

Reorienting Esthetic Knowing as an Appropriate “Object” of Scientific Inquiry to Advance Understanding of a Critical Pattern of Nursing Knowledge in Practice

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The esthetic pattern of knowing is critical for nursing practice, yet remains weakly defined and understood. This gap has arguably relegated esthetic knowing to an “ineffable” creativity that resists transparency and understanding, which is a barrier to articulating its value for nursing and its importance in producing beneficial health outcomes. Current philosophy of science developments are synthesized to argue that esthetic knowing is an appropriate “object” of scientific inquiry. Examples of empirical scholarship that can be conceived as scientific inquiry into manifestations of esthetic knowing are highlighted. A program of research is outlined to advance a science of esthetic knowing. **Key words:** *esthetic knowing, nursing epistemology, nursing science, patterns of knowing, philosophy of science*

SCIENCE plays a privileged role in the health care field. This is especially true in the current era of evidence-based practice (EBP). For EBP, empirical knowledge is privileged over other forms of knowledge because evidence is something that can be tangibly measured, documented, and compared. However, the nursing profession has always understood that practice is about more than what is patently visible and measurable, and has advanced other epistemological forms of knowledge besides scientific knowledge as critical to expert nursing practice. By epis-

temology, we mean theories of knowledge that describe what is knowable and how that knowledge can be obtained. Barbara Carper¹ famously articulated these forms of knowing in her 1978 seminal paper *Fundamental Patterns of Knowing in Nursing*. These include empirical, personal, ethical, and esthetic patterns of nursing knowledge.

Esthetic knowing has traditionally been lauded as the “art” of nursing, an “ineffable”² pattern of knowing that, while critical for nursing practice, remains invisible and immeasurable. However, scholars have recently begun to critique this conceptualization of esthetic knowing. Sam Porter, for example, argues that in the era of EBP, claims that esthetic knowing is unamenable to empirical scrutiny falls foul of the public’s expectations for transparent and accountable practice and is “an increasingly untenable position for nursing to adopt.”^{3(p12)} Duff-Cloutier et al argue that the failure to explicate esthetic knowing has

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Statements of Significance

What is known:

- Barbara Carper's seminal *Fundamental patterns of knowing in nursing* articulated 4 patterns of nursing knowledge: empirical, ethical, personal, and esthetic
- Carper explicitly stated that esthetic knowing is "not amenable to scientific inquiry and validation."
- While esthetic knowing is critical for nursing practice, it remains weakly defined and understood, in part related to its status as an inappropriate "object" for scientific examination

What this article adds:

- We review and synthesize past and current developments in philosophy of science to show how esthetic knowing can validly and credibly be considered an "object," or more appropriately agentic subject, for nursing science.
- Nursing science aiming to identify permutations of esthetic knowing in practice to better understand and generate claims as to where and when and how it can be expected to manifest is a reasonable and feasible undertaking.
- Such an account of esthetic knowing can have significant professional implications in terms of how nurses are perceived, organized, respected, and understood to influence health care delivery and patient health outcomes.

created an unacceptable landscape where nurses "do not need to be able to explain their nursing" to anyone.^{4(p9)} The suggestion

is that by relegating esthetic knowing to a space outside the domain of scientific inquiry, nurses are doomed to a haphazard do-it-yourself project that defies description.

In this article, it is argued that continued acceptance of since-refuted accounts of philosophy of science is, in part, responsible for the continued articulation of esthetic knowing as something that cannot be scientifically examined and better understood. Current philosophy of science debates are described. The phenomenon of esthetic knowing is then re-oriented, within an updated philosophy of science, as an appropriate "object" of scientific inquiry. Examples of empirical scholarship are highlighted that can be conceived as scientific inquiry into manifestations of esthetic knowing. Finally, future research trajectories for empirical scholarship on esthetic knowing are suggested to advance nursing science and practice.

CARPER'S ESTHETIC PATTERN OF KNOWING

Esthetic knowing is one of 4 fundamental patterns of knowing in nursing identified by Carper¹ and has been described by early nursing theorists and writers as associated with the "art" of nursing. It is thought that esthetic knowledge facilitates the acquisition of new knowledge through the gathering of experiences that cannot be explained or articulated. In nursing practice, an esthetic experience occurs when the nurse understands and/or comprehends a particular occurrence that is subjectively conveyed, yet cannot specifically articulate using language. Comprehension of a particular occurrence, especially one that involves a patient, requires more than just recognition of a need expressed. Rather, it requires perception, as articulated by Dewey.⁵ For Dewey, recognition is quite different from perception. Recognition serves the purpose of identifying something, in particular, and labeling it according to some sort of pre-set classification system. Perception, however, includes an individual's (eg, the nurse's)

ability to deliberately gather together several singular events and small details about what is happening and merge them together to create a holistic picture of what is really actually taking place. This contribution by Dewey was foundational to Carper’s description of the “esthetic process” for nursing practice and was similar to the esthetic process described by Wiedenbach in her 1963 article, *The Helping Art of Nursing*.⁶ For Wiedenbach, the esthetic process was the means by which nursing as an art was made visible, through actions taken by the nurse to ensure that patients’ needs were met. The perception of a patient need not only produces an action taken by the nurse, but is very much reflected within that action itself. It is this element of perception, and not recognition, that gives the action taken by the nurse an esthetic quality.

Nursing as an “art” had previously been addressed by theorists such as Orem, who described it as an expression by a particular nurse, who through creativity and style constructed and provided nursing care that was effective and beneficial.⁷ For Orem, nurses possessed the ability to be creative in designing their own care, which then enabled them to adapt their actions to ensure a desired outcome based on what they have envisioned. Benner⁸ further developed and described the idea of comprehending the clinical situation or the patient experience as a whole, which is fundamental to perception and envisioning. Watson advanced a theory of human caring with the goal of providing an ethical-philosophical basis for the “deeply human dimension of nursing.”^{9(p130)} Watson defined 10 “carative” processes that capture the dimensions of caring in nursing, including humanistic values, trust, and cultivation of sensitivity to oneself and others.

Jacobs-Kramer and Chinn, in their article *Perspectives on Knowing: A Model of Nursing Knowledge*, advanced Carper’s scholarship and argued that the pattern of esthetics is difficult to understand and explain because it can be viewed as both a distinct way of knowing and combination of all forms of knowledge.¹⁰ Separately, esthetic knowl-

edge is fully reliant on and incorporates the context in which it is found. As a combination of all forms of knowledge, esthetic knowledge is considered as the whole knowledge continuum that is then incorporated within and applied to the practice of nursing, the “art-act” component of esthetic knowing. For esthetic knowledge to take place, the nurse must be engaged in the moment, interpret the situation, and the needs required by the patient and then expect a particular outcome and act in relation to what is expected. It is in this esthetic process that the patient is uniquely cared for. Esthetic knowledge aligns with empirical, ethical, and personal knowledge to collectively bring about a balanced, meaningful, and artful nursing act.¹⁰ Nurse theorists such as Benner, Tanner, and Cioffi have expanded and linked Carper’s description of esthetic knowledge with the imperceptible skills that nurses possess: their personal experiences, their intuition, and their actions in practice.¹¹⁻¹³ Mastery of esthetic knowledge means that a nurse is able to recognize salient clinical information from a variety of sources and ascertain which ones, singly or combined, are likely to lead to unfavorable outcomes for their patients.¹³ For Fawcett, esthetic knowledge addresses the “artful” execution of these nurses’ technical skills.¹⁴

The “intangibility” of esthetic knowledge

It has been argued that esthetic knowledge is intangible and cannot be observed or explained beyond the context of each individual’s personal experience.¹⁵ Esthetic knowledge suggests a form of knowing that is based upon personal familiarity with the patient context and extends “beyond the constraints of rational thought.”^{15(p8)} Carper explicitly stated that esthetic knowing is “not amenable to scientific inquiry and validation.”^{1(p20)} A 1994 issue of *Advances in Nursing Science* (volume 17, issue 1) focused on the development of esthetic knowing since Carper’s article. The articles in the issue reflect a distinct approach to scholarship, focusing on

expression of and learning about esthetic knowing through art appreciation and exploration, as well as art as a healing modality in and of itself. Chinn, introducing the issue, argues that these approaches to scholarship are very different from empirical scholarship, and need to be, because the human experience of health and illness, and esthetic knowing, cannot be expressed in any medium other than what is known as art.¹⁶

It is argued that a continued acceptance of since-disclaimed accounts of philosophy of science is at least in part responsible for the continued articulation of esthetic knowing as something that cannot be empirically examined and understood. The next section briefly (though certainly not comprehensively) summarizes this history and articulates present-day philosophical understandings of scientific inquiry.

HISTORY AND PRESENT DEVELOPMENTS IN PHILOSOPHY OF SCIENCE

Science is associated with truth claims. In philosophy of science, epistemology involves demarcating the rules surrounding a scientific claim about the world, thereby determining any claim's level of truth. The history of philosophy of science has been a history of efforts to propose infallible rules for scientific truth claims that demarcate them from nonscientific opinions or beliefs.¹⁷ Ancient philosophers tasked themselves with distinguishing between truth and appearance. By the time of Aristotle, "truth" was synonymous with "science" and involved logical argument about an object under examination to derive causal principles about why something is as it is. A priori logic provided the certainty criterion for scientific knowledge; if the logical argument was faulty, then the truth claim was rejected.

Importantly, Aristotle also demarcated science from nonscience by differentiating "know why" causal knowledge from "know how" practical knowledge. Know-how is the

knowledge of appropriate action, like a ship builder's knowledge of how to build a ship. Know-why is the knowledge of first causes, like a scientist's knowledge about the principles of wood buoyancy. As Larry Laudan, a prominent philosopher of science, summarizes, "science is distinguished from opinion and superstition by the certainty of its principals; it is marked off from the crafts by its comprehension of first causes."^{18(p113)} Scientific knowledge explains the principles underlying phenomena (like buoyancy), which is what makes that knowledge certain, and moves it beyond nonscientific, general understandings of the processes that constitute phenomenon (like ship building).

The rise of predictive know-how as a scientific truth claim

Actual knowledge generating practices in the seventeenth century problematized these know-how/know-why criteria for science. As Laudan¹⁸ explains, the processes that astronomers were using at the time to produce what are still considered pinnacles of science (equations of planetary motion and gravity) were obtained and reported as know-how knowledge, not know-why. Seventeenth-century astronomers were not working toward understanding primary causes or essences, but rather systematically collecting data to construct a "sophisticated and scientific account" of orbital phenomenon that did not focus on underlying causal accounts. These know-how accounts of planetary movement and gravitational forces were regarded as scientific accounts by the astronomers, and later by others, because of the *certainty of their conclusions*, the predictive capacity of the scientific products, despite their lack of propositions articulating primary causes, for example, explanatory causes of gravitation.

These developments reinforced the philosophical link between truth and certainty, and that certainty claims could also demarcate science from nonscience. However, at the same time, they lowered the bar for the understanding of principal causes as a

necessary component of scientific knowledge, which Laudan¹⁸ argues as a rejection of Aristotle’s “know-how” versus “know why” scientific demarcation. Now, certainty, or infallible knowledge, could exist without causal explanation, through description and prediction of the mechanistic processes that constitute the phenomenon.

Empiricism as scientific method

With predictive know-how knowledge placed firmly within the bounds of science, philosophical efforts turned toward determining the requirements of scientific know-how; that is, what processes lead to know-how scientific claims and what processes lead to something other than scientific claims. The scientific method thus became a focus of inquiry. This led to the epistemological conviction that proper science deals exclusively with the *process of empirical observation and measurement*, without recourse to pre-empirical speculation, or theorizing, about causal principles or explanations of a phenomenon of interest.¹⁸ The argument was that inductive methods, that is, direct observation of tangible phenomenon, were scientific and led to certainty claims whereas speculative methods involving unobservable entities, that is, theorizing, could not be scientific because they were by definition not based on observation, therefore disqualified from being able to produce certainty claims. For classical empiricists, predictive propositions came late in the scientific process and were based solely upon repeated observation and documentation. Empirical generalizations were explicit statements comprising formulae of the observable world ($F = m \cdot a$) that were all-encompassing, meaning that they did not need additional inputs of information and were predictive under any circumstance of the phenomenon. Theorizing, or speculation, rather than observation and documentation, became considered epistemologically a “flimsy methodological”^{18(p123)} exercise to be avoided at all costs.

Empirical fact as theory-laden

This description of science as empirically based is still relevant today and is perhaps what many people think of when they think of science. Classical empiricism itself was, however, rather quickly debunked *philosophically* through logical analysis, showing that what lies between a fact and a factual proposition is not certainty, but interpretation. Lakatos and colleagues¹⁹ provide a wonderful example of the logical argument in the book *For and Against Method*. Imagine a machine that gets “fed” empirical propositions and the machine’s job is to answer whether the proposition is true or not. If you feed the machine a mathematical proposition like “2 plus 2 equals 4,” the machine would be able to spit out “true”; the proposition statement has all the necessary information to provide an answer. However, if you feed the machine the proposition “there is an elephant in this room” and ask the machine if the proposition is true or false, the machine simply cannot answer based on the statement alone. To answer the true-false question, the machine needs more information, like a picture of the room, and more importantly, an understanding of what an elephant is, to be able to answer the question. Propositions about facts, without additional information and understanding of the context of those facts, do not lead *directly* to truth statements.

A major epistemic consequence of this debunking was a new understanding about the “theory laden-ness” of facts, meaning that any observation (eg, of an elephant in a room) is perceived only through existing understandings—theories—of the world: observation is not a direct window into objective reality.^{20,21} A devastating conclusion based on this understanding was that the previously assumed direct link between scientific knowledge (either know-how or know-why) and certainty was made visible and found wanting, logically at least, because how can any proposition be considered certainly true when it involved other

forms of nonobservable, that is, noncertain, information?

Bounding theory with empiricism

Philosophers of science were now faced with a conundrum where observation alone was not sufficient anymore as a method to demarcate scientific activity, and theory-laden scientific propositions could not be assumed anymore to be co-terminus with certain truth. The theory laden-ness of observation and propositions needed to be explicitly addressed to recodify the link between science and certainty of knowledge claims. This state of affairs launched renewed efforts to articulate a pathway to scientific certainty, which led to the development of hypotheticodeductive methodology, where propositions, or theories, when, and only when, coupled to “strong empirical constraints”^{14(p122)} could provide the scientific demarcation criteria needed to get to progressive (if never total) certainty. Theories needed to be subjected to rigorous processes of empirical testing in novel cases to prove their scientific-ness and thus certainty. This line of philosophical argument retained basic elements of empiricism, notably the necessity of empirics, but linked empirics to theory in an interdependent but tense relationship that exists to this day, and that will be addressed more in the next section.

The hypotheticodeductive method is still considered a valid scientific demarcation tool in the health sciences. For example, the EBP movement assumes this approach as the pathway to determine health intervention effectiveness, with a strict hierarchy of empirical testing methods to achieve adequate levels of certainty. But it is important to highlight an important realization that came with continued philosophical analysis of the hypotheticodeductive method; the realization that it cannot in-and-of itself be considered a sufficient criterion to *produce* certain truth, just as analysis of classical empiricism showed that propositions in-and-of themselves are not a sufficient criterion to *articulate* certain truths. This means that some hypotheses/

theories will not be verified through testing, yet the hypotheticodeductive method does not clearly identify which theories will deliver the goods and which ones will drop out: there is no such thing as an absolute verification tool. So the method, while able to weed out bad theories through falsification (showing through experimentation that the claims are false), by that very fact cannot provide the security of certainty for any theory/hypothesis: scientific method does not ensure certainty of conclusions because the next test may be the one that falsifies the theory. One can only be as certain as the next test, and not once and for all.¹⁷

The demise of an invariant demarcation of science

Certainty of scientific knowledge is therefore philosophically not guaranteed by either specific approaches or any form (predictive or explanatory) of specified propositions. In fact, as Kuhn decisively showed, scientific theories and what are considered scientific methodologies change periodically, but not through any logically defined process. Rather what is considered scientific has historically undergone conceptual, paradigmatic shifts, or “fundamental conceptual readjustment.”^{22(pxiv)} These readjustments are not logically derived, as Kuhn makes clear: “neither proof nor error is at issue. The transfer of allegiance from paradigm to paradigm is a conversion experience that cannot be forced” and is about “persuasion rather than proof.”^{23(p152)} There is no logical process that defines the transition from one set of scientific theories and methods to another; it happens through social, not scientific, action.

Laudan makes a controversial conclusion based on all this: “*the evident epistemic heterogeneity of the activities and beliefs customarily regarded as scientific should alert us to the probable futility of seeking an epistemic version of a demarcation criterion.*”^{18(p124, italics original)} The continued debates on demarcation should stop, according to Laudan, because they are presupposed

on the spurious and false belief that an invariant definition of science exists.²⁴

Appropriate "objects" of science

If absolute certainty cannot be claimed anymore by science, and absolute criteria for scientific knowledge do not exist, then what exactly can be considered a scientific achievement? Both explanatory knowledge and predictive knowledge have see-sawed throughout the history of science as ultimate criteria of truth. Current philosophy of science has linked explanatory theory with predictive empirics in an interdependent but tense relationship that exists to this day, with no epistemic "winner." This raises questions about objects of science themselves, the phenomenon considered appropriate for scientific knowledge claim pursuits, whether of the explanatory or predictive kind. Previously the criteria determined the quarry, and phenomena unable to be logically formalized or directly observed were rejected as objects of scientific inquiry (eg, esthetic knowing). What influence do the current indeterminate scientific criteria have on "object choice"? Recent philosophers of science have argued that the very fact that science currently does not have strict demarcation criteria opens the door to phenomenon previously conceived as outside the boundary of science. Nicholas Rescher, for example, has argued that the future of science is impossible to predict, based on its history, and concludes therefore that setting domain limitations to science, or "putting entire ranges of phenomenon outside its explanatory grasp" is inappropriate and without merit.^{25(p153)}

Furthermore, with the scientific criteria of absolute truth removed, and both know-why and know-how knowledge considered appropriate scientific pursuits, it becomes possible to ask scientific questions about phenomena that do not require law-like answers.²⁶ It then also becomes possible to regard phenomenon as dynamic, yet still expect, through systematic inquiry, what Donna Haraway calls "reliable accounts of things not reducible."^{27(p114)} Haraway argues for knowl-

edge claims that are "situated," that is, located through connection, not distancing, and where "partiality and not universality is the condition of being heard to make rational knowledge claims."^{27(p121)} Scientific accounts cannot make all-encompassing claims anymore but *can* describe patterns and accounts of the world that are limited but nevertheless revealing and actionable, if only ever partially. Objects of science therefore do not need to be conceptualized as distinct "things" that through isolation and examination can be forever "known," but more accurately as agentic subjects that are related to through a process of systematic inquiry, whether they be genetic codes or geriatric conditions. Haraway defines this shift as "the activation of previously passive categories of objects of knowledge."^{27(p125)}

ESTHETIC KNOWING AS AN OBJECT/AGENTIC SUBJECT OF SCIENCE

It has been argued that "the art of nursing, it would seem, is everything that the science of nursing is not."^{28(p169)} Yet the conceptualization of science has changed so dramatically over the last few decades that it can be argued it is not necessary anymore to dichotomize nursing "art" and "science": the art of nursing can now be "activated" and related to through a process of scientific inquiry that is situated and holistic and does not aim to deconstruct. This is an important advancement because it allows for a move beyond the age-old debate about nursing as art versus science. Risjord, in his own analysis of philosophy of science in relation to nursing, has also claimed that "these changes in philosophical conceptions of scientific theories have profound consequences for the way that nurse scholars should think about science."^{29(p38)}

This is an incredibly fertile time for reorienting Carper's esthetic pattern of knowing as a phenomenon that can be revealed and (partially) accounted for through situated scientific inquiry. Previously, esthetic knowledge was "off the table" for scientific examination because of the ways science was conceived:

observation and categorization of tangible objects to produce stable and predictive truth claims. Esthetic knowledge was conceived as an alternate epistemology of knowledge *precisely* because then-current epistemologies of scientific knowledge precluded its inclusion. Carper wrote about “conceptual structures” as necessary *compliments* to knowledge that is derived from empirical science. Her conceptual structure for nursing knowledge that is enacted and expressed in practice was a theory of esthetic knowing. This epistemological move was important to the progress of nursing in that it clearly articulated an essential component of nursing. However, Carper’s claim that “esthetic meanings can be distinguished from those in science”^{1(p16)} was based on a historical, now refuted, orientation to science that blocked phenomenon without an obvious, observable taxonomy from the boundaries of scientific inquiry.

The implications of the scientific “activation” of the art of nursing, or esthetic knowing, are significant in today’s EBP health care era. As Chinn made clear so long ago, what is unique about nursing is a way of “seeing certain things as problems and creating solutions to those problems. The way we perceive problems and the solutions we seek are consistently grounded in the profound knowing that ‘health is wholeness.’”^{30(p72)} An empirical science that can generate greater understanding and clarity of this phenomenon will provide (a) nurses with a vocabulary that conveys the unique value of nursing in a way that is understandable to EBP-era health care providers/administrators and (b) a situated, holistic knowledge base that helps elucidate the influence of esthetic knowing on patient health and outcomes and therefore can be used to support the full scope of nursing practice across the health care spectrum.

A science of esthetic knowing

What would a science of esthetic knowing look like, and how could it be attained? How can nurses ensure that they are enacting esthetic knowing and that patients are benefit-

ing from it? The majority of scholarship on esthetic knowing continues to focus on advancing its ontology and epistemology.^{3,4,31-39} Most of the “real world” scholarship on esthetic knowing has focused on explicating techniques to foster esthetic knowing in nurses, such as art appreciation,^{40,41} storytelling,⁴² and journaling.⁴³ The idea is that these techniques provoke rich descriptions of imagination and caring, which attunes nurses to creative imagination and the meaning of care. For example, the introduction to a recent issue of the *Journal of Art and Esthetics in Nursing and Health Sciences* explains that the description of beauty is a way to see through the lens of holism and “connect, mind to mind, heart to heart.”⁴⁴ Yet how this attunement or connection is transformed into esthetic knowing in clinical practice is not clear. Perhaps a “routine” of art appreciation translates into a routine of holistic clinical assessment and practice? The suggestion is that esthetic knowing can be enhanced through certain techniques. If this is indeed the case, then it is not unreasonable to ask how this is accomplished.

Empirical scholarship on this question is quite limited, not surprisingly. A recent search in PubMed for research articles on “esthetic/aesthetic knowing/knowledge” OR “art of nursing” returned only 32 articles published in the last 5 years, only 4 of which were empirical research studies, mostly focused on nurses’ and patients’ narratives of esthetic knowing.⁴⁵⁻⁴⁸ Interestingly, all studies were conducted outside the United States. A similar CINAHL search produced 78 articles in the last 5 years, again only 2 of which were unique empirical research studies published in English.^{49,50} These were all conducted outside the United States as well and focused on student opinion of the art of nursing and a qualitative study reflecting esthetic knowing in neonatal nursing practice.

A big part of the problem is the wide variation in labeling the phenomenon of esthetic knowing. This begins with the spelling: esthetics versus aesthetics. Esthetic knowing has also been defined and examined

empirically as clinical expertise,^{11,51} clinical judgment,⁵² tacit knowledge,⁵³ translational mobilization,⁵⁴ and human caring theory,² among others. Interestingly, it is these conceptualizations of esthetic knowing that have been empirically studied in the most depth. The next section describes this research in more detail.

CURRENT EMPIRICS OF ESTHETIC KNOWING

In contrast to the dearth of empirical science on esthetic knowing "proper," there has actually been a wealth of empirical examination of alternate or aligned conceptualizations of esthetic knowing. Scholars have developed sophisticated methodologies to capture manifestations of esthetic knowing, and the knowledge produced has significantly influenced the nursing profession. Benner's work on clinical expertise is perhaps the most recognizable contribution to this scholarship. Benner articulated the fact that "the problems of explanation and prediction in the phenomenal realms (health and illness) must be solved before adequate holistic explanations and predictions of prevention and recovery from disease . . . can be developed."^{55(p3)} Her solution to the problem was Heideggerian phenomenology, a "strategy" that provided appropriate access to dynamic phenomenon such as health and illness, to find exemplars that "embody the meaning of everyday practices." These articulated meanings are the descriptive narratives that make a phenomenon visible and understandable. Benner successfully used this methodology to develop a predictive know-how model of clinical expertise that nurses use to this day to "locate" themselves along a continuum, from novice to experts, and which has been used as "evidence" to promote nursing residency programs in health care organizations across the United States.^{11,56}

Chinn articulated a "method for esthetic knowing in nursing," using critical hermeneutics, "the use of disciplined, deliberate study

. . . to reveal essential meanings."^{57(p28)} What is generated through this form of scholarship is not objective truth, but plausibility of meaning and consensus around that plausibility. The products of critical hermeneutics do not predict the future, yet critically bring "alternative possibilities to full awareness in order to nurture the ability to shape a preferred future."^{57(p32)} This method has been used by nursing scholars to examine elements of nursing care, such as the care of dying patients in the hospital,⁵⁸ and the facilitation of patient "transitions" to better health.⁵⁹

Jean Watson⁹ advanced a theory of human caring, which includes 10 carative factors that serve as a guide for professional practice. Watson places caring science as a "philosophical-ethical-epistemic field of study" that seeks to unify the admittedly diverse ontological and theoretical views of caring, while "incorporating empirics and technology."^{2(pp455-456)} A recent systematic review of empirical scholarship related to Watson's human theory of caring describes various methods of empirical inquiry (survey, focus groups, repeated-measure design, model evaluation) and summarizes the findings, which show students learn caring behaviors through interactions with nursing instructors who model caring behaviors.⁶⁰

Porter has defended qualitative research strategies as "empirics by another route," for demonstrating "those areas of nursing knowledge under the rubric of esthetics."^{3(p10)} Porter argues for a demonstrative, not determinative, empirics that make transparent patterns of knowing in a way that allows for them to be understood through describable actions. He rejects this form of empirics as reductive and argues instead that demonstrative empirics can provide a robust counterbalance to traditional determinative empirical science by providing "evidence concerning the authenticity and humane-ness of nurse-client interrelations."^{3(p10)}

Duff Cloutier et al⁴ also critique the claim that esthetic knowing cannot be scientifically examined. They explicitly argue that "what Carper thought to be 'unknowable', the 'art of

nursing' based on the complexity of practice, unexplainable reality, what some have labeled as intuition, is, at least in part, knowable."^{4(p6)} The authors differentiate between not-yet-known and unknowable and articulate a naturalistic inquiry process for a better understanding of esthetic knowing, which they claim is necessary to inform nursing practice. Naturalistic inquiry, qualitative methods, and demonstrative empirics are all variations on a "post-positivist" form of scientific inquiry, or what Sally Thorne has called a "science of meaning."⁶¹ This science derives from the previously discussed changes in philosophy of science, which allows for different conceptualizations of what science can achieve and the ways to go about achieving it.²⁶

FUTURE DIRECTIONS FOR A SCIENCE OF ESTHETIC KNOWING

How can this scholarship be synthesized and expanded into a targeted program of research on esthetic knowing? The first step is arguably an interpretive synthesis of the diverse conceptualizations of esthetic knowing that translates and transforms this rich and diverse scholarship into a coherent, common understanding of esthetic knowing that can serve as a framework for further scholarship and research.⁶²⁻⁶⁶ There is already consensus in the literature that fundamental aspects of esthetic knowing include experience,^{15,16,42,67,68} perception,³⁴⁻³⁶ and engagement.^{10,36,41,69,70} Research questions can already be constructed on the basis of this preliminary conceptual clarity, such as the following: what types of clinical experiences are associated with perceived growth in esthetic knowing over time? How is engagement expressed in clinical practice, and what is engaged? The unit of analysis for these questions is nursing practice itself. One situated approach to inquiry into nursing practice is practice theory. Practice theory offers a novel lens for understanding and explaining social phenomenon. Practice theory emerged from earlier philosophical discourse by Marx, Heidegger, Wittgenstein, and more recently

from philosophical work in social praxeology, and aims to remove the boundary between subject and object as distinct phenomena.^{71,72} Practice theory centrally places activities as the empirical object of study and as a source of knowledge. The focus of practice theory is on dynamics and relations, which makes it an appropriate lens for examining nursing practice.⁷² Practice theory aims to move beyond conceptualizing phenomenon as static entities, but rather to understand how actions produce outcomes.⁷¹ In this way, light is shed on how knowing is achieved. Researchers taking on a practice theory lens engage with the "core logic" of how practices are produced and reinforced, and with what consequences.⁷¹ This engaged lens is ideal for exploring esthetic knowing as it is manifested in everyday real-world practice and how it embodies knowledge-in-practice. A practice theory approach has already been used to examine nursing practice and make transparent previously "invisible" patterns of action that encompass the day-to-day nursing activities and its consequences.^{54,72,73} A program of research that is based on a consensus framework and uses a practice theory approach to empirically examine esthetic knowing can generate situated theoretical generalizations and has the potential to realize Chinn's expressed hope in *Art and Esthetics in Nursing* for a consensual understanding of esthetic knowing that has the capacity to shape practice.

IMPLICATIONS FOR NURSING SCIENCE

The main focus of this article has been to consider how a complex phenomenon such as esthetic knowing can be scientifically examined to produce interesting, meaningful, and actionable findings. It is not about defining and formulizing esthetic knowledge once and for all, but rather inquiry into its manifestations under various situations and with various outcomes. Causal first principles are not the aim for inquiry, nor do they need to be. Situated claims are possible, however. Furthermore, these claims should not be considered

outside the bounds of nursing values just because they are "scientifically determined." As Risjord explains, the historical division of nursing theories into scientific and non-scientific was a function of considering nursing values inherent in the esthetic pattern of knowing, but not the empirical pattern, which because "scientific" was considered value-free. But has been shown, the theory-laden-ness of scientific facts has already been acknowledged, and as Risjord argues, for nursing, "Carper's segregation of [value-free and value-laden] patterns of knowing is a profound misrepresentation of nursing knowledge"^{29(p64)}

In conclusion, esthetic knowing, because of its importance to nursing practice, should be considered a fundamental topic for nursing science. Nursing science that aims to identify permutations of esthetic knowing in practice to better understand and generate claims as to where and when and how it can be expected to manifest is a reasonable and feasible undertaking. It firmly places esthetic knowing as a critical phenomenon within today's EBP health care era and helps ensure that research findings are valued and acted upon to improve health care practices. As a concrete example, Benner and colleagues¹¹ were able to build a rigorous "know-how" empirical knowledge base of clinical expertise, providing narrative accounts of the stages of knowledge development and the practices nurses enact throughout these stages. This know-how trajectory has become the basis for major changes in nursing education and practice, most recently nursing residency programs in health systems that explicitly aim to facilitate the advancement of nursing expertise in a systematic

way.⁵⁶ There is no reason to believe that the same could not be done in terms of a situated program of research on esthetic knowing.

IMPLICATIONS FOR NURSING PRACTICE

Continued representation of esthetic knowing as an ineffable art limits its full and consistent expression in nursing, which directly impacts the nursing profession in reaching its full potential. It has been noted by many scholars that nurses find it difficult to describe what they do, to themselves and the health care field.^{54,74} Benner, Allen, and others' systematic efforts empirically observing, analyzing, and synthesizing the work of nurses make it quite clear that nursing knowledge and skills are not "plug and play capacities, but built up over time and integrated with the surroundings."^{54(p137)} These capacities drive health care delivery in no small part, yet because they are not well articulated, they remain invisible, and therefore undervalued, to both nurses and other health care professionals. Because of this, current care models that specify the organization of nursing knowledge and practice cannot and do not incorporate or allow for essential elements of nursing practice to be expressed, which research suggests contributes to nursing burnout and attrition, and may also influence patient outcomes.⁷⁵⁻⁷⁷ This is especially true in an EBP health care era. An explicit empirical account of esthetic knowing will have significant professional implications in terms of how nurses are perceived, organized, respected, and understood to influence health care delivery and patient health outcomes.

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