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Working Chance: Peirce's Semiotic Contrasted With Benner's Intuition and Illustrated Through a Semiosis of a Novel Event in the Context of Nursing

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Correspondence: Miriam Bender (miriamb@uci.edu)**Received:** 20 August 2024 | **Revised:** 15 November 2024 | **Accepted:** 20 November 2024**Funding:** The writing of this article was supported in part by resources provided by the Sue & Bill Gross School of Nursing Center for Nursing Philosophy.**Keywords:** Charles S. Peirce | intuition | nursing | nursing knowledge | nursing practice | Patricia Benner | philosophy | pragmatism | semiotic

ABSTRACT

As a practicing clinical nurse, a phenomenon I experienced at times was the sudden acute sense that something was going wrong with a person in care at the sub-critical unit in the hospital where I worked. In fact, many hospital nurses have their story of “something's not right” in relation to a person they were caring for/with, in that the day started with them on a coherent path to healing and then suddenly the nurse feels something is going very wrong, *and yet there is nothing observable that would justify such a feeling*. This feeling would be called “intuition” by many nurses, a concept most notably theorized in nursing by Patricia Benner in her extensive program of scholarship. Benner defines intuition as “understanding without rationale.” Benner opposes embodied intuition and rational abstract reasoning and creates criteria for the use of each by nursing depending on whether the clinical situation is familiar or novel. The philosophical idea is that the new must be reasoned with a different mode of thought than the familiar. Charles Sanders Peirce was a philosopher of reasoning. He defined logic as the theory of reasoning, which by the end of his career he was declaring was only another name for semiotic. Peirce argued that all reasoning/semiosis is done through signs, or more accurately sign-activity. Semiotic is the philosophical schema providing the concepts and methods by which semiosis - reasoning - happens. Importantly, semiotic does not oppose different modes of thought, and conceptualizes reasoning as a process that functions in familiar as well as novel situations. In this paper I describe Peirce's philosophy of semiotic. I then provide an example relevant to nursing by conducting a semiosis of the nursing scenario above to show how nursing “works chance,” or novelty, in a way that doesn't need to resort to rational abstract reasoning and yet is different than Benner's notion of intuition.

We gather what is passing ... in large measure from sensations so faint that we are not fairly aware of having them ... the insight of females ... may be explained in this way. Such faint sensations ought to be fully studied ... and assiduously cultivated by every man.

(Peirce and Jastrow 1884, p. 83)

1 | Introduction

Back when I was a practicing clinical nurse, a phenomenon I experienced at times was the sudden acute sense that something was going wrong with a person in care at the sub-critical unit in the hospital where I worked. In fact, many hospital nurses have their story of “something's not right” in relation to a person they were caring for/with, in that the day started with them on a

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coherent path to healing and then suddenly the nurse feels something is going very wrong, *and yet there is nothing observable that would justify such a feeling.*

This feeling would be called “intuition” by many nurses, a concept most notably theorized in nursing by Patricia Benner in her extensive program of scholarship. Benner defines intuition as “understanding without rationale” (Benner and Tanner 1987, p. 23). Benner’s notion of intuition has been popular in nursing, in part because it affords an idea of knowledgeable nursing practice that allows for emotions and feelings as constitutive of this knowledge.

Intuition involves immediate apprehension, which according to Benner, occurs only as a function of deep acquaintance with similar experiences and recognition of patterns of behaviors that come from a total immersion and embeddedness in clinical contexts and with the people cared for in them. Benner is clear that intuition *only* works in this familiarized context. Where it doesn’t work is in “a novel situation” (Benner, Tanner, and Chesla 2009, p. 320). Benner distinguishes novel situations explicitly as those that do not allow intuition to function.

In my scenario, a nurse is stopped in their tracks related to a novel situation, where what to do next is unknown. For Benner, in these kinds of novel situations, the nurse must rely on “detached deliberation of an expert facing a *novel* situation in which he has no intuition and so... must resort to abstract principles” (Benner, Tanner, and Chesla 2009, p. 320-1, italics in original). In my scenario, it would seem that an apprehension of the unknown must shift the nurse into an abstract, principle-based reasoning, meaning, the nurse is no longer functioning through intuition.

This is an interesting distinction Benner seems to think has to be made; a distinction between an intuitive mode of thought or reasoning and an abstract mode. And from these two modes one *must* be selected over the other based on the situation at hand. This is a bifurcation of thought or reasoning based on different kinds of situations. The philosophical idea is that the new must be reasoned with a different mode of thought than the familiar.

Charles Sanders Peirce was a philosopher of reasoning. He defined logic as the theory of reasoning. This is a broad definition of logic, which by the end of his career he was declaring was “only another name for semiotic” (CP 2.227¹). Peirce argued that all reasonings, or semioses, happen through signs, or more accurately sign-activity. Importantly, semiotic does not oppose different modes of thought. Rather, semiotic involves a categorical system of relationality that creates conditions for the emergence of signs and sign-activity—reasonings or semioses in all their variety.

To understand how this is the case, I will have to specify Peirce’s ideas in some detail in this paper because of the unique philosophical concepts and methods Peirce developed to make semiosis possible. This includes his characterization of experience, in which “experience is neither certain nor uncertain, because it affirms nothing” (CP 1.144). How then to know through experience? Through a “***radicalism that tries experiments***” (CP 1.148, bold and italics in original). According to

Peirce, the process of reasoning is a process of experimentation, more or less “hazardous” (EP p. 472) in terms of effects. Peirce’s idea was that reasoning involves sign activity, which effectuates feelings, efforts, and thoughts. Signs are mediums of thought, which only happens through action, which cannot happen except through feeling. This processual always involves all three elements and it is their interrelations, as structured via semiotic into classifications of triadic relations, that make for the variety of reasonings or semioses.

All this is elaborated in the following sections, after first considering a more thorough exposition of Benner’s theory of intuition, including her arguments about where it works and where it doesn’t. I then conduct a semiosis of the nursing scenario I began this paper with, to show how nursing “works chance,” or novelty, in a way that doesn’t need to resort to detached analytic reasoning and yet is different than Benner’s notion of intuition.

2 | Benner’s Intuition

Expert nursing practice has been linked to a concept called intuition by Patricia Benner in a large body of scholarship. Benner defines intuition simply as “understanding without rationale” (Benner and Tanner 1987, p. 23). Benner argues that intuition is involved with expert nursing clinical judgment and has made this linkage in terms of Dreyfus’s idea of “intuitive judgment” (Benner and Tanner 1987).

Clinical judgment, which involves intuition, is how Benner conceives a nurse “developing the moral imagination and skills of being a good practitioner” (Benner 2000, p. 8). Nursing practice qua clinical judgment involves phronesis as well as techne, Aristotelian terms distinguishing “procedural and scientific knowledge” from “practical reasoning engaged in by an excellent practitioner lodged in a community” (Benner, Tanner, and Chesla 2009, p. xvi). Benner makes the argument that clinical judgment is a moral and embodied practice that involves a different kind of knowing than “mechanistic rationality,” described as a “conscious, linear analytic process” (Benner, Tanner, and Chesla 2009, p. 209). Clinical judgment is the socially constituted moral agency of a nurse that drives the kind of practice nurses do and involves emotions and perceptions and judgments—“perceptual capacities that enable reasoning and acting as moral agents in particular lifeworlds” (Benner 2000, p. 6). While techne is also necessary for clinical judgment—the nurse needs “intellectual training” (Benner 2015, p. 1) providing theoretical knowledge of things like pathophysiology so as to clearly be able to recognize and act on it in the clinical setting—Benner’s argument is that intuition comprises the special unique efficacy by which the nurse acts “as” knowledgeable nurse.

Nursing through this lens becomes “an existential skill” (Benner, Tanner, and Chesla 2009, p. 20). Benner and colleagues call this effort a phenomenology of everyday ethical expertise in which emotion is critical to “developing ethical sensitivity and perceptual acuity that are necessary to the discernment of qualitative distinctions central to clinical and ethical judgments” (Benner, Tanner, and Chesla 2009, p. 309). This all involves intuition, or immediate apprehension, which

according to Benner, occurs as a function of deep acquaintance with similar experiences and recognition of patterns of behaviors that come from immersion and embeddedness in clinical contexts. These apprehensions are “not arrived at through a conscious, linear analytic process” (Benner, Tanner, and Chesla 2009, p. 209). Rather, it is by a thorough familiarity with the routine goings-on of people being cared for within clinical contexts that expert nurses acquire what Dreyfus originally termed aspects of intuitive judgment, such as pattern recognition and similarity recognition (Benner and Tanner 1987). This means that the trajectory from novice to expert nurse involves becoming deeply familiar with patterns of care trajectories and clinical situations.

It is precisely this familiarity with the expected that allows the expert nurse to see the unexpected or unnoticed and address them. Benner speaks to instances somewhat similar to the opening scenario, if not quite. She calls it “recognizing the unexpected—that is, when tacit global expectations of patient’s recovery are not met” (Benner, Tanner, and Chesla 2009, p. xvii) and discusses this in a section called *Seeing the Unexpected* in a book chapter on expert practice (Benner, Tanner, and Chesla 2009, p. 153–157). The expert nurse recognizes what goes unnoticed by others because “one has experientially learned what to expect and is open to perceiving missed expectations” (Benner, Tanner, and Chesla 2009, p. 154).

Benner calls these missed expectations “salient aspects of the situation” which promote “detective work” in gathering the until-then unnoticed data and then providing it to the clinical team to resolve issues (Benner, Tanner, and Chesla 2009, p. 154–5). This process is reliant on “knowing the patient” which is a “vital aspect of interpreting early warnings and of managing instantaneous therapies” (Benner, Tanner, and Chesla 2009, p. 347). These “early warning signs” are the “salient” indicators of a situation, there to be noticed via expert intuition and which brings the situation back to expected trajectories. This intuition of the unexpected/unnoticed happens in direct relation to previous and deep acquaintance; with the people being cared for/with themselves, with their expected clinical trajectories, and with the context in which all this occurs. It involves picking up on something that should have been picked up on but wasn’t—a missed-known rather than an un-known.

2.1 | Where Intuition Does and Does Not Work

While this certainly happens in nursing, a lot, it does not correspond to my scenario, which is a scenario in which the nurse confronts something alien; not something unexpected so much as something completely unknown. Another obvious example is the nursing done in the early days of Covid-19, when literally no one had ever ‘had’ Covid-19 before and health systems and clinicians were literally upheaved by the process of trying to care for them. According to Benner’s theory, these nurses were unable on principle to practice through intuition, since there was zero familiarity with Covid-19, with how Covid-19 manifests in bodies, or how to treat and care for these people within the context of total uncertainty about how Covid-19 might be transmitted. To be clear, with Covid-19 there were no expectations that could be missed since covid was a novel phenomenon in which nobody knew at all what to expect.

Benner distinguishes these as novel situations explicitly because they do not afford that with which intuition can function. This is the way she puts it, “an intuitive expert facing a familiar but problematic situation” should be distinguished from the “detached deliberation of an expert facing a *novel* situation in which he has no intuition and so... must resort to abstract principles” (Benner, Tanner, and Chesla 2009, p. 320-1, italics and gender attributions in original). This makes it clear that there are situations in which intuition works and situations in which it does not work; “detached analytic reasoning is needed in cases of breakdown, where direct apprehension [intuition] does not occur” (Benner, Tanner, and Chesla 2009, p. 387).

This is problematic however because as Benner and colleagues stress, abstract principles “are unable to produce expert behavior” and thus linear analytic reasoning by definition “produce[s] inferior responses. The resulting decisions are necessarily crude, since they have not been refined by the experience of the results of a variety of intuitive responses to emotion-laden situations and the learning that comes subsequent to satisfaction and regret” (Benner, Tanner, and Chesla 2009, p. 321).

This seems paradoxical. Good nursing is intuitive nursing but the moment a situation arises that involves novelty, intuitive reasoning is no longer possible, and yet the analytic reasoning that is the only recourse the nurse has in this situation will by definition produce “inferior” nursing. This makes it seem as if the only context in which good nursing can happen is in contexts where novelties never arise. And yet, as many nurse readers could attest, and which much literature makes evident, nurses are continually experiencing and competently nursing in the context of novelty or contingency (see e.g., Allen 2018 or any of the innumerable papers describing the creative and life-saving nursing actions in response to the most novel health scenario we have encountered in the last century, Covid-19).

2.2 | Overcoming the Paradox

The intuition-calculation distinction that Benner seems to think has to be made is a bifurcation between an intuitive mode of thought or reasoning and calculative mode. And from these two modes one *must* be selected over the other based on the situation at hand. This is a bifurcation of thought or reasoning based on different kinds of situations. The philosophical idea here is that the new must be thought with different tools than the familiar.

Charles Sanders Peirce, an American philosopher and a founder of Pragmatism, was interested in this idea. A constant focus of his philosophy was thought or knowing, which he termed reasoning. He defined logic as the theory of reasoning, the whats and hows of reasoning. This is a broad definition of logic, which by the end of his career he was declaring was “only another name for semiotic” (CP 2.227). Peirce argued that all reasonings happen through signs, or more accurately sign-activity qua semiosis. Each semiosis is a reasoning. Importantly, semiotic does not oppose different modes of thought or reasoning. Rather, the structure of semiotic elaborates and accounts for sign-activity, or reasoning, in all its different varieties (which will be discussed in more detail in a later section).

3 | Contrasting Peirce's Semiotic and Benner's Intuition

Benner's theory defines caring as "experience-based intuition" (Benner, Tanner, and Chesla 2009, p. 326, italics in original), involving a "response to the *unique*, as opposed to the general, situation," with the unique defined as the situation in which deep embedded familiarity drives action instead of "rules and maxims dictating what *anyone* should do" (Benner, Tanner, and Chesla 2009, p. 326-7, italics in original). Benner has done significant work inquiring into and theorizing care as a mode of intuitive reasoning that not only allows for the emotional, the affective, and the contextual, but demonstrates them in action in embodied expert nursing practice.

Yet while Benner develops this generative concept of intuition, 'the rational' is retained in her theorizing, as she continues to acknowledge that a detached rational mode of thought is also needed for nursing practice at times. In fact, an opposition between novel and familiar contexts is what drives Benner's need for intuition in the first place; the need to move beyond cognitive models of thought that "control for or ignore context, emotion, and the individual's experience" (Benner, Tanner, Chesla 2009, p. 207). Hence the bifurcation, where both "cognitive" and "embodied" modes exist but are opposed, with the consequence that a switch must occur from the embodied-intuitive to the cognitive-rational or vice versa based on the criteria of whether the situation/context is novel or not.

What is at stake here is the difference between the rational and the human as described by the Dreyfus brothers in the first chapter of *Expertise in Nursing Practice* (Benner, Tanner, and Chesla 2009). For the Dreyfus's, theory involves that which is explicit, universal, and abstract, and traditionally is viewed as coming before practice, the idea that theory drives practice and not the other way around. According to the Dreyfus's, theory has as its focus "a physical object governed by physical laws" while intuition involves the human, "a unique way of being in that everything human beings do follows from their individual self-interpretation" which means "the human being does not have fixed properties like an object" (Dreyfus & Dreyfus in Benner, Tanner, and Chesla 2009, p. 19). These distinctions between humans and objects make them different in nature and hence differing in expression—objective laws and subjective interpretation—which means that neither can be folded into the other nor grounded in a deeper common root.

Peirce was critical of this kind of bifurcating approach to reasoning. Peirce's idea of logic was that it accounted for reasoning "as such," without assuming there were elements of the process of reasoning that were specific to humans. He did this by transforming what the Dreyfus's conceive as objects with properties which can be abstracted into universal theories, into the category of thirdness. Thirdness is described in more detail below, but in brief for Peirce what is characteristic of laws or theories is that theories "to which future events have a tendency to conform is ... an important element in the happening of those events" (CP 1.26). For Peirce, any prediction, housed in theory, is a hypothesis about the *mediations* by which something would come about. This is a very different conception of theory than the Dreyfus's, because it does not assume fixed properties or

even static objects, but rather habits of life, always in evolution (described in more detail below).

Peirce's overcoming of ideas of the fixed and abstract and calculatable goes to the very heart of his Pragmatism,² in terms of focusing on events rather than objects, and specifically conceiving the event's thirdness as the "important element in the happening of" the event that gives to potentially many different and disparate actions a general common effect, and thus transforms actions into habits (rather than laws). And a habit is another way of putting the pragmatic maxim; what one is prepared to do under specific circumstances, with "one" not assumed to be a human. For Peirce semiotic generalizes to the conduct of a stone [CP 5.96], a sunflower [CP 2.274], and even a rainbow [CP 5.283], as well as us.

This is all elaborated upon in some detail in the following sections. It is important to note that this inquiry into Peirce is through the lens of nursing and so the focus has been on illuminating Peircean ideas that particularly resonate with nursing. For those not especially interested in reading the details of Peirce's philosophy, they can skip ahead to section 8, titled "a semiosis of chance, or, how nursing works chance."

4 | Introducing Peirce

Peirce (pronounced "purse") was a scientist and philosopher who stands as a founder of modern logic, as well as Pragmatism. He is rightly known for his logic of science, including his theories of probability, abduction, and induction. Yet through the development of his scientific logic, including rigorous measurement schemes that are still in use today (including probability statistics and the procedure of randomization) what struck Peirce the scientist was that variation was always the only "stable" outcome of measurement. Peirce the philosopher inquired into this "scientific fact" of instability, and his genius was in not explaining it away as anomaly or error. Rather, he admitted that the world was "chancy" (Hacking 1990) and philosophically worked out the consequences of a chancy world in terms of a method of inquiry, which he termed semiotic.

To consider the world as chancy is to consider that it is not always already there, stably and immutably waiting to be discovered and abstracted into theory. One traditional way of orienting to the consequence of a chancy or unstable world is to view it as "arbitrary," which is devastating in terms of accounting for it intelligibly. To remove this cast of arbitrariness and unintelligibility from an admittedly chancy world, Peirce had to *reconsider the fundamental constituency of the world and how it is known*. This meant in part rethinking traditional philosophical ideas of Cartesian dualism between mind and matter, where the mind becomes something ontologically distinct from the world, which then creates intractable problems in terms of how the two ontologically distinct substances interact.

Peirce overcame this philosophical dualism of mind and matter through "a radical shift from objects to process thinking," as Kevelson has put it (Kevelson 1994, p. 215). Or as Peirce put it in his writings on philosophy of mind, "we are accustomed to speak of an external universe and an inner world of thought.

But they are merely vicinities with no real boundary line between them” (CP 7.438). Peirce’s philosophy reconceived the world as an open-ended production via signs interpreted through the process of semiosis in which intelligible continuity (not distinction) between the natural and the human result.

Peirce’s semiotic addresses an inexhaustible world-in-the-making, transforming traditional notions of knowledge as about the properties of pre-existing entities towards a notion of knowledge as a process of inquiry. In this way “what exists” is transformed into *that which awaits inquiry*. Importantly, this inquiry reaches right into the ontological, as that which happens and can be received, communicated, and even made durable over time through sign transformation. Thus, knowledge of the world becomes an ongoing semiotic process of interpretation which is expressed ontologically—the *world qua metaphysical product of a method of inquiry*.

5 | The Development of Peirce’s Categories

Peirce began by developing what he called the “phaneral” categories, meaning that which is hypothesized as characteristics of all experienced phenomenon, to provide a scaffolding for his semiotic. Peirce developed and refined these categories over the course of his life. Peirce had a special term for this kind of analysis, phaneroscopy, to distinguish it from Husserl’s phenomenology. There are some commonalities between Husserl’s phenomenology and Peirce’s phaneroscopy (Shafiei and Pietarinen 2019) but they have very different philosophies elucidating their insights and thus should not be confused with each other. Peirce felt a comprehensive list of categories was the necessary first step in characterizing all forms of reasoning about experience. Peirce’s three categories are firstness, secondness, and thirdness. Peirce provides evocative illustrations to help understand these categories.

5.1 | Firstness

Firstness is “simply a peculiar positive possibility regardless of anything else... [an] unanalyzed total impression made by any manifold not thought of as actual fact, but simply a quality” (CP 8.329). These “qualities” that have an existence purely of their own, “must be initiative, original, spontaneous, and free... it precedes all synthesis and all differentiation; it has no unity and no parts. It cannot be articulately thought: assert it, and it has already lost its characteristic innocence; for assertion always implies a denial of something else. Stop to think of it, and it has flown!... first, present, immediate, fresh, new, initiative, original, spontaneous, free, vivid... and evanescent” (CP 1.357). Firstness involves pure potentiality, that which could potentially become, without having become (because that would involve secondness), and thus can only ever be analytically inferred, “every description of it must be false to it” (CP 1.357).

5.2 | Secondness

Secondness characterizes the actual. If firstness characterizes possibility, it is secondness that characterizes actuality, “the

force of existence” (CP 4.172). Secondness is “eminently hard and tangible. It is very familiar, too: it is forced upon us daily; it is the main lesson of life... limitation, conflict, constraint, and secondness generally, make up the teaching of experience” (CP 1.358). We are daydreaming away in our garden and suddenly are brought back to actuality by the piercing whistle of a train passing by. We are walking down the street with no thought of our legs moving and the street meeting us at every step when all of a sudden we are on the ground, felled by a pothole. These are experiences of action-reaction. The breaking of a flow by a rupture. This is the world encountering itself, “one thing acting upon another—brute action” (CP 8.330). A stone crashing to the ground, a person crashing onto the street, a sound crashing into a space.

5.3 | Thirdness

Peirce considered thirdness the “mental element” in phenomena. The illustration that best brings thirdness to light, for me at least, is Peirce’s description of giving, the giving of a gift. Here it is:

If you take any ordinary triadic relation, you will always find a mental element in it. Brute action is secondness, any mentality involves thirdness. Analyze for instance the relation involved in “A gives B to C.” Now what is giving? It does not consist [in] A’s putting B away from him and C’s subsequently taking B up... In A’s putting away B, there is no thirdness. In C’s taking B, there is no thirdness. But if you say that these two acts constitute a single operation by virtue of the identity of the B [i.e., a gift], you transcend the mere brute fact, you introduce a mental element (CP 8.331).

With thirdness, Peirce argued against the philosophy that denies the reality of abstractions or ideas, or as Peirce puts it, the question of “whether laws and general types are figments of the mind or are real” (CP 1.16). Rather than espouse the position “that the rationality in nature arises in human reason” (Houser in EP, p. xxiii) Peirce showed how these laws (or rules such as gift giving) *do* have characteristics of their very own. We *could* consider a law of nature (say, gravitation) to be a “mere formula” that *we alone* have devised to establish a relation between terms, but Peirce then demands an answer to the question of “what in the world should induce a stone, which is not a term nor a concept but just a plain thing, to act in conformity to that uniformity?” (CP 5.48). This means, *our* “mere formula” does not have the power to make *those* stones move. So, what does this power then consist of? Peirce’s answer is thirdness.

What is characteristic of formulas and rules and laws, from a Peircean point of view, is that rules (and laws, etc.) “to which future events have a tendency to conform is *ipso facto* an important thing, an important element in the happening of those events. This mode of being which *consists*, mind my words if you please, the mode of being which *consists* in the fact that future facts of Secondness will take on a determinate general character, I call a Thirdness” (CP 1.26, bold and italics in original). Any prediction (such as that housed in an equation) is about *the future* and thus has nothing to do with

secondness, which involves the crash of the now. And predictions themselves are the hypothesized *relations or mediations* by which something would come about. It is this a differentiation between action and *conduct*, which distinguishes secondness from thirdness.

Peirce has a lovely story illuminating this difference between action and conduct, which is the baking of a pie (CP 1.341). We can observe the many activities involved in baking a pie, including the fact that different people do different things and use different ingredients, but what is it that affords us and them the capacity to say, “they are baking a pie” rather than to simply serialize their activities from start to finish and end it at that? It is the event’s thirdness, the “important element in the happening of” that gives to the many different and disparate actions a general common effect, and thus transforms actions into conduct, or to use another of Peirce’s terms, a habit. And a habit is another way of putting the pragmatic maxim; what we, broadly defined—us, a stone [CP 5.96], a rainbow [CP 5.283], a sunflower [CP 2.274]...—are prepared to do under specific circumstances.

5.4 | Firstness of Firstness, Secondness, and Thirdness

Peirce was clear that his categories were not to be thought as ingredients of phenomena; they are emphatically not the “building blocks” of phenomena. As Peirce put it, “perhaps it is not right to call these categories conceptions; they are so intangible that they are rather tones or tints upon conceptions” (CP 1.353). So what is their importance then? As categories they have the capacity to *give character* to phenomena and thus make for the ability to “mark them” (CP 2.662).

This is subtle yet important, because what this affords is the ability to organize what otherwise has been conceived as intangible *as well as* utterly distinct. Traditional classification schemes presuppose a common trait or property of whatever is being organized, or rather sorted, that are assumed to be commonly pre-existing in a class of entities, which is what enables them to be demarcated from other classes of entities. Peirce is highly critical of this “metaphysical signification” (EP2 p. 116) in relation to classification. For Peirce classification works via ideas, “every class has its definition, which is an idea” (EP2 p. 121). It is the idea that has the power to create classifications, and “a natural class being a family whose members are the sole offspring and vehicles of one idea, from which they derive their peculiar faculty” (EP2 P. 125).

The intangible and distinct become tangible and related through Peirce’s classifying ideas accounting for the ways firstness, secondness, and thirdness can be in relation. While all experience involves firstness and secondness and thirdness, their involvements differ depending on the experience. This differing relational involvement is expressed via ordinality, and the order of involvement is first first, then second, then third. This principle of ordinality affords the ability to organize categorical relationalities, in that “there is such a thing as the Firstness of Secondness and such a thing as the Firstness of

Thirdness” (CP 1.530). But there can be no secondness of firstness, nor thirdness of firstness, which would contradict the principle of categorical ordinality. Space precludes a fuller discussion around this, but it is important to keep in mind that these categorical relationalities guided Peirce’s efforts developing the semiotic classifications signifying these relationalities, which will be discussed in the next section, and will be referred to again in the section on semiotic and chance further along in this paper.

6 | From the Categories to Semiotic

The signs of semiosis evolved from Peirce’s early work on the logic of inference, from which he concluded that “inference in general obviously supposes symbolization; and all symbolization is inference” (W1, p. 280). Reasoning for Peirce meant symbolization in terms of *inference by signs from signs*. It is very important to always keep in mind that signs are emphatically not things or entities, but relationalities enacted semiotically involving firstness, secondness, and thirdness, in a logically articulated manner.

The different kinds of relationalities between the categories of firstness, secondness, and thirdness are signified or represented through semiotic, the study of signs. *Signs stand for the categories from the perspective of their manifestations* (CP 1.346). This can happen in all sorts of ways and so Peirce put much effort into developing numerous semiotic classifications of these modes and perspectives. The most famous classification is the nine types of semiotic relation (e.g., iconic, indexical, and symbolic) depending on the aspect of the sign considered.

These classifications constitute a rich and open-ended matrix of kinds of semioses, encompassing everything from sensing a quality to a hypothesis and beyond. It is through semiotic that Peirce’s world becomes “perfused with signs, if it is not composed exclusively of signs” (CP 5.448). The world is a sign, just as “the mind is a sign,” (CP 5.313) just as “every thought is a sign” (CP 5.314), and semiotic is how this happens.

6.1 | Semiotic Triadicity

It is important to understand that a sign is not actually “a sign,” in terms of an individual autonomous thing. A sign means sign-activity. And this activity involves a triadic relationality between three sign-elements; a sign, its object (another characteristic of sign), and its interpretant (yet another characteristic of sign). These technical terms convey the work of sign-activity with all their kinds of effects, such as feelings and actions and thoughts. As Peirce puts it, “we may take a sign in so broad a sense that the interpretant [effect] of it is not a thought, but an action or experience, or we may even so enlarge the meaning of a sign that its interpretant [effect] is a mere quality of feeling” (CP 8.332).

More formally, a sign *mediates* between its interpretant and its object. This is the method of the transformation of signs. What results in this transformative sign-activity “is itself something in the nature of a representation, or a sign,—something noumenal,

intelligible, conceivable, and utterly unlike a thing-in-itself” (EP, p. 380). This complex statement is basically saying that semiotic has not to do with a human mind thinking about what is not in the mind, that is, the world. For Peirce, person, thought, world, and sign are all of a piece and only distinguished through analysis. As he puts it, the “sign which man uses is the man... man is a sign... man is the thought” (CP 5.314).

For Peirce world *is* sign, thought *is* sign, mind *is* sign, and “Truth is the conformity of a representamen to its object—*its* object, ITS object, mind you” (EP2, p. 380, italics and capitals in original). This means, semiotically, that an object is not pre-existing, waiting to be denoted by a sign, and an interpretant is not an already-there person doing the denoting. To consider object and interpretant in this way would be to conceive them as pre-defined concepts in and of themselves and the work being to consider them in all their variation. Yet signs are not concepts, they are mediums, modes of mediation.

Mediation is the character of a sign. “A sign is anything which is related to a Second thing, its Object, in respect to a Quality, in such a way as to bring a Third thing, its Interpretant, into a relation to the same object” (CP 2.92). Semiosis is the doing of this sign-activity while semiotic determines the overall structure and elements that afford semiosis. What is the result of all this activity or mediation? A modification of mind; an effect; a meaning; a happening brought about through semiosis. World-mind-thought happens and grows and changes via mediation worked out by Peirce as a logic of relation.

In this brilliant if exceedingly difficult to understand philosophical scheme, Peirce found a way to make the world reasonable, all of it, from possibility to the future and everything in between. In a later section I will show concretely how this triadically plays out in a nursing situation, when nurses “work chance.”

7 | Semiotic and Chance

Semiotic was developed by Peirce in part because he recognized that his early logic of science did not provide a full account of logical reasoning. If Peirce was to follow through on his commitment that inquiry was a reasoning process full stop—the world was reasonable, all of it—he had to account for how chance could be reasoned, and not just calculated (away).

To do this Peirce had to inquire into chance as such. Peirce does this by asking, what characterizes irregularity, or chance? In asking this question Peirce moves towards a notion that “pure chance may itself be a vital phenomenon” (CP 6.322). Here Peirce begins to cleave chance of its mathematical necessity and begins to consider chance as possibility, which is “opposed to the necessary” (CP 6.366). Peirce elaborates, “in the sphere of mathematics, logic, and metaphysics there is not possibility in the strict sense; all that exists exists of necessity. [It is only] in the physical and practical spheres which deal with... the notion of possibility” (CP 6.366).

Peirce here makes the critical move of exporting chance out of the realm of the mathematical and importing it into the realm of the phaneral (phenomenal). Peirce links chance with his

phaneral category of firstness, which as described previously is about the immediate, fresh, new, initiative, original, spontaneous, free, vivid, and so forth. Peirce concluded not only that “chance is first” (CP 6.32), but that they are of a piece, “Firstness, or chance” (CP 6.202). And once chance has been characterized as phaneral firstness, it has been transformed into that which can enter into semiotic. And that is how Peirce created the conditions for chance to be reasoned.

Peirce is then able to ask “whether... chance... must not occasionally be *productive of signal effects* such as could not pass unobserved” (CP 6.47, italics mine). Here we return to the categorical relational organization of the firstness of firstness, secondness, and thirdness, to help us understand this question. What Peirce is describing here is a *firstness of thirdness*. There is pure firstness, and chance is characterized as such. But according to Peirce chance can be “productive of signal effects” and so this means we are not in the realm of phaneral pure firstness/chance anymore but dealing with categorical relationality, hence moving toward semiotic. Semiotically, it is thirdness that is involved here, because an effect is a mediation. Does this mean chance involves thirdness? No: recall there cannot logically exist a thirdness of firstness related to the principle of ordinality. What is possible is a firstness of thirdness, which Peirce defined as “a mere Quality of Feeling... *to represent itself to itself* as Representation” (EP2, p. 161, italics mine). An *effect* of firstness or chance is *feeling*, chance felt, and Peirce is clear, “wherever chance-spontaneity is found, there in the same proportion feeling exists. In fact, chance is but the outward aspect of that which within itself is feeling” (CP 6.265). And it is precisely this feeling-effect that brings chance into semiotic inquiry.

What Peirce accomplished was conceiving an inquiry of chance as a process of categorical relation (i.e., the firstness of thirdness) that can be reasoned semiotically. The firstness of thirdness, an effect of chance—feeling as chance felt—constitutes the very mode by which chance becomes reasonable. It becomes reasonable via its encounter with mind; recall that the definition of phaneron is an appearance come to (not in) mind. Here we have firstness-chance come to mind, and in this phaneron-mind encounter, or more accurately, the encounter in which phaneron and mind become, there is created a sign. Peirce put it this way, “a feeling, therefore, as a feeling, is... the **material quality** of a mental sign” (CP 5.291, bold in original). Chance has been made material, that is, transformed from “intangible” category to tangible sign, and thus becomes available for semiosis.

8 | A Semiosis of Chance, or, How Nursing Works Chance

We now have a rudimentary idea of Peirce’s philosophy. For Peirce all is inquiry, done reasonably, through semiotic. Coming back to my clinical scenario, I want to suggest here that nursing “works chance” as part of its practice. Many hospital nurses have their story of “something’s not right” in relation to a person they were caring for/with, in that the day started with them on a coherent path to healing and then suddenly the nurse feels something is going very wrong, *and yet there is nothing observable that would justify such a feeling*.

This is a hospital situation in which a particular kind of emergent event—one we don't fully grasp yet—is happening. For example, a person who just had major surgery is 2 days post operative and has mostly been healing according to plan, but the nurse checks in and stops short with this feeling, "wait, something's off." But, as just mentioned, there is nothing to point to that would justify this feeling; the vital signs are stable, physical assessment doesn't turn up anything, the morning labs were within normal range, and so forth. In this novel (non-routine) situation, the nurse might decide on extra vigilance and alert the clinical team, but without objective data to point to, this feeling remains just that, a feeling. The outcomes of this situation can be various: it can amount to absolutely nothing (an end-of-shift "hmm, that was weird"); or over the course of a clinical shift certain observable signs could begin to emerge that has a nurse suspecting what might be happening (sepsis?); or perhaps most devastatingly, the person codes right at shift change, with asystole emerging as the only, fatal, observable indicator that "something's wrong."

It is precisely this variability in potential outcomes that makes this situation other than what Benner speaks to in terms of an unexpected event, in which the expert nurse "finds" the missing data and thereby puts the scenario "back on track," so to speak. What follows is a semiosis of nursing practice in the context of a novel event.

8.1 | Emotional, Energetic, and Logical Interpretants

This semiosis will focus on nursing in the context of a specific healthcare event, and it will involve specific sign-interpretants that Peirce developed alongside an illustrative story which seems to serve the purpose of explaining why these specific interpretants needed to be developed. The story is about a "problem... that does not fall within any class for which any general method of handling is known, and that indeed it is indefinite in every respect... it seems to elude reason's application or to slip from its grasp" (EP2, p 414-415).

To recall, interpretants are the sign-aspects involved with mediation, or "the proper significate outcome [effect] of a sign" (CP 5.473), which constitutes semiotic meaning. The interpretant trichotomy Peirce develops includes the emotional, energetic, and logical interpretant. There are three interpretants because an interpretant represents thirdness, and to recall there is a firstness, a secondness, and a thirdness of thirdness. The emotional interpretant constitutes the firstness of the represented thirdness. The energetic interpretant constitutes the secondness of the represented thirdness, and the logical interpretant constitutes the thirdness of the represented thirdness.

These interpretants, when semiotically involved with their other sign-aspects (sign and object-sign) have their mode of effectuation as follows, "in all cases, it includes feelings... If it includes more than mere feeling, it must evoke some kind of effort. It may include something besides, which, for the present, may be vaguely called 'thought'" (EP2, p. 409). So when these interpretants are in play, there is in all cases the effect of feeling, there may be effort, and there may be "vague-thought." It all

depends on the semiotic event. In Peirce's story, he is describing an event that seemingly "eludes reason's application," which is an event where thought can only ever be "vague," as will be made apparent in what follows.

Another piece of critical information Peirce provides about these kinds of events that seem to elude reason's application is that what is determined first is the sign-interpretant, not the sign-object. The interpretant comes first because "in its general nature, the interpretant is much more readily intelligible than the object, since it includes all that the sign of itself expresses or signifies" (EP2, p. 410). This means, for an event that is "indefinite in every respect," it is the interpretant that provides vital information about what the object-sign *could be*. But "merely producing a mental effect [vague thought] is not sufficient to constitute an object" (EP2, p. 429). This means both an interpretant and an object-sign must be determined in relation to any semiotic event for its meaning to become clear, that is, to not be vague anymore.

8.2 | Working Chance

We are now ready to move to the context of nursing. Think of a hospital situation in which a particular kind of emergent event—one we don't fully grasp as occurring yet—is happening. For nurses these are usually the events in which they say to themselves in the context of what until then had been routine care for/with someone, "something's off here, something's not right." For example, a surgical patient is 2 days post operative and has mostly been healing according to plan; the person is up walking, the medications have been able to be changed from intravenous to oral, the incision site looks clean without any signs of infection, in the morning assessment the person was joking with the nurse about something, and so forth. Then the nurse walks into the room that afternoon and stops short with this feeling, "wait, something's off."

From a semiotic perspective this is an appearance to mind, effecting interpretants, and the interpretant being effectuated at this stage of the semiosis is the *emotional* interpretant, with its mode as the *feeling* that "something's off." Recall that the *energetic* interpretant has as its mode of effectuation effort. In this hospital situation, the feeling-effect motivates the nurse into efforts figuring out "the reason," the object-sign, of their feeling; what is happening that prompts effort and yet is not yet "object-ified?" At this stage of the semiosis there are as yet no logical interpretants involved that would enable the form of the object (i.e., its sign, EP2, p. 477) to become determined, which would enable conduct under a habit, that is, knowing what to do next. And this is of course where we want to be in these situations, to have moved from confusion (what to do?) to knowing what is going on and thus knowing what to do.

I suggest that what is not yet determined (via its object-sign) is chance, and that what we are interrogating is a chance event. When a nurse suddenly stops short with a feeling that "something's wrong," what they are feeling is chance, or novelty. Recall, "wherever chance-spontaneity is found, there in the same proportion feeling exists. In fact, chance is but the outward aspect of that which within itself is feeling" (CP 6.265).

The nurse is suddenly apprehending that they are in the presence of chance via its effects-interpretants. And in the presence of chance, the nurse feels an inkling of the subversion of a desired plan, that chance is intervening on what until then had been a logically interpreted habit. Suddenly, the order of things is no longer set, the routine for the day becomes no longer routine.

These chance events involve breaks in the care routines nursing is involved with. Yet these breaks are not observable, they can only be felt; chance is a firstness and not a secondness. The nurse feels “something wrong” and yet when they search for the reason for what is wrong, there is nothing to be found. Note that this is a situation quite different than Benner’s intuition of a missed known that has been ignored by others but detected by the nurse who can then bring it to the clinical team’s attention. In the chance event, the object of the feeling has not actualized yet; nothing crashes forth, meaning there simply *is* nothing to detect. No wonder the nurse is feeling very uneasy!

And even *more* problematically for the nurse, because this is a chance event, there is no possibility of elevating this chance event’s interpretants/effects to a genuinely logical status, with *logical* (not only emotional and/or energetic) interpretants affording reliable conduct, that is, knowing what to do. Does this mean the semiosis has ended in failure, akin to the failure of Benner’s intuition in the context of the unknown? Not at all, because what I am calling a semiosis of chance can still occur. What a semiotic analysis of this chance event reveals is that the work is to get to new or *other* events, ones that *can* afford logical interpretants and thus circumstances in which what to do becomes known. And this is not done via “detached analytic reasoning” but by continuing on with the semiosis.

How does this happen? Peirce has provided a sketch. He acknowledges that an event may not be “capable of producing a logical interpretant;” that the event may be “too early,” meaning the “semiosis will not be carried so far” as to the logical interpretant, with “the other interpretants sufficing for the rude functions for which the sign is used” (EP2, p. 414). By “rude” he means not being governed by a rule of conduct, which only logical interpretants can afford. By “early” he means an event in which there are as yet no logical interpretants possible, which suggests that one could possibly work the event towards one that could afford them. In the context of our semiosis, this means the nurse has to make do with the interprets the chance event affords—the nurse *must use feeling and effort to carry the semiosis along*.

Here is the general rubric Peirce provides for doing so. First, “be thrown into a state of high activity” (EP2, p. 415). And this surely becomes the case in this semiosis. The nurse performs additional assessments, may be works to get some tests ordered, is hyper vigilant in not leaving the person’s hospital room, perhaps brings in a team of physicians, the rapid response team, and so forth. But all this activity may not really move the event forward in terms of it having any different character than chance event. This contrasts with Benner’s idea of “detective work” done with the goal of finding what is known to be missing based on familiarity with circumstances. Here we are still in the landscape of chance.

It is then time to move on to the next step, which according to Peirce is to identify situations with conditions similar to the current situation, in which the nurse *does* know what’s going on. This is not mediation in the strict sense of thirdness, logical connections guiding conduct. It is rather analogous comparison, the comparisons of “different meanings [that] are remote from each other, both in themselves and in the occasions of their occurrence” (EP2, p. 264) and yet show some affinity to each other. Since the condition of the current situation involves only a feeling, a firstness of thirdness, the work becomes to compare and contrast other events not occurring now but that have in the past and *presented with a similar feeling*.

In this effort past scenarios are considered, where a similar “something wrong” feeling was followed by an event in which what was happening was understood, for example the event of a perforated bowel or a pulmonary embolism. By engaging this analogical effort past experience serve as analogical prompt for current efforts, such as performing new assessments to determine whether or not one of these past events is perhaps happening *in-germ* here and now. This may or may not move the event along, but, as Peirce puts it, by the very effort the nurse “cannot fail to have noticed several obvious propositions that will be useful in further inquiries” (EP2, p. 416). Benner does acknowledge the work of expert nursing in reaching out to others: When a nurse “intuitively feels that a situation is so novel as to preclude intuitive response,” the nurse should “seek the advice of someone for whom the current situation is not novel” (Benner, Tanner, and Chesla 2009, p. 18). Yet our case is not the same; there is no one here for whom the situation is not novel. The work instead is to interrogate past experiences of feelings in the context of novelty/chance.

This leads to the next step. As the nurse does this work, perhaps now with a team of healthcare providers, they begin to understand the scope of the issue, some of its dimensionality, even if it is only in terms of what is clearly *not* happening (EP2, p. 417). And this begins to *focus* their efforts. As Peirce puts it, this effort, “however fanciful,... serves to focus attention upon matters which might otherwise escape observation” (CP 1.521). Perhaps with these efforts the nurse/team do not find what they had supposed, but because of all the “high activity,” at every turn there is a gathering of more indicators about what could be going on or what is not going on. And perhaps (but not necessarily) as this continues, they do find something, some information that moves the event forward to one which the team understands what’s happening, for example an X-ray done to look for a pulmonary embolism that ends up showing a rapidly evolving pneumonia, in which the nurse and hospital team now have a clear (not vague) course of conduct. In all these ways the chance event has been moved along until it has been transformed into an event affording logical interpretants guiding conduct (which is not to say that chance might not intervene again).

8.3 | The Habit of Changing Habits

In this semiotic chance event, the nurse did not have the advantages of logical interpretants to guide conduct. And yet, the nurse *was* working under a purpose, to find out what was

happening. And a purpose, according to Peirce, is a “specific character” (EP2, p. 431) of a habit. So was the nursing working a habit/conduct after all? But have we not just spent a lot of time and effort showing how the nurse could not be working under a habit, because in this chance event there were no logical interpretants available to motivate a habit? Here is Peirce’s response, “while I hold all logical, or intellectual, interpretants to be habits, I by no means say that all habits are such interpretants” (EP2, p. 431). A person can have a purpose “without yet having determined more precisely” (EP2, p. 431) how to accomplish that purpose.

Peirce characterizes the work done in light of this purpose as *experimental* (there are shades of abduction, deduction, and induction throughout this story, but Peirce by now fully cloaks them in terms of semiotic). According to Peirce, under a purpose, “one thus pursues a strict experimental method. It may turn out the meaning lies in a feeling or in some single thing or event. But in so far as either of these results are found, it will be shown thereby that the concept is not an intellectual one” (EP2, p. 432). This means ‘strict experimental method’ (i.e., semiosis) may not result in logical interpretants and their object, but nevertheless constitutes a rigorous mode of inquiry in the context of a chance event.

Can this also be a habit? Peirce suggests as much when he writes, “moreover—*here is the point*,—every [person] exercises more or less control over [themselves] by means of modifying [their] own habits; and the way in which [one] goes to work to bring this effect about [is] in those cases in which circumstances will not permit [one] to practice reiterations of the desired kind of conduct” (EP2, p. 413, italics in original, pronouns revised).

What this is basically describing is the *habit of habit change*. The habit-of-habit-change in this semiosis began with the feeling “something’s wrong.” This is an effect of a firstness that was emphatically not ignored or avoided, but attuned to, effortfully. Something’s not right, something’s changed, and the nurse needed to *change what they were doing* to figure out what this change consists of. This behavior conforms to a habit, but only when considered as *habit-change*. What are the conditions for habit change? For Peirce, it is “In those cases in which circumstances will not permit [one] to practice reiterations of the desired kind of conduct” (EP2, p. 413). Or, as I have called them, chance events in the context of hospital nursing.

8.4 | Working Chance as Synthesizing Vagueness

This habit-of-changing-habits-under-a-feeling constitutes a method of grasping meaning from contingency and flux, *rather than being stymied by it*. Nursing moves chance events along semiotically, with the signs and interpretants afforded by the chance event, which motivate a fine-tuned and intensive attention to change, bringing a chance event into a sharper focus, through the steps iterated above. Nurses change the focus of their practice, entertain new efforts, and by those very efforts move the chance event along in ways it would or could not without these “purposeful” semiotic efforts.

Working chance involves synthetic work (a piecing together of vagaries), not analytic work (breaking down to the clear and

distinct). It is the work of synthesizing feelings (what could this be?) and efforts (how could this be?) through an open-ended process that moves a chance event along until (perhaps, may be not) a logical interpretant/effect has been effectuated, affording its object, and hence a clear and not vague understanding of what is happening and what to do. And it is important to note that vague understanding does not mean *lesser or reduced or inferior* understanding; understanding could only ever be vague *at best* in the context of a chance event.

And just as importantly, perhaps even *more importantly*, the signaling event may never move past vagueness. But that doesn’t mean the feelings and the efforts didn’t play critical roles in moving the event past a chancy one. This is because what broke into the clinical routine does not necessarily have to *become* further determined, meaning that chance may dissipate, and the routine may once again become “the order of things.” By working chance nursing can *also stop chance* from becoming a determinate disruption. By attuning to chance and changing what’s done to figure out what’s happening, it is possible, without *clearly knowing what’s going on* (i.e., vaguely) to nevertheless work the chance event towards dissipation rather than further effectuation. In the context of hospital care, this is a highly desired effect that is however by its very process made invisible as effect, which makes for the paradoxical circumstance that nursing can facilitate certain events to *not happen*, and yet because they didn’t happen, there is no possibility for creating a “valuation” for this beneficial yet invisible effect.

9 | Conclusion

Peirce’s semiotic affords an orientation that does not bifurcate reasoning into distinct and opposed domains, the human and the rational, each necessitating its own “ways of thinking.” Semiotic emphasizes how feeling and fact are not opposed—how facts qua habits emerge *from* feeling and not in the absence of feeling. Peirce’s philosophical conceptualization of experience has it effectuated through feeling (firstness), effort (secondness), *and* thought/conduct (thirdness) via semiotic. The semiosis of the chance event described above demonstrates how chance can be felt, which motivates efforts driven by that very feeling, which becomes the very mode of grasping meaning from novelty, contingency, and flux, rather than being stymied by it. Hence, with semiotic, novelty does not pose a barrier to “expert” nursing practice.

Ethics Statement

This article does not publish research findings and so did not require ethics committee approval. The article is an original work, has not been published before, and is not being considered for publication elsewhere in its final form.

Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Endnotes

¹The Peirce literature is cited via a normative referencing in professional philosophy and so I will continue this practice in this paper. This is because Peirce published hardly any of his philosophical writings in his lifetime, for a multitude of reasons, and so most of his texts have had to be painstakingly gathered into collections after Peirce's death in 1914. **CP** means "The Collected Papers of Charles Sanders Peirce" and this collection denotes its volumes and paragraphs in numerical format, for example, CP 3.127 (Peirce 1994). **EP2** means "The Essential Peirce" volume 2 (Peirce 1992). **W1** means "Writings of Charles S. Peirce" volume 1 CP (Peirce 1982).

²Which Peirce by 1905 renamed Pragmatism in the context of wanting to distinguish his philosophy from other philosophers (e.g., Dewey and James) renderings of pragmatism, saying the term was "ugly enough to be safe from kidnapers" (CP 5.414).

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