A Peircean revision of the theory of extended mind

Uma revisão peirciana da teoria da mente estendida

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Abstract: This paper focuses on C. S. Peirce's theory of mind. Although there are only a few studies on this subject, Peirce's theory of mind has potential impacts even in the contemporary context. This paper considers C. F. Delaney's arguments and agrees with him that Peirce's theory can be construed as one going along with the 'externalistic tradition'. Moreover, this paper reflects on the concept of the 'extended mind' proposed by A. Clark and D. Chalmers, and then argues that Peirce's theory of mind may encourage a sort of 'active externalism' on which the concept of extended mind relies. The theory of extended mind, however, has a problem regarding the definition of self. On the other hand, Peirce's theory could provide an insightful understanding of the concept of self that may be free from the problem that the theory of extended mind suffers. This paper thus concludes that Peirce's theory of mind suggests an optimistic revision of the theory of extended mind.

Keywords: Charles Peirce. Externalism. Extended mind. Monism. Synechism.

Resumo: *O foco deste artigo é a teoria da mente de C.S. Peirce. Apesar de haver poucos estudos sobre esse assunto, a teoria peirciana da mente tem impactos potenciais mesmo no contexto contemporâneo. Este artigo considera os argumentos de C.F. Delaney e concorda com ele em que a teoria de Peirce pode ser construída em paralelo com a "tradição externalista". Além disso, este artigo reflete sobre o conceito de "mente estendida" proposto por A. Clark e D. Chalmers, e, em seguida, argumenta que a teoria peirciana da mente pode encorajar uma espécie de "externalismo ativo" no qual o conceito de mente estendida repousa. A teoria da mente estendida, no entanto, tem um problema em relação à definição de* self*. Por outro lado, a teoria de Peirce pode prover um entendimento perspicaz do conceito de* self *que pode livrar a teoria da mente estendida desse problema. Este artigo conclui que a teoria da mente peirciana sugere uma revisão otimista da teoria da mente estendida.*

Palavras-chave: *Charles Peirce. Externalismo. Mente estendida. Monismo. Sinequismo.*

Introduction

This paper is part of my project aiming to consider C. S. Peirce's theory of mind in the contemporary context of the philosophy of mind. In this paper, I will focus on

the externalistic aspects of Peirce's theory of mind pointed out by C. F. Delaney. Although Delaney's contention seems plausible, I will furthermore suggest that Peirce's externalistic view can be construed as 'active externalism', which is an idea A. Clark and D. Chalmers put forward in their paper "Extended Mind" (1998). I will thus find the place in which Peirce's theory of mind can be located in the contemporary context. However, we also need to consider the fact that the theory of extended mind has a problem regarding the definition of self. Peirce's theory involves a theory of self-consciousness, and this theory seems to offer a potential solution to the problem the extended mind suffers. This paper will therefore conclude that Peirce's theory of mind can suggest a revised version of the theory of extended mind, which might be called 'semiotic monism' and which no longer claims that mind is extended into environment, but argues that personal mind and the environment embracing this mind are continuous in the sense that both are evolving semiotic systems.

1 Delaney's argument

Although there are only a few studies on Peirce's theory of mind,[1] Delaney's studies are notable. In his paper "Peirce's Account of Mental Activity", Delaney focuses on Peirce's early works such as "Questions concerning certain faculties claimed for man" (hereafter "Questions"[2]) and "Some consequences of four incapacities" (hereafter "Four incapacities"[3]), and he points out certain externalistic aspects of Peirce's theory of mind. Delaney (1979) thus states "the philosopher who carried through this externalist program most self-consciously and most completely was C. S. Peirce".

Delaney's distinction between the 'externalist tradition' and the 'internalist tradition' is explained in the following way. In the internalist tradition, "[w]e have direct introspective access to our thoughts, and hence our understanding of thinking need not be conceptually tied to any reference to the external world" (*ibid*.). Accordingly, in this tradition, internal thoughts come first and then words are assigned to these thoughts as expressions of them.[4] On the other hand, the external tradition "has always taken middle sized physical objects as the paradigmatic objects of human understanding and carries this same spirit into the philosophy of mind" (*ibid*.). This means that the external tradition treats objects of mental activities as if they were physical and external objects; for example, language is assumed to be the object of understanding, and language is understood as external public object. Thus, in this tradition, human mental activities such as understanding and thinking are regarded as mediated by external objects such as language.

According to Delaney, Peirce's theory of mind has certain aspects that can be construed as expressing an externalist program. Delaney begins his argument by

1 Besides Delaney's studies, Savan (1981) examines Peirce's semiotic theory of emotion; Colapietro (1989) makes clear Peirce's idea of the self.

2 CP 5.213-63; EP 1:11-27.

3 CP 5.264-317; EP 1:28-55.

4 Delaney (1979) mentions Ockham and Wilfrid Sellars as representative philosophers going along with the externalist tradition.

showing that Peirce's methodological attitude leads to an externalist program in his theory of mind. In the core of Peirce's methodological attitude, there is the principle of parsimony.[5] This is the principle that when there are alternative ways to explain a given phenomenon, one should choose a way that is compatible with existing frameworks and thus avoid introducing new concepts as far as possible. Keeping this principle in his mind, Peirce sets the starting point of consideration of mental activities; he mentions the case of thinkings-out-loud as a paradigmatic case suitable for the starting point.[6] For example, a mental activity of thinking that I want this food can be examined in the paradigmatic case in which I express my thought out loud by the words 'I want this food'. This approach focuses not on internal mental states but on external public mental activities, so this can be understood as going along with the external tradition.

Peirce's externalist approach to mental activities can be supported by his denial of the ability of introspection. In "Questions", Peirce argues that intuitive abilities humans are assumed to have are actually derived from inferences, and the ability of introspection is one of these abilities. Peirce asks the following question about introspection: "[w]hether we have any power of introspection, or whether our whole knowledge of the internal world is derived from the observation of external facts".[7] Peirce's answer is that we do not have any power of introspection, and that "our whole knowledge of the internal world is derived from the observation of external facts". Delaney's distinction between the internalist tradition and the externalist tradition should be recalled here; while the internalist tradition presupposes the existence of the ability of introspection, the externalist tradition supposes that every object of mental activity is derived from the external world. In this sense as well, Peirce can be understood as an externalist.

This repudiation of intuitive introspection and other intuitive abilities leads to Peirce's more radical idea that all mental activities are mediated via inferences carried out by signs. This idea is explained in "Four incapacities". Peirce regards every entity that comes up in consciousness such as sensation, emotion, image, and concept as a sign. Since Peirce repudiates the existence of any kind of intuitive abilities,[8] these signs are also understood as gained via inferences, which are based on observations of facts in the external world.

Peirce states that "[s]omething, therefore, takes place within the organism which is equivalent to the syllogistic process".[9] This means that when "the organism" is a human, something equivalent to an inference appears in the human mind; inferences develop in the human mind. These inferences are based on external facts,

5 Peirce explains this principle in his contribution to Baldwin's *Dictionary of Philosophy and Psychology*. See CP 7.92-3.

6 See CP5.247; EP 1:23.

7 EP 1:22.

8 In "Questions", Peirce states the term 'intuition' means "a cognition not determined by a previous cognition of the same object, and therefore so determined by something out of the consciousness" (EP 1:11). In the last section of this paper, Peirce asks "[w]hether there is any cognition not determined by a previous cognition", and his answer is no (EP 1:25). He thus repudiates any kind of intuitive abilities claimed for man.

9 EP 1:31.

and developed by manipulation of signs. Signs, such as words, are also derived from the external world. Taking these considerations into account, Peirce suggests the following view about humans:

> It is that the word or sign which man uses is the man himself. For, as the fact that every thought is a sign, taken in conjunction with the fact that life is a train of thought, proves that man is a sign; so, that every thought is an external sign, proves that man is an external sign. […] Thus my language is the sum total of myself; for the man is the thought.[10]

These sentences clearly show that Peirce's theory about mental activities is within the framework of what Delaney calls the externalist tradition.

Delaney's contention that Peirce's theory of mind has externalistic aspects seems plausible. In what follows, this paper argues that Peirce's theory of mind can also be understood as involving 'active externalism' which was put forward by the theory of extended mind.

2 Extended mind

The theory of extended mind is explained by the following thought experiment.[11] Otto has a defect of memory, so he cannot remember anything for a long time by himself. He always carries a notebook in which information he needs to remember is written down; whenever he wants to remember something, he consults with this notebook, and gains the information he needs. Suppose he hears about an interesting exhibition in the Museum of Modern Art (hereafter MoMA), and he wants to visit this exhibition. He consults with the notebook, and finds certain information such as "MoMA is on 53rd street"; he can now go to MoMA. Otto gains such information by consulting with the notebook, while a non-handicapped person would gain the same information through his or her internal mental process, that is, by recalling his or her memory. Otto's process to establish beliefs can thus be understood as carried out by a coupled system of Otto's internal process, which does not include Otto's memory, and the notebook. In this way, Otto's mental process seems to extend to the environment including the notebook, beyond Otto's head or body; this is the contention of the theory of extended mind.

Clark and Chalmers identify this theory with 'active externalism'. They argue that active externalism should be distinguished from another kind of externalism, namely, the passive externalism of Putnam and Burge.[12] Suppose there is a Twin Earth, which is exactly like the Earth except for one point: on the Twin Earth, what is called 'water' is not H_2O, but liquid whose chemical formula is different from H_2O (suppose its formula is written as XYZ for convenience). XYZ on the Twin Earth brings about exactly the same beliefs as H_2O on the Earth does: water is wet, water

10 EP 1:54.

11 CLARK and CHALMERS, 1998.

12 Cf. PUTNAM, 1975; BURGE, 1979.

appeases thirst, and the liquid filling the Michigan Lake is water (there is a 'Michigan Lake' on the Twin Earth as well). The main point of this thought experiment is that both earthlings and twin-earthlings use the same word 'water', and this word brings about the same beliefs both in earthlings' mental activities and twin-earthlings' mental activities; however, earthlings use this word for H_2O, while twin-earthlings use it for XYZ. This thought experiment thus shows that the extension of word is subject to the external environment.

Using this thought experiment, Clark and Chalmers develop their argument in the following way. Suppose an earthling has teleported to the Twin Earth; now he is surrounded by XYZ, but nevertheless all the beliefs he keeps are still about H_2O. In this case, the external features such as the fact that the liquid which surrounds him is XYZ does not make any difference; "they play no role in driving the cognitive process in the here-and-now" (CLARK and CHALMERS, 1998). These features can be called 'passive'. On the other hand, in the case of Otto and his notebook, the situation completely changes. The notebook does affect Otto's cognition, and thus affects Otto's behavior (so Otto heads to 53rd street). In this case, the external features relevant to Otto's cognition are coupled with the human organism of Otto, and thus they directly affect Otto's behavior; Clark and Chalmers call such features 'active'. Active externalism presupposes that such active and external features affect the process of cognition.

This coupled model of cognitive system, which the theory of extended mind suggests, can be easily understood in the example case of solving a complicated multiplication on a piece of paper. In this case, external features such as a piece of paper and figures written on it can be regarded as coupled with the cognitive process which is carried out in the brain. It seems true that the theory of extended mind offers a helpful view in order to grasp human's cognitive actions.[13]

Now Peirce's theory of mind can be understood as a kind of active externalism. As explained in the last section, every inference is carried out via signs derived from the external world. A collection of inferences forms a collective set of habits, and these habits decide the behavior of organisms. Thus, Peirce's theory of mind could be identified with the idea that external features can affect the behavior of agents, namely, active externalism. In the next section, however, this paper shows that the theory of extended mind involves a serious problem.

3 A Defect in the theory of extended mind

In the thought experiment of Otto's case, at least two kinds of Otto can be pointed out: 1) narrow Otto (N-Otto) as a biological organism without the notebook, and

13 Adams and Aizawa point out that "Clark and Chalmers move from a claim about a brain and an external object constituting a cognitive system — the cognitive system hypothesis — to the claim that cognitive processing is not wholly in the head — the extended cognition hypothesis" (ADAMS and AIZAWA, 2008, p. 7). The Peircean revision of the theory of extended mind, which I would like to suggest in this paper, would approve of "the cognitive system hypothesis", but would not commit to "the extended cognition hypothesis".

2) wide Otto (W-Otto) as a coupled cognitive system of N-Otto and the notebook.[14] Then, the following question needs to be considered: which Otto's mind is regarded as extended, and where is this mind extended to, according to the theory of extended mind? One possible answer is that N-Otto's mind can be regarded as extended to the notebook. It might be true that this answer suggests a new understanding of Otto's mind as a coupled cognitive system, but this does not mean that N-Otto's mind is extended. Strictly speaking, N-Otto's mind is not extended, but N-Otto's mind is replaced with the coupled system called W-Otto. Other possible answers might try to suppose that W-Otto's mind is extended. However, the latter part of the question ('where is this mind extended to?') would not seem answerable. W-Otto is a coupled system of N-Otto and the notebook, and therefore W-Otto cannot be regarded as extended to anywhere.

The theory of the extended mind suggests considering as an extended mind a coupled system of human's internal structure and active external features. Although the coupled system seems helpful in understanding human mental activities, it should be noted that the coupled system called extended mind is ontologically different from that which has been called mind before introducing the concept of extended mind. The defect in the theory of extended mind consists in confusion of these two kinds of Otto. The coupled system this theory puts forward is W-Otto's cognitive system. This theory, nevertheless, explains the situation as if N-Otto's mind is extended; here is an ontological leap. This theory does not offer any answer to the question 'who is Otto'. This theory still needs to address the problem whether the self-identity of Otto is N-Otto or W-Otto (or another).

4 Self-consciousness in Peirce's thought

As argued in the previous section, the theory of extended mind actually suggests two kinds of cognitive systems, N-Otto and W-Otto, but this does not necessarily mean that Otto's mind is extended. The following question should still be asked: which system should be regarded as Otto's mind? Peirce's theory regarding the concept of self could provide an insight.

Peirce regards self as a particular kind of mind,[15] and he identifies mind with a collective sign. Mind is regarded as a set of semiotic inferential processes, which continuously reforms itself in confronting the external world. Self is, because it is a kind of mind, understood in the same way.

In "Questions", Peirce asks "[w]hether we have an intuitive self-consciousness".[16] Since he repudiates any kind of intuitive abilities, his answer to the question is that we do not have an intuitive self-consciousness; he regards self-consciousness as a consequence of inferences. In arguing so, he mentions a developmental process in

14 This idea of two kinds of Otto is borrowed from Kureha (2014). Kureha makes a more elaborated argument than the argument I make in this paper which shows that neither N-Otto's mind nor W-Otto's mind can be regarded as extended.

15 Peirce holds that "consciousness is a special, and not a universal, accompaniment of mind" (CP 7.366). Self could thus be understood as a special kind of mind with self-consciousness.

16 EP 1:18.

which infants establish their self-consciousness. While Peirce contends that infants do not have self-consciousness at a very early developmental stage, he points out that even such infants are strongly interested in their bodies. Peirce remarks that only what the body touches "has any actual and present feeling".[17] Although this may seem to lead to an idea that the formation of infants' self-consciousness starts with becoming conscious of the existence of their bodies, Peirce does not consider infants at this stage as having self-consciousness. He notes that "when a sound is heard by a child, he thinks, not of himself as hearing, but of the bell or other object as sounding".[18]

Notably, Peirce's view about self-consciousness is that it is when a child acquires language and realizes his ignorance that the self-consciousness takes place. Suppose a very young child hears people around him say that the stove is hot, but the child says it is not. In a sense this child could be right, because he is not touching the stove, so the hotness of the stove is not perceived via his body. However, when he touches the stove, he realizes that the testimony of people around him is true; the child realizes his ignorance. At this moment, Peirce argues, the child comes to "suppose a self in which this ignorance can inhere".[19] Thus, the child starts to establish self-consciousness by the realization of his ignorance and coming to listen to testimonies of people around. Peirce develops this argument and contends that ignorance and error "can be explained only by supposing self which is fallible;"[20] in this way, the concept of self should be regarded as a consequence of inference from ignorance and error.

However, this contention does not explain any positive feature of self; self is explained only as a locus in which ignorance and error should reside. Peirce develops this theory in his later papers on pragmati(ci)sm after 1905,[21] and introduces the concept of 'self-control', which positively characterizes the concept of self.[22] As mentioned above, Peirce regards a human mind as a network of inferential habits. This network continues to be reformed via intellectual inferences carried out by a rational mind, and self-control is considered an essential feature of such a rational mind. Self-control means a faculty to autonomously reform the network of habits. This enables a mind to become rational.

The concept of self-control can be sufficiently understood when what Peirce calls "the outer and the inner world"[23] are taken into account. According to Peirce, the human mind as a set of habits is established in the process of moving back and forth between these two worlds. Peirce explains as follows:

> Every sane person lives in a double world, the outer and the inner world, the world of percepts and the world of fancies. What chiefly keeps these from being mixed up together is

17 EP 1:19.

18 *Ibid.*

19 EP 1:20.

20 *Ibid.*

21 See EP 2:331-433.

22 Regarding this, Colapietro's study is particularly helpful. See COLAPIETRO, 1989.

23 EP 2:412.

> […] everybody's well-knowing that fancies can be greatly modified by a certain nonmuscular effort, while it is muscular effort alone […] that can, to any noticeable degree, modify percepts. A man can be durably affected by his percepts and by his fancies.[24]

"[P]ercepts" in this citation mean perceptive representations which external objects such as physical phenomena cause to appear in consciousness. In order to modify percepts, one needs to move a muscle and make a physical change; for example, in order to modify a given sight, one needs to move one's eyeballs or to walk around. Such perceptive representations are derived from the outer world. On the other hand, in the inner world, one can modify occurring representations without moving any muscle; for example, one can modify a mental image of a white horse into a unicorn by adding a horn to the horse in the imagination.

Both worlds are essential to the establishment of human's self-control; self-control is formed in the following process:

> Moreover,—*here is the point,*—every man exercises more or less control over himself by means of modifying his own habits; and the way in which he goes to work to bring this effect about in those cases in which circumstances will not permit him to practice reiterations of the desired kind of conduct in the outer world shows that he is virtually well acquainted with the important principle that *reiterations in the inner world,—fancied reiterations,—if well-intensified by direct effort, produce habits*, just as do reiterations in the outer world; *and these habits will have power to influence actual behavior in the outer world;* especially, if each reiteration be accompanied by peculiar strong effort that is usually likened to issuing a command to one's future self. [Peirce's original emphases].[25]

It should be noted that experiments aiming to bring about particular effects could be carried out not only in the outer world but also in the inner world, and repetitive experiments in the inner world could lead to the formation of habits which affects actual behavior. Thus, self-control is established not only by observations in the outer world but also by imaginative experiments in the inner world.

Peirce's concept of mind and self can be expressed in the following way. The human mind is a collective semiotic system with self-control. Mind as such a semiotic system can be identified with self. Moreover, self as a semiotic system continuously reforms itself by moving back and forth between the outer world and the inner world. For Peirce, mind (or self) is, therefore, not a stable entity but an ever-evolving semiotic system possessing self-control.

24 EP 2:412-3.

25 EP 2:413.

5 The synechism and semiotic monism

Peirce's theory of mind should be understood with reference to one of Peirce's main doctrines called 'synechism'. This is a doctrine contending that everything is continuous,[26] and it leads to a kind of monism which claims that everything is a semiosis: this monism can be called 'semiotic monism'.[27] The synechism and the semiotic monism are reckoned as distinctive features of Peirce's theory of mind.

The following passage is worthy of attention:

> Nor must any synechist say, "I am altogether myself, and not at all you." If you embrace synechism, you must abjure this metaphysics of wickedness. In the first place, your neighbors are, in a measure, yourself, […]. Really, the selfhood you like to attribute to yourself is, for the most part, the vulgarest delusion of vanity. In the second place, all men who resemble you and are in analogous circumstances are, in a measure, yourself, […].[28]

The developmental process of children's self-consciousness, which is explained in the previous section, is helpful to understand the implications of this passage. A child comes to establish self-consciousness when he realizes his ignorance and comes to listen to the testimonies of people around him. At this stage, the child understands external semioses such as testimonies of other people, and starts to adopt them as his own semioses; these external semioses are rendered a part of the child's semioses. Similar processes can be observed in the case of adults as well; adults can adopt external semioses and make them a part of their semioses. As explained in the previous section, self is understood as a collective semiotic system that has established self-control by moving back and forth between the outer world and the inner world. Thus, when Peirce contends that there is no clear distinction between one self and another self, he is thinking of the process of external semioses becoming a part of self as a semiotic system. Moreover, according to semiotic monism, phenomena in the outer world are also semioses. Peirce's theory of mind can therefore be construed as explaining the evolving process in which a semiotic system called self confronts external semioses and adopts these semioses as a part of itself.

6 A Peircean revision of the theory of extended mind

Embracing the synechism and the semiotic monism, the theory of extended mind can be re-explained as follows. In Otto's case, Otto does not initially have self-

26 In "The Law of Mind" (CP 4.102-63; EP 1:312-33), Peirce outlines his idea of 'synechism', and applies it to the mind. See also CP 7.565-78; EP 2:1-3.

27 By 'semiosis', Peirce means "an action, or influence, which is, or involves, a cooperation three subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs" (EP 2:411). It could be asked whether or not cognitive processes should be regarded as semioses. If cognitive processes are considered as analysable into series of actions between pairs, the answer is no.

28 EP 2:2.

consciousness like an infant at a very early developmental stage. When Otto interacts with others around him and realizes his disability in memory, his self-consciousness starts to be established. Then, Otto starts to use a notebook as an alternative device for his memory. The notebook is a collective set of external signs, and when Otto uses it, a semiosis of the notebook is being adopted into the semiotic system of Otto; a semiosis of the notebook can be understood as a part of the semiotic system of Otto. Thus, when Otto uses the notebook and decides his behavior, Otto's self can be identified with the semiotic system of Otto including the semiosis of the notebook.[29]

This Peircean revision has several advantages over the original version of the theory of extended mind. The original version considers the coupled system of N-Otto and the notebook as a mind. This allegedly extended mind (W-Otto's mind) and N-Otto's mind are completely different cognitive systems; nevertheless, the original version continues to call both 'mind', thus leading to confusion about the concept of self. However, because semiotic monism presupposes that every entity is a semiosis, the Peircean revision can understand both N-Otto's mind and W-Otto's mind as two semioses; both can be more easily understood as two cognitive systems. Moreover, this revision suggests possibilities of considering various kinds of cognitive systems at different levels; for example, a coupled system of W-Otto and the society to which W-Otto belongs becomes conceivable.

However, it should be remarked that the original contention of the theory of extended mind, namely, the mind which is extended beyond the head and body and into the environment, is no longer viable in the Peircean revision; the Peircean revision does not imply the expansion of mind but suggests various kinds of minds as semiotic systems.

The Peircean revision may conclude that self as a collective semiotic system continuously reforms itself by adopting external semioses such as a notebook and a social convention, depending on the situation. However, it should also be noted that this collective semiosis is in the process of evolving; the self learns more proper ways to adopt external semioses in the process of evolution. In this sense, the present self is continuous with the past self (or selves). Thus, self or mind can be understood as an evolving collective semiosis which chooses proper semioses, depending on the situation; this is an alternative concept of mind which Peirce's theory of mind can provide instead of the concept of extended mind.

Conclusion

This paper has argued that Peirce's theory of mind can provide an optimistic revision of the theory of extended mind. Peirce regards mind as a collective set of habits established with reference to external semioses; in this sense, Peirce's theory of mind can be understood as externalistic. Furthermore, since established habits affect actual behavior, Peirce's theory of mind can be considered as involving active externalism.

29 When a non-handicapped person, Inga, uses a smartphone to visit an unfamiliar place, Inga's self can be understood in the same way; the semiotic system of Inga includes the semiosis of the smartphone. However, it should also be noticed that Inga does not necessarily know all the functions of the smartphone for now. The semiotic system of Inga will change as experience of using the smartphone is accumulated.

However, the theory of extended mind that relies on active externalism suffers from a problem of self-identification; this theory confuses at least two kinds of concepts of self, 'N-Otto' and 'W-Otto'.

The synechism and semiotic monism of Peirce's thought can provide an alternative concept of self; self can be understood as a collective semiotic system that is comprised of numerous semiotic systems at various levels. This collective semiotic system can at some time choose to adopt one semiotic system as 'N-Otto', and at another time to adopt another semiotic system as 'W-Otto'. Moreover, self as a collective semiotic system continues to reform itself by confronting the external world. By virtue of this reformation, for example, Otto's self, which used to be only 'N-Otto', comes to be able to have self-consciousness as 'W-Otto', and self-consciousness even as a coupled cognitive system of 'W-Otto' and the society it belongs to.

Peirce's theory of mind thus has contemporary significance in the context of philosophy of mind, in the sense that it suggests such a distinct concept of self and provides an alternative concept of mind which is free from the problem the extended mind suffers.[30]

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30 From the viewpoint of the Peircean revision, Otto's self is regarded as an evolving semiotic system which can choose to be 'N-Otto' at some time, and to be 'W-Otto' at another time. However, it can still be asked how Otto's agency should be defined. Peirce's contention that "consciousness is a special, and not a universal, accompaniment of mind" (CP 7.366) seems insightful here. If the Peircean revision is to be subscribed to, the concept of agency needs to be fundamentally reconsidered, and personal agency should be regarded as only a special variation of agency.

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