

MEETING POINTS BETWEEN CRITICAL THINKING AND METACOGNITION TO RETHINK THE TEACHING OF ETHICS

Puntos de encuentro entre pensamiento crítico y metacognición para repensar la enseñanza de ética

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Abstract

The traditional vision of critical thinking (CT) founded on a rationalist approach has been questioned since the end of the last century by the 'second wave' of CT, which, despite not being a fully defined movement, has included aspects such as imagination, creativity and cooperative work in its understanding and in its application to teaching. At the same time, current perspectives in moral psychology such as the 'social intuitionist' model proposed by Jonathan Haidt, represent a challenge to the rationalist model of morality that many of the canonical normative ethics suppose. Since both CT and the moral foundation represent essential factors in the teaching of ethics, it is made explicit that the latter also needs to be revised. That is why the present work analyses a perspective of CT alternative to the traditional one based on the potential contribution of metacognition and the social intuitionist model, in order to open new lines of research to update the moral foundation that is assumed in the teaching of ethics. To delve into this, the relevance and applicability of metacognition in the teaching of ethics will be exemplified with situations related to the current Covid-19 pandemic.

Keywords

Ethics, thinking, critical, metacognition, teaching, model.

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Resumen

La visión tradicional del pensamiento crítico (PC) fundada en un enfoque racionalista ha sido puesta en duda a partir de fines del siglo pasado por la 'segunda ola' del PC, la cual, a pesar de no ser un movimiento del todo definido, ha incluido aspectos como la imaginación, la creatividad y el trabajo cooperativo en su comprensión y en su aplicación a la enseñanza. Paralelamente, perspectivas actuales en psicología moral como el modelo 'intuicionista social' propuesto por Jonathan Haidt, representan un desafío al modelo racionalista de la moral que suponen gran parte de las éticas normativas canónicas. Siendo que tanto el PC como el fundamento moral representan factores fundamentales en la enseñanza de ética, se hace explícito que esta última precisa también ser revisada. Es por ello que el presente trabajo analiza una perspectiva del PC alternativa a la tradicional basada en el potencial aporte de la metacognición y del modelo intuicionista social, con el fin de abrir nuevas vías de investigación para la actualización del fundamento moral que se supone en la enseñanza de ética. Para ahondar en ello, se ejemplificará la relevancia y aplicabilidad de la metacognición en la enseñanza de ética con situaciones vinculadas a la actual pandemia por Covid-19.

Palabras clave

Ética, pensamiento, crítico, metacognición, enseñanza, modelo.

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Introduction

As argued by contemporary researchers such as Haidt (2001), Triskiel (2016), or Tillman (2016), the dominant perspective in normative ethics regarding the characteristics of morality has traditionally been that of a rationalist approach, according to which it is assumed that moral judgments emerge exclusively from reason. For example, traditional ethics such as those derived from Kantian deontology or Millian utilitarianism generally assume that compliance with their criteria depends exclusively on moral reasoning since it is that which makes it possible to distinguish between moral correctness and incorrectness. Thus, influences such as those linked to emotions are usually considered as accessory influences or even as obstacles in following these criteria.

At present, the rationalist foundation on which canonical ethics instituted their normative criteria is problematized by research from moral psychology. Although studies in this discipline do not have a prescriptive purpose as the ethical systems just mentioned do, developments such as those of Jonathan Haidt (2001) show that normative criteria based exclusively on rational cognition are strongly conditioned by a cognition of intuitive type, which is related to emotions and precedes moral reasoning in the formation of moral judgments.

Despite the fact that multiple problematic points of the rationalist approach to morality have been evidenced, the critical perspectives that include emotions as an important factor are still scarce and/or have a marginal role with regard to academic research in normative ethics. Thus, it is impor-

tant to highlight a problem that will run through the development of this article as a whole: if we continue to assume that nothing that is currently studied in the field of moral psychology affects the understanding of morality that underlies normative ethics, this Philosophical sub-discipline runs the risk of reproducing and/or perpetuating dogmatic foundations that, in the light of experimental investigations, show to have lost its validity.

This anachronism in the theoretical foundations of ethics does not only represent a problem within the academy, but this being the philosophical sub-discipline that is responsible for analyzing what are the motivations, decisions, and/or actions that should be considered as correct to the ethical level in order to guide daily actions, formal education could be transmitting extemporaneous assumptions that would harm the adequacy of these topics so essential for social life. In fact, it is possible to affirm that this anachronistic theoretical starting point is present in the teaching of ethics both at the higher level and at the intermediate level. An indication of this is the fact that, when teaching ethics, the anthropological and psychological assumptions that an 18th-century philosopher like Immanuel Kant had at the base of his normative ethics are still often assumed to be valid. As recent examples of this, the developments of Moreno (2018), Mueller (2019), or Madhloom (2019) could be mentioned.

However, as philosophers such as Obiols (2008), Kohan (2008), or Cerletti, (2020) have suggested, didactics in philosophy has its peculiarities compared to other sciences, which could offer alternative ways that allow favoring a revision of the rationalist approach of morality and avoid its uncritical reproduction. To exemplify this, the reflections of Alejandro Cerletti (2008) are propitious:

(...) If it is a question of teaching philosophy, it would correspond to be able to determine what is going to be taught under that name. But, as is known, the question “what is philosophy?” constitutes a proper and fundamental theme of philosophy itself, and it does not admit a single answer, far from it. (...) The fact that pretending to teach philosophy leads, as a preliminary step, to having to rehearse, even temporarily, a possible answer to the question about what philosophy is, and that this attempt already involves introducing oneself into philosophy, shows that the foundation of all teaching of philosophy is basically philosophical and not merely didactic or pedagogical. The questions “what is teaching philosophy?” and “what is philosophy?” They then maintain a direct relationship that links essential aspects of philosophizing (p. 82).

Following the philosopher’s perspective, it is possible to understand that the middle-level philosophy teacher requires the same com-

mitment when developing their teaching as the higher-level teacher, specifically, they must choose a particular interpretation from the answer to the fundamental question ‘What is philosophy?’ So, in tune with this particularity of philosophical teaching, it would be desirable for the teaching of ethics to depart from the dominant perspective in the field of academic philosophy for two reasons. In the first place, in tune with the arguments of Suárez-Ruiz (2019), because this perspective is questionable in the same field of academic philosophy. Second, and mainly, because it is a perspective that is not adequate for the purposes of teaching aimed at fostering a more complex and better-founded capacity for moral reasoning, a fundamental component for the lives of students.

Starting from this brief state of affairs, this article will explore some critical perspectives of the rationalist approach to morality, with the purpose of providing tools for a problematization of this point of view in the teaching of ethics in general. For this, the focus will be placed on a concept that is especially relevant for the teaching of philosophy and, particularly, ethics, namely, that of ‘critical thinking’ (CT). This notion will allow narrowing down the scope of the study, at the same time as finding points of contact in the reviews that are taking place at the level of traditional conceptions of both the CT and the characteristics of morality.

In the first section, we will begin by exploring new trends in understanding CT, focusing particularly on the distinction between its traditional approach and that of the ‘second wave’. Then, in the second section, we will present the main criticisms made from contemporary moral psychology to the rationalist approach to morality based on the ‘social intuitionist’ model of Jonathan Haidt (2001). Finally, in the third, we will proceed to explore a CT perspective that is congruent with a critical view of the rationalist approach to morality and that, in turn, is suitable for its application in the teaching of ethics, based on metacognition.

Two general approaches to critical thinking

One of the main characteristics of the concept ‘critical thinking’ is its normative weight, that is, that theoretical aspect that is not limited to the description of phenomena, but, following Bailin et al. (1999) and Bensley (2011), also includes a prescriptive level, that is, a delimitation between right and wrong. Hence, the use of the CT in the teaching of philosophy supposes that there will be certain activities that will lead to it and others that will not. One of the practices commonly associated with it is the



logical analysis of judgments, following Moore and Parker (1991), and arguments by Fisher and Scriven (1997). Now, beyond the fact that it is perhaps the most widespread, assuming this practice as the primary, implies committing to a certain interpretation of the characteristics of the CT. Precisely, in relation to how this concept is taught in philosophy, there are common points that allow us to distinguish between at least two types of general approaches: a traditional one and a more recent alternative one, called by the philosopher Kerry Walters as the ‘second wave’ of critical thinking (1994).

Regarding the traditional approach, following the characterization of the philosopher Stuart Hanscomb (2017), he would find its first formulations already in the beginnings of Western philosophy. In the words of the researcher:

The historical origins of critical thinking can be identified in two fundamental characteristics of Western philosophy: (1) commitment to the truth (even in the face of social and political pressures to remain ignorant); and (2) the individual development of the virtues associated with wisdom and good judgment (...) (p. 5).

Based on its commitment to wisdom and knowledge, this approach would focus above all on an informal logical analysis, that is, following Kurfiss (1988), not in purely abstract terms but from a logic focused on the study of argumentation in the context of ordinary language. Then, following authors like Salmon (2012), CT from the traditional approach can be understood as a practice dedicated to reviewing and evaluating judgments and arguments used in everyday life, through rational scrutiny.

On the other hand, it has been pointed out that one of the main problems of this approach is that it ends up losing sight of the possible positive influence that processes such as creative thinking or intuitive aspects of cognition could have on the development of CT, since that, through their exclusive anchorage in logical analysis, as suggested by Thayer-Bacon (2000), these influences are usually characterized as dispensable or even as obstacles.

The most recent approach, the ‘second wave’ of the CT, is characterized by defining it not only as the application of logical analysis in the formation of judgments and arguments, but also as a process in which characteristics such as creativity, following Bonk & Smith (1998), imagination, following Gallo (1994), or cooperative work, following Thayer-Bacon (2000), are embedded. More recently, authors such as Ford and Yore (2012) and González-Galli (2020) have emphasized the importance



of metacognition in CT. According to this last author, for example, metacognition—which according to Zohar and Dori (2011) refers to the knowledge and regulation of one's cognition—would be one of the pillars of critical thinking, since it is not possible to make decisions with freedom and with solid theoretical foundations if one does not have a broad conscious knowledge about the modes of cognitive functioning that skew and limit one's own thinking and decision-making processes.

This approach intends to broaden the scope of the CT, given that, as indicated in the previous paragraph, even though the traditional approach includes informal logical analysis, it ends up committing itself to an exclusively rationalist consideration of said activity. Now, an important problem with this more recent approach is that, precisely, such an extension of the concept of 'critical thinking' entails the inconvenience of vagueness in its definition and the difficulty of delimiting the pedagogical-didactic methodology to reach it. According to the philosopher Claudia María Álvarez (2007, p. 22), it is due to the lack of precision and consensus in this second way that the traditional perspective still continues to be the canonical one.

Thus, while the first—the traditional approach—gains precision, it loses aspects of the process that seem to be inherent to the CT, the second—the second wave—by broadening its definition, loses precision and makes it difficult to find teaching strategies that make it effective. Following Álvarez (2007), this problematic point in the characterization of the CT could be considered as one of the causes that even the possibility that philosophy as a discipline can promote critical thinking has been questioned in academic literature.

In relation to the teaching of ethics, following researchers such as Hanscomb (2017, p. 7), it could be affirmed that of the two different approaches to the concept of 'critical thinking', the one that predominates is the traditional one. This could be due to the fact that two of the most important traditions in this philosophical sub-discipline base their normative criteria on rationality. That is, the canonical perspectives of Kantian deontology—with a normative criterion based on the 'categorical imperative' derived from reason- and the utilitarian perspective—with a normative criterion based on the calculation of utilities or, in other words, the impartial maximization of happiness. If we start from these rationalist criteria, the rest of the factors considered by the 'new wave' (such as creativity or cooperative work), would be interpreted as accessory or irrelevant influences in the rational clarification of motivations, decisions and/or moral actions. Perhaps it is for this reason, because of the ratio-



nalistic characteristics of canonical normative ethics, that it is still not possible to speak of a 'second wave' of the CT in ethics in particular.

Although, for example, didactic resources such as brainstorming or the search for creative solutions to moral dilemmas are usually common in ethics classes in secondary education, the function of these strategies is generally nothing more than to be means that allow arriving at true critical thinking based on a rational clarification based on logical analysis. In other words, although processes such as creativity or emotional involvement are present in teaching at first, they are usually reduced to the role of instruments subordinated to the logical clarification of arguments and judgments. This clarification may be adequate to tend to a greater capacity for rational judgment, but, as will be argued in the third section, CT should not be reduced to its traditional vision.

The preeminence of the traditional view of CT in ethics teaching has a specific parallel to this discipline since it is linked to an equally traditional conception of the characteristics of morality. Similar to what happens with much of the academic research in this philosophical sub-discipline, in the teaching of ethics a model of morality based exclusively on rationality is usually assumed, which has been questioned in light of recent research in moral psychology.



Critical perspectives of the rationalist model in moral psychology

Contemporary moral psychology is characterized by being an inter-disciplinary field in which research from various sciences converge when analyzing the psychological characteristics of morality. Although the link between this discipline and philosophical ethics may be apparent at first glance, in reality, there are few productions in the philosophical literature that consider this articulation in depth. Among the possible reasons for this scarcity, it could be considered that, while moral psychology deals with the 'description' of morality in psychological terms, ethics concentrates on the 'prescriptive' aspect of moral decisions and/or actions. This distinction would draw, at the same time, an important epistemic distance between both disciplines, since the role of moral psychology in the discussions related to normative ethics would end up being accessory or even unnecessary.

Now, in the last two decades, lines of research have emerged that present great challenges to the idea of an exclusively rational foundation

of morality, generally assumed by the traditional approach to normativity in ethics. These are experimentally based theoretical perspectives that arise, precisely, from contemporary moral psychology. One of its most important representatives is the aforementioned North American psychologist Jonathan Haidt (2001), who proposed the ‘social intuitionist’ model of morality as an alternative to the prevailing ‘rationalist model’.

Haidt is part of a current of moral psychology based on dual-process theories. Other representatives of this theory are, for example, Daniel Kahneman (2019), Olivier Houdé (2019), Joshua Greene (2013), Cordula Brand (2016), or Jonathan Evans (2008, 2020). According to these theories, the mind has two basic modes of operation. The first can be called ‘intuitive cognition’ (Kahneman, 2019, calls it ‘system 1’), and involves fast, consciously unregulated, and easy modes of thought (they do not require great effort in cognitive or physiological terms). The second can be called reasoned cognition (Kahneman calls it ‘system 2’) and involves slow, consciously motivated, regulated, and with effort modes of thought. Following Gigerenzer (2018) and Gilovich (2009), System 1 is largely made up of numerous cognitive biases or heuristics that guide rapid reasoning for decision making. Haidt’s ‘social intuitionist’ model, for its part, is cited by numerous recognized researchers such as Steven Pinker (2008), Robert Sapolsky (2017), Shihui Han (2017), which evidences that it has now become an unavoidable theoretical approach in the search for an updated characterization of morality.

The main argument of the model proposed by Haidt is that the formation of moral judgments is conditioned, above all, by moral intuitions derived from emotional influences. By ‘moral intuition’ the psychologist understands that sudden appearance in the consciousness of a moral judgment, without any notion of what steps were taken or the evidence used to arrive at said judgment. Unlike the ‘rationalist model’, in which it is assumed that moral judgments are caused exclusively by moral reasoning and where the affective component is accessory, from social intuitionism it is understood, on the contrary, that the fact that said judgments suddenly emerge to consciousness without a clear notion of the steps that have been taken to reach them, correlates with more emotional than rational influences.

Thus, according to the model proposed by the North American psychologist, moral intuitions are the most recurrent cause of moral judgments, and moral reasoning would be characterized, above all, by being a slow process, *ex-post facto*, generally subordinate to the effect of these intuitions. That is, the main function of moral reasoning would be to rationalize

decisions already intuitively conditioned. According to Haidt, this model is more consistent with developments in sciences such as primatology, for example, by Waal (1982, 1991, 1996) and Goodall (1986), psychology, for example, Wilson (1994) and Kagan (1983) and neuroscience, for example, Damasio (1994) and Gazzaniga (1986), while allowing the characteristics of moral judgment to be elucidated more effectively.

It could be said that these types of critical arguments for the rationalist approach to morality are in fact far from novel since they would have already been developed by philosophers like David Hume in the 18th century. In fact, the Scottish philosopher is one of the psychologist's references. For example, following Hume's *Treatise of Human Nature* (1969 [1739]), Haidt argues that, in most cases, moral judgments are analogous to aesthetic judgments, since they generally do not arise from a rational analysis of the characteristics of each particular situation, but of decisions determined by a 'moral sense'. Again, reasoning is no longer presented as the cause of moral judgment, but rather as a consequence of previous intuitive processing. That is, the function of reason is, above all, to justify decisions that have already been emotionally conditioned. Now, beyond the important Humean influence on his reflections, the contribution of the model developed by Haidt is, precisely, the updated experimental basis that supports it.

Summing up so far, Haidt's model escapes the traditional approach to moral judgments as arising from private reasoning and turns attention to the intuitive and social aspects of the phenomenon. A metaphor used by this author—which is very telling—is one that maintains that more than a judge or a scientist seeking the truth, reason is like a lawyer defending his client: emotions. In fact, this particularity would be in tune with an evolutionary vision of morality, from which it is understood that this phenomenon would not have arisen to seek objectivity, but as a way of reinforcing the social ties that ensured human survival throughout evolution:

From an evolutionary perspective, it would be strange if the mechanisms that underlie the formation of our moral judgments had been designed mainly to seek precision, leaving in the background the disastrous effects that being constantly on the side of our enemies and against our own friends would bring. Studies on attitudes, perception of others, and persuasion show that desires for harmony and agreement strongly skew judgment (p. 821).

It is worth noting that, beyond his emphasis on the role of moral intuitions, Haidt does not deny the importance of reason in shaping



moral judgments. The ‘reasoned judgment’ and ‘private reflection’ are still two relevant cognitive components in his model. Through private reflection, for example, it is possible to give rise to new intuitions that contradict the one that was automatically intuited. The emphasis placed on intuitive cognition and social influence in the psychologist’s model has the objective of making explicit that, in light of recent research on the characteristics of morality, the role of reasoned cognition is much less constant than is traditionally assumed.

Another caveat pointed out by Haidt is that his thesis on social intuitionism must be understood as an exposition of how the formation of moral judgments tends to occur at the psychological level, in which moral reasoning is rarely the cause of such judgments, not as a normative dogma of how they should be done. That is, the model represents an up-to-date and experimentally founded description of the characteristics of the formation of moral judgments, but it does not contain prescriptive statements about what people should do when determining what is right or wrong at the ethical level.

Starting from this distinction between a descriptive and a prescriptive level, a possible interpretation would be one that holds that perspectives such as Haidt’s are irrelevant to normative ethics since this sub-discipline deals with the other side of the spectrum of morality, namely, from the realm of ethical prescribing, developments in moral psychology could be regarded as dispensable. Now, based on the critical stance of the rationalist approach that is defended in this article, it should be noted that, if one starts from extemporaneous descriptive assumptions regarding the characteristics of morality, then the effectiveness of the prescriptive postulates would also be conditioned by said anachronistic starting point. Following philosophers such as Kitcher (2011) or Birnbacher (2016), although it is necessary to maintain a difference between a descriptive and a prescriptive level in ethics, this does not mean that the second can make its speculations absolutely independent from the second.

Therefore, beyond the fact that it is an investigation based on a descriptive elucidation of morality, Haidt’s developments allow revealing the main core of contemporary criticisms of the rationalist model that underlies a large part of canonical normative ethics: based on a model that shows that it no longer works, this approach cannot account for how moral judgments are regularly formed, so the normative ethics that assume it would be based on an anachronistic model, that is, one that no longer manages to encompass the characteristics of morality. Maintaining a similar conception of ethical normativity is problematic, since, to

take an extreme example, a normative ethic that requires individuals to have a decision-making capacity that far exceeds what is allowed by their cognitive characteristics could be assumed to be valid. That is, by maintaining an approach inconsistent with the psychological perspectives of the greater current consensus, there is a serious risk of defending ethics that are impracticable on the part of specific people.

Taking into account what has been developed so far in relation to the difficulties of the traditional approach to the CT, as well as the challenges that are presented by contemporary moral psychology to traditional normative ethics, in the third and last section, an alternative research path will be proposed that would allow us to escape, on the one hand, from the problems linked to the ‘second wave’ of the CT and, on the other hand, from the purely rationalist perspectives of morality.

Educational implications with special regard to the teaching of critical thinking

This section will introduce some key ideas that, in the authors’ opinion, could contribute to rethinking ethics teaching so that it is more consistent with the theoretical and empirical developments outlined above. In this analysis, special reference will be made to education aimed at promoting CT, a central objective for many educational currents and to which ethics teaching tends to aspire.

It has been noted above that the two main perspectives in relation to CT have serious limitations. While the traditional perspective falls into excessive rationalism, the “second wave” has the problem of vagueness in its definitions and/or proposals. The proposal in this last section focuses on the notion of metacognition (MC), a factor absent from the traditional perspective and which occupies a marginal place in many ‘second wave’ proposals. As mentioned, MC refers to knowledge about cognitive processes (including and especially one’s own) and the ability to regulate them. Numerous investigations, from different disciplines and theoretical lines, converge that metacognitive capacity is a key aspect in learning processes and, more generally, in the condition of an expert in any discipline. Examples of this are the studies by Azevedo and Alevén (2013), Jorba and Casellas (1997), Pozo (2016), Ritchhart, Church and Morrison (2014), or Zohar and Dori (2011). The proposal that will be presented in this section represents an attempt to take into account the findings of the previously outlined psychology of morality and the research on the



importance of MC to be developed in this section, in order to rethink an ethics teaching that encourages the CT.

The main suggestion to highlight is that exercising critical thinking requires metacognitive knowledge about the way in which moral judgments are formed. This second aspect is the most original of the proposal developed here and the one that places proposals such as Haidt's at its center. To put it another way, it is possible to affirm that a teaching practice that limits itself to providing conceptual inputs for ethical reasoning and that is assumed to be purely rational, will fail in its claim to be applicable in 'real-life', that is, because simply the cognitive characteristics of specific individuals are far from being purely rational. And that would imply, of course, the impossibility of promoting the CT. Thus, in addition to promoting the learning of traditional normative systems, the teaching of ethics should also provide knowledge about the psychological characteristics of moral judgments. These ideas will be illustrated below by discussing what conditions should be in place for a citizen to exercise CT in relation to some of the problematic issues raised by the current Covid-19 pandemic.

In the current context, many countries have established measures of social isolation and suspension of activities (commercial, recreational, etc.) aimed at reducing the rate of infections. In some countries at least, such as the case of Argentina, this type of measures gave rise to a public debate that, schematically, can be understood as a highly polarized discussion between those who consider that these measures are necessary and that the correct thing is to comply with them and those who, on the contrary, consider that such measures are not justified (in reality they are an excuse to restrict individual freedoms for political purposes, etc.) and that, therefore, the correct thing is not to comply with them (even violating the law in the exercise of an alleged 'civil disobedience'). In such a context, each individual faces a series of decisions, beginning with the identification of any of the positions presented and the subsequent determination of actions consistent with said position.

It is now possible to ask what knowledge a citizen would need to make decisions of this kind in an informed manner. First of all, assume that you would need to know something about biomedical sciences (What are viruses? How are they transmitted? Etc.). Second, meta-scientific knowledge is required (What status does the word of epidemiologists have in comparison with other social actors? Why are certain statements considered pseudoscientific?). Third, that person would also need to reflect on what it means to say that something (in this case the mandatory



nature of the measures that restrict certain individual freedoms) ‘is right’ or that ‘is wrong’. Here philosophy would make its contribution, with all the concepts and schools of thought of ethical theory.

Now, given what researchers such as Haidt argue, it is most likely that this person made his decision in a way that has little to do with rational arguments based on concepts from science, meta-science, and philosophy or on evidence. On the contrary, the decision will be based on intuitions whose origin is completely opaque to the individual, and then eventually that individual will make use of concepts from biology or ethics to justify their decision in a *post-hoc* way, that is, with a moral judgment determined prior to said justification.

In relation to the proposed example, opinions have been polarized in association with political-partisan positions, so it is easy to imagine that many of those who sympathize with the ruling political party will tend to consider the restriction measures correct, while those who sympathize with the main opposition party they will tend not to agree with these measures. Most likely, following Girgerenzer (2018), Sapolsky (2018), Greene (2013), and Haidt (2019), this is due to a bias that favors the acceptance of the ‘truths’ decreed by our social group of belonging, our ‘tribe’, a psychological mechanism that helps us ‘fit in’ or ‘belong’, avoiding the serious problems associated with becoming a ‘social outcast’. The entire debate is thus framed in a logic of “us versus them” and this polarization in opinions also supposes a strong moralization of the debate: what others do is wrong.

What is described in this scene does not seem very close to what is usually imagined as an ideal of critical thinking, mainly because it does not seem that the individuals have exercised a decision based on evidence and experimentally founded theories. Other issues related to the Covid-19 pandemic could be mentioned, such as the proliferation of ‘conspiracy theories’, which according to researchers such as Imhoff and Lamberty (2017) show the low levels of rationality in the way people understand the situation. But the main thing in relation to this work is to question what knowledge these individuals lack to consciously choose or, more modestly, what knowledge could increase the degrees of awareness of that decision. It is clear at this point that more details on biomedicine, philosophy of science, or ethics will not solve this problem, since all of them could become conducive tools to detail a *post-hoc* justification. The answer offered here is that what you need is metacognitive knowledge about the intuitive process that led you to make that first decision.



In the light of what was developed in the previous section, the foundation of such metacognitive knowledge would consist mainly of some version of the aforementioned ‘dual-process theories’, which distinguish between an intuitive cognition and a reasoned cognition. Continuing with the example mentioned above, and now placing it in a classroom setting, students should understand that, most likely, the decision they make regarding whether or not to comply with public health measures related to the pandemic is due to, in the first instance, more to the operation of intuitive than reasoned cognition. This would facilitate the momentary suspension of judgment, the reevaluation of the reasons given (from reasoned cognition), and, eventually, of the decision itself.

The interference of this dual process theory in the field of education could, of course, go further, for example, to address the question of why the intuitive system makes the decisions it does. This would require the analysis of various factors, from innate cognitive biases to other automated cognitive responses from socialization. In any case, these pre-conscious influences have nothing to do with the kinds of reasons that can be used to explicitly justify the decision, and that is revealing. The research could go even further, identifying some of those social causes. Thus, for example, a student could become aware that he or she has a certain prejudice in favor of techno-scientific interventions because he belongs to a family of scientists and/or is a student of natural sciences and, therefore, his group social reference adheres to this perspective. This bias could have led the individual to dismiss certain evidence and overestimate others, always with a bias in favor of the belief already installed (called by Wason [1960] as “confirmation bias”). The numerous cognitive biases or ‘heuristics’ identified in this field of study (fundamental attribution error, self-service bias, social conformity, etc.) offer valuable conceptual tools to explore these questions. On this topic, see, for example, the work of researchers such as Haidt (2019), Gigerenzer (2018), Gilovich (2009), or Gilovich, Griffin and Kahneman (2002).

All these concepts are metacognitive knowledge because they refer to cognitive processes and products (own and of third parties). But as was pointed out, MC also implies the ability to regulate one’s own cognitive processes. In terms of the ideas introduced in the previous paragraph, it is about increasing the intervention capacity of reasoned cognition. González-Galli, Pérez, and Gómez Galindo (2020) have referred to this ability with the name ‘metacognitive regulation’. This ‘regulation’ consists of (1) the understanding of what certain patterns of thought consist of, (2) the ability to identify these patterns of thought (in others and in oneself) and, (3) the ability to re-



gulate their behavior. Houdé (2019) even suggests that this ability to control and monitor is a prerogative of a third mode of cognition that, following the terminology of Kahneman (2019), calls ‘system 3’. For his part, Arango Muñoz (2011) distinguishes two levels of CT. The low-level CT refers to a capacity to regulate cognitive processes based on the simulation of said processes, while the high-level CT refers to a regulatory capacity based on a meta-representational structure and the self-attribution of mind States. According to this author, the high-level MC would correspond to functions of Kahneman’s system 2, which here has been called the reasoned cognitive mode. Thus, the knowledge about these aspects of the cognitive structure could facilitate a regulation on the own thinking biases, which can be understood as greater control of reasoned cognition (or system 2) over the intuitive one (or system 1) or as an empowerment system 2.

In summary, the teaching of ethics should not only provide knowledge that serves as inputs for the operation of reasoned cognition in relation to the contents involved in studying or making a decision (methodology of the traditional approach), but also metacognitive knowledge that serves as input for the operation of reasoned cognition in relation to intuitive cognition. One way to contribute to this latter goal would be to teach some version of dual-process theories of mind. It is worth noting that it is not about rehabilitating the old rationalist claim that reason dominates emotion (the ‘charioteer’ who dominates the ‘horses’, according to the famous Platonic analogy) since, following authors such as Damasio (2014) all judgment, including that which involves consciously reviewing a decision based on certain metacognitive knowledge, will necessarily be modulated by emotions. The bet is, rather, that the knowledge about how the mind works allows us to increase and improve the regulation that reasoned cognition can exert on intuitive cognition. To what extent this goal is achievable remains to be seen. In this sense, for example, Kahneman (2019) has been quite pessimistic, while Houdé (2019) gives reasons for greater hope. In any case, realizing that it is now implausible to uphold the traditional rationalist position on morality, it is necessary and promising to explore these possibilities.



Conclusions

In this work an alternative perspective has been offered that seeks to take the first steps to overcome the limitations in the teaching of ethics linked to, on the one hand, the traditional approach of critical thinking and,



on the other hand, the ethical approaches that suppose a model rationalist of morality. The need for this (or any other) alternative to take into account current hypotheses about how the mind works, such as, for example, Jonathan Haidt's 'social intuitionist' model has been advocated. Briefly, it has been suggested that critical thinking ability depends on knowing certain criteria about what 'thinking well' implies. Faced with a complex, relevant, and problematic situation (such as several associated with the current pandemic), the individual should understand the need to resort to scientific, meta-scientific, and philosophical knowledge to make informed decisions. But, in addition, and here is the focus of the proposal developed, one should also understand the need to resort to certain knowledge about how our own cognition works. More specifically, from learning some version of dual-process theories, the student of ethics should understand that his/her mind has two modes of operation, one intuitive and one reasoned, and that, in the absence of consciously directed effort and intentional, the first mode ends up dominating in decision-making. This, of course, has the negative consequence that decision making can be significantly detached from the most reliable type of analysis, namely one based on good theoretical models and relevant evidence. This knowledge and the ability to use it as an input to regulate one's own thinking are the main components of the individual's meta-cognitive capacity.

Students should also understand that this proposition does not assume that the intuitive mode of reasoning is wrong or, more generally, a negative aspect of cognition. Rather, they should understand that these are adaptive and, indeed, vital functions: life demands the rapid making of many decisions based on intuitive cognition, in circumstances where the slowness of reasoning makes it unfeasible. Instead, it is about being aware that the intuitive mode involves biases and limitations that, at least in certain circumstances, can lead to poor decisions and, based on this understanding, enhance a capacity to regulate one's cognition that gives reasoned cognition more power of intervention.

Although there was no space in this work to develop concrete proposals about how to work in teaching ethics this type of learning, in the case of teaching aimed at developing MC, useful suggestions can be found in other works focused on it in relation to other content. See, for example, the research by González-Galli, Pérez and Gómez Galindo (2020), in relation to the teaching of the theory of evolution, and that of Zohar and Dori (2011), in relation to the teaching of natural science in general.

Needless to say, there are numerous questions arising from what has been said so far, which will remain pending for future developments. For example, the question of whether or not there is a 'system 3' relatively autonomous from system 2 (or reasoned cognition), in charge of metacognitive regulation, has direct implications in relation to the question of how to promote this regulatory capacity. More generally, the extent of the ability of system 2 (or 3) to regulate system 1 is not clear. Although, as mentioned in the previous paragraph, there are numerous proposals on how to promote the development of MC, various conceptual problems make this task difficult. For example, the distinction between metacognitive knowledge and regulation is often not clear, nor is it clear to what extent these skills are transversal or, on the contrary, content-specific. Beyond these types of problems currently under discussion, it could be affirmed that this path for the investigation and teaching of the CT makes it possible to escape both the purely rationalist vision of this, as well as the problems of vagueness and indefiniteness typical of the 'second wave'.

The eventual answers to these and many other questions will be of great relevance in designing concrete teaching practices that can apply the program outlined here. In this sense, the proposal defended in this work does consist of nothing but some, still very general and abstract, great guidelines that could be useful to take the first steps towards the great objective of teaching in general, and of philosophy and philosophy of ethics in particular, which foster the capacity for critical thinking in citizens, an increasingly necessary capacity in an increasingly complex society subject to rapid and continuous changes that confront individuals with difficult decisions of social relevance.



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