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INITIAL STEPS IN DEVELOPING CRITICAL THINKING BY TEACHING PHILOSOPHY: *SCANDALON* AND RATIONALIZATION

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Abstract. This paper discusses creating and maintaining certain predispositions for the development of critical thinking as one of the key goals in teaching philosophy. By starting with definitions and recommendations of the Serbian Ministry of Education, Science, and Technological Development related to the goals of teaching philosophy, in this paper we provide a few suggestions for reaching these goals more effectively. We propose a general structural framework from which their realization can be accessed, with *scandalon* and rationalization as its first two elements. From that perspective, we stress the significance of plasticity and immaturity, as well as some ways to engage them in students. The paper also includes some specific aspects of critical thinking from the viewpoint of logical and methodological literacy. In order to better understand our point, the theoretical framework is backed with a few examples from the classroom. In the conclusion, we point out that these are only the beginning steps in developing critical thinking and that steps like testing and checking are also necessary for fully reaching this goal.

Introduction

The aim of teaching philosophy, as defined by the current guidelines of the Serbian Ministry of Education, Science, and Technological Development is to, among other things, develop critical thinking. From that perspective, critical thinking is primarily seen as an aid in developing logical and methodological skills in students to "present (both orally and in writing) well-founded thoughts and avoid typical fallacies in drawing conclusions and proving them,"[2] as well as to "efficiently apply logical procedures when analyzing, reconstructing, or drawing philosophical or other argumentation" (Правилник, 2020, p. 514). It is evident that critical thinking thus defined emphasizes developing intellectual abilities in students. However, we are of the opinion that in order to claim that this goal can be reached by obtaining a certain degree of logical literacy, another goal needs to be reached, one that is more closely related to the character of the student than to the ability for logical thinking. The Ministry of Education, Science, and Technological Development is of a similar opinion, since in the text related to articulating values and opinions published in the same issue of *Education Gazette* [Serbian: *Просветни гласник*] we find the suggestion that students practice "appropriate virtues, outlooks, and values: intellectual openness and curiosity, accepting testimonies and good arguments, being ready for self-criticism, tolerating different opinions, and being impartial when evaluating one's own and others' opinions and achievements" (Правилник, 2020, p. 514).

If we look at the views of some contemporary theorists who address critical thinking, we conclude that the above-mentioned requirements more or less align with their positions. For example, Hare (1999) sees open-mindedness as one of the key prerequisites for the development of critical thinking. According to him, "Open-mindedness suggests a willingness to take relevant evidence and arguments into account in forming our beliefs and values, and being willing to consider what can be said against the views which we now hold, altering or rejecting them where necessary" (Hare, 1999, p. 91).

[2] All translations from the Serbian made by the author.

We believe that this definition of *open-mindedness*, especially the part that emphasizes the willingness to change our current views, can be linked to what the Serbian Ministry of Education defines as intellectual openness and curiosity.

On the other hand, when we speak about the logical and methodological skills that are also required from students in the development of critical thinking, there are similarities here as well, especially in the realm of what contemporary theorists refer to as critical thinking in the narrower sense. According to Nikolić (2020), definitions of critical thinking by theorists such as Stella Cottrell, Tracy Bowell, and Gary Kemp "give more importance to education in logic and methodology (finding premises, drawing conclusions, differentiating between good and bad conclusions, gaining insights into logical mistakes, etc.)" (Nikolić, 2020, p. 865).

Based on this, it can be concluded that the recommendations provided by the Serbian Ministry of Education, Science, and Technological Development fully align with global trends in defining critical thinking. However, since *Education Gazette*, the official organ of the Ministry, is taken as the main guide for teaching philosophy in Serbia, we will continue to refer to the definitions contained within it, bearing in mind that they can also be applied more broadly in the educational context.

The cited text presents two predispositions—intellectual openness and curiosity—that we deem crucial, at least when starting to develop a problem. We consider these two traits, which we later discuss as plasticity and immaturity, to be necessary if we wish to continue on the path of intellectual advancement. What we claim is that, when beginning to logically observe a certain problem and its logical articulation, we need to entice this curiosity and openness, which we elaborate on in the chapter on *scandalon.* Even though we claim this step is necessary, it alone is not sufficient if we want to reduce critical thinking to its bare definition, which is related to the part of the formulation concerning avoiding logical fallacies, presenting well-founded thoughts, and efficiently applying logical procedures when analyzing, reconstructing, and building philosophical or other argumentation. Thus, the development of critical thinking must be followed by using appropriate logical tools, which we discuss in the chapter on rationalization.

The two steps we discuss next are not our own inventions but can be found in similar forms in numerous authors who write about the structure of developing a philosophical problem and critically observing it. In one of his papers that cover this topic, Nikolić summarizes the structural frameworks offered by several authors, dividing them into informal ones, such as observing, scandalon, become aware of the problem, work on negation, and formal ones, such as "inferring, rationalizing, problematization, actualization, analyzing, testing, examining the consequences of each hypothesis in the light of the previous" (Nikolić, 2019, p. 170). Based on this, we proceed to explain scandalon as one of the informal steps, and rationalization as one of the formal steps. Evidently, this covers only one of the aspects of developing critical thought, i.e., its beginning, but this development,

should it be taken in its entirety, must include the realization of the other steps, which we do not discuss in this paper beyond a mere mention in the conclusion.

Scandalon

One might suggest that the term scandalon is not the best solution for what we try to clarify next. In everyday speech, it has a negative connotation, in the sense that we are unpleasantly surprised by something, usually in an emotional context. However, in the philosophical tradition of teaching philosophy that we were taught in, this term mostly has a technical meaning. Here we mainly discuss Marinković's view of this step (Marinković, 1983, p. 30). It mostly relies on intellectual surprise, so it is probably better to consider it in a more global context as a synonym for the terms mostly used by other authors while having in mind the same goal. Here, we primarily understand it as "to problematize," "to provoke," or "to cause a dilemma."

Based on what was previously stated, it can be understood that the position we seek to initially induce in students undoubtedly finds its best expression in fulfilling the goal to become aware of the problem, as Dewey (1910, p. 9) postulates in his hierarchy of education. However, this is not an easy task, and there are numerous reasons that object to it. Some of them are emotional in nature—such as fear, stubbornness, or laziness—and others usually stem from the absence of information about a problem or concept. Nevertheless, it is necessary to point out the way they are brought to a position of realizing that they are not sufficiently informed about their lack of knowledge, that they are in a way immature, and that progressing by learning about the suggested subject is necessary. In the broadest possible sense, we may follow in Jaspers' footsteps and claim that cognition stems from borderline states, and that some kind of stress—or rather provocation—is needed to approach philosophical issues. If we were to determine what these borderline states are, we would point to the definition that describes these situations as those "in which philosophical questions that we usually neglect become necessary" (Јеремић, 2016, p. 11). This brings us to Popper's epistemological position, according to which "nothing is secure and [that] our knowledge remains conjectural and fallible" (Lam, 2007, p. 93). At this point, a question arises: how can such a position be reached?

We maintain that, in answering this question, only certain suggestions can be made, and there is no straightforward pattern or form for establishing this position. Importantly, through this step, we do not form any sort of skill or knowledge in our students but rather try to prepare the ground for such formation. In this way, we develop forms necessary for further development of critical thinking. More specifically, the goal of this step is to provoke questioning—to prompt students to

critically confront rigid intuitions and to use this confrontation as a foundation for argumentation. What is this really about?

In our opinion, one of the most eclectic thoughts on this concept is offered by Catherine Malabou. In her book *The Future of Hegel—Plasticity, Temporality, and Dialectic*, she offers several definitions, starting with the ancient meaning of the term concept. In the opening pages of her book, we find that "the Greek plassein (πλασσειν) […] means 'to model,' 'to mould'" (Malabou, 2005, p. 8). From the meaning of this verb, we find that:

> "'Plastic,' as an adjective, means two things: on the one hand, to be 'susceptible to changes of form' or malleable (clay is a 'plastic' material); and on the other hand, 'having the power to bestow form, the power to mould,' as in the expressions 'plastic surgeon' and 'plastic arts.'" (Malabou, 2005, p. 8)

It is evident that when Malabou connects this concept with education, she implies the first meaning of the adjective *plastic* and claims that "plasticity signifies the general aptitude for development, the power to be moulded […] by education" (Malabou, 2005, p. 8). Our interpretation shows that we start from the same position, but we should point out here that the other meaning can also be interpreted in the context of education, which is not our primary goal here. Namely, a wider understanding of critical thinking includes developing a certain creative potential in students, and from that perspective, critical thinking can also mean the power to bestow form, the power to mold.

If we turn once again to ancient sources, we find an interesting framework for understanding this concept in Plato's *Theaetetus*:

> "Then grant me for the sake of argument, that there is present in our souls a block of wax, bigger in one person and smaller in another, made of purer wax in one and more filthy in another, and harder in some people but more flexible in others, while there are some in whom it's in a measured condition." (Plato, 2004, p. 95)

This excerpt from Plato's work was an inspiration for Myles Burnyeat to develop his Wax Block Model. What Burnyeat claims is that Plato's metaphor points to "how the capacity for learning and retention varies from one person to another according to the qualities of their wax" (Burnyeat, 1990, p. 92). This could be understood in the sense that without this plasticity—without the softness of the soul—there can be no possibility for further cognitive growth.

John Dewey holds a similar position. He connects plasticity with the concept of immaturity as its correlating term. This may appear somewhat paradoxical, especially given that we—including what we learn from traditional philosophy—assume maturity to be the ultimate goal of education (the object of Dewey's criticism, in fact, is the position of both Fröbel and Hegel). By inverting this paradigm, mainly

with the claim that "the primary condition of growth is immaturity" and "the prefix 'im' of the word immaturity means something positive, not a mere void or lack" (Dewey, 2001, p. 46), Dewey leads us to the conclusion that this predisposition needs to be provoked. Only under conditions that reveal our immaturity can we progress in our cognition. Of course, Dewey is not alone in holding this view.

It is clear, based on the previously cited works, that our position is close to what is defined as a dialectical theory of argumentation, which, as we have already pointed out, operates primarily on the premise of "the fundamental fallibility of all human thought" (van Eemeren & Grootendorst, 2003, p. 131). Given this context, it is necessary to consider some of the reasoning Russell and Popper offer. According to Russell (Russell, 1926), intelligence is defined in two ways—firstly, as "actual knowledge," and secondly, as the "receptivity to knowledge." The British philosopher focuses more on the ability to acquire knowledge than on knowledge already acquired: "No doubt the word 'intelligence' properly signifies rather an aptitude for acquiring knowledge than knowledge already acquired" (Russell, 1926, p. 58). This interesting conclusion leads us to problematize this issue further. Let us briefly consider Popper's view on the problem of cognition. Popper argues that "continued growth [is] essential to the rational and empirical character of scientific knowledge" (Popper, 1995, p. 215). Although he connects this increase of cognition with science, he later claims that the same criterion, the criterion of progress, is also relevant to "the general way in which man, and even animals, acquire new factual knowledge about the world" (Popper, 1995, p. 216). This position strongly supports learning through insight into mistakes. If we fail to recognize the errors in our prior learning or point of view, and if we do not admit that our knowledge of anything is fundamentally immature, we can hardly expect that knowledge to grow. Therefore, we must first work on the problem of developing this awareness in our students.

When facing a task defined like this, the first strategy we can employ is to interpret a problem through multiple, varied circumstances or situations. This strategy is often applied in addressing ethical issues. For example, the absolute application of certain principles from deontological or consequentialist ethics can be questioned by changing the situations in which the moral agent operates. It turns out that "lying" or "caring about the well-being of the majority of people" are not always absolutely good or bad, as it would seem based on our primary intuitions. However, this strategy can be applied even when we are deconstructing some intuitions about other non-ethical questions. Our next example illustrates the application of this strategy in the classroom. We also note that this example represents our modification of the concept taken from Peg Tittle's book *What if…* (Титл, 2018, pp. 68–71).

Example 1

Let us assume that, at the outset, we are addressing the concept of identity with our students. Naturally, they already possess some knowledge about this term, but the extent to which their understanding is complete and well-founded is questionable. We begin by introducing an excerpt from Hobbes' *De Corpore*:

> "For if, for example, that ship of Theseus, concerning the difference whereof made by continual reparation in taking out the old planks and putting in new, the sophisters of Athens were wont to dispute, were, after all the planks were changed, the same numerical ship it was at the beginning; and if some man had kept the old planks as they were taken out, and by putting them afterwards together in the same order, had again made a ship of them, this, without a doubt, had also been the same numerical ship with that which was at the beginning." (Hobbes, 1992, pp. 136–137)

Two identity-determining concepts can be identified in this excerpt, one regarding matter and the other regarding form, which is relatively easy to understand from Hobbes' conclusion. In a sense, this does not present something that might lead to sufficient provocation, i.e., in this example, we find nothing scandalous that might challenge us to further think about the notion of identity. The answer is contained within the text and it may be if certain things possess the same form and are made of the same material, then they are identical, otherwise, they are not. There is nothing problematic about the excerpt, aside from one distinction and a superficial increase in the informative content of what we already know. However, that is not the point we are trying to make, so we introduce another excerpt to the play: one that actually leads us to the point of our idea. From that perspective, we include a paragraph from Locke's *An Essay Concerning Human Understanding*:

> "For should the soul of the prince, carrying with it the consciousness of the prince's past life, enter and inform the body of a cobbler, as soon as deserted by his own soul, every one sees he would be the same person with the prince, accountable only for the prince's actions: but who would say it was the same man?" (Locke, 1999, p. 324)

From the question that the excerpt ends in, we can infer that the matter is not as simple as it may have seemed previously. It turns out that knowledge about identity taken from the previous context is not very useful in this new context. We hope that the purpose of our point—that increasing informative content can stimulate the cognitive process—is now clear. Of course, aside from identity questions related to form and matter, the question of a person's identity is now included, which is much more difficult to answer categorically. A lot of contemplation is required. Of course, we do not intend here to favor either Hobbes' or

Locke's position. In philosophical discourse, the debate between proponents of biological and psychological theories of identity remains ongoing, with many arguments developed in support of both positions. Our intention here is not to delve deeper into the correctness of either theory, but merely to indicate that listing different concepts through which a particular idea is examined promotes progress, whether by further strengthening or challenging the position initially held by students.

By employing the strategy of provoking scandalon and revealing the immaturity of our cognition, i.e., by introducing situations in which the problematic term appears, we arrive at another, seemingly simpler suggestion to achieve the same goal. We believe that the same goal can be achieved in some situations with "work on negativity," which can also be used to develop plasticity. *Philosophy: A School of Freedom* (Goufida, 2007), a UNESCO publication, addresses work on negativity from a very interesting perspective: it suggests softening prejudice, guided by Kant's claim that "thoughts without content are empty, intuitions without concepts are blind" (Kant, 1998, pp. 193–194). This led us to ponder how prejudices can be confronted without simply using negations, like those beginning with expressions such as "you're wrong" or "we disagree." From this viewpoint, we attempt to propose an approach that goes beyond mere negation by dispelling prejudice on a perceptual level. Let us first present another example that may prove elucidative from this viewpoint.

Example 2

A problem I address with my students concerns explaining the position that, in our cognition, beside the senses, reason necessarily plays a role, resulting in a synthesis Kant defines as follows: "Synthesis in general is […] the mere effect of the imagination, of a blind though indispensable function of the soul […] but of which we are seldom even conscious" (Kant, 1998, p. 211). How can we break down students' prejudice that perception—that is, what we see here and now—is not a product of imagination? Clearly, we can theoretically explain and provide arguments and reasons to support that claim. However, here we focus on an informal method of challenging prejudices. Let us ask further: would it be convincing enough to simply propose this as a fact? If we are to cause scandalon, we must establish a new concept that disproves the claim that what we see here and now is free from imagination. In this way, we confront their primary prejudice, which presents imagination solely as related to the formation of fictitious objects. To assist, we may next call on Peirce and his instructions, illustrated by the the following example confronting this prejudice:

> "Take a number of this journal, turn over the cover so as to expose the white paper, lay it sideways upon the table before which you must sit, and put two

> cents upon it, one near the left-hand edge, and the other to the right. Put your left hand over your left eye, and with the right eye look steadily at the left-hand cent. Then, with your right hand, move the right-hand cent (which is now plainly seen) towards the left hand. When it comes to a place near the middle of the page it will disappear—you cannot see it without turning your eye. Bring it nearer to the other cent, or carry it further away, and it will reappear; but at that particular spot it cannot be seen. […] It follows that the space we immediately see (when one eye is closed) is not, as we had imagined, a continuous oval, but is a ring, the filling up of which must be the work of the intellect." (Peirce, 1868, p. 105)

After this, the only thing we can conclude is that there really is no better way to confront a person's prejudice than examples such as these, which directly indicate the fallibility of our knowledge—even that which seems the soundest.

Finally, we come to the question of doubt and how we understand this concept. Throughout history, there have been numerous views of this problem; since ancient times, various theories have addressed it. However, we will not delve deeper into this field, but will instead highlight certain aspects that may support our position. Specifically, at this stage, our goal is to challenge the prejudice(s) that, at this level, "mean[s] only an individual limitation of understanding" (Gadamer, 2006, p. 280). If this goal is successfully achieved, we simultaneously introduce doubt into one's starting position. Still, this doubt is not radical, because, following Gadamer's line of thought, we treat prejudice at this level merely as a basis from which we continue to maintain "trust to the better insight of others" (Gadamer, 2006, p. 281). All of the examples we presented are supposed to provoke doubt in the primary basis by introducing another basis, a wider one. Therefore, due to the duality of our bases—which is, we repeat, a necessary presumption for developing critical thought—there is always room for the other argument to be correct. Of course, this does not guarantee reaching the ultimate truth. Indeed, by invoking Popper's position, we acknowledge the elusive nature of final truth. Still, Popper does not suggest we should doubt all of our cognition, primarily by introducing "the idea of (degrees of) *verisimilitude*" (Popper, 1995, p. 233). A doubt arising from this perspective, as we have outlined, does not guarantee reaching ultimate truth, but rather suggests that an alternative concept, one different from the primary, may be "more closely similar to the truth, or corresponds better to the facts" (Popper, 1995, p. 233). However, at this level, this is still a hypothesis which, from the position of contemporary argumentative theory, meets only the first requirement for the development of critical thought, the one according to which "S believes that O is unacceptable" (van Eemeren & Grootendorst, 1984, p. 45)—or, it might be better to say that "S believes that O may be unacceptable."

Rationalization

The examples presented in the previous paragraph focus on showing how the formation of a viewpoint challenging a dominant one is caused, or how an insight into the possibility of a different position is awakened. They demonstrate the possibility of developing argumentation guided by prejudice and personal outlooks within the framework of the primary dilemma. In other words, although a certain dilemma is introduced by a scandalon and self-doubt is instilled in students' viewpoints, somewhat unsettling their emotional equilibrium, these viewpoints can still be defended with arguments that are not arguments in the true sense of the word. From the previous examples, we have seen or inferred a certain shift in initial stances, but this change was expressed only through mere presumptions. As van Eemeren and Grootendorst (2003) note, "a difference of opinion that is only partly externalized […] does make it difficult" (p. 135); therefore, it is necessary to establish firmer standards. Here, our focus turns to what is described as "the verbalization of initial thoughts in a logical structure" (Kienstra et al., 2015, p. 2). Let us try to articulate this more precisely.

By closing the previous chapter with Popper's concept of verisimilitude—or similarity to truth—we opened a wider field of thinking, which we further problematize here. Our interpretation of the concept was affirmative in scope, in the sense that doubt is justified if there are reasons to believe that an alternative concept is closer to the truth. Still, there needs to be a distinction between proximity to the truth (which might be better termed *resemblance to the truth*) and the negative connotation the term may carry in everyday speech. What are we really trying to say? When talking about verisimilitude or truthlikeness, we are actually addressing standards and rules that must be followed to consider one viewpoint or conclusion more suitable than some other viewpoint or conclusion. This adequacy may depend equally on form as well as content. Therefore, there needs to be a distinction between these rules and those that merely appear similar at first glance. As noted by van Eemeren and Grootendorst, we are actually facing a position of truthlikeness in the sense that it "requires the use of reason" (2003, p. 124). Here, we are concerned with rules that enable the defense of an argument or a position to meet the condition of being "endowed with the faculty of reason, rational; in accordance with reason, not irrational or absurd; proportionate" (van Eemeren & Grootendorst, 2003, p. 123). Let us see how this can be demonstrated in a negative context, which essentially involves avoiding certain forms that may appear truthful but are not, in the sense previously explained.

According to Bowell and Kemp (2005, p. 114), sometimes there are "attempt[s] to persuade us in ways that appear to provide good reasons but do not really." We are forced to dismiss these attempts as "sham-reasoning" from early on. These rules can be reduced to avoiding the use of arguments that primarily appeal to emotions rather than reason. "Rhetorical ploys" such as "appeals to specific feelings"

which "attempt to tap into specific feelings in order to influence our behavior and opinions" (Bowell & Kemp, 2005, p. 115) fit into this category. Consequently, in the second step of developing critical thinking, forming opinions guided by "appeal to novelty," "appeal to popularity," "appeal to compassion, pity, or guilt," "appeal to cuteness," "appeal to sexiness," "scare tactics," etc. should be avoided. However, the list of problematic tactics does not end here. It is also noticeable that the listed tactics are easily discernible in contemporary society, especially in commercial slogans and other methods of attracting consumers. When discussing that, we primarily mean the "appeal to authority" and "perfectionist" fallacies. Let us then start by trying to determine more precisely why these forms of argumentation are actually problematic.

The first form, "appeal to authority," is defined by Bowell and Kemp as a fallacy which "involves mistaken assumptions about the people mentioned by an argument" (2005, p. 139). It is our intention to point out how this fallacy of thinking actually affects all of philosophy and our concept of knowledge. There are three well-known approaches to presenting and discussing philosophical subjects: 1. a historically-oriented approach, 2. a problem-oriented approach, and 3. a personally-oriented approach. If we start from the third approach, we have to be aware that it is more susceptible to this fallacy than the previous two. Namely, teaching philosophy, among other things, includes introducing concepts that some of the most significant people in philosophy have to offer. Still, if those concepts do not include an approach to solving a problem, that could be a cause of this fallacy. Claims like "This is valid because Aristotle says so" or "We will not debate any further because Heidegger supports this argument" are not argumentative strategies that we are interested in. We certainly do not claim that the concepts of these two philosophers are incorrect, i.e., we do not seek to disqualify their viewpoints; we simply point out that their concepts need to be considered through a problem-oriented approach. That means that the veracity of their opinions—or any other opinion—does not stem from their authority, but from the authority of the standards and rules we are now presenting.

Although the "appeal to authority" and "perfectionist" fallacies are presented separately in the version we are referring to, we will still explain them as causally connected. Namely, belief in authority, in our opinion, is deeply ingrained in the concept of the existence of perfect knowledge. It is based on a wrongful assumption that "occurs when we place excessive demands on an idea or a proposal" (Bowell & Kemp, 2005, p. 140). According to what we said before, this fallacy stems from an affirmative perspective, i.e., it is a fallacy that gives us the right to decide on something based on authority, i.e., on our understanding that one's thinking is perfect. However, according to this second scenario, it can be a source of negative judgment of the validity of one's opinions. In such instances, when considering authority opinions, some may be dismissed solely on the presumption they are

not suitable enough for the problems we are considering. Let us illustrate this fallacy with an example.

Example 3

Descartes' concept of rationality is insufficient if we want to solve ethical problems.
Philosophy strives to solve ethical problems.
Therefore:
Descartes' concept of rationality needs to be discarded from philosophy.

It is clear that this reasoning is wrong, and that in considering the veracity of someone's viewpoints from the aspect of universality complete truthfulness is wrong.

It seems that, based on our interpretation of Popper's concept of verisimilitude, avoiding these fallacies is even more strongly justified. But let us return to pointing out the fallacies that need to be avoided if we want critical thinking to develop in the right direction. Next, we discuss the demands that "promote an optimal externalization" (van Eemeren & Grootendorst, 2003, p. 135). According to Bowell and Kemp (2005, p. 122), we should avoid "trading on equivocation," i.e., avoid "the ambiguity, and in some cases the vagueness, of a word or phrase in the given context." However, it is hard to avoid something without establishing clear rules how such a position, the position of clear expression, can be reached. Therefore, it is probably better to begin our contemplation with Gherdjikov's proposition, who advises the following: "Express yourself as clearly as possible, do not use terms that are doubtful and unclear, both for you and others" (Герджиков, 2019, p. 135). Let us first consider this recommendation from the perspective of moving from an expressed opinion to a clear standpoint. In view of the following claim, this is a necessary prerequisite: "Dialectically speaking, however, the standpoint precedes the arguments—otherwise there is nothing to defend" (Houtlosser, 2001, p. 35).

Namely, the difference between a good and a bad starting position for argumentation is reflected in the fact that not every expression can be a good starting position for a critical elaboration. Expression can equally take the form of descriptions, explanations, and examples. Still, as we will see within the framework of these forms, that is not a sound basis for a starting position in critical thinking. Within these forms, we need to recognize primarily what the key stance that needs to be defended or refuted is. Therefore, the first step to be taken is related to "distinguishing argument from other material" (Cottrell, 2005, p. 58), or if we are moving further towards the beginning of argumentation, we need to reach "the logical starting point […] that one of the two assertions has to be withdrawn" (van Eemeren & Grootendorst, 2003, p. 132). It is evident that the aforementioned forms do not provide a strong starting point; however, this does

not mean they should simply be dismissed. Rather, they should be transformed into a form from which critical thinking can begin. Therefore, we consider the first step of this journey to be asking questions that can lead us to our intended goal.

Contemporary argumentative theory greatly counts on asking questions as a way of leading to critical thought. Therefore, let us try to define the context from which we need to approach questions with the purpose of reaching our goal. According to van Eemeren, many thinkers who tackle the problem of argumentation overlook one mistake—they ignore the fact that "a man who asks misleading questions can hardly be said to have argued" (2001, p. 150). Thus, we must also consider another condition of effective questioning—one that may serve as a good basis for distinguishing between a clear standpoint and mere expressions of opinion. The questions we ask with the purpose of differentiating between mere descriptions, explanations, and examples have to be meaningful and designed to lead to a clear standpoint, where, we note, it does not matter whether it is a case of our students expressing themselves or we have a text in front of us that we treat as such.

Firstly, questions need to be asked for the purpose of discovering signal words, i.e. the terms from the given domain that need to be problematized. Although we have previously stated that Example 1 was relatively clear and that it provided an obvious conclusion, we will still take it as a basis for what we want to present here. Namely, the phrase "without doubt" in the previous example suggests that this is Hobbes' conclusion, but for what we now aim to examine, we need to consider it further, in the sense that we need to derive clear premises from it for the conclusion that is claimed in it. The example, the way Hobbes presents it, still does not have a logical structure, although it leads to a conclusion. Therefore, for the purpose of finding the propositions, we first have to find, as we mentioned, so-called signal words that the hidden propositions can refer to. Considering the example as a whole, a meaningful question in this sense would be: what were the sophisters of Athens wont to dispute? Of course, in an ideal scenario, the answer would include the words *identity* and *difference*. They are the signal words upon which the logical structure should be built. As we move forward, we encounter the task of translating these words into propositions. At this stage, we are searching for background information—specifically, logically precise definitions of what is embedded within the example. Here, our task aligns with the idea that it is "useful to identify the assumptions that underlie an argument, as the overall argument can then be better understood and evaluated" (Cottrell, 2005, p. 88). On this path, questions such as "What does it mean to be the same?" or, correspondingly, "What does it mean to be different?" can prove helpful. Only after a clear answer to these questions—which, in this case, should be "Identity depends on the material from which something is made" and "Identity depends on the form with which something is made"—can we say that we have set things into a satisfying logical structure. Namely, we now notice that this is a

classic logical conjunction, which is actually correct only if both propositions are correct, which, at last, is what Hobbes' conclusion also claims. Of course, it was not our point here to finally confirm Hobbes' viewpoint, or to claim that with maintaining a valid logical structure our final goal is fulfilled, but only to illustrate one of the necessary ways by which critical thought takes a proper course. From that perspective, Locke's position, as opposed to Hobbes', must be placed within the same logical framework, in the sense that it should offer another logically and precisely expressed conjunct, as we explained previously.

However, by continuing, we notice another problem that needs to be explained further. It is clear that, even after we have reached the position where signal words are found and placed within a framework of logical propositions, the connection between them can vary. Previously, it was expressed through a conjunction, but in some other examples, it may be expressed through other forms of logical connection. Another task that needs to be emphasized thus presents itself, related to the need to identify the nature of the link between the stated propositions. This is especially important because fallacies can also occur at this stage and must be identified and eliminated. Unlike the previously defined rhetorical ploys, here we are dealing with strictly logical errors. That means that we now consider the aforementioned presumptions in the sense that "the validity of demonstration depends not on the truth or falsity of the premises, but upon their form or structure" (Cohen & Nagel, 1968, p. 110); that is, we attempt to "make clear the formal factors upon which their validity depends" (Cohen & Nagel, 1968, p. 111). But before that, we need another rule with which we can rise to the level of higher abstraction. This rise to higher abstraction can be presented by paraphrasing Cottrell's technical rule that can lead us to what, until now, was our goal—that is, recognizing signal words and defining the propositions within which they are set (Cottrell, 2005, p. 58).

Let us say that, guided by this rule, we took a pen or marker in hand, scanned the example we are presenting, and underlined all the parts with which we could build a logical structure. Then, as suggested, we rendered these elements in the form of definitions. But, for an insight into purely logical fallacies, another abstraction is required—one that demands these definitions or propositions be brought to the surface using simple symbols. Thus, the definitions in Hobbes' textual example are now presented only by the letters *p* and *q*, and their connection is expressed with the symbol Λ. It is not difficult to determine that their validity depends on the rules established by truth tables. However, if the viewpoints are connected by a different operator, such as implication ($\rightarrow$) or disjunction (V), certain fallacies may arise—some of which we aim to highlight here. At the core of everything are Aristotle's teachings about syllogisms; therefore, before we start developing these interpretations further, we consider these teachings to be familiar.

In connection with the initial implication, we should first highlight the fallacy known as *denying the antecedent*, which occurs when "from the negation

of the antecedent we make a conclusion about the negation of the consequent" (Petrović, 2002, p 111). Closely following this is the fallacy of *affirming the consequent*, which involves "affirming the antecedent by referring to the affirmation of the consequent" (Petrović, 2002, p. 111). Another implication-related fallacy is *post hoc ergo propter hoc*, defined as the "incorrect attribution of causality," or the assumption that "after this, therefore because of this" (Riz, 2004, p. 473). Regarding disjunction, a fallacy arises from the failure to distinguish between alternation (complete disjunction) and incomplete disjunction. This is referred to as *fallacia disjunctionis*, and is defined as "a consequence of the inaccuracy of the first proposition, where the first proposition is not truthful because it has not been subjected to complete disjunction" (Petrović, 2002, p. 112).

Besides Aristotle's teachings on syllogisms, we can also begin with the teachings on the traditional square of opposition, representing the stated propositions using quantifiers. Even from that perspective, fallacies can occur that we should avoid, but we believe that would broaden our work beyond necessity. The previously noted fallacies from rhetoric and syllogistic perspectives certainly do not exhaust the domain of possible mistakes. As Petrović notes, there are "infinite forms of improper thought, an infinite variety of logical fallacies in the broadest possible sense" (Petrović, 2002, p. 104); therefore, it is impossible to list them all in one place. However, immediately afterward, he emphasizes a point that closely aligns with our criterion in attempting to better rationalize the primary concepts our students have in developing critical thinking. According to Petrović, "some improper thoughts are so improper that we often do not even notice them among logically incorrect thoughts" (2002, p. 104), and it should suffice that we have made an effort to identify such instances. However, that is merely one formal element in the proper development of critical thought.

Conclusion

By addressing the first two steps in developing critical thinking, we highlighted the significance of developing intellectual curiosity and the correct logical structuring of thoughts about a problem. Under the assumption that these steps are realized successfully, we reach a position of quality logical literacy. However, logic and knowledge of logical rules are not sufficient for fully developing critical thinking. If that were the case, logic would be a canon of truth or truthiness, as we previously explained. However, this is not the case. In fact, our understanding aligns more closely with Mr. Spock's response in the famous film franchise *Star Trek*: "Logic is the beginning of wisdom, not the end" (Kolencik, 2013).

If we return to another goal mentioned in the introductory part of this paper, accepting arguments, it is necessary to establish criteria other than logical ones. In other words, our thoughts, regardless of their logical validity, need to be

grounded in a wider evidence base. The ultimate development of critical thinking also includes an outlook on the world of life, whether it is viewed as natural or social life. Our thoughts, no matter how well logically structured, find their ultimate value through testing against the reality that surrounds us. It follows that further developing critical thinking includes testing and checking against the repercussions that can affect the wider living environment. The steps previously discussed enable this development, but it must be conducted through a series of different strategies and stages.

References

Bowell, T., & Kemp, G. (2005). *Critical Thinking: A Concise Guide*. London: Routledge. https://doi.org/10.4324/9780203482889

Burnyeat, M. (1990). *The Theaetetus of Plato*. Indianapolis: Hackett Publishing Company.

Cohen, M., & Nagel, E. (1968). *An Introduction to Logic and Scientific Method*. New Delhi: Allied Publishers Limited.

Cottrell, S. (2005). *Critical Thinking Skills: Developing Effective Analysis and Argument*. Houndmills – New York: Palgrave Macmillan.

Dewey, J. (1910). *How We Think*. Boston – New York – Chicago: D. C. Heath & CO.

Dewey, J. (2001). *Democracy and Education*. Hazleton, PA: Pennsylvania State University.

Gadamer, H. G. (2006). *Truth and Method*. London – New York: Continuum.

Goufida, M. (2007). *Philosophy: A School of Freedom*. https://unesdoc.unesco.org/ark:/48223/pf0000154173

Hare, W. (1999). Critical thinking as an aim of education. In: R. Marples (Ed.), *The Aims of Education* (pp. 85–99). London: Routledge.

Hobbes, T. (1992). Of identity and difference. In: W. Molesworth (Ed.), *The Collected Works of Thomas Hobbes*, Vol. I (pp. 132–138). London: Routledge – Thoemmes Press.

Houtlosser, P. (2001). Points of view. In: F. H. van Eemeren (Ed.), *Crucial Concepts in Argumentation Theory* (pp. 27–50). Amsterdam: Amsterdam University Press.

Kant, I. (1998). *Critique of Pure Reason*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511804649

Kienstra, N., Imants, J., Karskens, M., & van der Heijden, P. G. M. (2015). Doing philosophy effectively: Student learning in classroom teaching. *PLoS ONE*, *10*(9), Article e0137590. https://doi.org/10.1371/journal.pone.0137590

Kolencik, J. (2013, May 25). *Logic is the beginning of wisdom not the end* [Video]. YouTube. https://www.youtube.com/watch?v=A4XPTmmvVow

Lam, C.-M. (2007). Is Popper's falsificationist heuristic a helpful resource for developing critical thinking?. In: M. Mason (Ed.), *Critical Thinking and Learning* (pp. 93–108). Oxford: Blackwell Publishing.

Locke, J. (1999). *An Essay Concerning Human Understanding*. Hazleton: The Pennsylvania State University.

Malabou, C. (2005). *The Future of Hegel—Plasticity, Temporality and Dialectic*. London – New York: Routledge.

Marinković, J. (1983). *Metodika nastave filozofije*. Zagreb: Školska knjiga.
Nikolić, I. (2019). Informal and formal steps in conducting discussions and debates as ways of teaching philosophy. *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History*, *18*(3), 163–173. https://doi.org/10.22190/FUPSPH1903163N
Nikolić, I. (2020). Critical thinking between essentialism and perennialism. *Teme – časopis za društvene nauke*, *XLIV* (3), 863–880. https://doi.org/10.22190/TEME190117050N
Peirce, C. S. (1868). Questions concerning certain faculties claimed for man. *The Journal of Speculative Philosophy*, *2*(2), 103–114. http://www.jstor.org/stable/25665643
Petrović, G. (2002). *Logika*. Novi Sad: Dnevnik.
Plato. (2004). *Theaetetus*. Indianapolis: Hackett Publishing Company.
Popper, K. (1995). *Conjectures and Refutations*. London: Routledge.
Riz, V. (2004). *Filozofija i religija – istočna i zapadna misao. Rečnik*. Beograd: Dereta.
Russell, B. (1926). *On Education*. London: George Allen & Unwin LTD.
van Eemeren, F. H., & Grootendorst, R. (1984). *Speech Acts in Argumentative Discussions*. Berlin: De Gruyter Mouton. https://doi.org/10.1515/9783110846089
van Eemeren, F. H. (2001). *Fallacies*. In: F. H. van Eemeren (Ed.), *Crucial Concepts in Argumentation Theory* (pp. 135–164). Amsterdam: Amsterdam University Press.
van Eemeren, F. H., & Grootendorst, R. (2003). *A Systematic Theory of Argumentation: The Pragma-Dialectical Approach*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511616389
Герджиков, С. (2019). *Методика на философията в училище. Лекции*. София: Екстрем.
Јеремић, М. (2016). *Филозофија. Уџбеник за четврти разред гимназије и средње стручне школе*. Београд: Klett.
Правилник: Правилник о плану и програму наставе и учења за гимназију. (2020). *Просветни гласник*, *4*/2020. Београд: Службени гласник Републике Србије.
Титл, П. (2018). *А шта ако… Сабрани мисаони експерименти у филозофији*. Београд: Центар за промоцију науке.

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Почетни кораци у развијању критичког мишљења кроз наставу филозофије: *scandalon* и рационализација

Резиме

У овом раду ћемо говорити о проблему изазивања и успостављања извесних предиспозиција неопходних за успешан развој критичког мишљења као једног од кључних циљева у настави филозофије. Полазећи од дефиниција и препорука које даје Министарство просвете, науке и технолошког развоја Републике Србије, а које се

тичу циљева наставе филозофије, у нашем раду дајемо неколико начина за успешније достизање ових циљева, указујући укратко и на општи структурни оквир из којег је могуће наступити при њиховој реализацији. На почетку те структуре *scandalon* и рационализација заузимају прва два места. Из те перспективе, указујемо и на значај особина пластичности и незрелости, те на неке од начина њиховог изазивања код ученика. Поред тога, рад обухвата и неке специфичне аспекте критичког мишљења виђене кроз призму логичке и методолошке писмености. Ради бољег разумевања нашег излагања, сам теоријски оквир поткрепљујемо и са неколико примера из учионице. У закључном делу рада, указаћемо да су ово само почетни кораци у развијању критичког мишљења, те да се на путу потпуне реализације овог циља морају остварити и остали кораци попут тестирања, провере итд.

Кључне речи: критичко мишљење; пластичност; незрелост; аргументација; рационалност.