

A Reassessment of Ignorance from the Perspective of the New Meanings of Rationality

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Abstract: *In this article, we take a view of ignorance in relation to the new meaning of rationality, including the specific perspectives of limited rationality. We begin by suggesting that the problem of ignorance is far from the implied clarity of everyday expression, and there is a risk of inappropriate use of the concept. We show that not understanding what ignorance is, is part of ignorance, trying to avoid the situation of ignorance over ignorance. We propose a definition of ignorance by reference to the possible accessible and useful knowledge at a given time, suggesting that the understanding of ignorance is dependent on three variables: time, knowledge accessible at each moment of the present and utility. We analyze some asymmetries, including the one caused by the fact that we are often rigorous (but, nevertheless, interested) judges of others ignorance and very biased (that is, somewhat ignorant) about ourselves. We assess responsibility for our own ignorance by suggesting some limitations to the forms of ignorance for which we are responsible. We suggest that some variants of the unknown meet the definition of ignorance, and if we consider that most human decisions are made in conditions of information poverty, we can find that ignorance is frequently part of our cognitive strategies. Ignorance can be intentionally included in some of our cognitive strategies, one of which is provided by the principle of cognitive economics. The article can be one of the starting points for a set of recommendations on what can be ignored, what should and should not be ignored, when we are ignorant with no considerable effect and where/when we should not be.*

Keywords: *ignorance; accessible knowledge; useful knowledge; cognitive burden; agnotology.*

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Introduction

In a knowledge society, we believe it is normal for the problem of ignorance to be relevant, understanding what knowledge is, including describing its deficient ways. Ignorance is part of this route of apophatic understanding of knowledge, the failure to access its meanings properly affecting the meaning we give to knowledge.

This article belongs to the category of cognitive endeavors that assume a different way of talking about *ignorance*, participating in the intention of removing it from the shadow cone generated by simplifying approaches. We do not intend to abolish the concept of *ignorance*, but only to contribute to its possible adequacy to some of the current meanings of knowledge. It is an attempt to expand the meanings of ignorance to capture aspects that are not currently considered. It could also be one of the starting points for a set of recommendations on what can be ignored, what should and should not be ignored, when we are ignorant with no significant effects, and where/when we should not be.

One of the reasons for approaching ignorance is the need for proper understanding from the perspective of guilt: is ignorance culpable or can it be invoked to exonerate the subject from responsibility? Identifying the types of ignorance and their modality, related to the epistemic agency, is just one of the useful tools for this endeavor. Also, in the area of individual, responsibility seem to hold the answers to the following questions: Not knowing what ignorance is part of ignorance? What is more inappropriate: to be ignorant or to be ignorant of ignorance?

In the attempt to draw attention to the importance of the problem, thus justifying the usefulness of the approach, we will start by pointing out some of the traditional landmarks for this theme.

Ignorance could generate happiness: “Blessed are the poor in spirit, for theirs is the kingdom of heaven.” (The Bible, 1988)

The selection of this text takes into account its daily meaning, which tends to assimilate *poor spirit* with a form of mindedness. At its core is perhaps the belief in the existence of a synonyms between *spirit-spirit-rationality*, and it is relevant that some variants of the New Testament use the term *spirit* (New Testament, 1990). In order not to generate an inadequate understanding of the phrase, we specify that theologians indicate a different meaning from the everyday one, such as the humble conception of spiritual qualities (Krestiankin, 2014; 126-127) or a form of cognitive modesty. Even though the meaning of cognitive modesty is in this case generated by the reference to divinity, it leaves room for a form of ignorance revaluation. The

hermeneutical exercises of this phrase in the Bible do not lead to unitary results, an example being the interpretation that Andrei Pleșu gives, placing it in the area of humility, lack of vanity, of striving that wealth does not disturb the spiritual life, not to become the main - if not the only - value, etc. (Pleșu & Liiceanu, 2015; 52). The differences between interpretations generate a favorable space for the everyday sense.

Even if the daily interpretation is erroneous in relation to the proper meaning of this formula (given in the Christian context), the existence of error could say something relevant about one of the functional meanings of ignorance. Namely, it is worth behaving *as if this is* the basic meaning to see what this could tell us about the place ignorance occupies. There are times when, feeling the pressure of the cognitive burden, this interpretation can awaken a form of sympathy, seeming to capture some of the regularities of reality. We will see that this functional role is consistent with the principle of cognitive economy.

We can keep in mind, moreover, that in the Christian horizon the interpretation seems a reasonable one, if we think that the reason for the banishment from Heaven seems to have been a face of cognitive curiosity: the bite of the forbidden fruit, picked from the "tree of knowledge" (we resort, again, to the daily interpretation). Reinterpreted from the perspective of an interest in knowledge, the phrase suggests an inverse correlation between knowledge and happiness. The idea seems to make sense both to people shaken by the new knowledge that has upset their previous beliefs about the world and to those forced to learn. We leave aside the category of those who frequently point to *knowing* as the cause or equivalent of what we consider to be happiness). In addition, if we think about the potential risks associated with our various powers (the example of *nuclear power* is notorious; the use of artificial intelligence can also slide in this direction, an example being recently provided by Urbina et al. (2022) on the use of AI in lethal drugs discovery) and we consider the fulfillment of one of them may ending up in the situation of wishing we did not *know* so much, that is, being haunted by ignorance in these areas.

Conscious ignorance is the beginning of knowledge: "I know I don't know anything!"

We could also start with the paradox "I know I don't know anything", attributed to Socrates. In order to avoid debates on this paradox, we can reduce its significance by means of the following quote "(...) since I know my ignorance" (Platon, 2011, 235c), interpreting it as a first use of awareness of ignorance in the interest of the development of knowledge. At the limit, humanity seems to be distributing itself within the range created by

the awareness of ignorance, given by this formula and the cognitive sufficiency that characterized each age.

Conscious ignorance can be considered docile ignorance

A point of reference is also given by the docent ignorance, proposed by Nicolaus Cusanus (2008), which can be understood as learning what we must ignore, respectively as conscious/intentional ignorance. It also worth remembering other meanings of the *docile ignorance* proposed by Cusanus: ignorance as a form of awareness of the limits of our knowledge, leading to humility (Diaconu, 2015); renouncing everyday knowledge to foster revelation; a form of ignorance awareness that brings us closer to the truth; to the extent that to know is to compare, the knowledge resulting in this process is a limited one, which closes us in the cycle of comparables (Romaniuc, 2008).

Ignorance of ignorance

The following quote is attributed to Alfred North Whitehead: "Not ignorance, but ignorance of ignorance, is the death of knowledge". It can be considered an argument for trying to increase clarity on ignorance as part of interest in knowledge. In 2003, D. Rumsfeld ironically received the 'Foot in Mouth' Award (Plain English Campaign, 2003) for a text addressing some of the forms of ignorance. In terms proposed by Carrara et al. (2021): "Far from being meaningless, Rumsfeld's statements organize knowledge and uncertainty into categories". The lack of understanding of D. Rumsfeld could be regarded as an example of *being ignorant of ignorance*.

The provision of scientific theories

Although it is not exactly on the subject of addressing ignorance, Karl Popper's theory of scientific knowledge supports a reference to the limits of our knowledge. From K. Popper's perspective, the identification of what we do not know (which overlaps with some meanings of ignorance) is closer to our cognitive possibilities than to establish what we know, while also indicating the appropriate route of the evolution of knowledge. In this secondary sense, ignorance finds an opening in the area of scientific knowledge by means of falsifiability, as it constitutes a criterion for verifying a scientific theory and its demarcation from an unscientific theory: "(...) not the verifiability but the falsifiability of a system is to be taken as a criterion of demarcation" (Popper, 2005). Since in Popper's model scientific theories are placed in a form of a provisional, it can be associated with a form of ignorance presumption (associated with the limits of induction), with a functional purpose in the mechanism of scientific knowledge.

All information on cognitive biases and concerns about these forms of failure of adequate knowledge can be considered one of the indicators of

the extent of ignorance. On the horizon of these debates, a large part of the forms of ignorance are judged.

Through the above, we wanted to suggest that the problem of ignorance is far from the clarity implied by everyday expression, with the risk of inappropriate use of the concept. Moreover, if we refer to a broader understanding of ignorance, such as the one tempted in this article, we can see that each of us could be ignorant at one time or another, a basic reference being the very understanding of ignorance. The problem of understanding personal ignorance is complicated by the lack of interest in observing, being more oriented in the opposite direction: we are good (but still interested) judges of others' ignorance and very biased (that is, somehow ignorant) about ourselves.

Some limitations of this approach

Treating any theme brings with it the risk of its artificial inflation, beyond the natural limits. "When you have a hammer in your hand all things seem nails to you!" says one of the popular wisdom formulations (urban folklore), considered a law of Murphy. We assume that talking about ignorance, if it is not generally considered a relevant topic for knowledge, puts at risk of exaggerating its role and importance, by associating it with a dose of artificiality.

We can remember that there is at least one context in which addressing the problem of ignorance seems unnecessary: the one specific to enlightenment modernity, in which *ignorance* is equated with *unculture*, classification providing for itself the solution of *education*. Although it has a range of relevance, this classification of ignorance also involves a form of forced reductionism. For ignorance derived from the lack of cognitive labor, we think that the term *stupidity* is preferable, having more of the ability to indicate forms of guilt than the absence of knowledge. One argument (it is right, weak) for overcoming this closure may be that we cannot reduce *ignorance* to the antonym state of education.

In principle, we might consider that any failure to achieve the highest level of knowledge specific to each age constitutes for each person a measure of his ignorance level. But we know that with the cognitive evolution of humanity this maximal reference is further and further away from the concrete possibilities of a person, the principle of cognitive specialization being part of individual cognitive tasks distribution for many centuries.

About the stage of the research of ignorance; a few landmarks

After a brief history of understanding ignorance, which took place more in the area of everyday knowledge, we continue with the summary presentation of some of the previous approaches of ignorance.

Responsibility of ignorance

Analyzing the previous literature on this subject Alcoff (2007) notes three causes of ignorance:

1. The fact of being situated, which characterizes those who know, Indicating as an example the representative of this current on Lorraine Code (2004). The various social situations of the connoisseurs determine epistemic differences, respectively they are causes of ignorance. Code carried on the research on feminist epistemology, analyzing the epistemology of ignorance, epistemic injustice (Code, 2014a) and the effects of marginality on knowledge (Code, 2014b).

2. Specifics of group identities, indicating as an example the research published by Sandra Harding. Harding's epistemic impact of group identities analysis (1986) is mainly focused on gender and class identities, indicating differences in cognitive perspective.

3. Producing ignorance of oppressive systems, indicating as the main representative of this current Charles W. Mills. This approach is based on the cognitive practices specialized to dominant social groups, which have a positive interest in "seeing the World shaped" (Mills, 2007), this practice determinant a form of ignorance: White ignorance.

In the analysis carried out by Alcoff, ignorance has its place in the cognitive differences existing between the subjects, determined by the categories of differences of existence in the world identified: "... ignorance is contextual, but there are patterns of ignorance associated with social group and identities" (Alcoff, 2007, 47).

In the traditional logic of understanding ignorance, we might consider that all these differences can be reduced to differences in education. A careful analysis suggests that this is how we operate a forced reductionism.

The context of the discussions is that of the dialog necessary for the existence of society, ignorance being seen as a hindrance to it. An example: insensitivity to social problems can be considered a potential indicator of some form of ignorance (equally populist social approaches having a similar risk). To the extent that we agree with the natural role played by my side bias, we can observe the influence of different forms of situation on some forms of ignorance determination. But we also have to assume that this form of missing objective knowledge arises in the horizon of a person's

interest in order to cope in society, being considered a very widespread characteristic.

Some definitions of ignorance

Self-fulfilling prophecy. In an article that presents a successful summary of the level of research, Kassir (2018) examines three definitions of ignorance: (1) ignorance as a lack of true knowledge/belief (presented as propositional ignorance); (2) ignorance as active support for false perspectives; (3) ignorance as basic epistemic practice. Kassir's example of this last definition is Alcoff (2007), whose perspective he defines as a structural conception of ignorance. Analyzing the differences of meaning existing in different authors who analyze the problem of Kassir ignorance (2018), it raises the issue of ignorance revealed by the absence of noticing these differences, proposing another definition: "Ignorance is a disposition of an epistemic agent that manifests itself in her beliefs – either she has no belief about p or a false belief – and her epistemic attitudes (doxastic attitudes, epistemic virtues, epistemic vices)".

Congleton (2001) considered ignorance as a species of incomplete information: "(...) the existence of ignorance generally implies a complete lack of knowledge about a variety of real or imagined possibilities".

Relevant to the definition of ignorance is also the difference between simple beliefs (beliefs that are not based on true sentences) and knowledge (beliefs based on true sentences).

Some problems in defining ignorance

Gettier effect

The Gettier effect (Gettier, 1963) - to have true beliefs for the wrong reasons - belongs to the area of knowledge or that of ignorance? In Peels' view (2014) the Gettier effect seems to belong to the category of warrantless ignorance, being part of what Kassir (2018) indicates as the standard vision of knowledge, along with ignorance by disbelieving ignorance, suspension ignorance and deep ignorance. Suspensive ignorance can be understood as not wanting to hear about a particular topic (or as refusing to look at the chasm when you walk on the edge of it for fear of consequences).

The problem of cognitive normality

In first instance, ignorance seems to indicate that *you don't know something you should know*. As we can see, this definition allows the identification of ignorance by reference to a standard, which we can identify in the form of *cognitive normality*. Trying to indicate landmarks of cognitive

normality supports several perspectives, between some of them there being significant differences. Two categories of definitions seem to raise most of the problems: *the difference between theoretical knowledge and practical knowledge, respectively the establishment of the criteria for identifying knowledge*. In other words, attempts to establish cognitive normality have a degree of difficulty high enough to lead us to caution in defining ignorance. Like any social standard, *cognitive normality* is intensely connected to the area of morality, being sensitive to ideological influences. In so far as it is used as a criterion for defining ignorance, the latter is also affected by the risks of ideological contamination.

The use of defining ignorance *as not knowing what we should have known*, which is only possible by reference to a cognitive standard of reference, opens two directions for investigating ignorance: explaining the causes of the loss of knowledge and indicating how cognitive standards are built. Both directions of analysis use a dichotomic division of knowledge: *known* versus *unknown*. The use of Rumsfeld cognitive positions (Rotilă, 2021) may be an attempt to clarify the relationship between *known* and *unknown*, while suggesting that a greater degree of complexity is needed in understanding ignorance. As we will see in this article, complexity is enhanced by the different forms of cognitive intention, the possibility of fabricating ignorance (induced ignorance), the ambiguities generated in the horizon of cognitive economy, etc., each of these sources of complexity being part of the arguments in favor of the relevance of this article, and especially, of works on ignorance (some of them indicated in the references).

Cognitive positions and their effects on ignorance

We therefore believe that attempts to clarify the meaning of *ignorance* can be supported by addressing the relation between *known* and *unknown* from the perspective of the four cognitive positions we have previously developed (Rotilă, 2021) based on a text belonging to D. Rumsfeld (2002):

1. **The known known** - *is what we appropriately know*.
2. **The known unknown**- *is what we think we know without actually knowing* (the illusion of cognitive adequacy).
3. **The unknown known** – it can be defined as what *we know we don't know*. It includes both *what we know is not yet known* and *what it is not clear whether we will ever know* (but it is identified as belonging to the unknown area). To the extent that the reference to the known unknown is placed in the horizon of confidence specific to progress, it tends to transform a part of it into the unknown unknown.

4. **The unknown unknown** – *it is what we don't know we don't know*. Although Carrara et al. (2019) uses the Rumsfeld-ignorance formula for the unknown, we cannot consider that its entire area belongs to ignorance.

At a first glance, we could consider that each of the quadrants 2-4 also refers to types of ignorance, being able to identify forms of ignorance presentation to different authors for each of the three points. Meditating on the difference between them shows that we actually end up talking about ignorance in several ways, while also suggesting the need for specific approaches to clarify the meaning of each.

In the systematization of knowledge built on the basis of D. Rumsfeld's (2002) proposal, we believe that ignorance has its place especially in two areas: the unknown known (let's call it *first-degree ignorance*) and the *unknown we know* we will know someday but it turns out to be (because of its status and misunderstanding of our cognitive limits) the *unknown unknown* (we can indicate it as *second-degree ignorance*). Between the two ways there is a difference in situation and another in terms of the consequences of ignorance. If we wanted to include in ignorance all forms of the unknown, then we would have to define the *unknown unknown* as third-degree ignorance. In doing so, we believe we risk an undesirable confusion between ignorance and uncertainty. Even if there are certain areas of overlap between the two concepts (in some situations uncertainty can be caused by ignorance; including in the case of some forms of intentional ignorance), the area of difference is wide enough (we think of the uncertainty determined by the objective limits of knowledge) to keep them separate.

Defining ignorance in the horizon of *what is not yet known* implies either the certainty of the knowledge alternative in the case of other subjects or the possibility of knowledge in the future. In each of these situations, the definition of ignorance aims at a comparison between two cognitive positions, having the certainty of the correctness of one of them. However, the reference to the *level of knowledge in the future* is affected by uncertainty, currently taking the face of estimates affected by hopes or fears. In other words, since knowledge specific to the future can only have a certain form in the future, it cannot be used as a reference of ignorance, this being circumscribed to reports to knowledge specific to the present. Which means that the analysis of the level of knowledge specific to the past carried out by reference to the present cannot have as its object the identification of the ignorance of the past, but only the history of the evolution of knowledge. From a practical perspective, this narrowing of the definition of ignorance causes a limitation of the possibilities of invoking fault based on ignorance.

In the standard version of ignorance (specific to everyday understanding), conscious ignorance (the *unknown known* as having this status) cannot be considered a form of ignorance, as it isn't a source of imprudent decisions. In the face of the unknown (recognized as such; undisguised) we display attitudes of the type that accompany cognitive prudence. Things become more complicated, however, when we want to suspend the anxiety that the unknown causes us through the various veils of understanding appearances, such as those specific to the mythical or magical attitude. The unknown camouflaged by forms of apparent understanding is part of the realm of ignorance, as is the forgotten due to cognitive arrogance.

To the extent that the unknown is not the result of a rigorous identification based on cognitive labor, it can be designated as part of ignorance. It is the absence of knowledge, unconscious. The problem with the *known unknown* is that the status of the unknown, as a cognitive position, isn't the result of simple calculations, which would naturally result from comparison with the *known* or from any mathematical deduction operation from it, but requires cognitive labor. From the perspective of cognitive effort, the unknown has a situation comparable to the known, the two being in a symbiotic relationship. Historically, it has often been shown to be too much a cognitive burden. This could lead us to believe that humanity is doomed to a dose of ignorance.

If we approach the four cognitive positions from the reverse perspective, that of the positions of ignorance, we come to the following distribution:

1. Absence of ignorance.
2. Conscious ignorance.
3. Losing your own ignorance.
4. Total ignorance.

Missing one's own ignorance seems to be the strongest position of ignorance, from the perspective of its traditional definition. However, it is good to remember that in the traditional definition, ignorance seems to serve moral rather than cognitive purposes.

Some classifications of ignorance

The classifications of ignorance could mediate us a better understanding of its purpose. An attempt to do so starts from a loose enumeration, meant to favor the identification of possible criteria:

- **Unwanted ignorance** indicates all the places where knowledge is intentional but ends up being missed. Although it seems to sound reasonable, this category is dependent both on how we define

something as knowledge and on the cognitive authority to which we relate.

- **Useful ignorance** indicates all the knowledge that is absent (although it may have been present) lacking negative effects or that sometimes even has positive effects. It is easy to notice that the existence of useful ignorance is intensely dependent on the way of defining knowledge. In order to indicate the existence of its own content of this category, we can first note the example of over-specialization (qualification too high for the cognitive requirements of a job) and behavior towards these situations.
- **Objective ignorance** indicates, in particular, an objective limit encountered in the way of individual knowledge, but it can also be considered from the perspective of overlap with the unknown. In this second form, it becomes visible on a daily basis, especially in relation to the future, being associated with the failure of our long-term predictive attempts. Objective ignorance must be differentiated from incomplete information (Kahneman et al., 2021, 163) the latter indicating what could be known and is not. In the area of ignorance definition according to the knowledge possible individually, the question arises as to the extent to which objective ignorance is operative, the decision on this topic having significant effects in terms of *culpable ignorance*.

A criterion for differentiating ignorance can be its relation to the knowing subject intention. Using this criterion, we can see that a relevant distinction is between *involuntary* and *intentional ignorance*.

As we have been able to see so far, ignorance can be talked about in multiple registers. To illustrate something of the problem complexity we continue with the presentation of some forms of ignorance:

- *Assumed ignorance* unfolds in the horizon of what *we know we don't know*.
- *Ignorance as lost knowledge*: what we think we know, without really knowing or what we don't know we don't know.
- *Induced ignorance*: what others make us think we know.
- *Benign ignorance*: what we think we know, without really knowing it, but that does not affect us in any way.

Useful ignorance: what we mistakenly believe to represent knows, but which has positive functional effects (wrong theories, with good practical results) and *benign ignorance*. When combined with cognitive economics, this type of ignorance can be part of cognitive strategies.

This random enumeration of several forms of ignorance has, in particular, the purpose of drawing attention to the need to rethink the role of ignorance in axiological approaches.

Causes of ignorance

The problem of ignorance causes endures a seemingly simple solution in everyday life and in the area of ideological discourses, stupidity or lack of education seeming to be sufficient explanations. There are other forms of empowering people for their ignorance, such as the fact that epistemic vices can be thought of as a source of ignorance (Medina, 2012). At the same time, however, if we consider that cognitive biases can also figure in the causes of ignorance, then the problem of responsibility becomes complicated and, through this, that of the causal determination of ignorance. Since clarifying the causes of ignorance is dependent on the proper ignorance understanding, we continue to address some of the ignorance causes that argue against the simplistic definitions.

The cognitive burden

Increasing the average cognitive burden of the citizen in the new type of society could have the effect of diminishing the cognitive resources allocated to different traditional fields. We should ask ourselves if we haven't seen, in the meantime, a change in both the distribution of interest and the cognitive demands specific to everyday existence (diversification of consumption, respectively the multiplication of characteristics and products/services destined for consumption being one of the possible directions of analysis).

As we have already seen, the individual identification of ignorance is complicated by the existence of expectations for the person to meet cognitive standards. Any standard used in the human case is based on a generalization, often resorting to forms of cramping reality into concepts. The use of cognitive standards brings into question the risk of their inadequacy, elitism (understood as formatting expectations at a too high level) and populism (described as a definition of cognitive normality by reference to the least possibilities) being just some of the examples. The problem that interests us in this context is the risk of too high standards, which brings with it the rise of too high cognitive expectations that hover over people. Too high cognitive expectations coupled with increased information and consequently complexity can cause too much cognitive burden for individuals. In this context, people either strive to meet expectations but fail, in which case we're in the situation of an artificially

generated form of ignorance (from an inappropriate definition) or assume this impossibility, being in the situation of an assumed (objective) form of ignorance.

The cognitive burden is accentuated by the *burden of choice* arising from the multitude of possibilities presented by aggressive marketing carried out on all communication channels. One particular aspect is the impact of social networks, one of its faces being FOMO/fear of missing out (Herman, 2000), triggered by the image of the experience's multitude that others experience, for which we are ignorant.

In the process of continuous growth of information, possibilities and fields in which knowledge is developed, individual responsibility towards the maximum possible knowledge continuously decreases due to specialization, that is increasing cognitive responsibility of society. The general process of increasing the level of knowledge is not reflected symmetrically at individual level, limiting cognitive possibilities generating an increase in the extent of ignorance. The intense individual specialization necessary to obtain and maintain a level of cognitive competence, doubled by the increase of the cognitive burden associated with daily activities, causes the phenomenon of expanding ignorance in the area of personal life. Although it traditionally belonged to the area of cognitive competence and individual decision-making, it tends to be moved more and more into the sphere of specialists, whom we allow to tell us how we should live different aspects of our existence.

Science

In the introduction to the book dedicated to the analysis of the ignorance in the existence of science importance, Firestein (2012), resorts to a metaphorical presentation of the uncertainty specific to science, based on the following phrase, attributed to a proverb: "It is hard to find a black cat in a room, in darkness; especially if the cat wasn't there". Science often does not know where the cat is and isn't even sure that there's a cat there. This means that science has specific forms of ignorance, characteristic of science. In addition, science is a paradoxical source for everyday ignorance because with the growth of knowledge, the difference between the maximum possible knowledge and the average level of knowledge is also amplified.

We can consider that *science generates the unknown* in at least three different ways: (1) directly, through a form of its discovery; (2) by default, as a consequence of the discoveries made; (3) bureaucratically, as a side effect of the existence of scientists who must have a field of activity, this being what is still unknown. Part of this unknown is the area of ignorance. The

strong definition of the scientist is that of a person who deals with what needs to be discovered, this meaning being present including in the focus on what is known (in the space of knowledge certification).

An analysis of the ratio between the set of people who are considered scientists and of those who make discoveries (or between the set of published articles and the number of articles that actually present a discovery; we could add the set of those who simulate belonging to science) can reveal the extent of the difference between what is believed to be scientific knowledge without having this character and the knowledge itself. Where there is no question of imposture, this difference can be considered as falling within the realm of ignorance. In relation to Thomas Kuhn's thinking (1962), the period of transition to a new cognitive paradigm, which includes the coexistence of the old and the new perspectives (thus involving the possibility of access to adequate knowledge) could be characterized by the co-existence of knowledge with ignorance. Even though this model of science evolution based on the paradigm shift implies the admission of knowledge dependence on time, it is consistent with the reference we propose to define ignorance: access to available knowledge.

Another definition of ignorance

In order not to risk slipping into the area of the impossibility of explaining ignorance due to the inability to identify the missing knowledge, we can narrow the definition of ignorance to the *absence of necessary or useful knowledge*. This definition can only operate in the context of an identifiable and accessible referent, the *knowledge possible at the present time* seeming to cover this need.

Knowledge that is now possible/accessible

Haas & Vogt (2015) consider ignorance to be the absence of knowledge but reject the understanding of ignorance as a *lack of knowledge* (a knowledge that should be present), because it involves relating to omniscience in setting the reference standard. We could consider that the cognitive standard that constitutes the reference for understanding ignorance as a lack of knowledge (what it should be) is not being constituted by reference to idealizations of knowledge, but to its concrete possibilities. With the mention that identifying the concrete possibilities, however, raises significant difficulties in both its ends: both regarding the establishment of the standard and in the analysis of individual reports to such a standard. *The knowledge possible* at the present moment has the character of a general

reference standard, the attempts at individual level transposition generating difficulties.

By possible knowledge we must understand the cognitive level that is objectively accessible to each person if they would demonstrate diligent cognitive behavior, avoiding epistemic vices and cognitive biases. It is easy to intuit that evaluating each individual case according to these criteria could prove a difficult task in reality. At the same time, however, this is a closer reference to real possibilities (while also indicating their objective nature of evaluation) than the appeal to cognitive abundance

One might object that this form of defining ignorance results in a relativization of the justification for using this cognitive label. Indeed, this definition lacks the rigor intended to engender confident recourse to this type of cognitive categorization. This weakness, however, we believe has two significant merits: it may induce a form of prudence in appealing to ignorance and it may help to reduce situations where its use only apparently considers cognitive behaviors.

Ignorance must be related to individually possible knowledge

From the inherent limits of our cognitive possibilities, we can deduce that we are condemned to operate in the context of ignorance. This understanding of the knowledge limits, however, operates with a cognitive ideal full of uncertainties (somehow in *we know what we don't know* includes also *we don't know what we don't know*). Therefore, this is not the meaning of ignorance commonly considered, but that which relates to possible knowledge. Even if the difference between *possible* and *inaccessible knowledge* isn't always clear (time and other variables being sources of uncertainty), it seems to provide a reasonable horizon for understanding ignorance.

The useful knowledge

Trying to understand cognitive behaviors from an evolutionary perspective leads us to the idea of knowledge usefulness at individual and social level. Usefulness seems to be the essential key to deciphering the meaning of knowledge and the fundamental reference for understanding it. To the extent that this perspective is correct, usefulness becomes an important reference for ignorance.

The Cognitive Authority

The use of ignorance as a cognitive label implies the use of one form of cognitive authority. Whether it's the reference to a cognitive standard considered relevant by the cognitive community or whether this judgment is

exclusively subjective, it involves the appeal of cognitive authority. In every statement during "that person does not know something that he ought to know" cognitive authority is involved on two levels: the validation of a belief/set of beliefs as knowledge, and the consideration of that knowledge as part of the cognitive standards applicable to all persons or some of them.

The traditional definition of ignorance is conditioned by locating epistemic authority in the domain of the human. The existence of individuals and (more recently) communities with cognitive specializations demonstrated by practical results (in most cases) is a condition of the possibility of ignorance. Each type of specialization has its own cognitive authority, the common (ideal) denominator being the pragmatic verification of knowledge. Regarding science, the importance of the pragmatic perspective is visible in the area of technology, the latter being often considered the ultimate verifier of our cognitive adequacy.

Regarding science, the importance of the pragmatic perspective is visible in the area of technology, the latter being often considered the ultimate verifier of our cognitive adequacy. The principle of specialization implies the existence of specific cognitive standards. In this context we can see that a large part of the citizens has the task of avoiding ignorance by observing two categories of cognitive standards: the general standard, applicable to each citizen (for example, knowledge of laws and moral rules), and the special standard, most often being professional cognitive standards. Which implies the existence of two categories of cognitive authorities that have the possibility of using ignorance as a cognitive label for these people.

For a provisional conclusion of the theme, we can remember the existence of multiple poles of cognitive authority, the simplest indication starting with the person and ending with the institution with maximum cognitive authority (for some social systems this being the Academy).

Cognitive satisfaction

If we ask ourselves how anyone can know if they are ignorant, the appropriate answer seems to be provided by the reference to possible and useful knowledge. The use of this reference in a real way is struck by a problem: one must know what is the level of possible knowledge, while denying access to it in order to be able to attribute the label of ignorance to him. In that case, individual responsibility lies only on the refusal of access to standard knowledge. Ignorance is not used only in the context of that restrictive condition. If *possible, knowledge* can be judged by reference to a common cognitive standard of a cognitive community, *useful knowledge* seems to be situated, to the greatest extent, in the subjective area. To the limit, each

person seems to be free to decide the level at which cognitive pursuits begin to locate beyond usefulness, deciding to stop them. Trying to identify an essential landmark for the stopping rule seems to return us to the area of common cognitive standards.

Most often, the rule of stopping cognitive searches is governed by cognitive satisfaction, which knows a number of variations depending on time. In other words, *cognitive satisfaction* specific to each age can be used as one of the references to ignorance. Although we cannot say that the discussion is about the "cognitive mode", we can certainly speak of different references of cognitive expectations (burdens) depending on time. Cognitive satisfaction could be described as that state of contentment that we experience when we look for something and (we believe that) we have reached a result.

Even if it happens less often, cognitive satisfaction can also occur forcibly from the need to stop searching. At the limit, we cannot exclude the possibility that cognitive satisfaction also arises in the area of cognitive economy principle application.

The problem of differentiation criteria

Socially, one of the problems of understanding ignorance is the establishment of cognitive success criteria, on the basis of which the reference group of people we consider ignorant is selected. For example, if we relate to social success, then we must note that it's not only dependent on the cognitive level of the person, but also on other variables such as: socialization capacity, intuition of the network usefulness, pre-existing advantages (such as economic or physical ones), characteristics considered by the community as essential.

A few limits of the definition

Segmentation of individual knowledge and ignorance of artifacts

The continuous increase in the level of knowledge (which we can assume), coupled with an amplification of the speed of this evolution, generates an amplification of the individual cognitive burdens. This is one of the characteristics of the information society in which we live, a consequence of which is the existence of major differences (constantly accentuating) existing between the three generations of the present (children, parents and grandparents) to cope with these cognitive burdens (with the mention that the situation is also influenced by the increase in life expectancy, this tending to become a variable in ignorance understanding). The attempt to define ignorance by reference to the most effective cognitive

outlet increasingly benefits new generations, throwing the previous ones into a growing area of ignorance (defined on the basis of the present maximum standards). It's during this period that we are experiencing the biggest difference that exists so far between the ability of the three generations to cope cognitively in society, being expected that this difference will increase. In other words, in this way of defining we should find that the volume of ignorance is constantly increasing, being visible a form of overlap (in the cognitive zone) between the past and the present.

One of the solutions identified to cope with the increase in information volume is cognitive specialization. This strategy of sharing cognitive responsibilities requires redefining ignorance, with each person's overall cognitive responsibilities decreasing. We are bound to know more and more in an increasingly narrow field, entrusting more and more of the cognitive tasks that concern our daily existence to specialists. The increase in specialization level is doubled by a decrease in general skills. We no longer need to know how the artifacts we use in our daily lives work because we no longer have to repair them (replacing them using consumption) and they have become too complex for an average understanding (often complexity is given by a growing number of unnecessary features), their understanding being the responsibility of specialists. We know less and less of what we use on a daily basis, but our minds are left with the concern for this area of knowledge. The persistence of interest in the conditions of an increasingly weaker cognitive intake (the two being connected by a form of trust in the world) increases the risk of credulity, that is, of induced ignorance.

Can a specialist, who does not know all the contributions of different authors in his field of competence, be considered ignorant, given that there is a volume of information that cannot be covered? The fact that it has at hand the possibility of narrowing the field of specialization is a solution for maintaining in the area of efficiency the social etiquette of ignorance. However, this evolution of specialization generates a cognitive cost, which can be indicated in the form of increased ignorance.

Specialization involves assuming ignorance in certain areas, coupled with forms of trust in those who assume their knowledge. Based on the awareness of cognitive limits, the ignorance of non-specialists participates in completing the picture of this form of ignorance.

Our cognitive relation to artifacts is influenced by affective distancing from them, the latter being determined by the rapidity of technological change, aggressive marketing centered on the need of the new, and planned obsolescence (the latter can also be interpreted as a form of induced ignorance). The affective distancing causes the decrease of the

cognitive intake, the decrease of the capacity to understand the artifacts being doubled by the limitation of the knowledge and use of all the characteristics. This means an increase in ignorance regarding the characteristics of the artifacts we acquire, becoming less and less able to fill all their possibilities of use (a form of ignorance that causes a type of impoverishment of the ontological relations with the artifacts). By relating our appetite for unnecessary possibilities of artifacts to the costs necessary to create those characteristics we might consider that we discover the face of another form of ignorance. If we go further and analyze the impact of generating these unused characteristics on the environment, then a form of recklessness arises, that is part of a specific way in the field of ignorance.

In the information society, the old generations are finding it more and more difficult to cope with new technologies, being often ridiculed by the new generations (becoming more and more ignorant in relation to the newer and new average knowledge), while the new generations understand less and less of what they use on a daily basis, being considered ignorant by the previous generations. We are seeing an increasing volume of ignorance, but on different areas. It is difficult to estimate whether this model of the asymmetrical distribution of ignorance will maintain and accelerate, or whether the speed of growth of the available information will lead to radical ruptures between generations, generating the coexistence of different worlds (at least from the perspective of the cognitive intake). An essential variable is the emergence and development of artificial intelligence, which could lead to a radical change in the understanding of ignorance.

One of the possible scenarios is that the cognitive tasks necessary for everyday life will be taken up to an increasing extent by specialists and smart devices. If things go well, then ignorance will redefine itself according to the new context, not knowing what you use in everyday life, going beyond the definition of ignorance. But if something disturbs the course of this new type of society, causing a form of reset to previous existential parameters, then the new people will find themselves in the area of a major cognitive deficit regarding daily existence, becoming characterized by an essential ignorance.

Ignorance and time

History (as we understand it at this time) suggests that there is a progress of knowledge, the latter being thus dependent on time. This means that, on average, we can consider ourselves to have a more appropriate cognitive standing with our forefathers and a high level of ignorance toward our posterity (provided our ignorance is not a cause of cancelling the possibility of their existence). We must not make the mistake of thinking

that humanity is irrevocably inscribed in the line of cognitive progress. For example, the West proved itself for about a millennium ignorant in relation to the previous level of knowledge, this being the basis of the use of the name Dark Age in defining a historical period.

If we assume that the evolution of humanity has a purpose, including the continuous increase of the degree of control over nature (although this seems to be the strong sense of progress, we don't believe that it's assumed as a sense of humanity), a goal founded by a continuous development of knowledge, then we can see throughout history a continuous diminution of ignorance. In other words, increasing the degree of control over nature could be interpreted as a continuous diminution of ignorance.

But, along with the results of knowledge progress, the present is characterized by the perpetuation of some of the cognitive externalizations specific to previous eras. To the extent that these extensions of knowledge, incorporated into elements of culture and civilization, are tributary to outdated cognitive positions, we may consider them to contain a significant dose of ignorance (perpetuated today). The various forms of tradition could be characterized to a large extent as faces of the past ignorance, which is now prolonged. Equally, those who bet on some forms of wisdom embedded in traditions (but also those who structure a good part of their personal identity through appeal to traditions) can reasonably claim the existence of a dose of ignorance in the adoption of social practices that haven't been validated by the trial of time.

Artificial intelligence or changing the reference to define ignorance

In principle, we might consider that the definition of ignorance is generated by reference to the average knowledge of a citizen in a given cognitive community. It can thus be understood as a common cognitive denominator of a group of citizens considered to have a reasonable level of knowledge. If we consider anticipating the coming of artificial intelligence and considering the average level of knowledge or knowledge of the average citizen, then the common place is the fact that artificial intelligence risks making people more ... ignorant.

If we define ignorance as the failure of accessible knowledge, then soon we will run into the problem of moving the standard of knowledge to the area of artificial intelligence. To this problem there seem to be several categories of solutions that avoid the artificial increase in the cognitive burden: (1) the classification of new cognitive environments as extensions of the human mind; (2) moving the criteria for the hierarchy of cognitive capacities towards assessing the ability to interact with them and also use

them; (3) the definition of new cognitive environments as persons, thus giving rise to another problem of cognitive authority.

The classification of new cognitive environments as extensions of the human mind, for example, raises the problem of moving the cognitive classification system, that has as a minimum level the ignorance from the area of a cognitive characteristic of the human to that of the possession of the new cognitive instruments (which could become persons) cognitive and of the ability to interact with them (specific only to the first phase of new utensils development).

Concepts next to ignorance and specific differences from them

One way of understanding ignorance is to indicate specific differences from the concepts with which it borders or risks being confused. We look at some of these concepts below.

The unknown

The unknown is an essential concept to delineate ignorance, with the two concepts registering frequent overlapping areas in different studies. For example, Hans and Vogt (2015) often uses ignorance to indicate what we think belongs to the unknown. Some clarifications may be useful in this context.

In a certain sense, *the unknown* plays the role of general category against ignorance, the latter being a specie of the unknown. Specifically, *ignorance is that form of the unknown that should have been known*. How we determine what should have been known, namely who has the authority in the field, is related to the debate on ignorance.

The unknown does not have an amorphous distribution, being segmented into several different areas between them. The common place seems to be the difference between the *known unknown* (on which we have some anticipations or potential explanatory theories) and the *unknown unknown*, whose existence escapes our awareness. In this definition of ignorance by reference to the unknown we can see that there remains a rest: the *unknown that could not be known*.

The definition is not rigid, along with the variable time intervening and the *cognitive attitude*. For example, *cognitive arrogance* can move much of the unknown into the area of ignorance. In other words, much of the unknown remains out of ignorance under the conditions of modesty and cognitive prudence.

A delimitation necessary for the ignorance understanding also occurs in the area of the difference between *that which is not known but could be* (an

area likely to belong to the domain of ignorance) *and that which cannot be known effectively, without being aware of this impossibility* (denying the limits of knowledge). In this area of misguided cognitive expectations are also some of the differences suggested by Nassim Taleb (2007), especially those that seem to be grounded by separations of an onto-cognitive nature (such as the one between extremist and mediocristan).

The attitude towards the unknown is one of the indicators of its cognitive classification. Where the unknown becomes the source of cognitive challenges it falls on the positive side of knowledge. When the unknown does not become the source of cognitive queries (it doesn't generate the desire for knowledge), but of cognitive closures, it falls on the side of ignorance.

What we believe to be correct from the perspective of current scientific data, but later turns out to be wrong, is part of a separate cognitive position: in the way of defining that, we propose it belongs to the area of the unknown without belonging to ignorance, in the way of definition that we propose.

Irrationality

An understanding of the difference between irrationality and ignorance is given to us by Congleton (2001): Suppose two categories of information about an economic situation a person might know, such as the price of coffee. The person has access to all the coffee prices in a mall, without knowing that in a second mall in the same city a merchant offers a significant discount on the same coffee. That person can make a rational right decision (of the rational procedure applicable to the information held) but be mistaken because of ignorance. In this case, ignorance led the person to consider that he was in the situation of an unconditional distribution of the price of coffee, while he actually had access to a conditional distribution. The place where the problem arises can be observed when we look carefully at the conditions that a person must meet in order to be considered fully rational: 1. Know the general characteristics of the entire distribution relevant to a particular decision; 2. To use all the information it holds to make unbiased estimates of the relevant stochastic phenomena; 3. Make perfect (rational) use of those estimates.

Analyzing this example, we can observe two general sources of error: (1) irrationality, understood as failure to follow rational rules, and (2) ignorance, viewed as the absence of relevant information, which generates the use of a conditional distribution (limited to/by the information we hold) while considering that it would be a conditional distribution (significant for

that class; containing all the relevant information). By simplifying, the problem may arise from the representativeness of the sample or the rational procedure applicable to it. Noting that the question of the sample representativeness isn't as simple as it seems, it including a difficulty of the circularity type: in order to know whether a sample is representative, you need to know whether it includes all the relevant characteristics; but this involves first identifying what are the characteristics relevant to a particular population.

It is worth remembering an additional observation that Congleton (2001) makes: additional information (such as the price of coffee in the second mall) not only increases the size of the sample, but also brings with it an increase in uncertainty: the widening of the range of variation (prices, in the example analyzed) brings with it a widening of the world, that is, an increase in complexity and, consequently, uncertainty from the previously estimated level.

Analyzing the relationship between ignorance and irrationality we can find that there is an identifiable difference and, at the same time, the existence of an area of ambiguity is noted.

Uncertainty

Not all ignorance creates uncertainty. But a good part of it does. If we had a difference between *real uncertainty* and *perceived uncertainty*, we could say that *perceived ignorance* is associated with *perceived uncertainty*.

The correlation is not necessarily maintained in the case of *assumed ignorance*, its level tending to be in a situation of inverse correlation with uncertainty. One of the mediators of the assuming ignorance possibility of avoiding uncertainty is outsourcing: trust in experts or generically in others appears in the series of additional cognitive resources. In fact, *what I don't know but think others know* (especially if I know them and have access to their cognitive support) has an ambiguous status: although it's part of the assumed ignorance, through the outsourcing of cognitive resources we develop strategies to meet, which can diminish the uncertainty to extinction.

We might think that ignorance is the uncertainty that could be avoided. We can observe that the adequacy of this form of definition is dependent on the reference to the persons' useful knowledge, in question being the elimination of uncertainty in this area of cognitive interest. However, if we refer to the general avoidance of uncertainty, we can see that such a definition of ignorance illegitimately presumes a person's desire for predictions in environments/areas that he doesn't target (they aren't of interest to him; they aren't in the area of useful knowledge). Moreover,

intentional ignorance can be doubled by a form of voluntary uncertainty, and can be part of effective cognitive strategies based on cognitive betting or prudential procedures. An example of the efficiency of uncertainty caused by intentional ignorance is the ignoring of interventions of an ideological nature, the latter circulating information aimed at inducing predictive behaviors, not increasing the predictive capacity of subjects (the distance between community and individual interests in some contexts can generate an ambiguous status to selfish cognitive strategies).

Since we can't always be sure of what knowledge is and what isn't, from the perspective of the cognitive niche, our cognitive externalizations include not only knowledge, but also ignorance. Relative to the example of cognitive differences between different eras, viewed from the perspective of progress, we might consider for example that the symbol of the cross is cognitively inadequate in relation to the current period. Without entering into a debate on the multiple cognitive valences of this symbol, we can keep in mind that the problem cannot be clarified by a simple equation, there being a whole series of variables to be taken into account. For example, in contexts where deciding something is more useful from an evolutionary perspective than *indecision*, the totality of beliefs driven by a religious belief may prove to be a more effective mechanism than that of endless doubts that canton people into indecision.

The inexistent

Does the belief in knowing something that doesn't exist belong to the area of ignorance? We could rephrase the problem by wondering if imagination belongs to ignorance. A first answer seems simple: *no*, when what is imagined is realized as having this quality. Imaginary objects exist in the quality of imagined, knowing them together with this status being located outside of ignorance. Things no longer seem as simple if we consider the Gettier effect (1963), in which a true belief is inferred from a justified false belief. In question are the forms in which our mind completes the perception data, such as perceptual constructions being, in some cases, also the fruit of the imagination.

The situation is identical in the case of imaginary objects that are considered real and that mediate an effective practical understanding, offering the possibility of controlling some areas of the environment. This category is quite broad, representing a good part of the culture. However, the absence of knowledge of cultural aspects related to the area of common understanding is classified as ignorance even if there are imagined objects in question. In this case, we can consider the possibility of closing the problem

by referring to the *useful role of ignorance* (which occurs in some cases) or redefining knowledge so that it excludes imaginary constructions (we suspect that there are other solutions). However, the last proposed solution raises the issue of removing a good part of culture from the area of knowledge, even if the arguments regarding its role in the humanity existence are relevant.

"No cognitive land"

Does ignorance also cover the side of apparent cognitive disputes, the purpose of which is the struggle for power? Where are situated the lawyers, from a cognitive perspective? What about politicians? What is the cognitive place of disputes designed to convince, even if they are indifferent to the truth (or those who consciously assume the distance from the truth)? Through these questions we want to suggest that we have a multitude of cognitive placements for which we haven't yet built appropriate names. Formally, we could claim these territories in the name of ignorance. At the limit, they correspond to some of the defining forms of ignorance. There is a whole "no cognitive land" waiting for cognitive mapping.

To do this, however, it is necessary first to `clear` it of moral, religious, political contents. Its space is the entire area of disputes that aim to convince. A territory once occupied by the sophists (who prepared the social place of the lawyers), where the logicians (who created the place to be occupied by the intellectuals) were inserted.

Some perspectives on ignorance

Interactionism vs. intellectualism

Let's suppose we operate with an erroneously definition of reason, such as the intellectualist one (Mercier & Sperber, 2018). In this case are we in ignorance? If the error is determined by a time limit of knowledge (this is the level of knowledge at present) then we can consider that it doesn't. But what happens when we have at our disposal an alternative definition of reason, such as the interactionist one (Mercier & Sperber, 2018), but which we don't accept?

What is the cognitive definition of the situation when we are caught up in a cognitive paradigm that blocks our access to the alternative?

The difference between the intellectualist and interactionist perspective about reason generates a special category of ignorance. The strong definition of ignorance is structured in the context of the intellectualist perspective on knowledge. To the extent that we adhere to the

interactionist perspective, we need a conceptual restructuring of ignorance. The simplest example is offered by the approach based on the principle of cognitive economy: as long as we accept the existence of significant costs of knowledge, not knowing something (from "by the known" established that standard by intellectualist approaches to knowledge) could be considered rational.

In this context of analysis, we can see that the way we have proposed for defining ignorance (depending on the knowledge possible/accessible at the given moment) is outlined in the horizon of the interactionist interpretation, sharing the specific problems of this approach. The interactionist perspective (reasons serve explanatory and supporting functions and reasoning serves the argumentative function; Mercier & Sperber, 2018) supports assessments of cognitive success from a pragmatic perspective (ignorance being one of the unsuccessful explanations), making the understanding of ignorance dependent on other variables that intervene in the understanding of success.

Political correctness

The attempt to highlight the ignorance proper definition dependence on the accessible/possible knowledge of the present and the indication of the place occupied by the variable time in this definition determines a level of reinterpretation of the past restriction in the key of ignorance, by reference to the present knowledge. The current of political correctness forces a definition of ignorance beyond its natural temporal limitations. When someone who lived two centuries ago is made responsible for beliefs that were considered in that era as standard epistemic perspectives on certain aspects (such as inequalities between different categories of people) we are in a position to project guilty ignorance beyond the epistemic limits specific to time. That is, we are witnessing an ignorant definition of ignorance.

To the extent that certain faces of present-day reality force such definitions, we should ask whether there is a change in cognitive standards. For example, we could start from the point of knowledge in the new type of society. One might object that the definition we have proposed to ignorance admits the dependence of the present appropriate understanding, making early on an essential variable for indicating our cognitive limits. Which would mean that our interpretation can be contradicted by a better interpretation that will come in the future (or even by one of the presents, but to which we don't adhere/which we don't know). Of course, the definition of ignorance can be changed in the future and several attempts have already been made to do so. However, to the extent that we accept that

its essence lies in the area of cognitive responsibility, we must accept that the formulation of claims that were previously impossible to fulfill is not part of a rational approach to knowledge, but belongs to the sphere of ideological formulations.

Cognitive authority and legitimation

Ignorance is frequently used (expressly or implicitly) by various ideologies, being one of the preferred delegitimization tools. From the perspectives of understanding the ignorance problem, the relationship between knowledge and power must be part of, the struggle for cognitive authority or for legitimizing belonging to the caste of those who know being, perhaps, the most visible faces of the ignorance use in the struggle for power. In discussion is both induced ignorance and, above all, the use of social etiquette called ignorance.

Knowledge as the cause of social ignorance

Because knowledge has a strong community structure (generating information and validating it as knowledge being carried out within epistemic communities), it is reasonable to expect that ignorance is also dependent on cognitive communities.

To the extent that we consider that a large part of cognitive behaviors is socially determined, and they are specific to the patterns of social organization of which the person belongs, part of the problem of ignorance is shifted from the individual to society. Cognitive differences between people, in this case, become differences between social groups or societies, the subject of comparisons being the one of the *efficiencies of cognitive communities*.

If the assessments of ignorance include aspects related to the specificity of a cultural community, the problem of cognitive treatment that benefits the *difference* (thought here as what is specific to other cultures) becomes visible. From a general perspective, the common place seems to be the comparison between the West and the rest of the world, the evaluation criteria being technology and power (generated by technological advantages). However, the analysis of these cognitive communities from an ecological perspective seems to nuance value judgments, calling into question an apparent paradox: the existence of a macro-community whose cognitive efficiency tends to direct it to the area of risks to the existence of humanity, generated by its own behavior. That is, this cognitive macro-community is simultaneously a model of efficiency relative to the criterion of access to

technology and power and an obvious case of collective ignorance relative to the future of humanity.

Let's imagine our descendants who, in 100 years (or 50 or 20 or 500), being in an acute lack of existential resources, judge our current behavior. Can we hope that they will focus on the cognitive effectiveness that we prove in the area of technology? Or will they consider us like children, who had access to a form of knowledge but proved totally ignorant of their understanding of the consequences of its use (in terms of a meta-knowledge that could become a common place in a new society)? The resumption of these common places in the current debates on the environment and respect for the rights of future generations, we believe, is also relevant to the problem of ignorance.

Information technology

The current advance of information technology, which seems to bring about a form of convenient knowledge location, affects in multiple forms the understanding of ignorance. The positive aspects are related to the possibility of accessing any information necessary to solve one or the other of the problems. This means that the volume of information held (acquired through cognitive effort) occupies an increasingly low place in setting average cognitive standards. Equally, however, because the availability of information isn't the same as knowledge, the evolution of information technology being consistent with an apparently paradoxical effect: much information but little knowledge (relative to the increasing volume of the former). There are two reasons to consider it a seemingly paradoxical effect:

1. The traditional cognitive perspective is structured on the belief in the existence of a correlation between access to information and the possibility of knowledge. However, for the traditional perspective, it is important to have information (a problematic idea), not just the possibility of access to it. The concept of "library", taken by Nassim Taleb (2007) from Umberto Eco, is a good suggestion of the difference between the possibility of access to information (the existence of books in the library) and the possession of information (the division of books in the library into *read* and *to read*).

2. The current cognitive perspectives are aware of the problems generated by the level of information accessibility, either in the area of the capacity to process it or in the area of the need to have the criteria to distinguish between information and pseudo-information (we note that, in the *information society*, not only the volume of information has increased, but also that of pseudo-information).

The appearance of the paradox is generated by the traditional perspective, which brings the possibility of knowledge closer to the existence of information, while the increase in the capacity to store and transmit information also brings with it a significant volume of noise (this being one of the facilitators of ignorance). Rather, the difference between the *traditional* and the *present* is a simplification aimed at facilitating understanding, the presence of noise being broadly proportional to the level of communication and information storage capabilities. We can take as a reference the appearance of printing, analyzing the informational content of books published over different periods of time to understand humanity's appetite for noise (and, through that, finding out something about the weight of ignorance).

Cognitive burdens too high and guilty ignorance

Frequently, the basic meaning of ignorance is placed at fault, the person being considered (explicitly or implicitly) responsible for what he doesn't know but should know. The largest system for generating (artificially) culpable ignorance is the legal one, especially through the presumption of laws knowledge. If we consider that the legal system cannot function in the absence of that presumption, and if we agree that society isn't possible without a legal system, then we have to find that the existence of society is conditioned by the allocation of too much cognitive burden on citizens and on the compensation of obvious discrepancies between burdens and possibilities by recourse to culpable ignorance. We are thus born (in society) with an original sin: legal ignorance caused by a cognitive charge beyond our powers, which we have no possibility of redeeming. To a large extent, only chance can protect us from the consequences of this induced ignorance. Someone might answer us that the problem is a false one, with the rationality of laws generating the possibility of rational deduction of normality, individual responsibility being correctly linked to rational competences.

Alcoff (2007) indicates the emergence of intentional ignorance (willful ignorance) as a phenomenon that characterizes American society, with evaluation criteria including references to geographical or historical knowledge. One of the concretizations of willful ignorance is considered by Martin (2020) to be white ignorance: 'refers to white individuals' willful ignorance about racial injustice'. Beyond the possibility of the existence of the American society specificity and the risk that it's an insufficiently supported conclusion by the evidence, assuming that this finding is well-founded one should ask ourselves whether there are causes that could lead

to such behavior (endemic or epidemic). Given its formation in the context of cognitive responsibilities, the concept of *white ignorance* requires clarification from the perspective of the risk that it represents too much cognitive burden.

The utility of ignorance

Certain forms of ignorance can be part of our cognitive strategies, one of the arguments being offered by the principle of cognitive economy.

Useful ignorance

Ignorance can be part of cognitive strategies. A first argument in support of this can be derived from the analysis of human knowledge, taking into account (in particular) its limits, the costs of knowledge and environmental conditions. Some understandings of ignorance are the subject of approaches specific to limited rationality, characterized by trying to indicate too high cognitive claims or inadequate expectations from the human. The combination of limited resources with the large amount of available information leads to the need for a cognitive (ecological) adaptation, which can be described from two complementary directions: focusing on what needs to be/deserves to be known and identifying knowledge of little or no importance. From this perspective, ignorance can be observed as part of a cognitive strategy related to ecological rationality.

Moving into the register of examples (which belong to the category of anecdotal evidence), the weak outlet to the cultural environment to which a person belongs, which characterizes (often) the new generations, has two contexts of analysis and understanding: that of lack and that of ignorance specific to ecological rationality. The lack of knowledge of previous survival strategies, but which no longer prove effective in the new context, can be considered a failure to understand the history of one's own culture, also being in the category of ideological adequacy, but it can also constitute a form of adequacy to the new structure of the environment. Changing the practices of storing or storing information (e.g., the establishment of the personal library; an obvious value in the twentieth century), emerging in the context of the new way of finding information at hand, can be seen as rational behavior from the perspective of ecological rationality. Deleting part of the emails without reading them is part of cognitive hygiene.

In the context of *useful ignorance* discussion, it may be relevant to differentiate between *ignorance*, which comes with a strong negative meaning (at least in Romanian language), and *ignore*, the latter suggesting a form of assumed ignorance, based on a type of cognitive discernment. What is

ignored in this type of strategic approach seems not to be part of the area of ignorance. Ignoring can be understood as an argument for adding an additional condition, *the utility* (remaining to clarify the meaning to be added to the utility), to the definition originally proposed for ignorance by reference to possible/accessible knowledge. If we start, for example, from the difference between personal *utility* and the social one, we can see that socially *usefulness* could conflict with the *presumption of laws knowledge*.

Ignoring is integrated into our cognitive strategies, ignoring certain information to which we have access, for various reasons, being part of our daily behaviors. Increase the reach of information, which characterizes the contemporary society, generates a strong impulse to the cognitive strategies based on ignoring some of them (this major change in the accessibility of information also led to a change in the status of the intellectual, who was previously the main mediator of access to information). Dreams and hopes made possible by incomplete information suggest another dimension of useful ignorance. The situation is identical in the case of absent knowledge that could hurt. The obvious moral neutrality of scientific knowledge is a good example.

It is not clear whether the unfounded beliefs arising in the area of the need for meaning fall within the realm of ignorance, being necessary to clarify the status of a false belief that fulfills a functional role. In such cases we are on an area of knowledge that overlaps with other areas of existence, the functional purpose of a belief being able to influence the cognitive status.

We must note that in the debates on ignorance we already have a somewhat opposite path: a foundation of ignorance definition on a political-moral basis, the concept of white ignorance (Mills, 2007) being one of the examples. Both cases, namely the reinterpretation of some areas of ignorance from the perspective of the ecological context, but also the classification of some knowledge that taking into account the area of ignorance on moral and political bases, belong to the category of those who determine reinterpretations of ignorance.

The wave of ignorance, postulated by J. Rawls (2012), is an example of ideal ignorance as a presumption for the possibility of justice, Rawls stating that not knowing (forgetting) all the subjective conditions given (race, gender, etc.) would determine the elaboration of fair rules for every citizen because we couldn't anticipate what affects us and what disadvantages us. Hans and Vogt (2015) believe that this metaphor can be seen as an alternative to the blindfolded image of Justice, so that his judgment is not disturbed by his knowledge of subjective aspects. Hans and Vogt (2015) also

point as another example of the usefulness of a form of ignorance the studies carried out in double blind, namely the conditionings of this type existing in the methodology of scientific research.

Rational ignorance

Congleton (2001) proposes the use of the concept *rational ignorance*, indicating the choice of not knowing in certain areas. The concept is coherent with specific approaches to cognitive ecology, one of the important functions specific to such a strategy aimed at the efficient use of cognitive resources (inevitably limited). *Rational ignorance* is somehow placed in the continuity of natural ignorance, the latter suggesting both the limits of cognitive possibilities and the different stages of individual cognitive evolution (although we cannot exclude an area of overlap between the two; an example "life is too short to spend the time to know this").

Intentional ignorance has a functional role, intervening in protection from unpleasant knowledge (the absence of which cannot harm us), protection against temptations, etc. We can choose to be ignorant about something to protect our pleasures, convictions or beliefs, sacrificing the knowledge of another type of interest. Which shows us that the separate analysis of cognitive behaviors from other types of intentions, risks missing something from the understanding of the meaning of knowledge and cognitive mechanisms.

From the category of *rational ignorance*, we can keep in mind that Bertolotti (2016) addresses the use of superstitions in cognitive strategies to overcome cognitive limitations.

Useful irrationality as an example for useful ignorance

If we accept the definition of rationality proposed by Mercier & Sperber (2018), considering that human reason has two functions (corresponding to two great challenges caused by human interaction), reason/motivations serve explanatory, and supporting functions and reasoning serves the argumentative function, then we must find that in certain cases some cognitive biases can be considered rational (standard example *my side bias*). Such cognitive positioning also causes a paradigm shift in the understanding of ignorance, which includes situations of its valorization. For example, given that the cognitive standard is located on the traditional model of the intellectual (which we assume to be located at a distance from the ecological rationality due to the insistence on holding uncertain information from the perspective of utility) and traditional logic, we notice that ignorance can have a functional role from the perspective of

cognitive ecology. Also, in the area of ecology (but understood differently) seems to hold the energy consumption related to the set of pseudo-information.

The thesis of the world's reality

In order to be able to exist in the context of the large volume of information existing in the environment and the significant weight of uncertainty, we use different strategies of world's cognitive stabilization, considering that we know enough to continue our daily existence. The purpose of these cognitive stabilizations is the avoidance of *cognitive crises*, them generating real social blockages. The various temporary cognitive closures have a functional role, they ensuring the level of persuasion (necessary for each era) in a proper outlet to the world. To the extent that these theses of the *world's reality* include different ways of ignorance, we can observe other functional assumptions of it. Even though cognitive stabilizations most often use different mechanisms of camouflage of ignorance, they also involve assuming a tolerable dose of ignorance. The strategies of camouflage ignorance include: the cognitive empowerment of the future (the belief that what we don't know now, we will know in the future; it's the essential mechanism that characterizes *progress*), the symbolic investment of experts ("they know what we don't know"), meta- approaches (there is a meta-knowledge in a meta-world that belongs to meta-physics ...), or those of transcendental type (total knowledge belongs to an existence beyond us). We can thus consider that ignorance occupies an important place in the thesis of the world's reality of the world.

Specialization as ignorance

Considering that, along with cooperation, competition is one of the stimulators of humanity's progress and we consider that the development of cognitive niches (in the form of different types of specializations) is part of the competition's mechanisms, we must also include in this picture ignoring as a facilitator of specialization. In the context of specialization learning, what to ignore seems to be one of the conditions for success, enshrining a form of the ignorance utility.

If we accept the idea of the ignorance utility cases existence, then we should ask ourselves how much ignorance we need in order to be able to continue our daily existence.

The use of ignorance

Others ignorance benefits us

The existence of information asymmetry is a form of highlighting the ignorance of. The asymmetrical reduction of ignorance can generate a phenomenon of the kind mentioned by Congleton (2001): reducing the ignorance of others can disadvantage us, for example, by reducing an informational advantage that we had previously.

Induced ignorance (Agnotology)

In general, we could consider that all types of actions that are part of the sphere of manipulation use ignorance, both the pre-existing and the induced one. Induced ignorance belongs to the category of *intentional ignorance*, the latter being divided into two classes: *intentional personal ignorance* and the *intentional production of others ignorance*, in order to serve an interest. In the latter sense, an example of the marketization of ignorance is the one offered by Proctor & Schiebinger (2008) on the subject of the doubts created and maintained by the tobacco industry regarding the negative effects of smoking on health. Arfini (2021) defines this approach as creating unnecessary doubts.

The use of ignorance for commercial purposes – abuse of trust

Continuing the line of exemplification of the specific agnotology cases opened by Proctor & Schiebinger (2008), we can indicate that marketing strategies based on forms of formal cognitive empowerment of the person in areas that actually require specialization, contribute to the amplification of the phenomenon of induced ignorance. There are whole areas where traders are interested in giving us the illusion of knowledge, inoculating us with the idea of cognitive and decision-making skills designed to make us buy goods and services that routinely require expert evaluation. The inclusion of healthcare services in the category of consumer goods is one of the relevant examples.

An example of ignorance marketization is offered by the pharmaceutical industry, which takes the form of multiple variants (and prices) under which an active substance is sold. The essence of the business is a combination of buyer ignorance and the *placebo* effect exerted by the higher cost. This is just one of the many faces in which the 'tax on stupidity' is used, as it occupies a significant share in the overall profit. With the mention that such situations go beyond the area of information asymmetry between the seller and the buyer, being part of the ignorance induced by the recourse to the abuse of trust. At the same time, it's obvious that the situations definitions of this type are mostly the figment of further evaluations, daily they seeming to belong to the area of natural behaviors.

Creating the right ground to take advantage of ignorance

One of the perspectives that determines an inadequate understanding of ignorance is the presumption that people want knowledge every time, generating them the necessary control for their freedom. However, there are situations in which some people rather want a simplification of life by reducing the cognitive burden. For example, the deregulation occurred in certain markets (which were previously controlled by the state) brings with it an increase in the opportunities for diversification of the supply, but also an increase in the cognitive burden of the citizen. Since not every citizen is willing to assume behaviors that increase his cognitive burden (especially in a society characterized by a continuous pressure in this direction), the strategies of encounter include different heuristics and even forms of assuming ignorance. To the extent that this happens, the liberalisation of some markets also ends up involving the possibility of economic bets on the citizen ignorance. At the same time, in situations where we can exclude the applicability of 'tax on stupidity' mechanisms, we are quite close to a situation such as induced ignorance. The small share of rational behavior in such cases can be considered one of the conditions for the emergence of profit. In such cases, *profit* can be interpreted as *taking advantage of others ignorance*, being pre-existing or induced.

In such situations it's obvious that education can be considered a form of general social support, but in the area of specific interventions there are also different types of consultancies in identifying rational decisions. The highest level of support is constituted by the cognitive communities, their efficiency (judged in terms of reality and the adequacy of decisions) occupying the most significant share of cognitive support/ relief of the cognitive burden. Even though they can be analyzed in the broader context of forms of cognitive specialization, cognitive communities may also be responsible for forms of dissemination of ignorance.

Objective ignorance (determined by the rationality way of being)

Assuming that we agree with the principle of the rationality evolution according to goals and relative to the environment, then we must note that the orientation of an organism is towards processing information on the regularities of the environment in which it operates (Mercier & Sperber, 2018). However, the orientation isn't a general one, towards all regularities, but one guided by an interest in survival and reproductive success. This model reveals the rest of the regularities: the set of regularities that don't enter the area of interest generated by the organism orientation, which can be considered an area of ignorance. It's the whole dimension of

regularities that we don't know because we haven't been oriented towards their discovery. It isn't assumed ignorance, but the whole area of the unknown to which we are set to be indifferent. It's a space of cognitive limits characteristic of the species to which we belong.

It isn't clear the stability of these limits, namely whether science has broken this cognitive specificity, moving human knowledge to the area of a broader perspective. The current utensil orientation (based on the intention to transform the whole nature into utensils capable of serving one or the other of our purposes), one of the faces of our desire for more and more power, seems to have transformed man into another cognitive species (to the extent that it is like this, we could consider that this place is part of the humanity destiny).

The regularities on which we don't focus our inferences can be considered part of our ignorance. Since they are the result of a selection according to interests for perpetuation and survival (and, more recently, for power), if we refer to the application of some principles of cognitive economy, then we can consider them part of useful ignorance. This definition seems problematic because we can legitimately assume that we should first know a regularity in order to be able to decide on its usefulness. The problem is partially solved through the selection based on areas of regularities (doubled by the limits of our means of discovering them).

Institutional generation of ignorance

Social strategies include forms of implicit ignorance highlighting by indicating the difference marked by the existence of diplomas certifying studies from their absence. Diplomas highlight a difference in cognitive competence, which legitimizes differences in social status. The context of profiling the expertise certified by various diplomas is constituted by the ignorance of the laypeople (more appropriately, by the presumption of ignorance). Making access to various activities conditional on the existence of diplomas (to which the obligation to belong to a community - cognitive - professional is often added) emphasizes the highlighting of differences and, thereby, of a form of ignorance (presumed). The whole process of verifying and certifying education and competence is implicitly one of highlighting ignorance.

The good ignorance

The excess of information that makes the decision difficult is a good example of the usefulness of ignorance in certain contexts. Every time

indecision has higher costs than the decision with the highest probability of being adopted under the conditions of limited information or even with any decision, ignorance hangs on the good side of the usefulness balance.

The principle of cognitive economy

Does ignorance define the limits of our cognitive possibilities (Arfini, 2021)? It may be useful to consider this statement as an indicator meant to launch a suggestion about one of the possible roles of ignorance. But if we try to treat it as a definition then we risk missing out on its understanding. For example, the simple utilitarian role of ignorance in maintaining the balance between resources, possibilities and priorities (in saving `mental energy`), specific to mental efficiency, is sufficient to demonstrate the necessity of getting out of the narrow definition area that constitutes the treatment of ignorance as a cognitive limit.

At human level, one of the most important existential resources is time, its main characteristic being finitude. Any activity that takes time without generating a significant contribution to the quality of existence and (especially, we would say) to its meaning, can be passed into the area of unnecessary consumption during life, that is, in the category of those that cause the waste of this limited resource. Consequently, interventions involving the limitation of this waste can be considered as supporting the existence. Knowledge is also a great time-consuming existential, in many cases occupying the first place in this category. Avoiding unnecessary knowledge can be considered a positive effect to assumed ignorance, falling within the principle of cognitive economy. The prudent use of cognitive resources could be part of a rational approach model, with ecological rationality being the closest to this status.

Cognitive ecology

Learning what types of information should or can be ignored is a useful endeavor, and can be considered part of knowledge. The choice of what we ignore is part of our daily behaviors, most often taking place in the absence of prior guidance sprung from the experience of others.

Along with *antilibrary* we should place the *useless library*, comprising all the information with little or no usefulness existing in certain areas of educational systems. While *antilibrary* (the totality of unread books) participates in the awareness of individual ignorance, the *pseudo-library* (the set of books that circulate pseudo-knowledge) contributes to the maintenance and amplification of ignorance based on the illusion of knowledge. The purpose of *antilibrary* is to support its highlighting of

knowing *what you don't know*, while the *pseudo-library* keeps on *not knowing what you don't know*, having the illusion that you know.

The inevitable part of ignorance; predestined ignorance

What is the relationship between ignorance and limited rationality? In a certain sense the non-recognition of the limits of rationality can be considered part of ignorance. In the context of the inevitable limitation of cognitive resources, knowledge is dependent on the choices made in the allocation of these resources, each choice also involving what is not chosen. From the perspective of this Sartrean definition (Sartre, 1943) (J. P. Sartre uses it to indicate the essential relationship between freedom and existence), everything that isn't chosen falls into the zone of an ignorance form, consequently, ignorance. Ignorance thus becomes constituted by each individual cognitive choice, taking the face of what is not chosen. Remaining in the horizon of Sartre's approaches, just as the choices arising against the background of freedom outline both existence (our being) and nothingness, our choices in the matter of investing cognitive resources generate both knowledge and ignorance (understood here as what we haven't chosen to know).

The specific mechanisms of attention, based on the selection and privileging of certain stimuli, constitute another relevant reference for understanding the role of ignoring certain data in the functioning of thought. If there are relevant stimuli in the discussion, from the point of view of the value of the information/contribution to the adequacy of the behavior, which are in the situation of competition in front of the attention, then the selection made by the attention has as an inevitable consequence a certain form of generating ignorance. Someone might object that this type of ignorance escapes the definition I proposed because attention is not accessible to all its possibilities simultaneously (being forced to privilege certain stimuli over others), so in the discussion would be a type of stimuli that cannot be framed in the area of possible knowledge. Our answer is suggested by the title of this section, in discussion being a special form of ignorance, to which we cannot escape. The term *predestination* doesn't refer in this case to the fact that we are already given the failure of one or another of the possible knowledge, but rather indicates a type of cognitive limit (which has its cause in the limited nature of the available resources).

Responsibility to one's own ignorance

One of the issues implicitly addressed in this article is how responsible we are for our own ignorance or, more appropriately, what are the forms of ignorance for which we are responsible. Along with identifying the causes, establishing responsibilities can help to lessen ignorance; obviously, when it comes to undesirable forms of ignorance. As if the causes are not correctly identified, missing out on responsibilities or forcibly assigning them is one of the risks that amplify the problems. Moreover, often in the case of ignorance establishing responsibilities is a form of identifying the causes. Hoping that we have been able to provide some convincing arguments on the usefulness of relating ignorance to accessible and useful knowledge, while also pointing out some examples of situations where the link between ignorance and responsibility isn't so certain, we will proceed with the presentation of a few examples.

Asymmetry and social interest

Mercier & Sperber (2018) states that each of us behaves asymmetrically when weighing the arguments: we resort to an evaluation tolerant of our arguments (largely due to the principle of cognitive economy, leaving the burden of evaluation to others) being instead much stricter in evaluating others arguments. We believe that this asymmetry tends to also characterize the attribution of ignorance, being tolerant of what we don't know (although we should've known) and much more rigorous in finding this form of ignorance when it occurs in the case of others. The evolutionary explanation could be of the same category as that provided by Mercier & Sperber (2018) in the case of argumentation: the essence of the interventions is to win the debates and convince the members of the community with whom we enter into dialogue, not to achieve knowledge (this having a secondary role). If this hypothesis is correct, then the attribution of ignorance occurs in the area of these social interests rather than in the one of the desire for knowledge. In this case we claim to use ignorance for the purpose of cognitive classifications, while resorting to it out of interests of social position. In addition, the social status of ignorance we believe can be interpreted as an argument in favor of the social role of reason and reason proposed by the two authors.

The difference between ideal and reality

Woods (2005) proposes a framework of analysis based on two dimensions: the theory of cognitive abundance and what happens in reality. We believe that in this paradigm we can speak of the ideality that

characterizes the level of knowledge considered in identifying ignorance, *cognitive abundance* being a standard too high to be situated with certainty in the area of the possible.

„ Who disagrees with us is ignorant!”

Ideology judge ignorance by reference to the desired result, ignorance being part of the few favorite explanations for missing out on the same beliefs. We must not forget, however, that the desired result is actually certain forms of value, which don't fully affect the category of cognitive behaviors.

Some of the cognitive beliefs are influenced by the assumed values, the latter being intensely dependent on beliefs. In such cases, ignorance is determined not so much by deficient cognitive reports, but by existential strategies designed to solve problems in other fields to which crystallizations of different emotions are added.

Epistemic agency

One of the solutions to identify the causes of ignorance and its forms involving responsibility is the debates on *epistemic agency*. Quite common is the use of *epistemic agency* in studies analyzing ignorance in the context of race and sex (Kassar, 2018).

Haas & Vogt (2015) add to the conditions of ignorance existence alongside the propositional conception of ignorance and the doxastic attitude, understood as the way of relating to a sentence, such as the suspension of judgment, the variation in the intensity of conviction, the suppositions and postulates with whom we turn upon it. The doxastic attitude can be understood as part of the propositional approach, but also mediating the transition to *epistemic agency*. Kassar (2018) considers that the doxastic attitude is part of the epistemic attitudes, along with the epistemic virtues and vices, proposing a conception of ignorance in which he tries to integrate the three meanings of ignorance that he analyzes in the first part of the article: "On this integrated conception, ignorance has two components, a doxastic component and an epistemic attitude component. The doxastic component consists in lack of knowledge/true belief or a false belief. The epistemic attitude component consists in doxastic attitudes, for example, disbelief, suspension and in epistemic virtues, for example, open-mindedness and curiosity, or epistemic vices, for example, closedmindedness and arrogance...".

One of the essential variables for the ignorance existence (which influences *epistemic agency*) is people's *cognitive appetite*, often indicated in the

form of the desire for knowledge. To the extent that a person cannot be held responsible for his cognitive appetite, there is a significant problem with the attribution of responsibilities in ignorance.

The use of ignorance as a cognitive label sometimes risks being determined in some cases by cognitive arrogance, the latter belonging to the category of epistemic vices. Ignorance, as a social procedure of cognitive labeling, generates risks both for the subjects of this action and for its authors.

What can we do?

The common place that seems to constitute the "gold standard" of interventions aimed at eliminating or reducing ignorance is education. In this article we have tried to indicate some of these interventions' limits, along with highlighting some situations in which education participates in the ignorance generation. However, these examples don't nullify the main place occupied by education in combating ignorance.

Is education a solution?!

To use education as a solution to cancel ignorance (and even the debate on ignorance) means to look at things exclusively from an ideal perspective, missing the necessary grip on reality. Educational systems are suitable (even if not equally) both for the transmission of knowledge and the formation of cognitive habits and for the transmission of information with the unfounded claim to represent knowledge and the practices of acquiring and disseminating such information. The total systems of the twentieth century (some continued in the present era), the existence of creationism, etc., there are as many evidences of a degree of cognitive indifference that characterizes education systems. Ideally, education seems to be a solution against ignorance, but experience shows that translating the ideal into reality doesn't always lead to satisfactory results.

The fact that school education brings with it a significant risk of generating ignorance can be considered a common place of criticism of different educational systems. The ideological orientation, the failure *to learn how to learn*, the exaggeration of the emphasis on memorization, the illusion of knowledge generated by the strictly causal interpretation of the correlation between the level of education and the mastery of cognitive instruments are just a few examples of potential sources of ignorance planted in school. Obviously, the phenomenon is rather peripheral relative to the general cognitive outcomes of school education. At the same time, however, the set of variables that end up causing an uneven distribution of ignorance in the school environment must be identified.

Cognitive strategies that include forms of ignorance; "What makes a world, I will do too!"

Given that decisions in the conditions of a large volume of information become difficult to take, these situations can determine the preference for communities that take over the responsibility of some of the decisions through prescriptions. A code of conduct can be viewed as a form of reducing the cognitive burden. The abundance of information may be accompanied by this seemingly paradoxical effect of gregarious cognitive behavior.

Taking over the cognitive behaviors of the majority is an example of strategic positioning in the face of ignorance, and may include the possibility of future access to a form of cognitive crowdsourcing. This strategy reveals an essential form of taming ignorance through hope in others as a cognitive resource.

Some conclusions

Defining a human mainly in the area of his cognitive functions, using knowledge as a criterion of differentiation from other entities (usually from other mammals), places ignorance in the area of debates about the ideals of humanity. On a daily basis, most often ignorance is perceived as a hindrance to the attainment of new ideals, as a deficiency that disturbs the achievement of goals. Not infrequently, however, ignorance is used as a replacement explanation either for other unnoticed or unsustainable causes (such as our cognitive limits) or for the erroneous design of ideals. In addition, like stupidity (often without being differentiated from it), ignorance is sometimes used as an argument designed to legitimize the power or justification of various actions.

We have proposed a definition of ignorance in relation to knowledge that is possible/accessible and useful at a given time. Which means that the understanding of ignorance is dependent on three variables: time, knowledge accessible at every moment of the present, and usefulness. This form of definition is marked by the attempt to pluck ignorance from the area of meanings marked by ideological interest and to protect it from confusion with the *unknown*.

Defining ignorance in the *horizon of what isn't yet known* implies either the certainty of the alternative of knowledge in the case of other subjects or the possibility of knowing in the future. In each of these situations the definition of ignorance refers to a comparison between two cognitive positions, having the certainty of the correctness of one of them. However,

the reference of the level of knowledge in the future is affected by uncertainty, currently taking the face of estimates affected by hopes or fears. In other words, since *knowledge specific to the future* can have an exact face only in the future, it cannot be used as a reference to ignorance, this being circumscribed to the reports to the knowledge specific to the present. This means that the analysis of the level of knowledge specific to the past carried out in relation to the present cannot have as its object the identification of the ignorance of the past, but only the history of the evolution of knowledge. From a practical perspective, this restriction of the ignorance definition leads to a limitation of the possibilities of invoking fault based on ignorance.

The antidote to ignorance seems to be education. A very brief analysis of the education contribution to the emergence of ignorance revealed some limits of this type of intervention. In line with contemporary trends, we might consider that a compensatory solution is critical thinking. To simplify understanding we should identify the differences and overlaps (if any) between ignorance and cognitive errors, thus discovering areas where resorting to critical thinking could help reduce ignorance. To the extent that *objective ignorance* and *useful ignorance* are at issue, they cannot be undone by means of critical thinking because *objective ignorance* reflects an objective impossibility and *useful ignorance* should be coherent with the objectives of *critical thinking*. Thus, critical thinking can be useful insofar as it departs from the cognitive idealism specific to modernity, covering the conditionings specific to the perspective of ecological rationality. Although many of the ideas lie in the continuity of the current of limited rationality, the perspective of the whole isn't centered on the suggestion of a reduction in confidence in human rationality, but in highlighting on a realistic basis the different types of limits, starting from the objective ones.

We have tried to suggest a cautious approach to the relationship between time and ignorance, resorting to a critical analysis of the knowledge progress. One of the arguments is that the increase of knowledge (or the way in which we use it) has a paradoxical effect: it causes an increase in the worlds' complexity, this generating an increase in unpredictability, thus of ignorance.

Giving forms of acceptability to some variants of ignorance, as we have done in this article, has the advantage of eliminating an extreme form of fear towards it, freeing the person from the temptation and burden of *cognitive picture*, respectively avoiding the risk of forming social ideals inappropriate to the possibilities. Discussing the natural faces of ignorance can have the effect of increasing the frequency of "I don't know!", uttered

honestly for others and for oneself, thus diminishing the volume of apparent knowledge. We believe that the procedures prior to the awarding of academic degrees should include the assessment of the ability to honestly identify and utter one's own ignorance, with an emphasis on that which makes the progress of knowledge possible.

The question "What do you not know?" should be located next to the multiple faces in which the question "What do you know about ...?" is formulated. Redefining ignorance closer to the place it has is an endeavor that also targets scientific knowledge. A form of modifying the accents from knowledge to the unknown can, in some cases, bring with it a level of protection against ignorance determined by looking at science from the perspective of the pride of what is known.

Ignorance can be included in some of our cognitive strategies, one of the arguments being offered by the principle of cognitive economy. If we consider that some variants of the unknown correspond to the definition of ignorance, and if we take into account that most human decisions are taken in conditions of information poverty, we can find that ignorance is frequently part of our cognitive strategies.

In the situation in which the attempts to redefine the meaning fail to determine the desired repositioning, given the centering of the term ignorance meaning on the negative evaluation, it's worth pondering the need to replace it with a more appropriate concept.

References

- Alcoff, L. (2007). Epistemologies of ignorance. Three types. In S., Sullivan, N., Tuana, Race and epistemologies of ignorance (eds.). State University of New York Press (pp. 39-57).
- Arfini, S. (2021). Situated ignorance. The distribution and extension of ignorance in cognitive niches, *Synthese* volume, 198, 4079–4095.
<https://doi.org/10.1007/s11229-019-02328-0>
- Bertolotti, T. (2016). Extending cognition through superstition: A niche-construction theory approach. In L., Magnani, C., Casadio, (eds.) *Model-Based Reasoning in Science and Technology, Studies in Applied Philosophy, Epistemology and Rational Ethics* (vol. 27, pp: 165–177). Springer, Cham. https://doi.org/10.1007/978-3-319-38983-7_9
- Biblia, Noul Testament [Bible, New Testament] (1988). Matei 5:3, Editura Institutului Biblic și de Misiune al Bisericii Ortodoxe Române București.
- Carrara, M., Chiffi, D., De Florio, C., & Pietarinen, A. V. (2021). We don't know we don't know: asserting ignorance. *Synthese*, 198, 3565-3580. <https://doi.org/10.1007/s11229-019-02300-y>

- Code, L. (2004). The Power Of Ignorance. *Philosophical Papers*, 33(3), 291–308.
<https://doi.org/10.1080/05568640409485144>
- Code, L. (2014b). Feminist epistemology and the politics of knowledge: questions of marginality. In M. Evans, C. Hemmings, M. Henry, H. Johnstone, S. Madhok, A. Plomien, S. Wearing (eds.), *The SAGE handbook of feminist theory*. (pp. 9-25). SAGE Publications
- Code, L., (2014a). Ignorance, injustice and the politics of knowledge, *Australian Feminist Studies*, 29(80), 148-160.
<https://doi.org/10.1080/08164649.2014.928186>
- Congleton, R. D. (2001). In defense of ignorance: On the significance of a neglected form of incomplete information. *Eastern Economic Journal*, Eastern Economic Association, 27(4), 391-407.
<http://www.jstor.org/stable/40326058>
- Cusanus, N., (2008). *De docta ignorantia*, Polirom.
- Diaconu, C., (2015, 15 March). Nicolaus Cusanus: ”Știu că nu știu ...!”,
<https://calindiaconu.com/2015/03/15/nicolaus-cusanus-stiu-ca-nu-stiu/>
- Firestein, S. (2012). *Ignorance: How it drives science*. Oxford University Press
- Gettier, E., L., (1963). Is justified true belief knowledge?. *Analysis*, 23(6), 121–123.
<https://doi:10.2307/3326922>
- Haas, J., Vogt. K. (2015). Ignorance and Investigation. In M., Gross, L., McGoey (eds.). *Routledge International Handbook of Ignorance Studies*, (pp: 17-24).
- Harding, S., (1986). *The science question in feminism*. Cornell University Press.
- Herman, D. (2000). Introducing short-term brands: A new branding tool for a new consumer reality. *Journal of Brand Management*, 7(5), 330–340.
<https://doi.org/10.1057/bm.2000.23>
- Kahneman, D., Sibony, O., Sunstein, C. R. (2021). *Noise: a flaw in human judgment*. Little, Brown Spark
- Kassar, N. El (2018). What ignorance really is. Examining the foundations of epistemology of ignorance. *Social Epistemology*, 32 (5), 300-310.
- Krestiankin, I. (2014). *Pregătirea pentru spovedanie*. Editura Egumenița
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. University of Chicago Press.
- Martin, A. (2021). What is white ignorance?. *The philosophical quarterly*, 71(4), pqaa073.
<https://doi.org/10.1093/pq/pqaa073>
- Medina, J. (2012). *The Epistemology of Resistance*. Oxford University Press.
- Mercier, H., Sperber, D. (2018). *The enigma of reason*. Penguin Press

- Mills, C. W. (2007). White ignorance. In S., Sullivan, N., Tuans (eds.), *Race and epistemologies of ignorance*. (pp. 11-38). NY: State University of New York Pr.
- Noul Testament [New Testament], (1990). Édition du Dialogue Société D'Éditions Internationales, Paris
- Peels, R. (2014). What kind of ignorance excuses? Two neglected issues. *Philosophical Quarterly*, 64(256), 478-496.
- Plain English Campaign, (2003). Foot in Mouth award 2003, <http://www.plainenglish.co.uk/campaigning/awards/2001-2010-awards/2003-awards/811-foot-in-mouth-award-2003.html>
- Platon (2011). *Phaidros sau despre frumos*, Humanitas.
- Pleşu, A., Liiceanu, G. (2015). *Dialoguri de duminică. O introducere în categoriile vieții*, Humanitas.
- Popper, K.R., (2005). *The logic of scientific discovery*. Taylor & Francis e-Library
- Proctor, R., Schiebinger L., L., (eds.) (2008). *Agnotology: The making and unmaking of ignorance*. Stanford University Press
- Rawls, J. (2012). *O teorie a dreptății*, Ed.UAIC.
- Romaniuc, B. (2008). *Cusanus, matematica și divinitatea*. Suplimentul de cultura. <https://suplimentuldecultura.ro/5127/cusanus-matematica-si-divinitatea/>
- Rotilă, V. (2021). The limits of knowledge in the COVID-19 pandemic. Some prudential recommendations in uncertainty conditions. *Postmodern Openings*, 12(1), 347-367. <https://doi.org/10.18662/po/12.1/265>
- Rumsfeld, D. (2002) U.S. Department of Defense, DoD News Briefing - Secretary Rumsfeld and Gen. Myers, February 12, 2002 11:30, <https://usinfo.org/wf-archive/2002/020212/epf202.htm>
- Sartre, J. P., (1943). *L'etre et le neant. Essai d'ontologie Phénoménologique*. Gallimard.
- Taleb, N. N., (2007). *The black swan: the impact of the highly improbable*. Random House.
- Urbina, F., Lentzos, F., Invernizzi, C., & Ekins, S. (2022). Dual Use of Artificial Intelligence-powered Drug Discovery. *Nature machine white ignorance*
- Woods, J. (2005). Epistemic bubbles. In S., Artemov, H., Barringer, A., Garcez, L., Lamb, J., Woods (eds.). *We Will Show Them: Essay in Honour of DovGabbay*, College Publications, 2, 731–774.