


Peirce's Logic of Vagueness



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Abstract:

Peirce's "logic of vagueness" asserts that vagueness (which can never be completely done away with) can have the paradoxical effect of "entirely destroying doubt." Yet the ability to engage genuine doubt in the course of inquiry is the first requirement for critical thinking. A lack of awareness of the "invariable vagueness" of "acritically indubitable" beliefs and inferences breeds ignorance and absolutism. This presents us with an important ethical challenge: since a permanent state of vagueness (resulting in ignorance and absolutism) seems to be the habit for much of humanity, one priority of a democratic society should be to inquire into the "logic of vagueness." How else can we know which methods and tools to develop for educating citizens able to engage intelligently in democratic processes? We all operate from acritically derived beliefs, but those who hold most tenaciously to these are also those who possess the greatest affinity for absolutism—as "vagueness" has the unique capability of "entirely destroying" doubt. Whether due to inherent inability, poor educational practices, or other reasons, the unfortunate (and sometimes deadly) consequences of absolutism surround us. Thus, it is wise that we understand vagueness; its ability to "entirely destroy" doubt; and Peirce's method for becoming aware of the "invariable vagueness" of "acritically indubitable" beliefs.

Keywords: Vagueness, Fallibilism, Ambiguity, Methodetic, Abduction, Critical Common-Sensism

Can There Be a "Logic" of Vagueness?

"Issues in Pragmaticism," an essay Peirce wrote for *The Monist* in 1905, deals primarily with his concept of "Critical Common-sensism." There, he commented that Critical Common-sensism is a "variety of the Philosophy of Common Sense, but it is marked by six distinctive characters..." One of these, his concept of "vagueness," appears as the fourth characteristic of Critical Common-sensism. The issue of vagueness is also mentioned in a few of his unpublished manuscripts written during this same time. One of Peirce's most intriguing comments about vagueness is: "I have worked out the logic of vagueness with something like completeness, but need not inflict more of it upon you at present." (PW 295) Much like the confident words of the unknown grand conqueror in Shelley's "Ozymandias," (1983 [1818]) it first appears that "nothing beside remains," of Peirce's "logic of vagueness" except for this reference to it. This entry addresses the mystery of Peirce's "logic of vagueness," explains the connection of vagueness to Critical Common-sensism, and proposes a synonymous relationship between vagueness

and one aspect of Peirce's concept of Retroduction.

A reasonable person can be expected to ask: "How can there possibly be any "logic" in vagueness? The terms "vagueness" and "logic" do not make much sense when taken together." Yet, as mentioned earlier, Peirce tells us that he has worked out the "logic of vagueness with something like completeness." There are at least two ways to interpret Peirce's enigmatic comment about the "logic of vagueness." One way is to consider "vagueness" as a particular sort of inference (say simple induction). During the Lowell lectures on the history of science, Peirce said:

It is wonderful how many people are to be met with who know nothing about reasoning. The popular opinion seems to be that if you find any similar relationship between things, and then find a supposed condition from which this relationship would certainly result, you have there some evidence that that condition really exists. (SW 249)

The sort of acritical inductive inference described above, could well be an example of what Peirce meant by the "logic of vagueness." However, another way to think of the "logic of vagueness" is as a logic that contains methods for identifying and addressing vagueness—thus enabling the reduction of vagueness from something that is vague. According to Peirce's definition of the term "logic," it seems that the second interpretation is to be preferred over the first.

For Peirce, logic is "the science of self-controlled deliberate thought... performed by means of signs." (PW 62) Therefore, Peirce tells us, "logic may be regarded as the science of the general laws of signs." Thus, if there is a "logic" to vagueness, then that logic must be one of "self-controlled deliberate thought," and it must also belong within the "science of the general laws of signs" (or semiotics: the theory of signs and their meanings). As such, we are going to examine the "logic of vagueness" as an integral part of Peirce's total concept of logic (directly related to continuity as "fallibilism objectified"), wherein self-controlled deliberate thought by means of signs is used to expose, identify, investigate, analyze, and reduce the vagueness of a statement or situation.

It is the Critical Common-sensist, Peirce tells us, who recognizes that there is much vagueness within all beliefs. Which brings us to the question: "What does Peirce mean by the term 'vagueness'?" Peirce wrote:

I must first point out the distinction between a Fact and what in other connexions, is often called an...Occurrence. An Occurrence, which Thought analyzes into Things and Happenings, is necessarily Real; but it can never be known or even imagined in all its infinite detail. A Fact, on the

other hand is so much of the real Universe as can be represented in a Proposition, and instead of being, like an Occurrence, a slice of the Universe, it is rather to be compared to a chemical principle extracted therefrom by the power of Thought; and though it is, or may be Real, yet, in its Real existence it is inseparably combined with an infinite swarm of circumstances, which make no part of the Fact itself. It is impossible to thread our way through the Logical intricacies of being unless we keep these two things, the Occurrence and the Real Fact, sharply separate in our Thoughts. (in Rosenthal, 1994, pp. 5-6)

In other words, there are Facts, which can be represented in a proposition and there are Occurrences—or slices of the Universe, within which facts arise, but which cannot be known in infinite detail. At every moment each of us inhabits a point within the "slice of the Universe" for which all possibilities exist, but which cannot ever be known, or even imagined in all "infinite detail." Yet, within this "slice" (right along with everything that "can never be known or even imagined in all its infinite detail") resides everything that we do not yet know, as well as everything that we may eventually come to know—or not. The fact that we can never know all there is to know is a constant (an invariable) in Peirce's philosophy. This means that at least some degree of "vagueness" is unavoidably invariable.

In his essay, "Critical Common-sensism," Peirce refers to the "invariable vagueness" of that which is "acritically indubitable." By acritically indubitable, he means that which seems so patently evident that it has never been called into question. Therefore, the "invariable vagueness" of the "acritically indubitable" means that there is an inherent lack of clarity for those beliefs and inferences which remain "uncriticized" because they seem to be patently evident.

At first it may seem strange that Peirce would pair the "patently evident" with "invariable vagueness," since these seem contrary to one another. After all, things that are "patently evident" are matters about which it seems impossible for us to believe otherwise. But, according to Peirce, it is especially within the most profoundly certain of our *acritically* derived absolutes that vagueness resides. Each of our patently evident beliefs (each one correct as far as it goes) houses a "slice of the universe," which Peirce tells us can never be understood in its entirety. Peirce warns us that "vagueness, which is no more to be done away with in the world of logic, than friction in mechanics," can have the effect of completely obliterating doubt. (PW 295) Perhaps this paradoxical ability of vagueness to destroy doubt explains the coercive power of opinions born of ignorance—and the all too frequent tendency of some people to be most insistent about (and certain of) the absolute truth of matters about which they are essentially ignorant.

Peirce deemed as characteristic of "Critical Common-sensists" that they recognize the relationship of the vagueness of "acritically derived" beliefs and inferences, as well as a fundamental ignorance of fallibilism that accompanies the absolute certainty born of such beliefs. In other words, our "acritically derived" beliefs and inferences, which seem patently evident to us (and are only capable of being clarified once doubted), reside within the same slice of the Universe that contains everything that "can never be known or even imagined in all its infinite detail."

For this reason, an analysis of Peirce's concept of vagueness directs us to his doctrine of *fallibilism*, which asserts that all knowledge is fallible. Something that we believe absolutely (which seems patently evident to us) can only be penetrated and discovered as vague when fallibilism "opens our eyes to the significance" of an observed fact that does not square with that absolute belief. For example, before the truth about the revolution of the planets was generally known, it was "patently evident" to everyone that God had made the earth to be the center of the universe. This was an acritically indubitable belief, one that did not die easily. Remember, Galileo (1564-1642) finished out his life under house-arrest for merely suggesting that the earth revolves around the sun. We can dismiss as ignorant, those churchmen whose *acritically indubitable* beliefs imprisoned Galileo—although, at the time, it seemed "patently evident" that these clerics were correct. For pre-scientific minds, the earth was the center of the universe because it was *patently evident* that this was so (and thus, made to be so by God). Anyone doubting this was, naturally, a heretic. Peirce's point is that, because of the fallibility of all knowledge, even we "moderns" tenaciously hold, and will continue to hold, *acritically indubitable* beliefs that may eventually turn out to be as ludicrous as those held by sixteenth-century churchmen.

For example, we all know that it has always been true that the earth revolves around the sun—even before anyone believed it does so. Coming to know the truth of a matter is not what makes it true. The "truth" of a fact is true, regardless of whether anyone figures it out. Peirce would have said that "fallibilism" (the inherent uncertainty of all knowledge) "opened the eyes" of the early astronomers to the significance" of certain surprising facts. Thus, *fallibilism* (made present by means of abductive inferences) provided every new "plank" of scientific discovery that enabled scientists to develop an understanding of the motions of the planets, leading to the evolution of modern astronomy, space-travel, and beyond. Fallibilism, then, is the doctrine that "our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and indeterminacy." (PW 356) According to Peirce, this doctrine asserts that our

knowledge can never be absolute for uncertainty and chance swim in continua, along with everything else. "Even in our most intellectual conceptions," Peirce wrote, "the more we strive to be precise, the more unattainable precision seems." (PW 295) So, vagueness, according to Peirce's doctrine of continuity, can never be eliminated altogether.

Thus, vagueness is an expression of the "continuum of uncertainty and of indeterminacy" within which our knowledge is never absolute. Not only can we not know all it is that we do not know, we cannot know with absolute certainty all that there is to know about anything.

But as soon as a man is fully impressed with the fact that absolute exactitude never can be known, he naturally asks whether there are any facts to show that hard discrete exactitude really exists. That suggestion lifts the edge of that curtain and he begins to see the clear daylight shining in from behind it. (PW 357)

Peirce's "curtain" then, is a *veil of ignorance* which, when lifted by a Critical Common-sensist, exposes things as being vague and in need of investigation. Vagueness is a condition of minds and of potentialities. Things unknown and ambiguous are vague—they are both this and that at the same time. Peirce tells us that the "vague is that to which the principle of contradiction does not apply." (PW 295) For Peirce, the Critical Common-sensist takes the time and effort to lift the "edge of that curtain"—the *veil of ignorance*. The Critical Common-sensist is aware of the inherent vagueness in all things (especially those which seem patently evident) and thus keeps an eye out for ambiguities, inquiring into them as they arise. So, from the perspective of a Critical Common-sensist, the "logic of vagueness" involves the process by which ambiguities become recognized and are made sense of.

Contrary to this, whenever we are acting from the perspective of an acritical indubitability (something that seems patently evident), we cannot recognize the ambiguity (or vagueness) inherent in whatever it is that we believe. We must first recognize that something is ambiguous (we must lift the "curtain") before we can begin to reduce its vagueness. Thus, the "logic of vagueness" is the logic by which anomalies (those facts which are not yet noticed) come to be recognized, made sense of, and eventually generalized. This process involves use of the same logic by which Peirce contends that any "surprising facts" should be noticed, made sense of, and generalized—the logic of Retroduction.¹ The Critical Common-sensist, then, is one who, as a matter of course, applies Peirce's methodetic (Retroductive reasoning for the purpose of inquiry) to the recognition and resolution of the vagueness of

acritical indubitabilities.

Retroduction, the lengthy process of reciprocal analysis that is Peirce's "action-reaction-interpretation" loop, (Chiasson, 2001, p. 89) engages the interplay of abduction, deduction, and induction for noticing "surprising facts," then placing them into an explanatory hypotheses, analyzing, testing, evaluating, refining, reformulating, re-evaluating, re-analyzing, and so on.¹ This tie-back from his concept of vagueness to his concept of Retroduction, by way of his concept of fallibilism (a redundancy of sorts) explains why he did not want to "inflict more explanation on us...." Such an "explanation" would require him to lay out the "logic" of how it is that we come to deliberately lift the "curtain" and notice a "surprising fact." The recognition of a fact as being "surprising" is the first sign that a belief may be vague (or ambiguous). This recognition is also the first step in Retroductive reasoning, as well as what must occur before any new learning can take place.

Up until now, we have been defending the proposition that there can even be a "logic" to vagueness. We have not yet addressed Peirce's concept of the "invariable vagueness" of the "acritically indubitable," nor its synonymous relationship with his logic of abduction.

On the Invariable Vagueness of the Patently Evident

"By all odds," wrote Peirce, "the most distinctive character of the Critical Common-sensist...lies in his insistence that the acritically indubitable is invariably vague." (PW 294)

"Acritically indubitable?"

This complex phrase refers to beliefs that are already fixed in our minds (as real, true, genuine, or certain) without our ever having considered them as needing scrutiny. So, an acritical certainty is one that we have never even thought to question or analyze. Since an "acritically indubitable" belief is one that has never been questioned or analyzed, the belief cannot have been clearly defined—because definition is a consequence of analysis. This means that an "acritically indubitable" belief is one that lacks clear definition. Something that lacks clear definition must therefore be "invariably vague." Thus, the lack of the process of questioning and analyzing (resulting in the lack of a clear definition) is the reason why the "acritically indubitable is invariably vague."

Next Peirce wrote:

Logicians have too much neglected the study of vagueness, not suspecting the important part it plays in mathematical thought. [Vagueness] is the antithetical analogue of generality. (PW 294-5)

"Antithetical analogue?"

Peirce means here that vagueness is *analogous* to generality in the sense of having *opposite* (or antithetical) characteristics of the same sort (or level or type). The question we need to answer, then, in order to grasp Peirce's concept of vagueness is: "What are the characteristics of *generality* for which *vagueness* has "antithetical" characteristics?" Thus, before we can fully understand what Peirce means by "vagueness," we need to examine what he means by the term "generality."

GENERILITY

For Peirce, generality in the mental realm (expressed as continuity) enables meaning in thought and communication. Generality (or continuity) expressed as law, pattern, form, syntax, regularity, signs, and habit, organizes *potentialities* and *actualities* into meaningful relationships. Without generality, we could have no meaning in thought and we could have no language.² "All thought whatsoever," wrote Peirce, "is a sign, and is mostly of the nature of language." (PW 258) For Peirce, signs are *general* objects that allow us to think because they stand in place of the thing thought about.³ Thus, signs are generalized "place-holders" of a sort. We cannot have a thought of any sort (even an irrational thought, a hallucination, or a dream) without signs.

For Peirce, there are three main sorts of signs. One sort (*icons*) are direct representations of the thing thought about (such as mental or physical images, sounds, smells, etc.). Another sort (*indices*) has a direct connection to the object, serving as indicators of something other than the sign itself. Indices (the plural of "index") serve as a pointing out function (in the sense that rain clouds are an indication of rain; or a word in the 'index' of a book points out where to find that term in the book proper). The third sort of sign (*symbols*) includes words, images, and physical things whose meanings are not directly connected to objects by form or indication. Thus, we must have a "*definition*" of a symbol if we are to know what that symbol represents or points to.

All signs are general in the sense that they continue to stand for something beyond a single instance or occurrence. For example, a rain cloud operating as a sign of rain, continues to operate in that way well past a single instance of a rain cloud actually leading to rain. The only way that a rain cloud can be taken as a sign pointing to the possibility of rain is that it has been known before to have been an indication of

impending rain.

Signs can be *subjectively* or *objectively* general. Subjectively general signs include such things as proper names. A proper name such as "Abraham Lincoln" is *subjective* because it refers to a particular and specific subject (or person). The name "Abraham Lincoln" is also *general* because it stands for that specific person ("Abraham Lincoln") whenever and wherever it is used. Thus, "Abraham Lincoln" is a "*subjectively general*" sign. Peirce's comments on vagueness do not deal with *subjective* generality. (Chiasson, 2001, pp. 126-8).

An *objectively* general sign is one which applies to more than one of the same sort. Thus, the term "president" is an *objectively* general sign. The word "president" is *objective* because it could stand for anyone who is, has been, or will be president. This word is also *general* because it continues to stand for this objective concept (president) whenever and wherever it is written or spoken. Thus, the word "president" is *objectively general*, since it stands for any number of examples of people who are, have been, or will be president of one thing or another.

OBJECTIVE GENERALITY AND OBJECTIVE VAGUENESS

Now let us begin to examine the term "general" in relation to its analogue counterpart, "vagueness." Peirce writes:

A sign is *objectively general*, in so far as, leaving its effective interpretation indeterminate, it surrenders to the interpreter the right of completing the determination for himself.

Then, Peirce gives this example of an objectively general statement:

"Man is mortal."

" What man?"

"Any man you like." (PW 295)

In other words, an *objectively general* statement is "generic," meaning that it can be "true" of any number of specific examples and "false" for any number of examples as well. An *objectively vague* statement, on the other hand, cannot be true or false of any specific examples, because it refers to something that is not yet determined. Here is what Peirce says:

A sign is *objectively vague*, in so far as, leaving its interpretation more or less indeterminate, it reserves for some other possible sign or experience the function of completing the determination.
(PW 295)

Here is Peirce's example of a statement that is *objectively vague*:

"This month," says the almanac oracle, "a great event will happen."

"What event?"

"Oh, we shall see. The almanac doesn't tell that." (PW 295)

Thus, the potential meaning of an *objectively vague* statement remains open-ended, uncertain, undiscovered, and unassailable as well.⁴ An *objectively general* statement, on the other hand, has a "truth" function to it, which can be ascertained by means of deduction and induction.

So what did Peirce mean when he wrote that "[vagueness] is the antithetical (or opposite) analogue (or counterpart) of generality?" For Peirce, "generality" is a principle that allows a mind to develop a clear understanding of concepts by means of definition. *Generality* permits us to identify qualities of things. The identification and formulation of qualities enable us to form and to use general categories. Categories provide us with a means for making sense of experience by allowing us to 1) collect specimens (kinds of; sorts of; examples of; instances of); 2) to identify structural relationships (parts of); and 3) to identify the operations of complex systems (patterns of actions). Generality allows us to bring about greater clarity concerning a sign and the context (or situation) in which that sign resides.

Vagueness, however, takes us in the opposite direction. *Vagueness* is diffuse; it is *a-general*, in the sense that it is neither general in the sense Peirce means, nor is it specific. "Objective generality" indicates coverage of many instances, while "objective vagueness" leads outward to many unspecified possibilities. We can identify instances of objective generality because we know the qualities that define the instances. For example: we know the qualities of the general sign "president," as these have to do with such matters as position within a hierarchy; sorts of responsibilities; relational status among workers; and so on....

Yet, we can also say that, before the qualities (for identifying categories) are engendered from which to "generalize" the meaning of the sign "president," we had an example of objective vagueness. Take, for the example, the general statement:

- "Presidents are leaders."

We can give many instances in many different contexts for which the sign "president" (from presidents of countries to presidents of country-clubs) indicates a position of leadership.

On the other hand, the objectively vague statement:

- "When our candidate becomes president, he will be a 'strong' leader," might cause us to ask:

What are the qualities of a strong leader?

- "Just watch and see what our candidate does once he is president."

The above example illustrating "objective vagueness" leaves us with yet-to-be-asked questions about such elementary matters as "How will I know it when I see it?" and "What are the qualities from which I can discern the one thing from another?" If, for example, you have been told that you will see signs that a certain candidate is a strong leader, but have not determined what the qualities of a strong leader are, how will you know if you are observing qualities of strong leadership?

Peirce points out that:

No communication of one person to another can be entirely definite i.e. non-vague... [W]herever degree or any other possibility of continuous variation subsists, absolute precision is impossible. Much else must be vague because no man's interpretation of words is based on exactly the same experience as any other man's. Even in our most intellectual conceptions, the more we strive to be precise, the more unattainable precision seems. It should never be forgotten that our own thinking is carried on as a dialogue and thought mostly in a lesser degree, is subject to almost every imperfection of language. (PW 295)

Thus, it may seem that Peirce is telling us that complete "non-vagueness" (precision) is impossible. Yet, elsewhere he tells us that generality (the "antithetical analogue" of vagueness which allows us to sort and classify with precision) is an essential ingredient of reality. (PW 266) Does this mean that we can never become clear enough to achieve a complete understanding of true reality because we will always have vagueness nipping at our heels?

In a sense, it does mean that. Think back to our earlier discussion of the three sorts of signs: icons (which stand as representations of the thing that they are standing for); indices (which indicate something else); and symbols (which require general agreement in order to have meaning). Of these three basic sorts of signs, icons are potentially the least vague, since they look like (or smell like, or feel like, etc.) whatever it is they stand for. Symbols (especially those used in communication, such as words, musical notes, and numbers) are potentially the *most* vague of signs, since they require both training and agreed-upon definitions in order to have meaning.

Yet, even an apparently simple iconic (representative) sign can be vague or not depending upon its context and interpretation. For example, let us say that Joe Smith is an American who was born, raised, and is currently residing in a particular small American town. Let us also say that Joe has had no exposure to West African culture when he notices an Ashanti fertility figure on display among other artifacts representing the female form at the home of his neighbor, Ralph. In such a context as this one, where one female figure sits among a collection of other female figures, Joe might experience this Ashanti icon as merely a primitive representation of a naked female form, and nothing more. If he merely assumes a meaning for this icon and does not think to ask: "What is this?", his meaning of this Ashanti fertility figure is likely to remain "acritically indubitable." For him it will be merely a statue of a female form. The same result could occur if Joe does ask "What is this?", but his neighbor, who bought the African icon at a garage-sale, does not know that it represents more than a *naked woman*.

True, the term "naked woman" is an "objectively general" category from which one can make an objectively general statement of the same sort as Peirce's:

The statue is a representation of a naked woman.

Which naked woman?

Anyone you like.

As Peirce says, objectively general statements must "surrender to the interpreter the right of completing the determination for himself." Yet, this indeterminate aspect of interpretation, while fulfilling Peirce's criteria for generality, also allows vagueness a foothold. Such is true of many objectively general statements, especially those which are "acritically indubitable."

Earlier we discussed the difference between general and vague statements. You may remember that objectively general statements are "generic," meaning that they can be "true" of any number of specific examples and "false" for any number of examples as well. Objectively vague statements, on the other hand, cannot be true or false, because the characteristics (or qualities) upon which they can be determined as true or false have not yet been determined.

The most obvious question that will arise here is: How can we then say that the category, "naked woman," is vague? After all, that category satisfies Peirce's criteria for an "objectively general" statement.

Objectively general statements of any sort, because they have a truth function, can make it *seem* that something clear and valid is being said. But the vagueness that

accompanies *acritically* derived general statements, when questioned, enlightens us to the fact that what we have assumed to be "patently obvious," may say little about the full "truth" of the matter. Peirce would say that all such acritically assumed meaning is "invariably vague," as all such meanings are acritical indubitabilities.

Remember, Peirce tells us that "the vague is that to which the principle of contradiction does not apply." Certainly, we cannot contradict Ralph's statement that the Ashanti figure is that of a "naked woman." Nor could we, considering the ambiguity of this figure, contradict a statement that it is not. The figure has some qualities of a naked woman and is missing some qualities as well. In any case, the more thorough meaning of that Ashanti figure is still exceedingly vague for Ralph. Thus, although the term "naked woman" provides a general category for Ralph's peculiar collection of bric-a-brac, this general category can be considered high degree of vagueness, especially in the case of understanding this figure as an Ashanti icon.

Ralph's general category, then, is vague in much the same sense that the statements—"Our candidate will be a strong leader" or "This month a great event will happen"—are vague. Although the example of the candidate, and Peirce's specific example of vagueness concern yet-to-occur events, his concept of vagueness nevertheless applies to anything which is not yet known. For example, vagueness could concern something that occurred eons ago, of which we are not yet fully aware, or are mistaken, or misguided (such as the recent asteroid theory for the cause of rapid dinosaur extinction). It also applies to the workings of a single mind—to those various beliefs that each one of us blithely accepts as unquestioned truths.

So, just as we know in vague terms what the words "strong" and "leader," (as well as "great" and "event") mean, we know in vague terms what Ralph's general category of "*naked woman bric-a-brac*" means. The vagueness in each of these instances stems from what we don't know—and even more significantly, from what we don't know that we don't know.

The *vagueness* that is inherent in all of our unexamined beliefs (those assumptions and conclusions that we have never even considered to be in need of examination) is, in a sense, analogous to Peirce's category of firstness (potentiality; possibility; unrelated quality). For, just as firstness is the container of yet-to-be discovered meanings (potentialities), so too vagueness contains within it the potential for greater clarity. True, it is a "real fact" (a generality of sorts) that Ralph's statue represents a naked woman. But it is also a "real fact" that this figure represents more precisely *symbolic* concepts belonging to an Ashanti fertility icon. In Ralph's case, the meaning of this

figure remains *vague* because he has acritically fixed the belief that it is just *a statue of a naked woman*, and so belongs in his collection of the same. Ralph would not be able to *define* this icon, except by its vague resemblance to the female form. For him, the belief that this statue is nothing more than that of a *naked woman* is an "acritical indubitability."

Yet, we can accurately say that it is a "real fact" that Ralph's statue represents an Ashanti fertility concept, whether he or anyone else of his acquaintance ever comes to know this. The "reality" of the meaning of this icon is not dependent upon either Joe or Ralph knowing what that meaning is. In this same sense, the "realities" within all of our unexamined (and therefore vague) beliefs are also real, even if we never come to the point of questioning these beliefs and even if we never seek to eliminate the vagueness from them by means of inquiry.

Vagueness, Critical Common-sensism, and Retrodution

The inherent vagueness of all communication and understanding is part and parcel of Peirce's doctrine of fallibilism. And, although we seem to be able to communicate well enough to function in the world, the quality of that functioning always suffers to one degree or another because it is riddled with vagueness and because we are fallible. Perhaps because of the rigorousness required of Critical Common-sensism, most people appear to rely upon a minimal level of ordinary common-sensism—the level which assures a permanent state of vagueness. Not only can we not know all it is that we do not know, we cannot know with absolute certainty all that there is to know about anything. In other words, since we are fallible beings, we cannot know anything with absolute infallible certainty.

More importantly, we cannot even recognize a small slice of whatever it is that we do not know that we don't know—until the moment that we notice a surprising fact that brings it into our awareness. Peirce writes:

Neither the Philosophy of Common-sense, nor the man who holds it accepts any belief *on the ground* that it has not been criticized. For [...] such beliefs are not "accepted." What happens is that one comes to recognize that one has had the belief habit as long as one can remember; and to say that no doubt of it has ever arisen is only another way of saying the same thing. (PW 298)

Once noticed, something that we have held as an acritical indubitability (a patently evident belief) may demand that we critically address it. If, for example, Joe's first noticing of the Ashanti fertility icon had seemed to him a "surprising fact," the question

"What is this?" might have been enough to begin the progressive reduction of vagueness from that sign. If Joe had asked this question, but settled for the acritical answer that his neighbor provided, the sign would remain vague in this case as well. Neither Joe nor his neighbor would have realized that there is anything else to know about this artifact. Remember, as Peirce says: "...such beliefs are not "accepted," they simply have never been questioned.

However, should Joe start to wonder about that icon, it could become a "surprising fact" for him. Should he begin an examination of the "surprising fact" of this iconic sign, he will have begun the first step of Peirce's methodeutic (Retroductive reasoning¹)-for bringing clarity to the vague meaning of this Ashanti figure. Perhaps, since Joe's sister once visited Tahiti, he might first hypothesize that the icon might be from a Polynesian culture. He would soon discover, by means of inquiry, that this is not so and may then turn to a new hypothesis, guessing that, because of its color and form, it might be of African origin. Since Africa is a huge and culturally diverse continent, the hypothesis that the figure might be of African origin would require further sub-hypotheses. Eventually, by means of further inquiry and analysis, a match might be found between that "surprising fact" (the African icon in Ralph's home) and a class of objects belonging to the African nation of Ghana. Such a match might lead to more questions about Ghanaian history and culture, allowing Joe to bring about even greater clarity to the meaning of that icon and to develop even more questions about it as well.⁵

This is the point Peirce is trying to make here concerning "the most distinctive character of the Critical Common-sensist...." An ordinary common-sensist might not even notice that a fact is surprising. But, should even an ordinary common-sensist happen to notice a "surprising fact," (he or she) would not bother to critically address it. If a surprising fact (such as the uniqueness of the Ashanti figure) is noticed at all, an ordinary common-sensist would not inquire into its origins, as Peirce's Critical Common-sensist would. An ordinary common-sensist would be likely to dismiss the anomaly, or acritically ascribe the artifact to a pre-existing category such as "statues of naked women," or "oddities," or "ugly things," or "primitive things," or "bric-a-brac," or "things that don't matter one way or the other." Again, our ordinary common-sensist is not wrong to categorize the object in any of these ways. The Ashanti figure could be classed into any of the above categories. As we have discussed, anyone can rightly argue that there is always a "sort" of generality to an objectively vague statement. However, this sort of vague generality is in the nature of an acritical conclusion, not a conclusion derived from examination and analysis.

Perhaps this is a point where those who are confused by Peirce's comments on vagueness and generality go astray. All signs are general objects. Generality (or continuity, Peirce's term for the generality of mental function[PW 266]) allows us to function in the world. But, as mentioned earlier, the quality of functioning in the world (which we can only do based upon generalities) suffers due to the "invariable vagueness" of our acritical indubitabilities, as well as well as from the idiosyncratic nature of individual experience. Just because an acritically indubitable belief is vague, however, does not mean that it is incorrect. After all, our functioning in the world is mostly based upon patently evident beliefs—those that have not been critically derived.

So, vagueness and fallacy are not the same thing. A vague belief, remember, is one that cannot be contradicted.(PW 295) The Ashanti statue, for example, can be correctly lumped into any number of general (but vague) categories. Vague beliefs can be criticized for being vague, or else be made less vague by means of inquiry and analysis. A vague belief cannot be contradicted, since it lacks enough clarity for contradiction—lack of clarity being the fundamental criterion of vagueness. Ralph, for example, cannot be contradicted for saying that the Ashanti statue depicts a naked woman. Others could be equally correct from certain perspectives in saying that it is something other than a naked woman, or by categorizing the statue as an "oddity," an "ugly thing," a "primitive thing," "bric-a-brac," or "things that don't matter one way or the other."

Based upon its features, no one would argue Ralph's point that this is a statue of a naked woman. But, in a much larger and more accurate sense, all that Ralph does not know about that statue tells us that his understanding of that icon is vague. He has not even thought to question the meaning which he acritically assigned to that statue when he bought it at a garage sale.

Suppose, however, that Ralph's neighbor, Joe, is one of Peirce's Critical Common-sensists. Suppose Joe had recognized this artifact as a "surprising fact" and then began the process of abductive reasoning to develop an *explanatory hypothesis* about its origins and meaning. Joe would have begun the progressive process of Peirce's methodeutic (or Retroduction¹) for bringing greater clarity to the meaning of that icon.

An explanatory hypothesis is a *generality* that enables us to begin reducing the vagueness underlying the meaning of a "surprising fact" by means of explication and demonstration (operational definition). Even if an explanatory hypothesis is incorrect, our Critical Common-sensist would still have reduced the degree of vagueness surrounding this icon by determining at least one thing that this icon *is not*. For, as we

eliminate hypotheses, we eliminate vagueness as well. Peirce wrote:

An explanatory hypothesis...which does not limit its purpose to enabling the mind to grasp...a variety of facts, but which seeks to connect those facts with our general conceptions of the universe, ought, in one sense to be verifiable... [T]hat is to say, it ought to be little more than a ligament of numberless possible predictions concerning future experience, so that if they fail, it fails. (PW 267)

In this sense, a Critical Common-sensist will begin to extract clarity from a vague concept by means of operational definitions as he or she makes "predictions concerning future experience." This process of developing clarity will cause an evolution of consciousness in the Critical Common-sensist as he or she begins to connect a single "surprising fact" to the qualities and categories of a much larger context. For, to make predictions, we must be able to identify the qualities (characteristics) of what it is we are predicting and to recognize the expression of these qualities when they occur. Definition is a process of recognizing characteristics and comparing these to characteristics of other things. A well-formed hypothesis is dependent upon having effectively defined the qualities of the thing and its context. Before Joe can test out his explanatory hypothesis that the female figure is of African origin, for example, he will need to have developed some sort of definition of the qualities and categories of African art and some resources where he might find examples of these.

Peirce contends that as long as we remain unconscious of them, we do not outgrow our "acritical indubitable" beliefs.

[O]ur mode of life remains that of somewhat primitive man, yet as we develop degrees of self-control unknown to that man, occasions of action arise in relation to which the original beliefs, if stretched to cover them, have no sufficient authority. In other words, we outgrow the applicability of instinct-not altogether, by any manner of means, but in our highest activities. (PW 296)

Yet, as surely as there are Critical Common-sensists of the sort Peirce describes, there are even more ordinary, *acritical*, common-sensists. In contrast with Critical Common-sensists, ordinary common-sensists remain unconscious and instinctual, even in the face of complex problems. They continue doing what they already know how to do and continue believing what they already believe. Ordinary common-sensists either do not notice that a fact is "surprising," or else they explain away such facts by means of *acritical* assumptions or assurances. Some are so resistant to new information that they manage to avoid even obvious empirical evidence in order to maintain a tenacious hold upon the most vague and indefensible of acritically acquired beliefs. (Chiasson, 2001)

For example, as we can easily see in political extremes, vagueness occurs at both ends

of the political spectrum. At the one end we find acritical acceptance of rigid traditional beliefs. At the other end we find the acritical rejection of traditional beliefs in favor of poorly defined concepts engendering change. From the far ends of the spectrum, *acritically indubitable* beliefs produce the same sort of conduct-absolutism. Absolutism dictates the application of one set of beliefs or another without regard for consequences. *Fiat iustitia, ruat caelum*—"May justice be done though the heavens fall in."⁶

In the center-somewhere between absolute certainties and total chaos (which often arrives as change for the sake of variety), resides the region in which the "invariable vagueness" that comes from "acritically indubitable" beliefs (from either end) can be recognized, questioned, provisionally explained, and examined. By the process of inquiry (questioning, hypothesizing, analyzing, and testing), vagueness can be made less vague—but never, according to Peirce, absolutely precise.

Conclusion

Each of us holds "acritically indubitable" (patently evident) beliefs and, because of this, we each have unquestioned beliefs that are "invariably vague." It is not, according to Peirce, possible for any one of us to truly doubt what we cannot help but believe is true. (PW 256-7) If such beliefs have been fixed acritically (without thought or analysis), says Peirce, they will be "invariably vague." If they remain unquestioned, they will remain relegated to the domain of instinct (or habit). The recognition of a surprising fact and the ensuing process of developing an explanatory hypothesis to explain that fact can make us aware of something that we were not aware that we did not know. Critical Common-sensists are conscious fallibilists—aware of the inherent vagueness of all beliefs. They remain on the alert for ambiguities, willing to "lift the edge of that curtain to see the clear daylight shining in from behind it."

Thus, in a Peircean sense, vagueness is to generality what knowledge is to ignorance—and what fallibilism is to certainty. Vagueness can never be altogether extinguished, just as possibilities can never be altogether exhausted, and just as imperfect (thus fallible) humanity can never achieve absolutely certain knowledge. As Peirce said: "[W]herever degree or any other possibility of continuous variation subsists, absolute precision is impossible." (PW 36)

The characteristics of *generality* for which *vagueness* is "antithetical" are the yet unknown characteristics of reality. (And "reality" for Peirce, exists whether or not anyone comes to know it. [SW 358]) Therefore, the logic of vagueness is the same logic

by which "surprising facts" (things previously unknown or ambiguous) are recognized and made sense of. This is the logic of Retroduction—the reciprocal interplay of abduction, deduction, and induction¹. Hence, the logic of vagueness is (or else requires) the logic of Retroduction.

Thus, when Peirce wrote in 1905: "I have worked out the logic of vagueness with something like completeness, but need not inflict more of it upon you at present," he probably meant much the same as he did when he wrote to Lady Welby in 1911.

I am just now trying to get a small book written in which I positively prove what the justification of the three types of reasoning consists in [...] and showing the real nature of Retroduction. (in Fann, 1970, p. 60)

This "small book," of course, was never written, providing philosophers in the twenty-first century with the intriguing challenge of either discovering or completing Peirce's unfinished work on "the real nature of Retroduction." Perhaps once Peirce's theory of Retroduction is completely understood, his "logic of vagueness" can be completely understood as well.

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Notes

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1. See the author's Abduction as an Aspect of Retroduction in this encyclopedia. ↔ ↔ ↔ ↔ ↔
 2. In the context of Peirce's categories of firstness, secondness, and thirdness, "generality" corresponds to thirdness, "actuality" to secondness and "potentiality" to firstness. Thus, Peirce's concept of "vagueness" might be considered as the expression of unrelated and unmediated firstness in the mental realm. ↔
 3. Philosophers of language may balk at this, claiming that a direct word-world conception is both outdated and far from satisfactory. However, such a judgment should, in this case, be

reserved until the reader has applied a good dose of "critical common-sensism" to the investigation of Peirce's semiotic.[] ←

4. As we will discuss later, it can be argued that there is a "sort" of generality to an objectively vague statement. However, this sort of generality is in the nature of an acritical conclusion which has not been derived from examination and analysis. This distinction will be made clearer as we proceed. ←
5. However, Peirce might have said that we are "extracting clarity from" the vague meaning of the Ashanti figure, rather than "bringing clarity to" it. ←
6. T. Alexander, 10 November 2000. Southern Illinois University at Carbondale, private correspondence. ←