed processes as fact preserving rationale, so are therefore practically limited for any form of general application. Abductive reasoning was first described by Charles Sanders Peirce as retroductive inference, and is really a form of educated guessing (Peirce 1878). For example, if we know we need to change a patient’s dressing in the morning, we generally estimate how long it will take for us to set up the materials, remove, clean and replace the dressing, based on prior experience or trial and error guesswork, rather than deductive reasoning. It is really reasoning to the best explanation, and this pattern-matching process is one of the ways that intuitive cognitive processes work.

Another problematic aspect of Carper’s aesthetic knowledge is that of empathy. This is hugely challenging for health professionals as we are not our patients, and so trying to put ourselves in their position would seem
very unwise, as this will reflect what we think we would feel if we were our patients, rather than what they actually feel. Finally, another problem arises in separating aesthetic knowledge from personal knowing. There does not seem to be a good rationale to separate knowledge of self and aesthetic knowledge (apart from the temporal element of immediate appreciation), and they seem inextricably intertwined.

Overall, as the separation of aesthetic knowledge from personal knowledge seems particularly difficult to achieve, and this type of knowing is also highly personal. We have to consider the practical value of using these categories to differentiate different forms of knowledge and make decisions based on them. All things considered, all of these last three categories seem to represent relativistic and personal ways of knowing that are difficult to justify action upon without resorting to faith-based argument.

**CRITIQUE OF CARPERS’ TYPOLOGY**

There has been some limited critique of Carper’s work in the nursing academy, but few have really challenged the nominalist foundations of this approach, and more often the framework has been positively endorsed in nursing literature. White (1995) acknowledged the work had been received somewhat uncritically, and suggesting the addition of a fifth pattern, sociopolitical knowing to expand the framework to take account of sociocultural and political aspects. Nevertheless, she supported the framework as a conceptual organizer for nursing and promoted its expansion. Silva et al. (1995) took a different approach and suggested a philosophical shift towards an even more ontologically focused framework. Using artistic examples, they argue Careper’s ways of knowing were too limited and the categories appear mutually exclusive and epistemologically focused. They suggested that the approach should move further into the realms of ontological reflections on reality, meaning and being, to foster a better integration of art and science. Fawcett et al. (2001) were also generally supportive of Carper’s work, but acknowledged the ineffability of aesthetic, personal and ethical patterns of knowing and their eclipse by empirics in the development of EBP. However, they supported the introduction of wider forms of knowledge into EBP incorporating all patterns of knowing. Porter (2010) also acknowledged some of the issues with the inability of aesthetic knowledge to provide transparency in its expression, and that such patterns of knowing may not be amenable to empirical justification, and therefore public scrutiny. Porter’s view was generally supportive, and she concluded that the ‘new problem of EBP requires nurses to change the shape and patterns of knowing to respond to the challenge it represents’ (Porter 2010, 12).

**A MULTIPLICITY OF ALTERNATIVE WAYS OF KNOWING**

On the basis of using rationalistic and relativistic arguments for knowledge generation to define categories of understanding, we must logically be open to alternative typologies. If we wish to adopt Carper’s classification, then we also have to support consideration of other categories of knowing that can be argued as ways in which people know things. Our point here is that the postmodern and nominalist arguments used to support Carper’s classification can be equally well used to underpin other creative classifications. In response to this proposal, and to illustrate the arbitrariness and cultural specificity of any attempt to categorize the world, we have developed such an alternative classification below. A version of this argument was originally made by the writer Jorge Luis Borges in his 1942 essay ‘The Analytical Language of John Wilkins’ (Borges 1942/2001). Wilkins was a 17th-century philosopher who had proposed a linguistic classification of the animal kingdom that would encode a description of the thing in the word naming the animal. In response to this scheme, Borges described a curious (though logical) alternate typology based upon a fictitious Chinese encyclopedia (the Chinese Celestial Emporium of Benevolent Knowledge). So, in the spirit of Borge’s typology, we present an alternative comprehensive typology of Ways of Knowing.

- **Empirical Knowing**: knowledge derived from empirical sources. Experiential knowledge may be derived from scientific inquiry, or other external sources, that can be empirically verified.
- **Hallowed Knowing**: Knowledge revealed in ancient sacred texts. This form of hermeneutic knowledge is obtained from the reading and interpretation of sacred texts.
- **Esoteric Knowing**: Knowledge of things beyond comprehension. Esoteric knowing is personal knowledge that cannot be explained to others in a meaningful way, but is understood to be true by the individual.
- **Knowing Knowing**: This is knowledge surrounding the processes involved with coming to know things; curiously, a not uncommon phrase in the world of education.
- **Visionary Knowing**: Knowledge derived from visionary dreaming. This form of knowing requires the knowledge to have been obtained while asleep.
- **Luneful Knowing**: Knowledge derived from states of madness. This requires the knowledge to have been
acquired by intuitive revelation during an episode of paroxysm,

- **Supernatural Knowing**: Knowledge derived from magic. Here, the knowledge has been obtained through the practice of magic or through other uncanny phenomena,

- **Lupine Knowing**: Knowledge derived from werewolves. This form of knowing occurs when knowledge has been directly passed on to the individual from a lycanthrope,

- **Satellite Knowing**: Knowledge of things that has arisen at a great height, where the people below look like flies and, lastly,

- **Other Knowing**: Knowing in ways not categorized by the above.

Although this categorization may appear rather absurd, the arguments we use to support these categories as valid divisions to explain forms of knowing are essentially the same as those supporting Carper’s classification. As a result, taking a nominalist approach to categorizing knowledge in this way forces us to accept such multiple ways of knowing. The practical outcome of this is that we may generate a multitude of different descriptions of the same phenomenon rather than actually developing useful new knowledge. In essence, differentiating between what one accepts as a valid form of knowledge generation becomes rather an arbitrary point.

**A PRACTICAL ALTERNATIVE TYPOLOGY OF KNOWLEDGE**

From our postpositivist and non-realist perspective, however, we can suggest the principle that knowledge is constructed in the human mind based on a shared objective reality that includes both individual and subjective components. Before we consider a framework to account for knowledge on this basis, it is useful to briefly review the notions of *a priori* and *a posteriori* knowledge. The terms *a priori* (‘prior to’) and *a posteriori* (‘posterior to’) have long been used to distinguish types of knowledge, justifications or arguments, the first use recorded being that of Thomas Aquinas in his Summa Theologica in 1274. There are many points of view on these two types of assertion, and their nature and relationship is one of the oldest problems in modern philosophy. This problem relates to the conception of a distinction between analytic and synthetic statements of knowledge, arising from the works of Immanuel Kant, David Hume and Bertrand Russell and later the logical positivists (Russell 2007). The distinction between analytic and synthetic propositions was first introduced by Kant. Put simply, synthetic propositions can be considered statements that require reference to the world to demonstrate they are truthful. For example, ‘all ill people have an infection’ and analytic statements are those that refer to statements that can be seen to be true in themselves, for example, ‘all ill people are unwell.’

*A posteriori* knowledge is relatively straightforward to understand in that it refers to knowledge or justification that is dependent on experience or empirical evidence; for example, ‘some swans are black.’ This is consistent with the notion of synthetic statements of knowledge.

*A priori* is sometimes used as a term to describe an argument made without a logical basis, that is, without evidence or analysis. More usually *a priori* knowledge is considered knowledge independent of experience; for example ‘all swans are birds’. *A priori* knowledge was presented by rationalists as analytic knowledge, in that it was independent of experience and that the predicate was implicit in the subject, such as ‘all men are human’. However, problems arise in considering *a priori* as distinct form of knowledge. The logical paradox that Hume and Kant identified was, How is *a priori* knowledge possible without some form of experience? Hume argued that nothing could be known about the *a priori* relationship between cause and effect, and hence, many analytic statements were actually synthetic. Also in many propositions, no analysis of the predicates will expose the subject. His notable illustration was the mathematical statement: 7 + 5 = 12. In themselves, neither seven nor five contain the idea of twelve, and they must be combined first (Hume 1902). Kant (whose thought derived from rationalist origins) outlined a distinct view of *a priori* knowledge that he expressed in his *Critique of Pure Reason* in 1781. Bertrand Russell gives him the credit of having first conceived of a form of *a priori* knowledge that was not ‘purely analytic’ (Russell 2009).

Kant proposed that we could only know particular facts about the world via our sensory experience, but the form of such experience depends upon *a priori* reasoning that paradoxically, is a mental construction. His view of *a priori* was that it described the underlying mental processes prior to experience. For example, he saw time and space as *a priori* constructs created by the mind prior to experience. For Kant, a physical object is considered unknowable. What we can know is the phenomenon, in other words, the object of our experience. The phenomenon is seen as a product of both itself and us. Thus, as it comes into our experience, the phenomenon acquires characteristics that ‘conform to our *a priori* knowledge’ and therefore, this knowledge cannot be valid outside our experience.

Interpretations of these arguments and views on Kant’s ideas of *a priori* knowledge have occupied philosophers for
the last 200 years. However, this form of interpretation of the world involves special abilities that have yet to be described in terms that do not resort to the metaphysical. Kant was argued to be a nominalist, and he also supported the priority of mind over matter or physical experience (Sassen 2000). His ideas continue to influence much postmodern thinking in nursing today.

Nevertheless, a more pragmatic and useable interpretation of a priori knowledge that we adopt here is that presented by Quine who suggested the notion of analytic knowledge as ‘true by virtue of meanings and independently of fact’ (Quine 1951, 68). In other words, we may consider a priori knowledge as analytic or synthetic, and a priori synthetic propositions are considered true by virtue of their meaning regarding currently accepted facts about the world.

Taking such an approach, we could consider the following as a simple practical postpositivist classification of ways of knowing that avoids resorting to nominalism:

- Empirical Knowledge: a posteriori knowledge derived from experience
- Intellectual Knowledge: a priori knowledge derived from:
  - Individual cognitive processes
  - Group sociocultural processes

This classification offers advantages in simplicity and in that it supports the principle that knowledge has both individual and subjective components that may arise from personal beliefs and as a part of sociocultural relationships. It acknowledges both the a priori and a posteriori aspects of knowing, and also provides a practical working framework for the application of knowledge within the paradigm of evidence-based practice (EBP).

CONCLUSIONS

Ultimately, adopting Carper’s typology for practical decision-making is as value laden as any other approach. The adoption of personal belief-based outcomes is central to using Carper’s ways of knowing as an explanatory framework, and this seems overly reliant on unfalsifiable intellectual argument in its justification of forms of knowing, rather than validation through applied outcomes. Worryingly, its roots in postmodern American neo-pragmatism suggest that potentially one can justify just about any form of knowledge to support a desired outcome. Ultimately, Carper’s typology seems to offer limited practical value in supporting health decisions as it can be equally well supplanted by any other typology.

Arguing that the way that nurses generate knowledge is somehow fundamentally different from the way other people know things seems questionable at the very least. Nursing knowledge would seem better defined by domain, and theoretical basis, rather than in terms of the subculture of its members and their shared cognitive processes. Carper’s typology was a creative and innovative approach in its time, but 40 years later appears to have had minimal impact on nursing decision-making practice or on health outcomes in the workplace. So, perhaps it is now time to seek more functional alternatives that are more commensurate with EBP, rather than ontologically centred nominalist frameworks. Regrettably, if nursing academics continue to champion these perspectives, we may well be left with a one-way ticket to an intellectual dead end within which any form of nursing knowledge can be justified as simply another way of knowing.

We should be reminded that the primary purpose of nursing theory is to support practical outcome focused care, rather than to develop even more theory. Given the current demographic trends and growing inadequacy of health-care resources to meet demands, returning to a scientific pragmatic view that is empirically outcome focused would seem timely.

REFERENCES


