



# MIND, BELIEFS AND INTERNET SOCIAL MEDIA: A PEIRCEAN PERSPECTIVE



*Priscila Monteiro Borges*

Universidade de Brasília (UnB), Brasília, DF – Brazil.

 <https://orcid.org/0000-0002-4573-5807> |  [primborges@gmail.com](mailto:primborges@gmail.com)

*Tarcísio Cardoso*

Universidade Federal da Bahia (UFBA), Salvador, BA – Brazil.

 <https://orcid.org/0000-0002-1093-5307> |  [tcardoso@ufba.br](mailto:tcardoso@ufba.br)

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**Abstract:** Mind for Peirce is a system of beliefs that acts to achieve a certain purpose. Not only Peirce attributes mind to institutions and social groups, but the development of mind depends on the extension of mind beyond individual human minds. Therefore, social communities or institutions embody social habits, and act as minds with their own purposes, fixing beliefs of two types: beliefs of vital importance, and theoretical ones, which have a bearing towards knowledge and truth. Internet social media can be seen as a complex social mind composed of individuals and their digital media that encompasses gadgets, algorithms, and platforms. If internet social media acts in a way to achieve certain beliefs, of what type are they? Are they beliefs of vital importance or theoretical ones that lead to knowledge and truth? Are these two types of beliefs sufficient to understand the modes of action of internet social media?


**Keywords:** Mind. Belief. Internet social media. Media agency. C. S. Peirce.

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**Resumo:** Mente é, para Peirce, um sistema de crenças que age para alcançar um determinado propósito. Não apenas Peirce atribui mente a instituições e grupos sociais, mas o desenvolvimento da mente depende da extensão dela além das mentes humanas individuais. Portanto, comunidades ou instituições sociais incorporam hábitos sociais e agem como mentes, com propósitos próprios, fixando crenças de dois tipos: crenças de importância vital e crenças teóricas, que têm relação com o conhecimento e a verdade. Redes sociais, na internet, podem ser vistas como uma complexa mente social composta por indivíduos e suas mídias digitais, as quais englobam *gadgets*, algoritmos e plataformas. Se as redes sociais na internet atuam de forma a atingir certas crenças, de que tipo elas são? São crenças de importância vital ou crenças teóricas que conduzem ao conhecimento e à verdade? Esses dois tipos de crenças são suficientes para entender os modos de ação das redes sociais na internet?

**Palavras-chave:** Mente. Crença. Redes sociais na internet. Agenciamento midiático. C. S. Peirce.

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# MIND, BELIEFS AND INTERNET SOCIAL MEDIA: A PEIRCEAN PERSPECTIVE

*Priscila Monteiro Borges*<sup>1</sup>

*Tarcísio Cardoso*<sup>2</sup>

**Abstract:** Mind for Peirce is a system of beliefs that acts to achieve a certain purpose. Not only Peirce attributes mind to institutions and social groups, but the development of mind depends on the extension of mind beyond individual human minds. Therefore, social communities or institutions embody social habits, and act as minds with their own purposes, fixing beliefs of two types: beliefs of vital importance, and theoretical ones, which have a bearing towards knowledge and truth. Internet social media can be seen as a complex social mind composed of individuals and their digital media that encompasses gadgets, algorithms, and platforms. If internet social media acts in a way to achieve certain beliefs, of what type are they? Are they beliefs of vital importance or theoretical ones that lead to knowledge and truth? Are these two types of beliefs sufficient to understand the modes of action of internet social media?

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## INTRODUCTION

Considering the complexity of media agency on the Internet and the articulation of these media with the formation of belief, the aim of this work is to discuss internet social media and some impacts they have in our social lives, from the perspective of Peirce's idea of mind and beliefs. The expression "internet social media" does not refer to any particular platform or website, but to a variety of internet agency based social media platforms that promote interactivity and social networks among individuals, communities, organizations and institutions. Those are represented by their profiles, whose content is generated by each user, either by creating new content or by sharing content created by others.

It is important to remember that some controversies inherent to the current stage of digital culture point to the intimate relationship between technological mediations and human communication, which is why social studies have adopted expressions like "technical mediations" or "sociotechnical hybrid" (Latour, 1994, p. 63; Cardoso, 2015, p. 223). In this

<sup>1</sup> Universidade de Brasília (UnB), Brasília, DF – Brazil. ORCID: <https://orcid.org/0000-0002-4573-5807>. E-mail: [primborges@gmail.com](mailto:primborges@gmail.com).

<sup>2</sup> Universidade Federal da Bahia (UFBA), Salvador, BA – Brazil. ORCID: <https://orcid.org/0000-0002-1093-5307>. E-mail: [rcardoso@ufba.br](mailto:rcardoso@ufba.br).

work, we will discuss the agency of sociotechnical hybrids in terms of Peirce's philosophy, especially his way of associating a theory of sign and a theory of mind, which is related to a very peculiar theory of communication and of social mind in which we can find the concept of *commens* and *commind* (Peirce, 1992-1998, EP 2:477-478 [1906])<sup>3</sup>. The adoption of this perspective aims to contribute to recent studies on the formation of beliefs in the digital environment, especially emblematic in the context of narrative disputes, fake news, misinformation, post-truth and the exploration of cognitive biases in the formation of beliefs (cf. Santaella, 2021; Baggio, 2021; Gomes; Broens, 2020; Ibri, 2021; Romanini; Gaurda, 2019).

Among the plurality of contemporary theoretical perspectives that account for the complexity in which digital communication is entangled, we highlight the idea of mediatization as presented by Nick Couldry and Andreas Hepp in the book *The Mediated Construction of Reality* (2017). Inspired by the classical Peter Berger and Thomas Luckmann's book, *The Social Construction of Reality*, Couldry and Hepp's argument points out that we must understand the complexity of contemporary social reality as a construct, and this is much due to the inclusion of media agency in contemporary culture. It is easy to see how Couldry and Hepp are highlighting the agency of media to understand the additional complexity of the social generated by digital culture as a layer that was added within the scope of social relations already mediated by previous media practices. It is precisely this overlap between a mediation of everything of the first order (especially in mass media culture) and a mediation of everything of the second order (especially in digital media culture) that characterizes what the authors understand by mediatization (Couldry; Hepp, 2017, p. 23).

If we consider, following Couldry and Hepp, that the mediatization of the social implies a change in the way contemporary culture is constructed, we can understand that the actual stage of our media culture opens many questions about the mediated systems of belief formation in contemporaneity. These systems may be of special interest for the dialog of mediatization studies with semiotics if we take the very idea of social mind, that is, the association of mind with the sharing of signs and ideas in the social sphere. Therefore, the scope of this work intends to call Peirce's philosophy to the debate on the mediatization in order not to examine the consequences of the connections between signs and thoughts to social mind in the contemporary culture, but especially to encourage the academic community to discuss some of the epistemological contributions of Peirce's philosophy to the social mind and sociotechnical agency in our already controversial digital culture, especially in what concerns to internet social media.

<sup>3</sup> Following the established practice, reference to edited books of Peirce's texts are as follows: The abbreviation EP, followed by volume and page number, refers to the *Essential Peirce*. The abbreviation CP, followed by volume and paragraph number, refers to the *Collected Papers of Charles S. Peirce*. The abbreviation W, followed by volume and page number, refers to the *Writings of Charles Sanders Peirce*. The abbreviation NEM, followed by volume and page number, refers to the *The New Elements of Mathematics*. In square brackets is the date Peirce wrote the text.

## 1 INTERNET SOCIAL MEDIA AND PEIRCE'S CONCEPT OF MIND

But what sort of relation can we find between internet social media and Peirce's idea of mind? Mind for Peirce has nothing to do with brain. Consequently, it is not restricted to humans or animals, even though humans and animals may be seen as a model for the mode of action of mind. Mind, for Peirce, is what acts by final causation. He explains: "The microscopist looks to see whether the motions of a little creature show any purpose. If so, there is mind there." (Peirce, 1931-1966, CP 1.269 [1902]).

Purpose, however, is not a synonym for final cause. It is just our most familiar kind of final cause (1992-1998, EP 2:120 [1902]). For Peirce (1992-1998, EP 2:120 [1902]), final causation is

[...] that mode of bringing facts about according to which a general description of result is made to come about, quite irrespective of any compulsion for it to come about in this or that particular way; although the means may be adapted to the end.

The final cause is a general principle, not an individual one. It is an external cause that governs an action and that explains it (Peirce, 1992-1998, EP 2:315-6, NEM 4:252-3 [c. 1904]).

Since for Peirce mind is defined as a mode of action, or what acts by final causation, Peirce refuses to locate mind anywhere specific. In a famous passage, where he says that his faculty of discussion could be located in his inkstand, if, as some psychologist says, the faculty of language is located in a brain lobe (1931-1966, CP 7.366 [1902]), Peirce is not merely joking, he is affirming that we may look for mind in places where thoughts are expressed, such as papers, books, and even the action of a body or its parts. External tools and media are places where we can find traces of mind (Skagestad, 1999). This means that, in such places, we can observe actions governed by final causation.

Peirce knew that operative minds can be embodied in institutions and cultural practices and traditions, and even in artifacts. In fact, Peirce believed that it was these extended minds that serve as the cognitive base, or ground, for human thought (semiosis). (Houser, 2016, p. 387).

It was based on a similar idea that Michal Kosinski, David Stillwell and Thore Graepel (2013) developed a method to ascertain an individual's personality using data from Facebook. Based on hundreds of Facebook likes, Kosinski could evaluate one's personality better than friends and parents. His method was reproduced and applied by Cambridge Analytica to influence people during the Brexit campaign and the 2016 election in the U.S.A. (Grassegger and Krogerus, 2017). With metrics extracted from Facebook likes about millions

of people's personality, they could better predict each person's reaction to a message, and then create messages that would influence people in one direction.

In the text called *The Law of Mind*, Peirce (1892)<sup>4</sup> affirms that personality is like a general idea. You cannot apprehend it in an instant of time. "It has to be lived in time; nor can any finite time embrace it in all its fullness" (Peirce, 1892, p. 556).

This general idea is a living feeling. It determines acts in the present and in the future, and explains acts from the past. Regarding the connection between different moments of a temporal interval that characterizes semiosis, if each sign of this interval characterizes the materialization of mental action, then it is possible and even indispensable to think of such sign records as parts of the mind process. Similarly, the data<sup>5</sup> collected by social media platforms are of great importance for the new social mind since they are a record based on social acts. As a microscopist trying to see any purpose on the motions of a little creature, the analysis of these data may also show some purpose, a general idea that may help to predict future actions – any resemblance to Isaac Asimov's science of psychohistory may *not* be mere coincidence.

However, social media are not only a repository of recorded actions that may show people's habits. Like every sociotechnical network, internet social media have changed the way individuals and organizations interact and communicate. Think, for example, how fashion culture spreads trends through digital influencers and how algorithms act as editors in each social media user timeline. Being an environment that foments interaction among the actors in a social network, they can be considered as parts of a system of social groups connected to the same platform composed of other social groups, whose interaction is motivated by sharing some ideal, expectation, political view, culture, geographical territory, or genealogical similarity.

Internet platforms are also institutions, as they are constituted by companies that promote networking and community formation. As companies, they have a mission and the intention of earning money through their activity. The real costumers of internet platforms, however, are not the individuals that freely create a profile to connect to people and share personal information about places they go, things they consume, political views, moral beliefs, etc. Internet platforms do not get much money from these people directly. But with all the information they collect about them, they have the most valuable product to sell nowadays: *data*. Data is what they sell to companies and institutions that want to affect and influence individuals in many different ways.

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<sup>4</sup> Peirce's text *The Law of Mind* was also published in CP 6.102-63, EP 1:312-333, and W 8:135-57.

<sup>5</sup> It is important to notice that the data collected by social media platforms are not only human generated data, since beyond human actions there are many non-human ones (such as bots, apps, devices, servers etc.).

Datafication (Van Dijck, 2014; Meijas; Couldry, 2019) and platformization (D'Andrea, 2018, 2020; Poell *et al.*, 2019), as part of the new social life, characterize what Couldry and Hepp (2017) call “deep mediatization”, which for our purposes should be understood as the context in which internet social media, having features of institutions and social groups, embody social habits while they fix new habits to achieve their own purpose. Being users of social media, as many of us are today, we may have acquired some habits, which may not be immediately evident to us. The interface of social media, insofar as they are mediated by algorithms, contributes to the acquisition of some habits. Every time you access a social media platform, for instance, contents are selected and displayed in a *news feed*. The particular pieces of content, displayed at each time, are special cases of a general event that is the organization and visualization of contents in a feed. The way the news feed is organized in each platform adopts some parameters to establish its criteria of relevance that shows the users what they might be interested in seeing. These criteria are developed based not only in a chronological way, but also on people's behavior as users of the platform and, sometimes, even of other platforms. This general event, the organization of contents in a feed that may interest them, stimulates a certain type of interaction, like scrolling down the website feed, clicking on buttons that express feelings, and writing comments on the posts.

Such a sociotechnical agency engenders a culture and all the complexity of political issues in which it is immersed. To focus on that agency, it is important to notice that a person is probably going to interact more if the contents are of interest to him or her. That is why companies, through its algorithmic policies, adopt this kind of interface which provides this “relevance criteria” based on individual desires (Pariser, 2011, p. 35-39). Through these actions, people are giving back to the company more data to be stored, shared or sold and that will also be used to give back to users more personalized content. Internet social media could be seen, then, as a complex mind institution with its own purpose, composed of a network of agencies in which individuals can act too, each one with their own purposes. In this complex network, people may have one purpose, while the companies have another. This type of algorithm mediated interaction, however, precisely because it is based on criteria of personal relevance, does not stimulate the searching for new information or a casual contact with different realities, resulting in filter bubbles that deprive users from information that disagrees with their own viewpoint.

Recent research in Brazil have shown that more people are using Internet to access news and that most of them access Internet from their smartphones.<sup>6</sup> The result is that people are using less personal computer browsers and more mobile apps. This phenomenon is understandable since media groups and corporations have migrated from old media to the new ones, and people can follow them in social media. However, the increase of users of

<sup>6</sup> Available at: <http://www.secom.gov.br/atuacao/pesquisa/lista-de-pesquisas-quantitativas-e-qualitativas-de-contratos-atuais/pesquisa-brasileira-de-midia-pbm-2016.pdf/view>. Access on: July 14, 2023.



internet social media apps changed the way people obtain news. Many publications, with low and high-quality content, rely on social media for views. Consequently, they have developed many strategies to earn clicks on their links. Some of these strategies have contributed to decrease the quality of content (Himma-Kadakas, 2017; Ruggiero, 2017). Some common practices of spreading information without any concern for the quality of its contents, each time more common in post-truth era, are very close to what professor Quassim Cassam recently defines as epistemic insouciance. “Epistemic insouciance is an attitude rather than something that a person does, and it does imply an indifference to the truth or falsity of one’s utterances.” (Cassam, 2019, p. 81)

Contemporary philosophers, like Cassam (2019) and Harry Frankfurt (2005, pp. 52-58), pointed out that this kind of attitude can be worse than the deliberate lie, because it is not concerning to the truth at all (like the idea of “bullshit” captures) and the power of this epistemic insouciance is so great that it aims to resist any debate by force, rejecting experiences, or giving any attention to them. This attitude, as we will see in Peirce’s theory of fixation of beliefs, is referred to as the tenacity method.

It is frequent, in a context of a political election, the flooding of internet social media with all sorts of doubtful content (Soares and Recuero, 2021a). Absolute assertions, lack of reference to reliable data and easy solutions for complex problems are clearly rhetoric strategies that do not contribute to a better understanding of the political and social reality (Recuero *et al.*, 2021). Content with these features, however, is widely shared and consist in the major part of the political debate in the present.

The idea, inspired on Vannevar Bush’s Memex (1945), that Internet could promote the democratization of information allowing a plurality of voices and perspectives is no longer supported by social media habits. Mainstream media may have lost part of its hegemony, but the mere presence of a plurality of voices does not guarantee that the producers of contents adopt any method of reasoning that aims to assure the quality of their conclusion and that the mere debate on a certain information would lead to a reliable knowledge (Soares and Recuero, 2021b).

Although the examples given so far are not exclusive of internet social media and neither are their consequences, they are all connected with a mode of action on social media that has exposed the problem of content reliability, which covers many aspects and involves other agents than the platforms themselves. Ibri (2021) and Baggio’s (2021) recent works take a Peircean perspective to analyze networks and fake news, showing that, from a pragmatist approach, it is necessary to consider the practical consequences of the ideas and habits being formed in the culture. We can ask, then, what is the type of habit we want to acquire using the internet social media?

## 2 SOCIAL MINDS FIXING BELIEFS

Houser takes seriously the idea of social minds, affirming that they are “[...] not merely reservoirs of social beliefs; they are operational programs and relational networks for ongoing distributed semiosis — animated minds of the social groups whose behavior they regulate” (Houser, 2016, p. 389)

Being minds, social minds are also subject to processes of belief formation, which has been the matter of Peirce’s theory of beliefs, developed in the text *The Fixation of Belief* (1877).<sup>7</sup> Belief, for Peirce, is the end of an inquiry process stimulated by the sensation of doubt. “The irritation of doubt causes a struggle to attain a state of belief” (Peirce, 1877, p. 6).

An inquiry process that goes from doubt to belief coincides with a reasoning process that starts from hypotheses and reaches a conclusion whose reliability depends on the reasoning methods adopted. Therefore, for Peirce, reasoning may be seen as a process governed by a general principle, which is the will to achieve a belief.

According to Peirce, belief and doubt are two fundamental ingredients of reasoning. Doubt generates an irritation that initiates the inquiry process that culminates in the fixation of a belief (Peirce, 1877, p. 6). In the reasoning process, we go from one state of mind (doubting) to another (believing). This deserves our attention since the reasoning process is also the process through which we discover things we did not know before. “The object of reasoning is to find out, from the consideration of what we already know, something else which we do not know” (Peirce, 1877, p. 3).

That is, the reasoning process ends with a belief in something we have just discovered. However, we may have the impulse to accept a conclusion that is either true or false. A reasoning process may reach a conclusion, in which we believe, but this is not the end of all reasoning processes. A conclusion may become a hypothesis for new reasoning processes. In the long run, beliefs may change in their dialog with experience, and reasoning tends to correct itself (Peirce, 1992-1998, EP 2:43 [1898]).

Peirce considered beliefs as cognitive and behavioral habits (Houser, 2016, p. 381). “A belief is a habit; but it is a habit of which we are conscious” (Peirce, 1931-1966, CP 4.53 [c. 1893-1895]). The “[...] tendency to repeat any action that has been performed before” (Peirce, 1982-2010, W 4:553 [December 1883-January 1884]) is the main element of a habit. But it is also important to notice that a habit is something that we are not aware of, “a deliberate, or self-controlled, habit is precisely a belief” (Peirce, 1931-1966, CP 5.480 [1907]).

According to Peirce, the formation of habits comes from inductive processes. He says: “A habit arises, when, having had the sensation of performing a certain act, *m*, on several

<sup>7</sup> Peirce’s text *The Fixation of Belief* was also published in CP 5.358-387, EP 1:109-123, and W 3:242-257.



occasions *a*, *b*, *c*, we come to do it upon every occurrence of the general event, *l*, of which *a*, *b* and *c* are special cases” (Peirce, 1868, p. 152).

The formation of habits relates to an abstraction process through which particular occasions that culminate in the sensation of performing an act are seen as special cases of a general event. All the special cases of these general events will culminate in the sensation of performing an act.

The reasoning process is described as an inquiry, which is not only scientific, but which includes all investigations that occur during life. However, as an inquiry may be distinguished into scientific and from everyday life, a belief is also distinguished in two types. The first type of belief is the one we depend on for matters of vital importance. They develop in the regular course of life and are important to adapt the species to its environment. The beliefs of vital importance are natural ones that act on practical life. The readiness to act which characterizes a belief in this case “[...] is willingness to act upon the proposition in vital crises” (Peirce, 1992-1998, EP 2:33 [1898]). Peirce also calls this type of belief as being a *full belief*.

In contrast to full belief, Peirce hesitated to designate theoretical belief as belief (Houser, 2016, p. 383), since the mental state related to it is not a readiness to act. A purely theoretical belief is an expectation towards the future (Peirce, 1931-1966, CP 5.538-545 [c.1902-3]). A theoretical belief may be seen as a hypothesis, which is not very helpful in practical life because it doesn't bring the will to act in vital crises. They “serve as stepping stones on a path toward knowledge and truth” (Houser, 2016, p. 383). Theoretical belief is strongly related to scientific inquiry, which aims to move towards the truth of its theses, even if such truth is always in the future.

It is important to notice that, while theoretical belief is committed to the pursuit of truth and presents a hesitation to act, for beliefs of vital importance, truth and validity are irrelevant, because they function as readiness to act no matter what. Beliefs of vital importance sure can be found out to be true in the long run. Considering Peirce's synechism, or his principle of universal continuity, we can think of a continuity among minds, which means that, in the long run, reasoning tends to get closer to the truth. It is not the synechist view, however, that explains the fixation of a vital belief, but its capacity to solve problems.

It is worth noting that our beliefs (both theoretical beliefs and full ones) are related to our actions, in the way they guide our lives in practical matters. However, Peirce is emphatic in affirming that in great decisions, he does “[...] not believe it is safe to trust to individual reason” (Peirce, 1992-1998, EP 2:30 [1898]). In such occasions, we must trust instinct. He says:

[...] pure theoretical knowledge, or science, has nothing directly to say concerning practical matters, and nothing even applicable at all to vital crises. Theory is applicable to minor practical affairs; but matters of vital importance must be left to sentiment, that is, to instinct (Peirce, 1992-1998, EP 2:33 [1898])

Instinct, for Peirce (1931-1966, CP 2.170 [1902]), is a general collective principle that acts in human nature determining the way humans should act. Unlike individual reasoning, instinct is collective. As a general principle of action, instinct is a kind of habit, but it is a habit inherited by a species, which cannot be explained as the result of any general mode of mental action (Peirce, 1992-1998, EP 2:465 [1913]). While belief is a controlled habit, of which we are aware, instinct is an inherited habit from the nature of the species, which is not the result of training or tradition.

In the development of semiotics from 1906 onwards, Peirce chose the term ‘instinct’ to designate the mode of firstness of the tenth and last trichotomy, which concerns to the modes of assurance of the utterance (Peirce, 1992-1998, EP 2:490 [1908]). Houser (1998, p. xxx), in the introduction of the *Essential Peirce* vol. 2, points out that this use of the term instinct is related to Peirce’s proposal to include firstness in logic. In the text “Philosophy and the Conduct of Life”, instinct is what guarantees and guides our actions in matters of vital importance. If we should not insist upon scientific reasoning on matters of vital importance, but rely on instinct, common sense and sentiment (Hookway, 1993, p. 1), then, why are we trying to understand social media with all this belief theory instead of acting according to our instincts?

It may be that internet social media as a mind is a social mind that appeals, in general, to instinct. There is nothing wrong with this, as we saw it. It should work well for matters of vital importance. This means that the system of beliefs that constitute this sort of mind was not fixed through scientific reasoning, but through the other methods Peirce refers to in *The Fixation of Belief*: tenacity, *a priori* and authority. None of these takes truth or falsity in consideration. Now, if we are dealing only with practical beliefs, to which truth and validity are irrelevant, why are we worried with information reliability and fake news?

Perhaps, one could imagine that it would be better to abandon internet social media, since we can look neither for truth nor for reasoning that leads to the growth of knowledge. Instead, we could, regardless of Peirce’s hard distinction among the types of reasonings and beliefs, investigate whether we can learn something from the scientific reasoning that could help us not to be as inconsequential as the actual epistemic insouciance evinces and to fix beliefs in which the readiness to act is not so strong, but in which reasoning is playing a more central role.

### 3 SCIENTIFIC REASONING AND THE HABITS AND BELIEFS OF EVERYDAY LIFE

To continue the pursue of our present proposal, and taking into account the pragmatic ethical focus to deal with some recent belief issues pointed by Ibri (2021), we will present some reasons to relate scientific reasoning and theoretical belief to a problem of everyday life, such as the habits and beliefs acquired using internet social media.

First, it is important to have in mind the context in which Peirce wrote the first Cambridge Lecture, called *Philosophy and the Conduct of Life* (1992-1998, EP 2:27-41 [1898]), rejecting the idea of mingling philosophy with practice, and separating the practical and the scientific method of investigation. In 1898, Willian James invited Peirce to give some lectures in Cambridge, and Peirce's first proposal was to give a course called *On the Logic of Events*. As he presented it, James wrote a letter to Peirce asking him to "[...] be a good boy and think a more popular plan out". He also suggested that "[s]eparate topics of a vitally important character would do perfectly well" (Ketner; Putnam, 1992, p. 25). It seems no accident that the first *Cambridge Lecture* is called *Philosophy and the Conduct of Life*. Peirce begins this lecture affirming that true investigation should not be guided by utility and should lose sight of it (Peirce, 1992-1998, EP 2:29 [1898]). It looks like a response to James. And it may not only be a response to the letter he received, but also a response to William James's essay, *The will to believe* (Houser, 2016, p. 382). In that text, James justifies the deliberate adoption of beliefs without evidence. Peirce strongly objects to James, since, for Peirce, adopting beliefs without evidence is a way of blocking the road of inquiry and the will to learn (Houser, 2016, p. 382).

Second, Peirce, in his first Cambridge Lecture, also recognizes that the results of science can do a great deal for life and admits that philosophy can influence morality, but that this should be allowed in a secular slowness (Peirce, 1992-1998, EP 2:29 [1898]). Thus, the relation among science, philosophy and life may be admitted. The development of science and knowledge should not be guided by practical problems, but the development of these sciences should influence and change things of practical and vital life.

We may agree with Peirce that the scientific method should not be applied to vital questions of life, while, at the same time, recognizing that the scientific method may be helpful for practical questions of life. By doing so, we are far from corrupting Peirce's theory, but actually doing something that Peirce himself proposed in his classification of sciences: finding relationships among different types of sciences. Peirce's classification of sciences is ordered from the most general to the less general and more particular ones, in such a way that the sciences on the top of his classification — the more general ones — provide principles to the more specific ones (Kent, 1987, p. 5). Here, we are taking Peirce's general principles and seeing how they apply to a phenomenon that is changing social habits.

Philosophy may not help a person to be well succeeded, but to what extent could the search for truth and the disposition for doubt be important to solve questions of everyday life? Isn't the right reasoning mode a topic of vital importance?

The problems we face with social media involve truth and knowledge. These two matters have already been long discussed by philosophers and we may learn something from them. Peirce wrote a lot about the types of reasoning and the aim of science to reach truth by reasoning. We will not enter into Peirce's logic of relatives or his existential graphs, as he did in some of the Cambridge Lectures, in spite William James' request. It may suffice to pay attention to some concepts related to the logic of reasoning.

We have already mentioned that in a reasoning process we pass from a state of irritation of doubt to a calm and satisfactory state of belief (Peirce, 1877, p. 6). The state of calm is more comfortable and will be sought independently of the truth of the belief, since practical belief aims to bring in the state of calm and not the discussion about their suitability to the state of affairs of the world. So, if we are looking for knowledge and not calmness, practical belief will not suffice.

The most recently cited text by Peirce on belief investigation seems to be *The Fixation of Belief* (1877), as we can see from the number of references to this work by the research community (Franco, 2017; Franco; Borges, 2017; Borges; Gambarato, 2019; Alzamora; Andrade, 2019; Baggio, 2021; Ibri, 2021; Santaella, 2021). In this text, Peirce presents four methods for fixing beliefs. The first is tenacity, the method by which a person constantly reiterates his or her established belief and no contrary opinions can affect his or her self-confidence. The second, the method of authority, takes into account beliefs fixed within communities in which some institutions discourage people to think by themselves and present a specific belief as the one that must be fixed. And the *a priori* method is one that makes a person believe in something that conforms to his or her previous beliefs. The beliefs achieved with these three methods may end the irritation of doubt, but none of them question the reliability of a belief. According to Peirce, the only method for fixing beliefs that questions the reliability of belief is the scientific one. This method considers, first, that individual reasoning is insufficient to guarantee the reliability of beliefs; and second, that beliefs must be suitable to something external to the mind, that is, to external facts. The scientific method implies a research process that is not restricted to any type of reasoning that leads to a belief, but specifically to an observation process that seeks to perceive the suitability of beliefs to external facts.

The scientific method puts its generated beliefs in doubt instead of bringing in the state of calm. This occurs because theoretical belief does not bring the mental state that comes from full belief, that is, the disposition for action. Theoretical belief involves "mental states that are more properly regarded as hypotheses and are of little if any practical importance,

[...] that serve as stepping stones on a path toward knowledge and truth.” (Houser, 2016, p. 383) Scientific theoretical beliefs are always quasi-beliefs and they are never free from doubt (Houser, 2016, p. 396) After putting a belief in doubt, there comes a second step, which is the observation of external facts. This step shows that, besides putting a belief in doubt, it is necessary to somehow control the reasoning type to be employed in order to verify the reliability of the belief. We need, then, to understand how Peirce describe the types of reasoning.

According to Peirce, there are three types of reasoning: abduction, induction and deduction. “Deduction proves that something must be, Induction show that something actually is operative, Abduction merely suggests that something may be” (Peirce, 1992-1998, EP 2:216 [1903])

Abduction is the first step of scientific reasoning. Abduction raises a hypothesis “[...] which we must embrace at the outset, however destitute of evidentiary support it may be” (Peirce, 1931-1966, CP 7.219 [1901]). It is a guessing that will be rationalized later. The next step is a test based on experience, which is proper of induction. Then, considering the hypothesis and the tests based on experience, we reach a general conclusion by means of deduction. In a scientific process of fixing belief, reasoning must pass through these three steps to reach a theorematic belief, which is the one that generates an expectation regarding the future, not a will to act.

Stating that it is necessary to observe external facts during reasoning processes, Peirce seems to be drawing attention to the need to test the belief reached deductively. It is precisely because the inductive process consists in the test of the hypothesis by means of experiences that Peirce affirms in his fourth Cambridge Lesson that “[...] induction tends to correct itself, is obvious enough” (Peirce, 1992-1998, EP 2:43 [1898]). Therefore, the theorematic belief, brought forth by a deductive process of reasoning, should be subjected to the observation of external facts, which relates to an inductive process, to confirm or not the suitability of the belief to external facts. If theorematic beliefs should always be suspected, new tests with external facts will be required, generating, perhaps, an infinite chain of inductive processes. The recurrence of inductive processes will occur mainly if the belief suits to external facts.

If the belief does not correspond to the observed external facts, a new inference must be made by the deductive method and, again, this must go through the inductive test. Peirce, however, asserts that the inductive process is not the only one that tends to correct itself; the deductive process may do so too (EP 2:44 [1898]). How can this happen?

Peirce says, throughout his texts, that “[...] all necessary reasoning is diagrammatic” (NEM 4:49 [1898]).

Deduction is that mode of reasoning which examines the state of things asserted in the premisses, forms a diagram of that state of things, perceives in the parts of that diagram relations not explicitly mentioned in the premisses, satisfies itself by mental experiments upon the diagram that these relations would always subsist, or at least would do so in a certain proportion of cases, and concludes their necessary, or probable, truth. (Peirce, 1931-1966, CP 1.66 [c. 1896])

It is precisely by experimentation with diagrams that deduction can correct itself. Peirce expands the idea of observing external facts to include the observation of diagrams. In his *Prolegomena to an apology for pragmatism*, Peirce (1906, p. 492-493) defends the reasoning process of *diagrammatization*, telling the story of a general who uses a map during a combat to mark the troops' position in the territory. The use of a map, which is a type of diagram, has advantages compared to the use of the territory itself, since it allows experiments on the map about the best ways to act in the field. Peirce, then, compares diagrammatic experiments with chemical experiments, defending that there is no distinction between them. This means that the second step of the process of verification of beliefs itself can alternate between inductive and deductive reasoning.

Beliefs acquired by the methods of tenacity, of authority and *a priori* do not follow these processes that apply to scientific reasoning. Yet, if we look for more precision in the way we acquire knowledge in everyday life, we may notice that what Peirce calls scientific is not a method exclusive for scientists, but a method that is present in all our dialog with everyday experienced life, and which concerns to the way we somehow control our thoughts. Otherwise, it will be impossible to reach any reliable belief or predict any part of experience. Being aware of these processes could change the way we fix new beliefs, since we would be able to control or, at least, try to control the processes that we become aware of.

This process of inquiry that Peirce understands as scientific could also be very helpful when dealing with the problem of the quality of information in social media or with the habits acquired therein. On the other hand, there will be people completely confident and satisfied with their own beliefs, to whom none of this will be of help, since they are not willing to doubt their beliefs and proceed with an investigation process. In this case, we must rescue the first rule of logic, which says that “[i]n order to learn you must desire to learn and in so desiring not be satisfied with what you already think” (Peirce, 1992-1998, EP 2:48 [1898]) or “[...] there is but one thing needful for learning the truth, and that is a hearty and active desire to learn what is true” (Peirce, 1992-1998, EP 2:47 [1898]). The will to learn must be rescued and it presupposes “[...] a dissatisfaction with one's present state of opinion” (Peirce, 1992-1998, EP 2:47 [1898]).

It is precisely that kind of openness to new beliefs that, according to Peirce's argument, cannot be missing in a mind, even in social mind. Thus, if that attitude cannot be missing in



digital culture, then we may take as problematic that kind of social minds agency that leads to a mental state of closure, including the algorithmic ones and the instances of epistemic insouciances or misinformation in sociotechnical networks. This idea dialogues with Ibri's (2021), Baggio's (2021) and Santaella's (2021) recent works, who suggest, from different and complementary points of view, that a Peircean perspective should take into account the philosophy of pragmatism to discuss the social mind engendered by the sociotechnical, so that the modes of fixing beliefs and promoting ideas must be judged not only by their agencies, but also by their consequences<sup>8</sup>.

## FINAL REMARKS

If we take into account that Peirce's concept of semiosis is so broad that not even matter and mind are severed (Nöth, 2007, p. 180), and if the social mind engendered by internet social media in our culture may be understood in terms of a sociotechnical process and interaction (Cardoso, 2015, p. 226), then all actors of this social mind must share responsibilities. But, when we open our perspectives to the sharing of responsibility among platforms, news organizations, governments and users, for examples, we can see that even the last group of actors (human individuals) engenders new social issues, such as the media literacy – that is, a kind of education intended to allow consumers to distinguish what is real and what is fake in their networks. Regarding the platforms, there are some interface issues. For example, algorithms could be edited to promote experiences in which we, as a social mind, would deal more with doubt than with reiteration. In addition, there is much effort to scale up the influences of platforms, but not so much to scale it down.

Accordingly, if an algorithmic or a human agency promotes bubbles of comfortable beliefs, it is going in the opposite direction of knowledge and, here, the path of social mind and belief theory encounters one another once again. It is never too much to remember that the kind of action which systematically obstructs the way to knowledge is called epistemic vices by Cassam (2019, p. 23).

If we, as individuals or as a sociotechnical collective, desire to learn, we will have to deal with the discomfort of doubt, and our media agency should support the plurality of ideas, even when it seems hard to take it as relevant to individuals. Far beyond individual criteria of relevance, there is always a social aspect of relevance in a social mind. Especially

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<sup>8</sup> Santaella, for example, asserts that if we bring “[...] belief fixation methods to the examination of current conditions, we will see that the 21st century has transformed beliefs into ammunition” (Santaella, 2021, p. 104). Similarly, Ibri calls Peirce's ethics into the debate on the effects of fake news on society, noting that we must take care that new forms of knowledge mediated by digital do not end up fostering intentionally produced falsifications of reality, capable of creating “[...] conducts aimed at particular purposes of interest groups” (Ibri, 2021, p. 256). By agreeing with this ethical concern, Baggio points out the risk of internet networks to promote fake news or bubble effects in the social minds, is that by doing so they tend to distance humans from the pragmatic attitude, that is, of a conduct based on a dialogue with reality (Baggio, 2021, p. 190).

when it seems to embed social problems, we can try to take a belief as doubtful one in order to balance our states of mind, according to the available knowledge, and do not block the inquiry process. Even if the belief in doubt is not instinctive, doubting is something that may be learned through reasoning. Doubting will certainly require some amount of effort, but as we get more experience with it, we may become more adapted to the otherwise weird sentiment that comes with it. According to Peirce, “[...] just as reasoning springs from experience, so the development of sentiment arises from the soul’s inward and outward experiences” (Peirce, 1992-1998, EP 2:40 [1898]).

The principles of the scientific method anchored in social minds may not guarantee the reliability of the beliefs, but they can inspire a kind of attitude that is epistemically virtuous instead of vicious, to use Cassam’s terminology. And that way of dealing with the dissonance between what experience is showing us and our own previous knowledge and habits may help us as a social mind and sociotechnical culture if we, first of all, practice doubting our own assertions, especially the absolute ones. Secondly, we must, at least provisionally, put on hold the signs that reach us through traditional and digital media, not with the intention of fueling conspiracy theories, but as a gesture of encouraging critical judgment, since we desire to learn and, thus, to investigate and to include collateral observations in a process of formation of a belief. Thirdly, we must request society to develop tools and platforms that can be not only based on individual criteria of relevance, but also on social ones, in order to promote a more responsible algorithmic agency that will not only “solve” personal problems and provide “individual based responses”, but that provides social desired results. Thus, if we want to move towards a more inclusive social state of technical mediation, it is important to include in our current mediatization of institutions certain kinds of agencies that promote not only bubbles, but openness by human and algorithmic agency, in order to increase the amount of doubt experiences instead of reinforcing calm and satisfactory states of belief. What is relevant for an individual immediate interest may not be politically or epistemically interesting for social minds.

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