

7-14-2006

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John Mark Gowan

University of Missouri-St. Louis

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EVOLUTIONARY IMPLICATIONS FOR CONTEXTUALISM

by

John Mark Gowan
B.M., Music Theory, University of North Texas State – Denton, 1990

A THESIS

Submitted to the Graduate School of the
UNIVERSITY OF MISSOURI – ST. LOUIS
in partial Fulfillment of the Requirements for the Degree
MASTER OF ARTS
in
PHILOSOPHY

August 2006

Advisory Committee

Berit Brogaard, Ph.D.
Committee Chair

Andrew Black, Ph.D.

George Streeter, Ph.D.

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ACKNOWLEDGMENTS

The author wishes to Dr. Berit Brogaard for her assistance and friendship as well as my wife, Helle Gowan, for her continuing support.

ABSTRACT

Contextual knowledge-attribution and natural selection are both processes that allow knowledge-attributions and organisms to evolve, respectively. The difference between Contextual knowledge-attribution and natural selection is the existence of intention: natural selection is an unintentional process that is possible because of random physical variations while Contextual knowledge-attribution is an intentional process that is possible because of random memetic variations. Evolutionary Contextualism, as a memetic theory, is the theory that knowledge-attributions evolve based upon unequal probabilities within a context created by falsifiable standards that are dependent upon attributer intentions. If Contextualism is a memetic theory that concerns knowledge, and memetic evolution is an evolutionary process, I conclude that biological evolution has significant implications for Contextualism.

Introduction

The idea that biological evolution by natural selection has implications for epistemology is not new. Karl Popper and David Cambell introduced the idea that evolution has implications for epistemology in the seventies. Here I ask what, if any, are the implications of biological evolution for epistemic contextualism? First, I will address this question by reviewing some recent versions of epistemic contextualism. In the second section of this paper I will review evolutionary epistemology, a naturalistic approach that emphasizes the importance of natural selection as a determining factor in epistemology. In the third section of this paper I apply the process of natural selection and evolutionary epistemological concepts to Contextualism. Finally, I apply this approach to several arguments against Contextualism, and conclude that the notion that the truth-value of sentences used to make knowledge-ascriptions is context-sensitive follows naturally from the argument that our ability to come by knowledge is a result of biological evolution.

Contextualism: Section I

Contextualism Defined

In his paper *Contextualism and Skepticism*, Stewart Cohen defines Contextualism as an epistemological theory of knowledge that takes the truth-value of sentences used to make knowledge attributions to depend on standards salient in the conversational context of the attributor.¹ According to Cohen, the intentions of the speaker partially determine the standards that are relevant for evaluating a knowledge ascription sentence for truth or falsity. The speakers, for example, may have certain purposes or intentions that are more or less important to them. For example, if a speaker S is attending an important meeting,

the standards for whether A knows that S's plane leaves at 3 p.m. might be relatively high. The general idea is that the interest that a speaker has in avoiding error will affect the truth-value of a knowledge ascription of the form A knows that p.

Also, given a particular situation or fixed environment, Cohen claims that because the intentions of attributers vary, the "standards for knowledge ascriptions can vary across contexts" and "there is no context independent standard."² According to Cohen, "two speakers may say "S knows p", and only one of them thereby says something true. For the same reason, one speaker may say "S knows p", and another says "S does not know p", (relative to the same circumstances), and both speakers thereby say something true."³ The apparent contradiction is explained by pointing out that different standards are in play in each speaker's context. The standards that determine the truth-value of a sentence expressed by a Contextualist are regulated by the context of attribution, that is, the particular situation or environment that the speaker is in as well as their particular interests. For these reasons, according to Cohen, justification comes in degrees.⁴

The standards that determine the truth-value of a sentence spoken within a context are also dependent upon how crucial it is for the speaker to be correct within the given context. Cohen considers the chance for error to be important because certain contexts can make the chance for error more or less important to the speaker. "And when the chance of error is salient, it can lead attributers to intend, expect, presuppose, stricter standards."⁵ According to the contextualist what is deemed important to the attributer in a given situation, also influences the standards that they use.

Contextualists such as Cohen reject the entailment principle, which is roughly: S knows P on the basis of (reason or evidence) R only if R entails P. Instead, knowledge-

attribution is justified by standards that can vary depending upon the intentions and purposes of the knowledge-attributor. “Since we reject the entailment principle”, Cohen writes, “We allow that we can know a proposition, even when there is a chance of error. When, however, the chance of error is salient, in a context, the standards tend to rise to the point that our reasons are insufficient for knowledge.”⁶ Since contextualists reject the entailment principle, they must allow knowledge of a proposition together with an accepted chance of error. All knowledge-attributions are fallible, but if the chance of error is salient enough in a given context, the standards of the speaker within that context will rise, even to the point of being insufficient for knowledge.

First, according to Cohen, the reasons that a speaker has in expressing a sentence, influences the truth of the sentence uttered. Also, given a particular situation or fixed environment contextualists claim that because the intentions of attributers vary across contexts, the standards for knowledge-attributions can also vary. Cohen claims that standards do not exist outside of context. Furthermore, Cohen also considers the chance for error to be important. Certain contexts can make the chance for error more or less important to the speaker uttering a sentence, and so can change the standards upon which the truth-value of the sentence is dependent. If the chance of error stands out conspicuously enough to the speaker in a given context, the standards that the speaker uses tend to rise to the point that her reasons are inadequate for knowledge-attribution.

Contextualism and Skepticism

Keith DeRose, in his paper *Assertion, Knowledge, and Context*, also points out that “the truth-conditions of knowledge-ascribing and knowledge-denying sentences (sentences of the form “S knows that P” and “S doesn’t know that P” and related variants

of such sentences) fluctuate in certain ways according to the context in which they are uttered.”⁷ DeRose, however, believes that contextualist accounts of knowledge attributions are a response to philosophical skepticism.⁸

DeRose uses a rule of sensitivity to determine standards in a context. DeRose's *Rule of Sensitivity* states that:

“When someone asserts that S knows (or does not know) that P, the standards for knowledge tend to be raised, if need be, to a level such that S's belief that P must be sensitive if it is to count as knowledge.”⁹

According to DeRose's *Rule of Sensitivity*, “a ‘low standards’ case in which [x] seems quite appropriately and truthfully to ascribe knowledge to [S] will be paired with a ‘high standards’ case in which [x] in a quite different and more demanding context seems with equal propriety and truth to say that [S] (or a similarly positioned subject) does not know.”¹⁰

Like Cohen, DeRose claims that standards vary across contexts. He points out that there are a wide variety of different standards that can be used by the contextualist in different ordinary contexts, but when more skeptical situations arise, those that call for higher standards, the contextualist uses more substantial examples (less radically skeptical) to attribute knowledge in that context. He writes, “To make the relevant intuitions as strong as possible, the contextualist will choose a “high standards” case that is not as ethereal as a typical philosophical discussion of radical skepticism: a “skeptical hypothesis” may be employed, but it will be much more moderate than the playthings of philosophers (brains in vats, evil geniuses, or what not)”¹¹

Standards are dependent upon contexts of ascription even in those contexts in which radically skeptical claims are made such as being a brain in a vat rather than a living human being with hands and feet. In such situations, DeRose claims that it becomes difficult to assert anything.¹² Fewer and fewer things become able to be asserted until nothing is available to justify any knowledge-claim. In such a radically skeptical context, the *lack of any justification* means that knowledge-attribution is not possible. The lack of justification in a radically skeptical context is not special to Contextualism. Rather, DeRose claims it is a problem for all epistemological theories.

So, like Cohen, DeRose points out that there are a wide variety of different standards that can be used by the contextualist in different ordinary contexts, but adds that when more skeptical situations arise, those that call for higher standards, the contextualist uses more substantial examples (less radically skeptical) to attribute knowledge in that context. He also claims that Contextualism as a theory of knowledge is primarily a response to philosophical skepticism. In contexts where philosophical skepticism is used as the standard, the lack of any justification means that knowledge-attribution is impossible, but this is a problem for all epistemological theories.

Section II: Evolutionary Implications on Epistemology

In this paper I am arguing that evolution has certain implications for knowledge-attributions. With that in mind, I think that a short digression into the implications of biological evolution for epistemology is in order. Regardless if one agrees or disagrees with theories entailed in the Evolutionary Epistemology (EE), it is widely accepted that life is the result of biological evolution. I am presenting a section on Evolutionary

Epistemology, because it is important to understand that biological evolution plays an important role in what we are capable of knowing, how we know, and even why we think. I will first start with a short overview of EE. Secondly, I will study some of the ramifications of biological evolution for knowledge-attribution. And thirdly, I will study what implications that evolution has for our ability to learn and communicate.

Evolutionary Epistemology

Evolutionary Epistemology seeks to explain the principles upon which we base knowledge-attributions, and how those principles are connected to biological evolution. Evolutionary Epistemology (EE), a term coined by David Cambell is Karl Popper's theory that there are ramifications that biological evolution has for knowledge-attributions (Cambell, 1974). According to Popper knowledge is to be understood as a continuation of animal knowledge (Popper, 1972, 1986, 1999). There are three features of EE that I will discuss here. First I will discuss hypothetical realism, then hypothetical-deduction (falsification), and lastly the evolutionary limitation of cognitive tools.

EE, a naturalistic epistemology, makes the claim that our cognitive beliefs are in line at least partially with how the world really is. The claim that there is a real world that is independent of us is known as hypothetical realism. It claims that the world is at least partially knowable and understandable by us, and that our knowledge about the world is, as Gerhard Vollmer states, "hypothetical and always preliminary."¹³ Naturalized epistemologies defend a hypothetical realism, and claim universality because all life, and hence all knowledge, is entailed by the fact that of biological evolution by natural selection.

Also, the success of our knowledge-attributions is not only dependent upon their quality, but also on how effective they are in that world. This means that knowledge-attributions are based on a defensible cost-benefit ratio between the attribution made and the environment that it is made in. If a knowledge-attribution helps the attributer to understand the world, then it is considered to be beneficial. The cost of knowing is the work it takes to understand the world: the more beneficial, the more the cost.

The claim that there is a real world that is independent of us is also known as scientific realism (Smith, 2003). Scientific realism, according to Smith, claims that there is a common reality that we all share which is independent of what we think and conclude about it. This common reality includes the reality of our thoughts and theories but is not wholly dependent upon them. Science has the responsibility of giving us an accurate representation of what the common reality that we share is. Knowledge-attribution has the same responsibility. Vollmer's claim, however, is that our knowledge is always experimental, and as such is hypothetical (Vollmer, 2005). His claim is in line with Popper's hypothetical-deductive method, or falsification (Popper, 1999).

Peter-Godfrey Smith writes, "Falsificationism claims that *a hypothesis is scientific if and only if it has the potential to be refuted by some possible observation.*"¹⁴ Given falsificationism, the evolutionary epistemologist never justifies knowledge-attributions (Smith, 2003). Rather, those that are not falsified (those that survive falsification) are accepted, and those that are falsified are not accepted. Metaphorically speaking, biological evolution "falsifies" organisms when those organisms are not able to adapt to the environment: the organism becomes extinct, and hence does not procreate. An organism's survival relies upon its fitness characteristics, and how effective such

characteristics are in helping the organism to survive in the environment that it is in. The process of falsification does not end with a true, justified belief, but with an accepted theory that is capable of being falsified. Falsifiable knowledge-attributions are accepted because they are unable to be falsified. In other words, evolution simply keeps what works, until something more beneficial comes along.¹⁵

Gerhard Vollmer writes that EE is distinguished by two traits: “by its claim to universality and by the limitation of tools admitted for describing and explaining the world.”¹⁶ Given its universality, EE limits the tools that we have to make knowledge-claims, such as the ability to learn and the use of language, to those that are possible because of biological evolution. It does not allow for unseen or unexplainable forces to be used as tools for describing and explaining the world. But evolution is not perfect, and neither is our ability to come by knowledge. Because our intuitions fail regularly, we must depend upon other cognitive tools to learn about the world, and the most important thinking tool we have is language (Vollmer, 2005).

To reiterate, Evolutionary Epistemology (EE) makes the claim that there are ramifications that biological evolution has for knowledge-attributions. It is a naturalistic epistemology that defends hypothetical realism. Furthermore, the evolutionary epistemologist never justifies knowledge-attributions because, according to Popper, “*all human knowledge is fallible and conjectural. It is a product of the method of trial and error. (Italics added)*”¹⁷ Rather knowledge-attribution is hypothetical and temporarily correct based on the ability of the knowledge-attributer to falsify the knowledge-claim. Lastly, EE also limits the tools we use to learn and communicate. I will review the

consequences of these limits later on, but first, what are the ramifications of natural selection on knowledge-attribution?

The Ramifications of Natural Selection on Knowledge-Attribution

Elliot Sober describes biological evolution by natural selection as “a developing entity, extending (and contracting) its boundaries in several directions at once.”¹⁸

According to Sober, what explains these occurrences is the idea of natural selection.¹⁹ He states that the process of evolution by natural selection can be divided into three main constituents:

- a) Random variation in the objects considered, allowing for selection to act.
- b) Variation in fitness based on unequal probabilities: some fitness traits are more conducive to procreation, and hence survival.
- c) Heritable characteristics: the passing on of fitness characteristics.

In short, Sober writes, for the process of natural selection to act “there must be heritable variation in fitness (Lewontin 1970).”²⁰

Evolutionary epistemology claims that knowledge is a by-product of evolution, and a presupposition of epistemology. That knowledge is a by-product of evolution comes from the fact that the knowledge-attributer is a product of evolution.²¹

Epistemology cannot be separated from the fact that epistemologists have evolved. For that reason, knowledge-attributions cannot be separated from biological evolution.

Epistemological theories have evolved, and continue to evolve just as life continues to evolve. Knowledge is possible because the epistemologist is able to recognize it by creating theories concerning knowledge, and she is only able to do so because the ability to do so has evolved. The first consequent of biological evolution on knowledge-

attribution is if humans are the product of biological evolution then the claim that knowledge is the product of biological evolution is *necessitated*.

Secondly, it is important to note that natural selection is not a random process although it is a product of random processes. Popper states, “A choice process may be a *selection* process, and the selection may be *from* some repertoire of random events; *without being random in its turn* (Popper’s italics).”²² In biological evolution natural selection involves unequal probabilities rather than randomness (a point that many creationists do not understand). But natural selection applies to knowledge-attribution as well. Knowledge-attribution is an intentional process based on unequal probabilities created from random events.

For example, I recognize that I need to fix my car, but do not know what is wrong with it. I might recognize that it sputters and is hard to start. Also, so as to not pay too much money, I want an explanation that I can understand concerning the problem with my car that is relevant to my car and my pocket book. My interest in understanding why my car sputters and is hard to start may include chemistry, physics and a whole host of other variables, but it may not be every possible variable, at least not directly, that I am interested in understanding in order to understand what is wrong with my car.

If, on the other hand, I want to understand chemistry and physics, for example, I can use my car to understand those things. To understand why my car won’t start and how much it will cost me to get it to do so take certain information while at the same time dismissing other types of information. In this way, the recognition and choice of information needed, based on attributer-intentions, creates a context in which unequal probabilities between needed and un-needed information is created. The information that

helps me to understand why my car doesn't start is beneficial and needed in one context, the one in which I want a viable explanation to why my car won't start so as to not pay too much for the repair, while information that helps me to understand chemistry and physics is not helpful (not needed) in the same context. Information may be beneficial in one context while completely superfluous in another.

The recognition of what it is that I need to understand can be random, but the process of learning about what I recognize is not. First, what I recognize as beneficial in one context many times depends upon the context itself. In one context, the importance of flight times is important, and in another getting my car repaired is important. The contexts that are created are often created randomly created by a host of variables. But what is beneficial in a given context is based upon the intentions of the attributer.

In recognizing something as beneficial, unequal probabilities are created by the intentional act of learning by the potential knowledge-attributer. They do not want to learn all there is to know, but only that which pertains to their intentions and is beneficial in that particular context. The ability to recognize and learn about p based upon the intentions of the attributer and the benefits of p in a certain context create unequal probabilities between what needs to be both recognized and learned. So, the second consequent of biological evolution on knowledge-attribution is that knowledge-attribution is an intentional process that involves unequal probabilities created by the attributer in a given context.²³

The third consequent of biological evolution on knowledge-attribution is the method in which knowledge-attributions are passed on, the heritability traits of knowledge-attributions. EE holds that because our intuitions fail regularly, we must

depend upon other cognitive tools, such as language, to learn about the world. The heritability of ideas through learning and language is also an evolutionary process, and is limited to the memes we have available to us at a given time. But what is a 'meme'?

The Evolution of Language

Recently (Dawkins, 1983), the concept of heritable variation in fitness has been applied to the recognition and replacement of ideas by cultural transmission. Recognition and replacement of ideas is usually (but not necessarily) a linguistic process and is considered by Richard Dawkins as being evolutionary by nature. He writes, "Cultural transmission is analogous to genetic transmission in that, although basically conservative, it can give rise to a form of evolution."²⁴ The form of evolution that Dawkins refers to is similar to natural selection in that recognition of ideas (a) ultimately leads to the replacement of weaker ideas by stronger ideas (b), which then evolve further by being heritable (c). Dawkins calls the recognizable and replaceable objects that evolve 'memes'. The form of evolution, the process by which memes evolve then, could be called Memetic evolution.

Memetic evolution applies to many forms of knowledge transmission such as "tunes, ideas, catch-phrases, clothes fashions, [and] ways of making pots or of building arches." In other words, memes are defined by their representational content, the information that they represent, which also provides the mechanism for memetic evolution (Distin, 2005).²⁵ Dawkins believes that "just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation."²⁶

Memes are not only able to change the language that we use, but the ideas that we have and the contexts in which we have them. Dawkins' claim is that when "you plant a fertile meme in [a] mind you literally parasitize [the] brain, turning it into a vehicle for the meme's propagation in just the way that a virus may parasitize the genetic mechanism of a host cell."²⁷ As stated earlier, we must depend upon cognitive tools to learn about the world, and according to Dawkins, our cognitive tools are the result of a process of memetic evolution.

Learning is important in memetic propagation, and there are, generally speaking, two types of learning: non-associative learning, the result of the exposure to the world around us via our perceptions; and associative learning, the cognitive recognition of the relationships between events that we perceive.²⁸ Associative learning is important because it is through associative learning that we come to understand the benefit of a meme in a given environment. Memetic evolution depends upon associative learning for propagating successful memes, and so does Contextualism, as I will point out below.

In conclusion, the ramifications of biological evolution on knowledge-attribution are that because humans are the product of biological evolution, knowledge is also the product of biological evolution. Also, the learning process is similar to the process of natural selection. Although natural selection is an unintentional process and the process of learning is an intentional process, they are both based upon unequal probabilities. Lastly, associative learning and language evolve by a process similar to natural selection, and unintentional process, known as memetic evolution, and intentional process.

Section III: An Alternative to Contextualism

So far I have reviewed Contextualism: a theory that claims that the truth-value of sentences containing knowledge-attributions vary depending on the standards in play in the context of use, and evolutionary epistemology: the claim that biological evolution has ramifications for our ability to know. The fact that human beings have evolved indicates that their thought processes, their ability to conceptualize and theorize knowledge, are the product of an evolutionary process. As I will try to point out, this presupposition leads to a salient relationship between Contextualism, knowledge-attribution and evolution.

Evolutionary Contextualism

If biological evolution can be accepted scientific explanation for the existence of life, then given biological evolution by natural selection, truth-value is contextual. First, if Contextualism is a semantics theory for 'know', it is possible for it to be construed as a memetic theory of knowledge. Secondly, if knowledge is a possible because the ability to 'know' evolves, and evolution progresses from 'mistakes' (differences in fitness traits), it follows that fallibility must be accepted as a necessary component of all knowledge-attributions. Thirdly, given that knowledge is a by-product of evolution, knowledge-attributions have no context-independent justification. Rather, attributer standards change according to the ability of an attributer to falsify them within a given context.

First, Contextualism is often construed as a semantics theory for 'know' according to which 'know' depends on the standards of knowledge in play in the context use. If intentions, and therefore standards, make use of memes, which I believe that they do, contextualism as a semantics theory that concerns knowledge can also be construed as

a memetic theory. Memes, through the use of language, can evolve according to how beneficial they are to a knowledge-attributer within a given context. The concept of heritable variation in fitness (natural selection) can apply to the recognition and replacement of ideas by cultural transmission (memetic evolution), and as such can be considered as being evolutionary by nature. Therefore, if language is able to evolve according to how beneficial it is to a knowledge-attributer in a given context, contextual knowledge-attribution is at least in part evolutionary.²⁹

Secondly, evolution is able to progress because of slight changes, or variations in fitness traits. These variations exist because of many biological factors, but the gist of it is that variations are caused by ‘mistakes’ in heritability. These ‘mistakes’ create fitness variation, which makes the process of natural selection possible. If trait A fails in a given environment, and trait B succeeds, trait B is said to be more fit and therefore evolves further in that environment. Epistemologically speaking trait B is ‘true’ while trait A is ‘false’, but both traits are necessary for natural selection to progress.

Fallibility must be accepted as a necessary component of knowledge-attributions because there is *always* a chance of error; the question is how essential that chance of error is in the attributer’s context. If unequal probabilities are created by the intentions of the knowledge-attributer then error-salience is based upon unequal probabilities of importance within a context rather than equal probabilities outside of a context. For example, let’s call the statement “S knows that P” statement x. When a speaker recognizes x, she differentiates x from x₂, x₃, x₄ and so on. Even if x₂ and x₃ happen to be related to x in some way, the speaker may not be interested in x₂ and x₃, but only in x. In differentiating one attribution from a number of random possible attributions by her

intentions, even related ones, the speaker makes a selection from some repertoire of random events; *without making a random choice*.

Although the source of knowledge-claims is quite possibly random, the standards used in making contextual knowledge-claims are the product of attributer-intentions, and the ability of the knowledge-attributer to learn. As such, standards are not randomly generated by attributer intentions but the result of intentions coupled with associative learning. Attributer intentions and the ability to learn can create unequal probabilities based on principles such as the Likelihood Principle (Edwards, 1972). Sober defines the Likelihood principle as a situation in which “O [observation] favors H1 [hypothesis 1] over H2 [hypothesis 2] if and only if H1 assigns to O a probability that is much bigger than the probability that H2 assigns O.”³⁰ The standards derived from attributer intentions in a given context can be the product of the likelihood of one proposition being true over another in a given context rather than equal probabilities of all possible propositions being true outside of any given context.

If the standards used by the knowledge-attributer are memetic, which is to say they are gradable based upon heritable variation in fitness, and based upon principles such as the Likelihood principle then they are able to evolve because of unequal probabilities rather than equal probabilities. When the chance of error increases within a context, the attributer’s standards evolve depending on the salience of error, but also on how probable or un-probable a speaker has learned that similar standards have been in the past in similar contexts. Standards are not only based on past experiences, present intentions and future expectations, but also on what is recognized and understood as true based on what the speaker considers as unequal probabilities and non-random choices.

The implications of evolution on standards are that they are not only based on the purposes and intentions of each attributor of knowledge, but also on unequal probabilities and intentional associative learning. Furthermore, the process of recognition and learning can lead to more probable knowledge-attributions because while recognition is not always an intentional process, associative learning is an intentional process based upon unequal probabilities and the memetic transmission of ideas.

Memetic evolution provides ideas that are of the greatest benefit to knowledge-attributors in a given context, and based upon memetic fitness, memes continue to be used in future contexts. Speakers in a given context base the truth-value of their sentences on their intentions, what they have learned through association and on what have worked in the past. Memes used by a speaker are gotten from the speaker's own experience, the testimony of others, and their own memory; sometimes all three. Nevertheless memes survive based on their effectiveness in a given environment. If a meme is able to "survive", then it is passed on from one knowledge-attributor to another, from one context to another. *Knowledge-attributors keep what works.*

"Truth-value" has no evolutionary meaning per se, but is measured against what is not true. Fitness traits are more or less beneficial depending upon the environment they are in, but exist in an environment because there are other similar traits that are not as beneficial in the same environment. Similarly, memes are chosen by how beneficial they are to a speaker in a given context. Those that are most beneficial become heritable by the speaker in other contexts, and those that are not either become extinct, or are used simply out of necessity or ease.³¹ However, because the evolutionary process has worked

in the past, organisms that can make knowledge-attributions exist today: philosophers, for example. Biological and memetic evolution both progress by keeping what works.

Like biological evolution, contextual knowledge-attributions are able to evolve as well because of slight changes, or variations in speaker standards caused by the failure of speaker intuitions in a given context. For knowledge-attribution, being wrong is just as important as being right. When a speaker says “S knows P” and says something true, that speaker must also recognize that “S does not know P” is false. If a statement is not true given the standards used in the given context, the statement is not beneficial to the speaker. If the standard used in a given context is not high enough to substantiate a given statement, the statement must be considered false or the standard raised; either way the standard is not beneficial to the statement. Slight changes and variations in knowledge-attributions allow for the recognition of both true and false statements.

The ability to differentiate what is true from what is not true is necessary in order to make true knowledge-attributions. Not only must we differentiate what is true from what is not, but we must also recognize our capability of being mistaken. It is the fact that we are fallible, that our intuitions and the cognitive tools we use fail regularly, which allows us to make knowledge-attributions because we can differentiate true from false attributions according to our intentions. It is through fallibility that we recognize auxiliary possibilities and are able to differentiate true from false statements. We learn what is true by recognizing what is false.

Thirdly, knowledge-attributions have no context-independent justification. Rather, they are hypothetical and temporarily correct based on the ability of the knowledge-attributer to falsify the knowledge-claim. If a speaker claims that “S knows

that the P” in a given context, one way that the speaker can learn if the claim is true is by trying to falsify it. If “S knows that P” is consistent with the speakers intentions enough times, in a given context the standards needed for a speaker to know that “S knows that the P” can be lowered because the statement has failed to be falsified (it has ‘survived’ in that given context) given certain standards. Nevertheless, the claim is not justified, but only has failed to be falsified. If the claim can be falsified, the speaker, if he is a good learner, will try to learn why the claim was falsified, and raise the standards based on what he learns. The speaker’s standards are now raised because there is an auxiliary possibility in which the statement “S knows that P” is false: the context in which the speaker can falsify the claim.

If a speaker cannot recognize the possibility of being wrong or right because of the lack of auxiliary possibilities, a radically skeptical context is created. Although such contexts exist, they are still based upon speaker recognition, learning, and heritability. The speaker can recognize through his ability to learn what, if any, knowledge-attributions are possible. In such contexts, the ability to make knowledge-attributions is severely, but not completely limited. In recognizing the context as radically skeptical, the speaker has created an unequally probable situation simply by recognizing that the context in which he is in is radically skeptical and learning from that recognition. The standards that are necessary are either extremely high or impossible. The speaker can come to know what, if anything is possible to learn in such a context.

The context determines what the speakers intentions will be, at least to an extent, and from those intentions, standards are set. At the same time, the speaker is able to recognize that intentions can, and sometimes must change according to the context in

which they are made; that standards used in a given context are subject to change because they evolve depending upon the context that they are used in as well as what is capable of being learned. In all situations, falsification allows the knowledge-attributer to learn and create standards based on his intentions while at the same time knowing that those standards can evolve according to the context they are being used within, and what the attributer is capable of learning.

All knowledge-attributions are falsifiable, *even if they are accepted as true*. This means that the truth-value of sentences if accepted is accepted but only contextually. Temporary knowledge attributions are the result of the evolving standards of knowledge-attributers, based on the acceptance of temporary theories resulting from memetic evolution. Standards evolve based on recognition, learning, as well as the resulting recognizable and understandable probabilities that one standard has over another. Rather than justification, knowledge-attributions and the standards they are based upon depend upon being recognizable by falsification.

Because there are no justified knowledge-attributions, but only probable or unprobable knowledge-attributions, attributers recognize and learn by falsification. Learning is one positive trait of using falsification rather than justification. Using falsification as the test for knowledge claims, true attributions can be made, if only temporarily, by the ability of attributers to learn. Falsification results in knowledge-attributions in the form of new problems to be falsified. But this is no problem for the contextualist. As attributer-intentions change, they recognize and replace memes, which result in new knowledge-attributions within new contexts. Contextualism allows for temporary situations in which problems can be solved through associative learning.

Those standards that cannot be falsified cannot be considered valid for knowledge-attributions. Standards that cannot be falsified cannot be recognized as probable or un-probable by knowledge-attributers. Therefore, attributers are not able to recognize and replace old ideas with new ideas resulting in the inability to create new contexts, and attribute knowledge. In other words, the evolution of knowledge is not possible because associative learning is not possible. The standards used by the attributor must be able to evolve memetically, and for them to do so, they must be based upon unequal probabilities that are recognizable by falsification in a given context rather than equal probabilities in all contexts. Another result of falsification on Contextualism is that those standards that are unable to be falsified at time t by the knowledge-attributor are considered true; those that can be falsified are not true at time t , and those that are not falsifiable cannot be used as standards.

In conclusion, Contextualism as a semantics theory that concerns knowledge can also be construed as a memetic theory that concerns knowledge. Secondly, because knowledge-attributers are the product of biological evolution, theories of knowledge were able to be created to capture the truth. Also, because of the fallibility factor, knowledge-attributions are possible based on unequal probabilities within a given context rather than true, justified belief or equal probabilities outside of any given context. Fallibility is necessary to make true knowledge-attributions because they offer the attributer auxiliary possibilities to the attributions that they make. Thirdly, rather than justification, knowledge-attributions are based upon unequal probabilities between at least two possible attributions, both being recognizable by falsification. Falsification allows knowledge-attributers to learn through association.

If Contextualism can be construed as a memetic theory, it can also be construed as evolutionary. So, given the implications of biological evolution, Contextual knowledge-attribution is an intentional process of problem solving by knowledge-attributers that is possible because of heritable variation in memetic fitness.

Arguments Against Contextualism.

First, it has been suggested by Jason Stanley that knowledge-attributions are not context-sensitive. In his book, *Knowledge and Practical Interests*, Stanley claims that gradable adjectives fail leading to the failure of context-sensitive adjectives to “justify the context-dependence of knowledge ascriptions”, which “casts doubt upon the claim that knowledge comes in varying degrees of strength”.³² But, as a memetic theory of knowledge, Contextualism allows for growth and acquisition of knowledge: the recognition of ideas that ultimately lead to the replacement of weaker ideas by stronger ideas. Gradable adjectives are simply an example of memetic evolution.

Let’s take Stanley’s example:

“If the bank is open, then John knows that the bank is open, but doesn’t really know that the bank is open.”³³

John’s knowledge-attribution concerning the bank does not depend upon the bank being open. First, John recognizes a chance of error. The chance of the bank not being open is higher on Sunday, for example, than it is on Wednesday based upon what John has learned about banks in the past. Secondly, John’s knowledge about banks has been learned through associative learning. That is, John recognizes that banks are usually open on certain days and usually closed on others. John recognizes a pattern concerning the business hours of banks, and bases his knowledge on the pattern that banks are open and closed. Thirdly, John’s need to deposit a check will influence his decision to take a

chance that the bank is open or closed. If the need to cash a check is high, his standards will go up. If the need is low, then the standards will not be so high. Lastly, John knows that bank is really open only when he is interacting with the world, in the bank doing business, at a time when the bank is really open.

John's knowledge-attribution is true based not only on his intentions (going to the bank to do business), but also on what he knows about banks, based on the business hours of banks in the past. He is able to recognize and learn through association, that banks are open and closed during certain hours, and his ability to falsify (or not) the fact that there is a bank open at time t . John's knowledge-attributions are more probable if in the past his attributions concerning the opening hours of banks have been true. His attributions are less probable if John has been less right concerning the opening hours of banks in the past. His knowledge attribution is based on a heritable variation in fitness concerning how well his standards concerning banks have worked in the past.

Stanley also states that the failure of context-sensitive adjectives to justify the context-dependence of knowledge ascriptions is a problem as well. But, given the implications of biological and memetic evolution on Contextualism, knowledge-attributions have no justification. The standards of knowledge-attributers are based upon the intentions, recognition and learning of new memes, which creates the context in which knowledge-attributions are made. If a meme (any idea, semantic or otherwise) is falsified, it fails. If it is not falsified it is true, and if it is not falsifiable, it is not considered a standard of knowledge-attribution because of the lack of salience. Standards that cannot be falsified are not considered a standard of knowledge-attribution because if they are not recognized as probable or un-probable by knowledge-attributers,

no knowledge-attribution can be made: learning is not possible. So, adjectives are deemed truer or more false based upon their memetic fitness, which is founded on unequal probabilities rather than justification in a given context.

Those ideas that are not falsified within a given context are true, and those that are falsified become false. The truth of propositions comes in varying degrees of memetic fitness. Stronger ideas evolve further by being heritable: they become the temporary standards in the present because they worked in the past. The temporary standards that are accepted in one context at time *t* can be ultimately replaced and a new context created as our intentions change and we learn more through falsification.

Stanley concludes that the “fact that semantic contents of comparative adjectives are sensitive to contextually salient standards is irrelevant to the claim that ‘know’ has a similar context-sensitive semantics.”³⁴ But the intentional attempt by knowledge-attributers to solve problems is an intentional attempt to acquire true knowledge: ‘truth’ being based on unequal probabilities and falsification rather than justification. Attributer-intentionality in the problem solving process of acquiring true knowledge, and memetic evolution lead me to suspect that not only are “semantic contents of comparative adjectives [] sensitive to contextually salient standards”, but that “the claim that ‘know’ has a similar context-sensitive semantics” is true as well.

Secondly, Berit Brogaard suggests that the “allies of contextualism haven’t yet shown us whether contextualism can succeed in maintaining a notion of ordinary knowledge while resisting the absurdity that knowledge can be a matter of sheer good luck.”³⁵ I agree with Brogaard that it is an absurd notion that knowledge can be a matter of sheer good luck, but I disagree that given biological and memetic evolution

Contextualist knowledge-attribution is a matter of sheer good luck. Rather, Contextual knowledge-attribution is intentionally evolutionary, based upon standards that are the result of unequal probabilities rather than sheer good luck.

Brogaard's example of knowledge as the result of sheer good luck is a good one. She writes:

“It is not sufficiently justified if the reason I believe that every student in my logic class is born on [a] weekday is that my crystal ball (accidentally) gave me the (right) answer.”³⁶

Brogaard is correct in stating that if the reason that I use for my knowledge of student's birthdays is a crystal ball, I will not have a sufficient reason for my knowledge-attribution. The crystal ball, in this example, does not warrant a standard, and so is not contextual. Therefore, no knowledge-claim can be made. The crystal ball involves equal probabilities in a non-contextual environment. Given this, the contextualist cannot learn from what she recognizes. She cannot tell if the knowledge gotten from the crystal ball is the result of sheer good luck or not. The probability of the crystal ball being right is equal with the probability of it being wrong, and as such is not falsifiable. Standards that cannot be falsified cannot be recognized as probable or un-probable, are equi-probable and so are not considered valid for knowledge-attributions. However, the contextualist relies upon unequal probabilities, not equal probabilities.

For example, the likelihood of a crystal ball giving me consistently true knowledge is extremely low if I have an auxiliary hypothesis such as sheer good luck. The contextualist, based on the improbability of a crystal ball being able to give a right answer in this world (if it could be based on a crystal ball in any way), would be able to differentiate knowledge gotten from a crystal ball from knowledge gotten from sheer

good luck, given the likelihood principle. The contextualist can differentiate accidental knowledge from supposed knowledge gotten from a crystal ball given the likelihood principle together with an auxiliary hypothesis. With no auxiliary hypothesis, no knowledge-attribution is possible.

Memetic selection is not a random process although it is a product of random processes. Rather, memetic selection involves unequal probabilities. While randomness does play an integral role in what knowledge-attributers recognize, it is separate from the process of memetic selection. Accordingly, the concept of heritable variation in fitness (natural selection) applies to the recognition and replacement of ideas by cultural transmission (memes), and is considered to be evolutionary by nature. Memetic evolution is a process similar to natural selection: it is based upon unequal probabilities rather than equal probabilities. So, if Contextualism as a semantics theory that concerns knowledge can be construed as a memetic theory that concerns knowledge, then Contextualism can be construed as evolutionary, and is not the product of random variation (sheer good luck), but of unequal probabilities.

Conclusions

Contextualists claim that because the intentions of attributers vary, the standards for knowledge-attributions can also vary, but are still context-sensitive. Standards do not exist outside of context. Furthermore, the chance for error is important to Contextualism. If the chance of error stands out conspicuously enough to the speaker in a given context, the standards that the speaker uses tend to rise until the speaker's reasons are to the point that her reasons are inadequate for knowledge-attribution. However, this problem is not special to Contextualism, but is a problem for all epistemological theories.

Evolutionary Epistemology holds that there are ramifications of biological evolution on knowledge-attributions. Because humans are the product of biological evolution knowledge is also the product of biological evolution. Furthermore, although the process of natural selection is an unintentional process and the process of learning is an intentional process, they are both based upon unequal probabilities. Lastly, knowledge-attribution is possible through learning and language, also an evolutionary process.

Evolution has several implications on Contextualism. Because knowledge-attributers are the product of biological evolution, knowledge is a by-product of evolution, which means that fallibility must be accepted as a necessary component of knowledge-attributions. Contextual standards are based upon falsifiability. Also, the standards on which knowledge-attributions are made are based on unequal probabilities rather than true, justified belief or equal probabilities. Therefore, Contextual knowledge-attributions are able to evolve depending upon the environment they are made in. Contextualism as a semantics theory that concerns knowledge can also be construed as a memetic theory that concerns knowledge, and so is also evolutionary.

Contextual knowledge-attribution and natural selection are both processes that allow knowledge-attributions and organisms to evolve, respectively. The difference between Contextual knowledge-attribution and natural selection is the existence of intention: natural selection is an unintentional process that is possible because of random physical variations while Contextual knowledge-attribution is an intentional process that is possible because of random memetic variations. Evolutionary Contextualism, as a memetic theory, is the theory that knowledge-attributions evolve based upon unequal

probabilities within a context created by falsifiable standards that are dependent upon attributer intentions. If Contextualism is a memetic theory that concerns knowledge, and memetic evolution is an evolutionary process, I conclude that biological evolution has significant implications for Contextualism.

Notes

¹ Cohen, Pg. 94. Also, for the context of this paper, I regard the attributer as a self-ascriber and someone who ascribes knowledge to others. (*Thanks to George Streeter for bringing this point to my attention*)

² Cohen, Pg. 94.

³ Cohen, Pg. 94.

⁴ Cohen, Pg. 97.

⁵ Cohen, Pg. 98.

⁶ Cohen, Pg. 98.

⁷ DeRose, Pg. 2.

⁸ Ibid.

⁹ DeRose, 1999 Pg. 206.

¹⁰ DeRose, Pg. 3.

¹¹ DeRose, Pg. 3.

¹² DeRose, Pg. 22-2.

¹³ Ibid.

¹⁴ Ibid. Pg. 58.

¹⁵ Cambell, Pg. 108.

¹⁶ Vollmer, Pg. 262.

¹⁷ Popper, 1993, Pg. 116.

¹⁸ Sober, Pg. 5.

¹⁹ Ibid. Pg. 9.

²⁰ Ibid. Pg. 9.

²¹ Vollmer, Pg. 260.

²² Popper, 1999, Pg. 147.

²³ Here I should again note that the process of natural selection is an unintentional process based upon unequal probabilities while the process of learning is an intentional process based upon unequal probabilities.

²⁴ Dawkins, Pg. 189.

²⁵ Distin, Pg. 20.

²⁶ Dawkins, Pg. 192.

²⁷ Ibid.

²⁸ Distin, Pg. 33.

²⁹ If bowling can be considered a product of evolution, how can a bowler bowl a perfect game? The game of bowling does not evolve. A 'perfect' game of bowling is when a player bowls all strikes, and the resulting score is three-hundred. First, the game of bowling is the product of evolution, and has most likely evolved to be the game that it is today. In other words, the game did not spontaneously appear: it is the product of the human mind. Secondly, the intentional creation of bowling also created a virtual context in which a perfect score is defined three-hundred. However, the only reason a perfect score is defined as such, is because rules have been developed intentionally which define a perfect score as three-hundred. The score that defines a perfect game is arbitrarily chosen as a definition. The game of bowling would not change if a perfect score was defined as four hundred for example. Knowledge evolves because the intentions of knowledge-attributers are more often than not, the product of the recognition of some x that they want to know but do not know at time t_1 . A bowler, however, starts the game recognizing a goal that has been intentionally set: the bowler knows beforehand that a perfect score (300) is the goal of the game. A knowledge-attributer does not have such knowledge beforehand. Knowledge-attribution has no 'perfect score' because knowledge-attribution is not arbitrary. (*Thanks to Andrew Black for this example*)

³⁰ Sober, Pg. 32.

³¹ The use of memes by attributers because of ease of use, the lack of better memes, or simply out of necessity can be paralleled with the semantic blindness of knowledge-attributers. Attributers continue to use words and ideas that may lead to epistemological problems, but continue to use them because those particular words are the best cognitive tools available for the time being. (*Thanks to Berit Brogaard for her input here*)

³² Stanley, Pg. 35-36.

³³ Ibid. Pg. 37.

³⁴ Ibid. Pg. 45.

³⁵ Brogaard, Pg. 1.

³⁶ Ibid. Pg. 16.

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