Nursing concept analysis in North America: state of the art

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Abstract

The strength of a discipline is reflected in the development of a set of concepts relevant to its practice domain. As an evolving professional discipline, nursing requires further development in this respect. Over the past two decades in North America there have emerged three different approaches to concept analysis in nursing scholarship: Wilsonian-derived, evolutionary, and pragmatic utility. The present paper compares and contrasts these three methods of concept in terms of purpose, procedures, philosophical underpinnings, limitations, guidance for researchers, and ability to contribute to nursing knowledge and disciplinary advancement. This work extends prior criticisms of concept analysis methods, especially as formulated by Morse and colleagues, by promoting further critical discussion regarding the direction and effectiveness of nursing efforts to meet the basic needs of disciplinary development. Its central thesis is that nursing concept analysis must advance beyond the Wilsonian-derived methods of Walker and Avant by devoting greater attention to understanding the domain of concepts to be analysed and deriving features from these contexts.

Keywords: concept maturity, nursing discipline, boundary work, Wilsonian-derived, Rodgers Evolutionary, Morse Criterion-based pragmatic utility.

The differentiation of a discipline from general experience along with its subsequent growth and matura-
tion involves the development of distinct practices and self-understandings within a community of practitio-
ners and scholars. The process is one that creates boundaries that then need to be negotiated in ways that link one discipline to others and disciplines as a whole back into common experience. One key element in this boundary work, as it is sometimes termed (Gieryn, 1983, 1999), is what is called concept analysis.

Concept analysis involves the formulation and clarification of a mental construct, systematizing relevant information in ways that enable its appraisal
and enhancement as an element that serves to both advance theory and guide practice. In nursing, the methodological development of conceptual inquiry has lagged behind other syntactical concerns related to the pursuit of knowledge to guide practice. Concepts representing key phenomena of interest to the discipline have been identified; examples include comfort, caring, suffering, and more. However, those advocating concept analyses insist that most of these concepts are at a partially mature level of development because they have been neither clarified nor used consistently in research, theory, practice, and policy. This limits their utility to nursing, impedes discipline development, and, most importantly, compromises the well-being of patients. For nursing to flourish as a way to enhance health and comfort, concept analysis advocates argue that it is imperative to build a substantive body of knowledge for communicating nursing practice reflective of its goals. This requires the ongoing examination and development of concepts central to nursing. Attending to its conceptual base guards against over-reliance on an uncritical endorsement of approaches that fail to satisfy disciplinary evolution. The conceptual base for nursing deserves to be strengthened by studies analysing the current state of knowledge and understanding in the field.

With such concerns in mind, our aim here is thus to evaluate the major methods used for analysing concepts in nursing research. The significance of concepts to the discipline, the impetus for concept development, and the evolution of concept analysis in nursing will be discussed. Various methods that use literature as data to analyse nursing concepts will be examined in terms of purpose, procedures, underlying ontological and epistemological assumptions, adequacy of the direction provided to researchers using the method, limitations, and contribution to nursing knowledge and theory development. This article extends the critical examination of concept analysis methods begun by Morse and colleagues (Morse, 1995; Morse et al., 1996). In addition, it draws significantly on the Pragmatic Utility method developed by Morse (2000), compares the philosophical underpinnings of each method, and evaluates the guidance offered to researchers.

The significance of concepts to the discipline

As key aspects of boundary work, concepts guide a discipline by forming the units that comprise and link theory, research, and practice. Concepts are stable organizations achieved through utilizing rules of relation such as applying the principle of similarity to identify a class of elements or identifying fresh instances of a concept (Bolton, 1977). As shared knowledge, concepts facilitate identifying, communicating, and recognizing complex phenomena. Any modest scientific realism also understands concepts as connecting science and the world by enabling data to be organized and abstracted or organized, measured, and tested (Morse et al., 1996).

Nursing involves the art, science, and practice of alleviating suffering and helping people safeguard or improve their health and well-being (e.g. Travelbee, 1971). Nurses are therefore interested in behavioural concepts that can help them understand both the health and illness experiences of patients and the nursing contribution to patient welfare. A long history of epistemology inquiry suggests that concepts of behaviour are peculiarly difficult to define. Key concepts for grasping phenomena in the physical and biological sciences are difficult, so that the concepts of element (in chemistry) and species (in biology) remain to some degree contested even in these mature sciences. But when concepts refer to human behaviour, our experienced difficulties become even more pronounced, in part because of questions about the defining role played by human intention. When one person kills another, whether or not the killing was intended and even intended in what way can determine whether the action is conceived to be murder or accidental homicide. In social interactions and social science disciplines, key behaviours often lack the objective phenomenal stabilities of, for instance, chemical elements or biological species, and are not readily perceptible or measurable. The subjective or experiential features can only be inferred, and yet, there is often a need in the study of practical engagement with the human and social worlds to examine and enhance comprehensiveness of these concepts such as uncertainty and empathy in nursing.
those that articulate patient reality and explicate defining qualities of nurse–patient relationships. As Knafl & Deatrick (2000, p. 365) argue,

Concepts shape how we think about the patients, families, and communities with whom we work. They direct our observations and our actions based on those observations. Important in their own right . . ., they merit our careful attention and nurturance.

It has been argued that a discipline is responsible for and establishes itself by building its scientific research base from a set of well developed key concepts related to its phenomena of interest (Toulmin, 1973; Donaldson & Crowley, 1978). From this standpoint, confusion will result from using the same term with implicitly or explicitly different meanings (Rodgers, 1989b). Without a clear conceptual foundation, the quality of subsequent research and theory construction of any discipline is weakened and its maturity compromised.

The impetus for concept analysis in nursing

Concept development has taken place differently in different fields and sometimes in distinctive ways as disciplines have emerged in alternative historical or cultural contexts. What follows is a brief case study of concept development in nursing as this took place in the North American context. The basic features of this particular case no doubt parallel and have implications for other cases as well.

The first concepts distinctive of nursing as such were identified by Florence Nightingale (Nightingale, 1859/1946), who articulated the role of environment and observation in caring for an ill person. Descriptive studies of other phenomena important to nursing practice, but at the level of lay rather than scientific knowledge, were not undertaken until the mid-20th century (Norris, 1982a). These efforts included clarification of concepts such as anxiety (Gregg, 1952; Hays, 1961), reassurance (Gregg, 1955), and loneliness (Peplau, 1955). Although this work was undertaken by nurses with limited methods of concept analysis and theory construction, it continues to offer insights to nurses and students because the early nurse scholars were able to relate their practice to research and knowledge development in nursing. In relying on their experience to define the nature of nursing and on reason to inform the relations among their ideas about nursing, they negotiated what Markie has referred to as the tension between rationalism (view that knowledge of concepts is superior to information provided by sense experience) and empiricism (view there is no source of knowledge or concepts other than sense experience).

The impetus for concept analysis in nursing has been influenced by diverse factors, all relevant to similar boundary work in other disciplines. These included the struggle within nursing to define itself to those inside and outside the profession. Internally, focus was directed on developing a specialized knowledge base that could be taught to students and used to distinguish professional educational preparation from technical training. Externally, nursing began to differentiate from the profession of medicine through identifying independent nursing functions and basing practice on holism and humanism rather than on the medical model (Norris, 1982a).

A second factor included political support with funding to assist knowledge development in nursing. An example of this in the United States (US) was the establishment of Federal funding to provide doctoral education to American nurses (Kalish & Kalish, 1973). Scholarship programmes included the Special Nurse Research Fellowship for individuals, the Nurse Scientist Graduate Training programme for institutions, and later the individual and institutional predoctoral and postdoctoral awards available through National Research Service Award legislation (National Institute for Nursing Research, n.d.). These initiatives enabled US nurses to undertake research preparation in social, behavioural, and biological disciplines. Subsequently, doctorally prepared nurses re-entered nursing as anthropologists, psychologists, sociologists, and biologists, bringing concepts and research methodologies from those disciplines. While having nurses prepared as researchers in various disciplines was essential for nursing to achieve professional disciplinary status, the borrowed research methodologies had not been created for application in nursing contexts. There was a need to relate the conceptual frameworks of other disciplines to the
conceptual foundation reflecting the aims, values, and philosophy of nursing (Norris, 1982b).

A third factor contributing to the development of concept analysis occurred in the 1970s when theory development became a national goal in American nursing. Curricula for US nursing degree programmes were required to have underlying nursing theoretical frameworks (National League for Nursing, 1972). These theories, however, were deemed by some as inadequately defined and too abstract to guide educational programmes (Schwartz-Barcott & Kim, 2000). For example, some educators and academics argued that the language of the nursing theories was too esoteric for practice (Kim, 1999); focus was then directed by some academics towards developing the central concepts within nursing theories.

A fourth factor influencing concept analysis was associated with the need for a comprehensive system to categorize nursing content into a theoretical foundation reflective of and useful to practice. In 1973, a group of 100 nurse theorists, researchers, and practitioners at the First National US Conference on Classification of Nursing Diagnosis worked together to inductively derive conceptual content from practice (Gebbie & Lavin, 1975). However, at the 1976 Second National Conference, a decision was made to develop ‘diagnostic’ labels solely from practice situations without the benefit of theory (Gebbie, 1976). This resulted in a lack of integration of newly developed categories into extant theory (Young et al., 2001), spurring greater need to define concepts and develop knowledge for practice.

How to best engage in needed disciplinary knowledge development was facilitated by evaluation of the then current state of nursing science. Upon review of the published research of nurses from 1950 to 1975, Batey (1977) concluded that the greatest limitation in developing the conceptual bases of nursing knowledge was the conceptual phase (e.g. using an ambiguous concept in a study). Norris (1982a) articulated the need to use logic or philosophy of science for developing and refining methods to study the concepts about which nurses require knowledge. From that point forward, a variety of methods for analysing concepts important to nursing were developed and used. Morse and colleagues (Hupcey et al., 1996; Morse et al., 1996) have explicitly critiqued these methods. The current discussion will argue that continued critique of concept analysis methods including Pragmatic Utility, the criterion-based method proposed by Morse (2000), is needed to evaluate discipline substance and syntax.

Three approaches to concept analysis in nursing

Given the need for concept analysis in nursing, it is not surprising that more than one approach has emerged. In the North American context one can readily distinguish three basic approaches to or methods for doing concept analysis in the field of nursing.

Walker & Avant (1983) further summarized and introduced into nursing a method of concept analysis, adapted from Wilson (1963), who described Thinking with Concepts ‘as borrowed, watered-down, developed, advanced, simplified, over-simplified or what you will, when considered in relation to the techniques of linguistic philosophy’ (p. 53). Wilson’s combined self-deprecatory and self-inflationary self-characterization allows us to note that his textbook for school students has been taken more seriously by nursing scholars than it deserved, even to the point of further misleading oversimplification. According to Hupcey et al. (1996), for instance, Walker & Avant (1983) took Wilson’s 11 techniques for isolating a concept and implementing analytical processes and reduced them into eight steps.

A variation of Wilson’s method, developed by Chinn & Jacobs (1983), differed from Walker and Avant in that it examined the feelings and values associated with words and presented a less linear format with more interaction between the steps. A further variation, the Hybrid model (based on philosophy of science, sociology of theory construction, and participant observation) was created by Schwartz-Barcott & Kim (1986). The Hybrid model differed from the other Wilsonian-derived methods in including cases from clinical contexts, extensive review of the literature, and a fieldwork phase of data collection (Schwartz-Barcott & Kim, 1993). The Wilsonian-derived methods developed by Walker & Avant (1983, 1988, 1995) have been used the most often in graduate curricula, specifically

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in doctoral level theory courses. Numerous concept analyses using the Walker and Avant method have been published. However, given the weakness of Wilson’s own textbook approach, it is to be expected that efforts to build on this work would be inadequate to the task at hand.

Rodgers (1989a) considered the philosophical foundations of the previous approaches to concept analysis. She based her Evolutionary method on a cycle of concept use (definition and attributes), significance (importance to solving problems of interest to the discipline), and application (characteristics of concepts in various settings, across time, and within particular contexts such as particular disciplines, cultural groups, and theories). In Rodgers’ Evolutionary method, the selection of literature to be reviewed is drawn from computerized data bases; decisions regarding sampling techniques and researcher experiences during data collection and analysis are recorded (Rodgers, 1989a, 2000b). Concepts such as health policy (Rodgers, 1989b), grief (Rodgers & Cowles, 1991a, 1991b; Cowles, 2000; Cowles & Rodgers, 2000), and partnership (Gallant et al., 2002) have been analysed using the Evolutionary method.

Pragmatic Utility, a criterion-based method to explore concepts pertinent to nursing practice, was developed by Morse (2000). This method encompasses the technique of critical appraisal whereby analytical questions are employed to reveal implicit assumptions and differences about the concept through its use by authors or researchers subscribing to various perspectives. Critical appraisal enables exploration of the usefulness of concepts to a research programme and to science. Morse and her research teams have analysed concepts such as caring (Morse et al., 1990; Morse et al., 1991), empathy (Morse et al., 1992a, 1992b), and intuition (Morse et al., 1994) to the level where they can begin to be integrated in qualitatively-derived theory.

Critique of Wilsonian-derived, evolutionary, and pragmatic utility methods

The large number of published concept analyses in the nursing literature enables critique of the adequacy of these methods and their results. As has already been suggested, we think too much attention has been given to Wilsonian-derived methods, so that the Evolutionary and Pragmatic Utility methods constitute salutary alternatives in nursing concept analysis. Let us now defend this thesis by means of a detailed comparison of the three methods in terms of purpose, procedures, philosophical underpinnings, limitations, adequacy of direction to researchers, and contribution to nursing knowledge (see Table 1). This comparison and contrast that seeks to identify strengths and weaknesses, although it references numerous cross criticisms in the literature, nevertheless aims to be more than simple review and summary. By judicious selection it highlights an argument of its own.

Purpose

According to Rodgers (2000b), the purpose of studying concepts is to resolve a gap or inconsistency in disciplinary knowledge. The notion of concept maturity defined by Morse et al. (1996) as usefulness of the concept to theory, practice, research, and policy must be considered. Maturity implies a degree of maturation whereas an evolutionary view regards concepts as continually changing with the notion of maturity perhaps inappropriate.

The relationship between conceptual inquiry and concept analysis depends on one’s approach to concept analysis. As shown in Table 1, the Pragmatic Utility method explicitly purports to evaluate conceptual adequacy by examining the use of the concept within and across disciplines. The methods introduced by Walker & Avant (1983, 1995) and Rodgers (1989a, 2000b) focus on identifying the attributes of a concept. Chinn & Jacobs (1983, 1987) and Chinn & Kramer (1995) aim to create meaning. Schwartz-Barcott & Kim (1993), among other rationales for concept analysis, provide a learning activity for students in graduate theory courses.

Procedures

Concept selection

All methods presented in Table 1, except Pragmatic Utility, begin with concept selection. There is little
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<th>Method</th>
<th>Purpose</th>
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<th>Contributions</th>
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<tr>
<td><strong>I. Wilsonian-derived Methods</strong>&lt;br&gt;Walker &amp; Avant (1983, 1988, 1995)</td>
<td>To distinguish between defining and irrelevant attributes of a concept and to determine likeness and unlikeness between concepts</td>
<td>(a) Choose concept.&lt;br&gt;(b) Determine rationale for analysis.&lt;br&gt;(c) Identify all uses of concept.&lt;br&gt;(d) Identify defining attributions.&lt;br&gt;(e) Develop a model case.&lt;br&gt;(f) Construct additional cases (which may include fictitious cases) of what counts/doesn't count as an example of the concept.&lt;br&gt;(g) Identify antecedents and results.&lt;br&gt;(h) Determine empirical referents</td>
<td><em>Positivist</em> research paradigm. Concepts viewed as 'static' entities (Rodgers, 1989a; Wuest, 1994). The essence of concepts isolated through context-stripping and reduction. Truth value established through correspondence with a universal reality.</td>
<td>Simplification and lack of description of critical inquiry processes (Hupcey <em>et al.</em>, 1996). Dictionary definitions and invented cases reduce validity, comprehensiveness, and relevance (Hupcey <em>et al.</em>, 1996). Emphasis on consistency of concept use across contexts at the expense of comprehending internal consistency and fit with phenomena of interest to nursing (Morse <em>et al.</em>, 1996). Little if any new knowledge has resulted (Morse, 2000). Lack of direction for further research (Hupcey <em>et al.</em>, 1996).</td>
<td>Wilsonian methods widely used in nursing education. Provides writing exercise for doctoral students.</td>
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<p>| Schwartz-Barcott &amp; Kim (2000) | To (a) educate graduate students and (b) improve on Wilson’s method. | (a) Theoretical phase:&lt;br&gt;– Select a concept.&lt;br&gt;– Determine meaning and measurement of concept.&lt;br&gt;– Choose working definition.&lt;br&gt;– Search the literature.&lt;br&gt;(b) Fieldwork phase to collect and analyse data.&lt;br&gt;(c) Analytic phase to compile findings. | <em>Positivist</em> research paradigm. Concepts viewed as 'static' entities (Rodgers, 1989a; Wuest, 1994). The essence of concepts isolated through context-stripping and reduction. Truth value established through correspondence with a universal reality. | Simplification and lack of description of critical inquiry processes (Hupcey <em>et al.</em>, 1996). Dictionary definitions and invented cases reduce validity, comprehensiveness, and relevance (Hupcey <em>et al.</em>, 1996). Emphasis on consistency of concept use across contexts at the expense of comprehending internal consistency and fit with phenomena of interest to nursing (Morse <em>et al.</em>, 1996). Little if any new knowledge has resulted (Morse, 2000). Lack of direction for further research (Hupcey <em>et al.</em>, 1996). | Wilsonian methods widely used in nursing education. Provides writing exercise for doctoral students. |</p>
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<td><strong>II. Evolutionary Method</strong></td>
<td>To identify attributes of a concept through its common use to provide a foundation for further research.</td>
<td>(a) Select concept. (b) Determine realm for data collection. (c) Collect data re attributes and contextual basis (e.g. interdisciplinary, sociocultural, and/or temporal) of the concept. (d) Analyse the data. (e) Identify a ‘real life’ model case. (f) Identify hypotheses and area(s) for further development.</td>
<td>Interpretive paradigm. Concepts viewed as dispositional or continually subject to change (Rodgers, 2000b). Truth value of a concept established by the coherence of the attributes within the clusters (Rodgers, 1994).</td>
<td>Identification of a single model case limits richness and is inconsistent with view of concepts as context-bound. Process appears linear. Validity threatened by sampling statistically. Data adequacy not ensured.</td>
<td>Illustrates process of concept development through time and within a particular context. Inductive approach. Attempts to enhance credibility via strict recording of research decisions.</td>
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<td><strong>III. Pragmatic Utility Method</strong></td>
<td>To evaluate the ‘state of the art’ of concept use by comparing and contrasting applications in particular disciplines, determining conceptual adequacy with competing concepts, and identifying gaps, inconsistencies, and boundaries.</td>
<td>The approach is based on guiding principles rather than a series of steps. (a) Clarify purpose of the analysis. (b) Select literature to ensure validity – organize literature. (c) Identify critical questions – comprehend topic – ask questions of key literature. (d) Synthesize results – compile results</td>
<td>Critical Theory paradigm. View of concepts as probabilistic (attributes based on resemblances) and entity (must meet stringent criteria) (Morse, 1995). Truth value established by the usefulness of a concept to a discipline or programme of research. Analytical questions are not predetermined.</td>
<td>Limited to partially mature concepts for which an adequate sample of literature exists. No comprehensive manual to guide approach. Requires a large work space to construct the giant matrix for viewing the whole. Cannot be accomplished on a computer screen. Method is new and evolving.</td>
<td>Informs about the use and relevance of a concept to science. Extends knowledge beyond the boundaries of what is currently known by an individual discipline. Guides further research. Integration rather than reduction of prior research about the concept.</td>
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description of how the initial selection is made. Wilson had delineated processes of isolating questions of concept (i.e. separating and prioritizing questions of fact and morality from those of concept structure) and considering right answers (i.e. distinguishing instances of the concept nearer to the ‘heart’ of the concept from others less central). These processes, however, are rarely reported in the analyses published in nursing literature. Researchers using Pragmatic Utility begin by clarifying the purpose of the inquiry. For example, Penrod (2001) saw the need to determine where the conceptualization of uncertainty fit within the scientific literature of selected disciplines after identifying its emergence and theoretical relevance to nursing in a qualitative inquiry (Morse & Penrod, 1999) into the concepts of hope, enduring, and suffering.

Processes
Wilsonian-derived methods offer sets of steps to be followed. Rodgers recommends ‘formal’ analysis be conducted after data collection rather than concurrently to avoid reaching premature conclusions before all data are reviewed or available (Rodgers, 2000b). The separation of data collection from analysis may jeopardize reliability and validity by reducing the iterative interplay of maintaining focus while systematically checking and fitting data to confirm interpretation (Mayan, 2001). Pragmatic Utility contains guiding principles to be used at the discretion of the researcher (Morse, 2000). Morse does not promote adhering to steps or a linear format which may limit the cognitive effort and freedom needed to follow emerging nuances.

Data sources
All three methods use literature as a data source for analysing concepts. The Walker and Avant approach (1983, 1988, 1995, 2005) may also include using fictitious data to construct exemplary cases. Chinn & Kramer (1991, 1995, 1999) include other data sources such as visual images, popular and classical literature, music, poetry, and people who work with the concept. Rodgers (2000a) suggests researchers consider non-discursive forms of data such as the performing arts. Schwartz-Barcott & Kim (2000) supplement the data of the literature with interviews and field observations. Morse (2000) specifies professional literature be used to provide disciplinary context.

Sampling
Cross-discipline sampling and examination of changes in a concept over time is recommended by Schwartz-Barcott & Kim (2000), Rodgers (2000b), and Morse (2000). Schwartz-Barcott & Kim (2000) describe the need to select a small number of cases through fieldwork to corroborate and refine a theoretical definition constructed from comparing and contrasting explicit and implicit definitions of a concept. The difficulty with this approach is that the nature of the complex behavioural concepts of special interest to nursing may not be grasped until a researcher attains substantive comprehension of more than definitions. There is also potential for error associated with data inadequacy. Rodgers (2000b) places emphasis on selecting the means of concept expression prior to identifying relevant literature; however, she instructs researchers to systematically sample the literature using standard means of probability, stratification, or random sampling (i.e. \( n = 30 \) or 20% of the total population). Because this aspect of Rodger’s sampling technique is statistically rather than conceptually-driven, it may eliminate the logic and coherence needed for interpreting social processes or applications across contexts. Morse (2000) has stressed the need to retrieve, examine, and catalogue ‘all’ the literature (p. 350) relevant to the concept which includes obtaining and reading entire articles and computerized organization of the literature. But one may question whether it is possible to obtain or read ‘all’ of any relevant literature.

Data analysis
Data are analysed within the Wilsonian-derived and Evolutionary methods often through constructing cases that provide unfailing examples of the concept (Chinn & Kramer, 1995; Rodgers, 2000b; Schwartz-Barcott & Kim, 2000; Walker & Avant, 2005),
Antecedents (conditions required for an instance of the concept to occur), results (outcomes of concept use), empirical referents (concrete evidence of the concept), and exemplars (anecdotes that capture the essence of the concept) are identified. Additional cases may be constructed using the literature, the researcher’s imagination, or (if following the Hybrid model of Schwartz-Barcott and Kim) observation and interview.

In Pragmatic Utility, researchers value and evaluate maturity using the criteria argued in Morse et al. (1996): epistemological (clarity of definition, boundaries, attributes, preconditions, and outcomes), pragmatic (operationalization of the concept in research and practice), linguistic (use in various contexts), and logical (differentiation of the concept from other concepts when used in theory). According to these criteria, Pragmatic Utility can be used as the method for analysis if the concept is between immature and mature and if there is adequate and appropriate literature available. Data are analysed by synthesizing commonalities and differences in the answers to analytical questions formulated from in-depth comprehension of the topic and asked of the literature (Morse, 2000).

Rigor

Chinn and Kramer require researchers to develop criteria specific to the concept to validate the adequacy of a resulting conceptualization. Morse et al. (1996) have developed a set of criteria (i.e. extensiveness of data base, depth of analysis, logic of argument, validity, level of abstractness, and knowledge contribution) for evaluating rigor. Other methods of concept analysis included in Table 1 do not specify the means for evaluating processes and products.

Different understandings of concepts

The philosophical analysis of concepts constitutes a rich and complex field of discourse and debate. In the single most comprehensive review of the different philosophical positions in concept analysis, Margolis & Laurence (1999) in their introduction to a collection of arguments that runs from Plato through Wittgenstein and Quine to Fodor, Millikan, Peacocke, and others – covering work in philosophical analysis, psychology, and cognitive science – distinguish five basic theories of concepts. Specifically, these theories are classical (concepts encode necessary and sufficient conditions that enable their application in sensory perceptual terms), prototype (concepts encode the properties of objects in their extension), theory of concepts (concepts are structured by their relations to other concepts), neoclassical (concepts encode necessary conditions for their application), and concept atomization (concepts have no structure). As Margolis and Laurence well note, each of these theories has its strengths, weaknesses, and a significant number of defenders.

Concepts as understood in classical theory, prototype theory, theory-theory, neo-classical theory, and atomistic theory can all be part of either realist or instrumentalist epistemologies – although classical and neo-classical theories exhibit some bias towards realism. In critical social theory, as it emerged from classical Marxism, and in classical American pragmatism, as exemplified especially in the work of John Dewey, some concepts are also able to exhibit a kind of prescriptive realism, i.e. function as the articulation of ideals sought in practice. What is remarkable in all three methods of concept analysis found in North American nursing scholarship, is how little attention is given to the debates among these different understandings concerning what concepts are and their epistemological functions.

As indicated in Table 1, Wilsonian-derived methods are characteristic of what may be termed a positivist-realist research paradigm (Rodgers, 1994; Wuest, 1994) wherein context is stripped to isolate the concept. Distinct boundaries and rigid conditions that define examples of the concept are identified. The Wilsonian-derived methods, for the most part, engender a view of concepts as static entities which do not change over time or across contexts and which require truth value to be established through correspondence to a single objective reality. This realist epistemology is reflected in the approach of Schwartz-Barcott & Kim (2000) for corroborating a theoretically defined concept via field work.
The Evolutionary approach portrays a dispositional view of concepts as habits or capacities for behaviours that change over time (Rodgers, 2000b). Central to this perspective is an understanding that the meaning of a concept can be interpreted only within its particular context. The method aligns with interpretive or constructivist epistemology wherein reality is holistic, subjective, constantly changing, and interpretable only within a specific context. This would seem to be more in harmony with a prototype or theory-theory of concepts from either classical or neo-classical theories. Despite its alignment with the interpretive paradigm, aspects of the Evolutionary method (e.g. basing data adequacy on systematic rather than theoretical representation, using one single model case to represent the concept) nevertheless convey a positivist epistemology.

Pragmatic Utility offers a view of concepts that combines probabilistic (clustering of attributes based on similarity or resemblances) with entity (requiring attributes to meet stringent criteria to belong to a conceptual category) perspectives (Morse, 1995). This view of concepts may be like that found in some aspects of Critical social theory and classical American pragmatism insofar as concepts articulate aspirational ideals for nursing practice. Literature is critically selected and sorted in the most appropriate way to address ideological analysis and criticism, in conjunction with the research purpose. Analytical questions are used to challenge existing conceptualizations and explore new insights. Concepts are critically examined and transformed to increase their transformative potential within the discipline and to address societal effects of the research programme (Morse, 2000).

Limitations

Researchers using Wilsonian-derived methods in nursing research inadequately discuss method (Paley, 1996). They do not describe their internal dialogue and integration of the procedural steps with each other (Hupcey et al., 1996). Wilsonian-derived methods target the use of a concept across contexts with less emphasis on the internal consistency (e.g. clear definition, well-defined boundaries with other concepts) and the fit of the concept with other phenomena of interest in nursing (Morse et al., 1996). The Schwartz-Barcott and Kim Hybrid model may lack depth and utility because only one nursing situation is used (Morse et al., 1996). The Walker and Avant method tends to ignore minority perspectives (Wuest, 1994). Applicability may be reduced through limiting analysis to a small number of cases or by identifying attributes too abstract to be specific to the concept studied (Hupcey et al., 1996). Moreover, the use of dictionary definitions and invented cases reduces validity, comprehensiveness, and disciplinary relevance (Hupcey et al., 1996). Researchers using the Walker and Avant method invariably conclude their articles by recommending the need for further research about the concept without delineating the direction for this research (Hupcey et al., 1996).

Limitations of the Evolutionary method relate to sampling and analysis techniques. Sample selection based on statistical representativeness may compromise validity because the literature chosen randomly may not fully depict the concept. Moreover, identification of a single case from the data base may limit richness (Morse et al., 1996). Data adequacy is not ensured, as Rodgers (2000b) has reported that literature beyond that used to analyse the dimensions of the concept may be required to identify a model case. The use of standard thematic analysis to establish the attributes of the concept may reduce the internal intellectual dialogue needed to comprehensively develop concept structure. For example, surrogate (identical) and related (similar) terms were treated by Cowles & Rodgers (2000) as data in ‘final form’ (p. 107) to be analysed by frequency counts and excluded from comparison with the concept under study.

The major limitation of Pragmatic Utility is that it is new and evolving. The potential for misinterpretation must necessarily be monitored. Fasnacht (2003) astutely identified the resulting threat to validity when she departed from the guiding principles of the Pragmatic Utility method by using stratified random sampling and relying on a number of secondary sources to explore the concept of creativity. Pragmatic Utility is limited to the study of partially mature concepts about which an adequate and appropriate sample of literature is available. The analysis requires...
a large work space to view and synthesize the answers to analytical questions asked of all the literature.

**Research guidance from different methods**

Developers of Wilsonian-derived methods have to varying degrees refined descriptions of their approaches in response to reflection, feedback from others using or critiquing their approaches, and new findings in the literature. Chinn and Kramer substantially modified previous editions of *Theory and Nursing* to integrate scientific empirical knowledge with the esthetic, ethical, and personal patterns of knowing. The Schwartz-Barcott and Kim Hybrid model from its 1993 to 2000 description has undergone minor changes (e.g. appearance of the figure, additions to the list of concepts analysed using the Hybrid model, and addition of a fifth example of the usefulness of the model for research and practice). The Walker and Avant method has not changed significantly from its first (1983) to third (1995) editions. The fourth edition (2005) contains updated lists of concepts analysed and additional examples from these analyses in the text. The guidance to researchers using the Walker and Avant method remains unchanged: Sample the literature, mechanically state the defining attributes, and then provide model and other exceptional cases that are not necessarily drawn from the actual data of the literature. The researcher is not guided towards demonstrating that the attributes chosen make sense of the various uses of the concept and thus the completed concept analyses continue to come across as arbitrary and irrelevant for practice. Ridner (2004) acknowledged choosing the Walker and Avant method because of its simplicity. She did not compare its ease in use with the quality and usefulness of results.

The Evolutionary method offers explicit instructions for considering concept meaning as contextual and variable over time. Because of this, Rodgers calls for careful attention to the context of the concept’s use through systematic sampling. Yet, in instructing researchers to define general attributes, the context-specific character is reduced. A potential problem with the Evolutionary method is that researchers unfamiliar with standard qualitative procedures may erroneously believe probability sampling will saturate theoretical categories. This aspect of the method requires clarification. The strength of the Evolutionary method is Rodgers’ articulation of its philosophical underpinnings, as this enables researchers to understand the view of concepts and the findings resulting from using the method. But even Rogers fails to consider the full depth of philosophical issues that we have tried to raise.

Pragmatic Utility has drawn criticism by Baldwin (2003), who determined that while the method is comprehensive, it is too complex for novice researchers. Its lack of a comprehensive handbook may deter researchers who must assemble content from discrete articles and chapters. Penrod & Hupcey (2005) believe retrieval and cataloguing of an extensive body of literature is of particular concern for novice and solo researchers. They express concern about novice researchers ‘wallowing in data and wondering when, or if, they will ever be finished with the project’ (p. 205).

**Contribution to nursing knowledge and theory development**

The abundance of published concept analyses using the Walker and Avant method gives the impression that much work is being done or the nursing knowledge base is being developed. However, the significance and utility of the findings yielded by this method are questionable. Hupcey *et al.* (1996) have pointed out the following areas that limit the contribution of the Walker and Avant method: (a) rationale for choosing the concept in the first place is not described; (b) the use of dictionary definitions rather than professional literature removes needed disciplinary context from the analysis; (c) the construction of cases not relevant to nursing; and (d) the lack of identification of the relevance of the analysis in the synthesis and outcomes of findings. It is of concern that nonhuman cases continue to be invented when extensive literature is available. Invented cases, a standard method of philosophy, were used by Wilson (1963) to teach high school students to expand their thinking outside of their ordinary experience. The
appropriateness of continuing to use obviously invented or constructed cases to build nursing knowledge is nevertheless quite dubious.

The Evolutionary method contributes understanding of the concept across particular contexts and over time. To illustrate, Breen (2002) outlined the level of consensus and variation in the concept of chronic pain in the different disciplines of nursing, psychology, and neurophysiology. Knafl & Deatrick (2000) reported benefit to nursing staff by on site dissemination of the findings from concept analysis of normalization. Nurses were subsequently able to recognize family behaviour as ‘normalization’ rather than as ‘denial’ and to validate the clinical assessment criteria developed by the researchers. It is not clear if this contribution to practice resulted from advantages of the method or from direct dissemination of findings.

Pragmatic Utility grounds techniques for enhancing concept comprehensiveness in thorough examination of the literature and prepares a path for subsequent research (Knafl & Deatrick, 2000). It involves interpretation rather than reduction of prior knowledge associated with the concept. Pragmatic Utility has the potential to overcome limitations associated with the other methods because it does not base knowledge needed for nursing practice on fictional or superficial definitions and it ensures data adequacy by not limiting understanding to one single nursing situation or model case. The method is based on a process of asking analytical questions formulated from the data, hence it is data driven rather than predetermined (Weaver, 2005). It yields thick description of the internal structure of a concept, interfaces with other concepts, and is applicable across multiple contexts. Contributions of Pragmatic Utility are the extensiveness of data, well-articulated criteria for assessing concepts and concept analyses, and intellectual processes of critical appraisal for asking analytical questions and synthesizing results. McCormick (2002) identified specific areas for future research to advance the utility of the concept of uncertainty for nursing practice (i.e. to explore the relationship between uncertainty and perceived control in illness, to distinguish situations in which nurses should try to eliminate uncertainty from those in which they should promote it). Gallant et al. (2002) applied the Morse criteria for evaluating the maturity of a concept after analysis of the concept of partnership using the Evolutionary method.

**Discussion**

The integrity of nursing as a professional discipline is substantially linked to a capacity for developing its conceptual base. Conceptual articulation is a key feature of all disciplinary boundary work. To this end, nurse researchers have developed various methods to analyze concepts pertinent to practice. Critical comparisons among these three primary methods have revealed areas of difference and confusion that require further attention.

One such area is terminology. While developers of Wilsonian-derived and Pragmatic Utility approaches refer to their methods as *concept analysis*, the term *concept development* was chosen for the Evolutionary method. Rodgers has defined concept development as exploring concept structure, use, and significance to inform further research. Morse (1995) has argued for concept analysis as the more inclusive term, encompassing techniques to enhance the maturity of the concepts as well as to examine concept structure and use. The Morse method of Pragmatic Utility combines these two aspects of examining current understanding and furthering comprehension of concepts. Recently, Morse’s contemporaries (Hupcey & Penrod, 2005; Penrod & Hupcey, 2005) articulated a need to separate analysis (integrating what is known about the concept) from advancement (synthesizing new knowledge about the concept). They argued that concept analysis is not ‘a form of concept advancement’ (p. 205); and despite Morse’s description of Pragmatic Utility as a method of concept analysis, Penrod and Hupcey referred to Pragmatic Utility as a method of concept advancement. The latter may serve to limit application of the Pragmatic Utility method to concepts that have been ‘analysed’ by other methods. From the examination of studies that have used Pragmatic Utility, it is clear that the method, if applied correctly, enables both analysis and advancement of the concept. Hence this distinction is of little value and introduces a trivial debate.
In splitting the processes of concept analysis and advancement into two distinct methods referred to as an ‘incremental approach’ (p. 240), Penrod & Hupcey (2005) advocate a multiple methods approach for nursing conceptual inquiry. They base the need for this approach on the limited funding to junior researchers and the requirement of tenure review boards for researchers to demonstrate sustained programmes of research. This often unacknowledged dilemma of trying to balance the needs of science with the needs of university administration deserves further discussion.

The present study also sheds light on the issue of concept maturity. Mature concepts are well-defined and hold their boundaries when theoretically combined with other concepts. They are ready for use in quantitative research, practice, and theory construction. Immature concepts are inadequately defined, not clearly distinguished from other concepts within a phenomenal domain, and may or may not be used in practice and research settings (Morse et al., 1996). Because immature concepts may not be well described in published disciplinary literature, qualitative approaches are required to enhance comprehension of these concepts (Morse et al., 1996). The focus of the Wilsonian and Evolutionary methods on developing concept components and meaning and on generating data from field work, art sources, or researcher imagination suggest that these methods may have been designed for analysing immature concepts. They may be less effective with concepts at higher levels of maturity. Pragmatic Utility, by contrast, was specifically developed for partially-mature concepts (those with ambiguous meanings and inconsistent application in research and practice) for which an adequate body of scientific literature is available (Morse, 2000).

Consideration of the level of concept maturity has not been addressed in the Wilsonian and Evolutionary methods. The present critical assessment nevertheless suggests a need for researchers to begin conceptual inquiry by determining concept maturity in order to choose the most appropriate method. The finding that the Morse criteria for concept maturity have been used to assess concepts analysed by methods other than Pragmatic Utility will enable researchers to establish concept maturity and to base choice of method on scientific evidence rather than ease of use associated with a particular method. Nurse researchers need to ask themselves: Will a method selected because it appears simple to follow most effectively help advance the science of the discipline? Furthermore, it is important to keep in mind the observations of Knafl & Deatrick (2000) about the benefit to nurses from researcher dissemination of findings to the practice level. This indicates a need to choose a method for its potential contribution of findings to practice.

Finally, researchers need to adequately describe and evaluate their methods in addition to the substantive findings of concept analyses. For methods to evolve, a record of what was done is needed to direct future method development. Concepts and approaches to their analysis must be carefully developed within a discipline as a means to promoting disciplinary – not just conceptual maturity.

**Conclusions**

The intent of conceptual inquiry in nursing is to enhance theory construction, research, education, and practice. The three major methods of concept analysis used by nurses (i.e. Wilsonian-derived, Evolutionary, and Pragmatic Utility) have different views of concepts, approaches to data collection, and analytic processes associated with distinguishable understandings of concepts and epistemological interpretations. As a result, some approaches function better than others in the boundary work necessary to promote and enhance the integrity of nursing. Researchers, educators, and clinicians will need to be mindful of the contribution and limitations of each method in preparing for inquiry and interpreting results of concept analysis research. It is not the intent of this critical assessment simply to advance academic debate. Along with recognition of the strengths and weaknesses of different approaches, we also want to argue for the tolerance, appreciation, and evaluation of ongoing efforts to refine nursing syntax and develop nursing science. In this spirit, we hope that our findings will stimulate dialogue regarding the direction and effectiveness of the nursing efforts to meet the

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needs of disciplinary development at its most basic and critical levels. Nursing concept analysis itself deserves to be nursed.

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