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MIMESIS AND UNDERGRADUATE RESEARCH: RETHINKING HOW RESEARCHER MORALITY IS FORMED IN TIMES OF HIGH REGULATION

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ABSTRACT: Research ethics has been the object of an intense movement of regulation of research based on a preconceived model, under the logic of biomedical sciences. In this context of a mostly normative answer to the moral question, this article aims to offer arguments about the potential of forming morality through research practice. For this, it combines theoretical research, centered on the concepts of mimesis developed by Adorno and Benjamin, with the analysis of responses to an online questionnaire offered by undergraduate students in the humanities and social sciences with experience in undergraduate scientific research (USR). The formative potential of USR is affirmed, as it is a privileged instance for the analysis of mimetic behavior, allowing the learning of beginners through observation and the practical application of concepts from the moral field to research.

Keywords: Undergraduate Scientific Research, Mimesis, Social Sciences and Humanities, Research ethics, Regulation of research.

MIMESE E INICIAÇÃO CIENTÍFICA: REPENSANDO COMO A MORAL DO PESQUISADOR É FORMADA EM TEMPOS DE ALTA REGULAÇÃO

RESUMO: A ética em pesquisa tem sido objeto de intenso movimento de regulação da conduta a partir de um modelo preconcebido, sob a lógica das ciências biomédicas. Nesse contexto de uma resposta majoritariamente normativa para a questão moral, este artigo objetiva oferecer argumentos sobre a potencialidade da formação da moralidade a partir da prática em pesquisa. Para isso, combina a pesquisa teórica, centrada nos conceitos de mimese desenvolvidos por Adorno e Benjamin, com a análise das respostas a um questionário on-line oferecidas por estudantes de graduação das ciências humanas e sociais com experiência em iniciação científica (IC). Afirma-se o potencial formativo da IC, pois é uma instância privilegiada para a análise do comportamento mimético, permitindo a aprendizagem dos iniciantes pela observação e pela aplicação prática de conceitos do campo moral à pesquisa.

Palavras-chave: Iniciação científica, Mimese, Ciências humanas e sociais, Ética em pesquisa, Regulação da conduta.

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MÍMESIS E INVESTIGACIÓN DE PREGRADO: REPENSAR CÓMO SE FORMA LA MORAL DEL INVESTIGADOR EN TIEMPOS DE ALTA REGULACIÓN

RESUMEN: La ética de la investigación ha sido objeto de un intenso movimiento de regulación de la investigación a partir de un modelo preconcebido, bajo la lógica de las ciencias biomédicas. En este contexto de una respuesta mayoritariamente normativa a la cuestión moral, este artículo tiene como objetivo ofrecer argumentos sobre el potencial de formación de la moralidad a través de la práctica de la investigación. Para ello, combina la investigación teórica, centrada en los conceptos de mimesis desarrollados por Adorno y Benjamin, con el análisis de las respuestas a un cuestionario en línea ofrecido por estudiantes de pregrado en humanidades y ciencias sociales con experiencia en investigación científica de pregrado (ICP). Se afirma el potencial formativo de la ICP, por ser una instancia privilegiada para el análisis de la conducta mimética, permitiendo el aprendizaje de los principiantes a través de la observación y la aplicación práctica de conceptos del campo moral a la investigación.

Palabras clave: Investigación Científica de Pregrado, Mimesis, Ciencias Sociales y Humanidades, Ética de la investigación, Regulación de la investigación.

INTRODUCTION

Research ethics is a sensitive field, as it was at the center of serious ethical violations that occurred throughout human history, especially during World War II. The proliferation of norms declared aimed at protecting the moral field is a phenomenon that has been growing at an accelerated pace in recent years, especially in educational institutions, where it would be reasonable to have a preferentially formative answer to the question of research ethics. As a response to these violations, an intense normative movement began to regulate research, initially aimed at preventing the repetition of transgressions mostly practiced in the biomedical sciences, but which was spreading to other fields of research, most of the time without due respect to the particularities of the scientific areas that have come to be regulated (Israel and Hay, 2006).

In Brazil, the movement to regulate research is the object of significant (and justified) non-conformity on the part of researchers in the Social Sciences and Humanities (SSH)⁴, especially against Resolution No. 510/2016 of the National Health Council (NHC). This resolution is the main normative instrument for regulating research in SSH in Brazil, although it comes from a health-related body. The NHC norm disregards and disrespects the particularities of the methodological responses built over the years in research in the SSH, marked by the development and adoption of ethical care based on the specificities of scientific fields.

In addition to continuing to move the indispensable efforts to resist unfounded normalization, it is time for the educational field to strengthen and affirm formative proposals for the construction of researchers' moral autonomy as an alternative to the inadequate normative response. Aiming to contribute with arguments for the strengthening of a formative answer to the question of ethics in research, this article rescues the concept of mimesis to think about it in the scope of the undergraduate scientific research (USR) experience as a possible path for the moral formation of researchers.

The concept of mimesis, in its etymological origin, is centered on the ideas of imitation and representation (Gebauer and Wulf, 2004). The idea of learning by imitation, linked or not to the concept of mimesis, is the subject of several researches and authors in different areas of CHS, and it is possible to state that there is an inseparable relationship between imitation and education in Western culture (Carvalho, 2019). Christoph Wulf (2016) state that the human being child or adult, learns to act in society mainly in a mimetic way. This learning often takes place through participation in rites and rituals in which knowledge is passed on in an incorporated way into action.

In philosophy, the relationship between education and mimesis has been an object of reflection, at least since Ancient Greece, a period in which it was understood as a form of representation of nature, fundamentally linked to artistic expression, playing a leading role in the thoughts of Plato and Aristotle (Schlesener, 2009). To account for the purpose of this article, the theoretical framework will rely, above all, on the interpretations of Theodor Adorno⁵ and Walter Benjamin on the concept of mimesis. This choice is due to the fact that Adorno's work retrieves arguments from the two Greek philosophers mentioned and makes them more complex by combining them with analyzes from French ethnology and Freudian psychoanalysis, which perceived the presence of a regressive character in mimetic behavior. The dialogue with Walter Benjamin was fundamental for a transformation in the Adornian concept of mimesis (Gagnebin, 1993), which is why both authors were chosen to serve as the basis for the analysis proposed here, as they present complementary perspectives of approach to mimetic behavior that serve to think about the experience of USR.

⁴ An overview of the conditions for approval of NHC Resolution No. 510/2016, which currently regulates the CHS, specifically to the area of education, see Mainardes (2017). For productions prior to the approval of this resolution, see (anonymity) and the book edited by Santos and Karnopp (2017).

⁵ It is understood that Adorno is a relevant author to think about proliferation of norms in the moral field precisely because of its theoretical stance of resistance to any form of positive of ethics. In this sense, see Lastória (2001), Schweppenhäuser (2003) and Tiburi (2001).

In turn, the choice of USR⁶, as the initial phase of the researcher's profession, was due to the fact that, although undergraduate students carry out research throughout the course, USR is the most significant instance of training in scientific research, as it is properly guided and systematically organized by a more experienced researcher and by experimenting in a real research environment. This statement is supported by the regulatory legislation of the Institutional Program for Scientific Initiation Scholarships (PIBIC), the oldest public policy to encourage USR still in force in Brazil and which serves as a base for the other types of USR. Pursuant to Normative Resolution No. 017/2006 of the National Council for Scientific and Technological Development (CNPq), the USR aims to “awaken a scientific vocation and encourage potential talent among university graduate students, through participation in a research project, guided by a qualified researcher” (Brazil, 2006).

Based on the central characteristic of USR – moving training from a closer relationship between a qualified researcher and a research beginner – mimesis presents itself as a powerful and adequate theoretical category for thinking about the problem of ethical training in research, because, as will be argued, in this type of educational relationship, more than a mere technique, the learning of a practical practice in research is encouraged, which also involves ethical research. In this way, having USR as a stage and the category of mimesis as a theoretical construct in the elaboration of arguments, especially from the works of Adorno and Benjamin, it is intended to reinforce the importance of the moral formation of beginners in scientific practice, in a context of regulation of research.

To achieve the announced objective, the course of the article will follow the following order: presentation of the construction of the concept of mimesis in the work of the chosen authors, justification of the applicability of the concept in USR for moral education in research, detailing of methodological choices, analysis of opinions of undergraduate students who had experience of USR, from responses to an online questionnaire designed for this study and, finally, presentation of the conclusions.

THEORETICAL FRAME OF REFERENCE

The concept of mimesis in Adorno and Benjamin

The use of mimicry is not unique to human beings, there are studies within the biological sciences on the manifestation of this behavior in other animals (for example, flies, butterflies and snakes) (Futuyma, 1997; Ricklefs, 1996). Perhaps the best known case is of the chameleon that, when feeling threatened, changes the color of its own skin to blend in with the environment. Another form of mimetic behavior, present, for example, certain species of fly, is not linked to environmental imitation, but rather the representation of predator – an insect's attempt not to be identified as prey. In addition to the basic function of protecting life, mimicry appears as a form of communication and learning through imitation present in mammals, having been scientifically verified, at least in one species of bear, in a few primates (Taylor et al., 2019) and in the human being, “by far, the most qualified to learn by mimicry” (Wulf, 2016: 555).

For Plato (1997), the impulse to behave mimetically is irresistible to human being. This tempting character resides in the pleasurable feeling provided by the mimetic experience, as an aesthetic experience of fruition and belonging to nature and the environment. By observing the surroundings to form images and behaviors to be imitated, the human being learns through the representation and internalization of these models. According to Plato (1997), this tendency towards imitation is so intense that it would justify the deprivation of contact with artistic production in the education of young people, as art is understood as an imperfect representation of reality (conceptual reason would be the privileged path access to true knowledge) and which, in addition, contains negative examples that could be followed by young people (especially referring to Greek tragedy and comedy) (Gagnebin, 1993; Wulf, 2008). Furthermore, Plato (1991) criticizes the passive character of mimesis, as a mere representation of what already exists, being stripped, in his understanding, of a creative character on the part of the subject who

⁶ For a review of studies on USR in Brazil, see Massi and Queiroz (2010).

mimics. For these reasons, it is possible to state that Plato rejects the use of mimetic behavior as a resource for educating young people.

Unlike Plato, Aristotle (2000) rehabilitates the concept and its applicability to the educational field, as he sees mimesis as endowed with positive stimuli to be worked on by education. He focused his analysis on the potential of mimetic behavior to generate learning, which is even more important than the object of imitation itself. Although both Greek philosophers recognize that mimesis is part of human nature, especially in children, Aristotle (2000) understands that this behavior does not deviate the subject from knowledge, on the contrary, it works as a resource that “stimulates and encourages the knowledge process (importance of playfulness)” (Gagnebin, 1993: 71). Aristotle (apud Carvalho, 2019: 20), thus shifts the analysis of mimesis (which, in Plato, was centered on the imperfection inherent in representation), highlighting two positive aspects: the creative potential mobilized in the subject so that he is able to establish a relationship of imitation and the fact that imitation is a pleasurable activity for human beings in general.

Returning to Plato, Adorno starts from a first moment of criticism and refusal (especially present in *Dialectics of Enlightenment*, written with Horkheimer), and then rehabilitates the concept of mimesis throughout his work, namely in *Negative Dialectics* and, further, in *Aesthetic Theory* (Bassani and Vaz, 2011). It is important to note that, as a result of the change in the analysis of the concept, some commentators claim that Adorno was not able to substantiate mimesis as a theoretically consistent category (in this sense, see Freitas, 2001). In defense of Adorno, it is stated that there was a transformation of the concept throughout his work and that such change, as a whole, allows for a more complete analysis of mimesis, which is of interest to this article.

For Adorno and Horkheimer (1985), the need for self-preservation of life is at the archaic origin of mimetic behavior. In addition, the use of mimesis worked, in the early days, as a way to allay the fear of the different, unknown, frightening and threatening: by imitating or acting, the subject erased (diminished) the difference with what caused him fear. The resort to mythology, magical rituals, dances, among others, served as a way to assimilate the unknown, which became less frightening when appropriated by different forms of language (Gagnebin, 1993).

Adorno's theoretical rejection of this archaic moment of mimesis is due to the nullification of the subject's subjectivity for thoughtless incorporation into the context and to the use of non-rational mechanisms for mitigating fear. For Plato (1997), the use of mimicry in education puts at risk the construction of the laborious path of rational understanding of the world through the seduction to the enjoyment of nature and the arts. Along the same lines as Platonic criticism, but thinking from modernity onwards, Adorno and Horkheimer (1985) perceive that the first (archaic) mimesis can represent a threat to the process of clarifying nature based on reason.

Like Plato, even criticizing mimetic behavior, Frankfurtian authors argue around the strong human inclination to its practice; more than that, Adorno recognizes the existence of an “unavoidable moment of mimesis that is intrinsic to all human knowledge and practice” (Adorno, 2009: 131). Given the inevitability of this moment, Adorno (2009) argues that the rational emancipation intended by the Enlightenment movement should, precisely, be built from the overcoming of this first and inherent mimetic contact with reality. For Adorno and Horkheimer (1985), strongly influenced by Freud (1996), the absence of the rational overcoming of the first mimesis would result in the risk of adopting regressive behaviors, among which the most serious would be the realization of a “deeply rooted tendency in the living being and whose overcoming is a sign of evolution: the tendency to lose oneself instead of actively imposing itself on the environment, the propensity to let go, to regress to nature” (Adorno and Horkheimer, 1985: 187).

However, on the other hand, the excessive hardness in conducting the process of rational clarification and control over the mimetic impulse could determine its repression.

That price is high. It could be described as the transformation of the mimesis original, pleasurable and threatening at the same time, into a perverse mimesis that reproduces, in the subject's insensitivity and stiffness, the harshness of the process he had to go through to adapt to the real world and, we would say with Freud, from being a child to becoming an adult. This second mimesis is built on the repression of the first; it characterizes the subject who managed

to resist the temptation of regression but who lost, in this struggle as necessary as fatal, the plasticity and exuberance of original life, when he did not lose life tout court. (Gagnebin, 1993: 73).

For this reason, Adorno and Horkheimer (1985) see education as the central dimension for understanding modern society, as it instrumentalizes the process of clarification, especially from formal education institutions. For the authors, in a critical tone, “a pedagogy that makes children unaccustomed to being infantile – is the very condition of civilization” (Adorno and Horkheimer, 1985: 85). The modern educational process, instead of departing from mimesis for the construction of rationality, starts with the repression of mimetic behavior to control childish impulses.

In the school phase (as it happened in the beginnings of humanity), mimetic behavior is fundamentally determined by physical stimuli, by physiological reactions to preserve life, in which fear takes a leading role and the tendency is to imitate the behavior of the fittest or dissolution in the environment. Adorno (1993) establishes a relationship between archaic mimicry and the permanence of this behavior in childhood, as a pre-conceptual phase of approximation/appropriation of the world. Gebauer and Wulf (2004) assert that, in Adorno, mimesis figures as a central category of the educational process (*Bildung*), constituting intersubjective in social practices, being indispensable for the creation and conservation of a moral action based on imitation.

This first moment of mimesis is of fundamental importance. During this period, the family and the school tend to be the two main institutions responsible for introducing the world to the new generations, much more by example (and the environment they provide) than by word. Due to the absence of the world's most structured conceptual understanding in, children appropriate reality, through the incorporation (and imitation) of behaviors. Rites, gestures, (re)actions, are marked in the unconscious of children and are carried throughout life. If the environment is one of repression of the body, mimesis remains in its archaic character of immediate and unstable instance, based on the fear of difference, which tends to generate, according to the analysis of Gagnebin (1993: 76) on Adorno, a “process social of perverse identification... [, in which] the individual fear of regression to the amorphous would engender a totalitarian collective regression, whose most complete expression is fascism”. The totalitarian regimes intensify the archaic fear of the different, offering as an antidote the identification with the charismatic leader, endowed with an easy speech that explores, precisely, superficial appropriations of reality.

Benjamin (1985), in turn, took mimesis from a perspective more similar to that adopted by Aristotle, perceiving a (cri)active character inherent in human mimetic behavior (Gagnebin, 1993). This is because mimetic behavior presents elements of a knowledge relationship with the active participation of the subject, who needs to form an image of the environment to make it possible, rather than simply being able to recognize similarities, it is necessary to produce similarities (Benjamin, 1985). Indeed, the human being, unlike the chameleon, for example, is not able to change the color of his own skin, he needs to imagine the object or subject to be imitated and rationally create mechanisms that allow the representation. As this production does not generate perfect copies, it forces the subject to (creatively) fill gaps based on his subjectivity. Benjamin (1985) uses writing as an example: even writing letters, understood as a simple imitation task that could produce perfect copies, is impregnated with the personal traits of the writer.

Imagination, as the ability to create mental images, is favored by the archaic ability to read “the things themselves before the word are an object of reading” (Freitas, 2008: 365). It is important to clarify that Benjamin uses the archaic term referring both to “the origin of humanity and history [as to] the period of learning the world and socialization of the child in the process of educational for adult life” (Schlesener, 2019: 256). In both cases, imitation is intentionally produced with a view to insertion in the world.

Benjamin (1987) approaches mimesis mostly from texts about childhood (their own and in general), showing great concern with this stage of life for the development of rationality. Susan Buck-Morss (1995: 288, own translation) states that “[no modern thinker, with the exception of Jean Piaget, has taken children more seriously in developing a theory of cognition.” However, while Piaget focused on the gains resulting from the progressive advance of abstract thinking replacing childish thinking,

considering the use of explanations fantastic such as cognitive error, Benjamin sought to understand the losses resulting from the gradual abandonment of mimetic behavior by entry into adulthood (Schlesener, 2019).

According to Benjamin (apud Buck-Morss, 1995: 290), the loss of mimetic ability in adult life is determined by the loss of the ability to perceive similarities non-sensitive, understood as those that have no rational basis (referring to scientific rationality). Benjamin (apud Lavelle, 2014: 82) refers to “certain mimetic practices that characterize children's play and that would have been the foundation of a magical view of the world in the past”. He draws a parallel between the devaluation of mimetic behavior (1) throughout human history, referring to the replacement of this behavior by the inductive reasoning characteristic of modern science, and (2) in the individual's life, represented especially by the loss of capacity of imagination, so present in children's lives through play. In this relationship, the author sees the school as the main responsible for the suffocation of the mimetic impulse in children (Schlesener, 2019).

For Benjamin (1994), perceiving in things only the similarities already perceived determines the impoverishment of the experience. In the text: *On the program of the coming philosophy* (Benjamin, 2001), the philosopher announces his project to build a concept of experience capable of including what he called the experience of thought. For him, the experience “[f]ormed less with isolated data and rigorously fixed in the memory, than with accumulated data, and often unconscious, that flow into the memory” (Benjamin, 1994: 103). In the text *Doctrine of the similarities*, which deals specifically with mimesis, the author reaffirms this point:

Even for today's men it can be said that the episodes daily in which they consciously perceive the similarities are only a small fraction of the countless cases in which the similarity determines them, without their being aware of it. (Benjamin, 1985: 109).

Following this line, Benjamin (1985) states that art is the privileged dimension for the occurrence of true experiences. The artist is the one who retains the ability to produce similarities non-sensible, to see similarities where no one sees them. This idea is at the center of *Aesthetic Theory* Adorno's, apparently due to the influence of his dialogue with Benjamin (Gagnebin, 1993). Despite the risks pointed out by Adorno, it is clear from the *Negative Dialectics* and, even more, from the *Aesthetic Theory*, that the author does not condemn mimetic behavior; however, he understands that a first and desirable moment of mimetic approach to reality must be accompanied by the rational exercise of the subject: “it is neither an immediate mimesis, nor repressed mimesis, but the process it triggers and in the which remains modified” (Adorno, 1982: 364).

The process triggered by the first mimesis is fundamental for the construction of moral behavior in Adorno. For the author, morality is based on an impulse to prevent suffering (Adorno, 2009). In the first moment of mimetic behavior, in which there is an indifference between the subject and nature, it is possible to establish feelings of contiguity, familiarity and, especially, solidarity with the suffering of the other: “The impulse, the naked and raw physical fear and the feeling of solidarity with bodies torturous, to use Brecht's expression, the impulse that is immanent to moral behavior [...]” (Adorno, 2009: 238).

Mimesis, scientific initiation and formation of morality

Considering the characteristics of USSR, it is possible to affirm that it is an entry ritual into the academic environment. In this sense, the word itself initiation means more than simply the act of starting something, it also carries with it the notions that it is a rite, an experiential activity. The meaning of initiation, according to the Houaiss dictionary (2020), is: “The act of giving or receiving the first elements of a practice or the rudiments relating to an area of knowledge. Ex.: initiation scientific”. In USSR, the student is “initiated in the science 'game' and experiences linked to a research project, designed and developed under the guidance of a professor” (Massi and Queiroz, 2010: 175).

Thus, it is reasonable to state that the use of the term initiation indicates the expectation that USSR provides broader learning than only from a theoretical point of view, having as its main foundation

the contact between an initiate and a beginner. This makes USR a privileged instance for mimetic learning. The applicable legislation confirms this argument and establishes the central relationship of USR between a “qualified researcher” (under the terms of Normative Resolution No. 017/2006) and a young person starting research. From a perspective of laboratory practice, Neves (2001: 84) states that

[in USR,] learning takes place through observation and imitation of what the most experienced people do. In the field work, an intern informed me that she could only succeed in a certain procedure because the employee had taught her a special way to hold the scissors and that without it she would not be able to advance. Tacit knowledge thus accounts for a large part of the work in science, forcing those who wish to continue in the scientific endeavor to spend a good deal of time in the laboratories.

This tacit knowledge, especially associated by the author with laboratory practice, tends to be undervalued in the context of SSH. This is mainly due to the more material character that characterizes research practices in the biological sciences. In this sense, learning by imitation is more evident in biological sciences than, in general, in SSH, characterized by research practices that refer to a merely rational learning, supposedly without materialization in the physical world. However, mimetic learning is also an important resource in the training of researchers in SSH, which is evident, for example, when a young student learns to conduct interviews by imitating the approach and interview techniques of a senior researcher.

However, in this article, the aim is to affirm the importance of USR for mimetic learning in the moral field, which applies equally to science in general, with no difference between biological, SSH or mathematical sciences. If the correct way to hold a pair of scissors may require a theoretical explanation that is too abstract for a trainee, what then about understanding the metaphysical concepts that characterize moral thinking, and, even more challenging, the application of those concepts to research practice? However, in USR, it is possible for the student to visualize the application of the concepts of the moral field by experienced researchers, for example, in the adoption of ethical care in conducting a research.

The USR experience offers a privileged opportunity to learn metaphysical concepts by visualizing their materialization through actions. This is very important from an educational point of view, because the concepts of the moral field, due to their metaphysical character, are impossible to be known objectively (Lavelle, 2018), imposing serious difficulties for researchers in training. In this sense, it is possible to affirm that USR is close to what Benjamin called experience of thought, through the visualization of images loaded with meaning. In this way, the USR experience allows beginners to visualize the researchers' moral behaviors and to form mental images of the application of ethical concepts in practical situations, such as taking a stand in the face of concrete ethical dilemmas.

The formative potential of USR resides, fundamentally, in the fact that it enables the realization of the human tendency to learning through imitation, recognized by all authors who serve as the central foundation of this text. In the title *Minima moralia*, Adorno (1993: 147) states that “[the] human clings to imitation: a human being becomes truly human only when he imitates other human beings”. This aspect is essential to think of USR as a privileged instance for the formation of researchers' morality, as in which, according to Adorno (2009), the process of human formation moves by mimetic identification with individuals who contain the universal, in this case, humanity.

It is important to return to one of the main controversies about the formative potential of mimesis, which was even at the center of the debate that was established between the conceptions of Plato and Aristotle, regarding a supposed passivity characteristic of mimetic learning. Affirming that USR favors moral learning by resorting to mimetic behavior does not mean to determine that the student will graduate as a senior researcher. According to Wulf (2016: 559), following in Benjamin's footsteps: “[i]mitate does not mean to make a copy, but to elaborate an image that certainly has a model, but does not copy it”. This can be explained by the individual's participation in the process of producing similarities by filling in gaps, as mentioned in the writing example. Thus, the educational character of mimesis resides in the fact that imitation is an active process of producing similarities through which the

child seeks to transport himself into the world of which he does not yet feel part (Benjamin, 1987), or, in the case of this text, of the young adult who intends to be initiated into the academic world:

Identifying with the other, understanding him as a person who acts intentionally and, at the same time, paying attention to him are skills that participate in the mimetic desire of child to equal the adult and to resemble him, that is, to become like him. (Wulf, 2016: 555).

The relationship of mimesis with education can also be thought of from the etymological origin of the verb to educate (e/ducare, from the Latin), as a process of leading (dúcere) the child outside of himself (e-ex) (Martins, 2005) and prepare her to live in the world. To that extent, the educational process is a driving process.

[...] from the perspective of pedagogical authority it was held that the only honest and demonstrable license to teach is that which one possesses by virtue of example. [...] The valid teaching is ostensive. Show. This “ostentation”, which so intrigued Wittgenstein, is present in the etymology: the Latin dicere, “to show” and, only later, “to show by saying”; token and techen Intermediate English with their implicit "what shows" connotations. (After all, is the teacher a showman?) In German, deuten, which means "to point", is inseparable from bedeuten, "to signify". (Steiner, 1998: 13, own translation).

In this teaching-showing process, this encourages the beginner to imitate the researcher, residing the possibility of meaningful learning, born of the desire to learn. Based on such concepts and arguments, the data collected will be presented below in order to perceive some impressions of CHS students about the USR experience.

METHODOLOGICAL CHOICES

This article is part of a research project started in 2016 by the Research Group (deleted to preserve anonymity) and its backbone is the collection of data through the application of online questionnaires, to SSH researchers at different stages of their academic career (senior researchers - represented by leaders and vice-leaders of research groups⁷, doctoral students⁸ and researchers in training - understood as students with USR experience), in addition to an international stage⁹, seeking to produce knowledge about the consequences of normative interference (heteronym imposition) in the formation and exercise of moral autonomy of researchers.

At this stage, seeking to represent the beginning of the researcher's profession, the possibility of approaching research training from the process of orientation of the end of course paper (TCC) was conveyed, however, USR, in most cases, precedes chronologically the orientation of the TCC, appearing as a first contact with the research. In addition, the guidance practice of the TCC is implemented in different ways in the institutions and, in general, less rigorous than the USR in terms of compliance with the research method and ethical procedures. In this sense, in USR, the researcher in training is integrated into a consolidated research, that is, they are part of a research group, dependent on funding and, consequently, on strict compliance with regulatory procedures, with more intense interfaces with the university and with society – issues that tend to be mitigated in TCCs.

The intention of this phase of the research was to count on the answers of the USR scholarship holders of the Graduate Programs in Education (PPG/Edu) evaluated with grades 6 and 7 by the Coordination for the Improvement of Higher Education Personnel (Capes). In October 2019, were contacted by e-mail the respective USR directorates of the universities of the three PPGs that meet the aforementioned criteria, headquartered in the South Region. Of the three USR directorates contacted, two of them responded affirmatively about sending link of the questionnaire to its students in USR activity, and the third did not even respond to the contact.

⁷ Omitted for the preservation of anonymity.

⁸ Omitted for the preservation of anonymity.

⁹ Omitted for the preservation of anonymity.

Although the number of respondents fell short of what was intended (26), we understand that the sample is sufficiently representative for the exploratory purpose of this study, in which the analysis of responses is complementary to the theoretical discussion. Furthermore, the questionnaires are comprehensive, offering data that can be analyzed compatible with the main objective of this article.

The of the data collection instrument (questionnaire online first version) was developed in 2016 and, since then, it has undergone minor changes in order to adapt it to the target audiences of the different phases of the research¹⁰, which is registered in the Scientific Committee of (omitted to preserve anonymity), complying with all protocols relating to research ethics. In the version used for the present phase of the research, the questionnaire had eight closed questions, 13 open and one using the Likert Intensity Scale. In order to reduce the time needed to answer the form in full, some questions regarding the characterization of the respondents' profile, contained in the previous phases, were suppressed.

DATA

From a total of 26 respondents, 46,2% (12) started their activities in the USR with less than 20 years old, 34,6% (9) between 21 and 24 years old, 15,4% (4) between 24 and 30 years old and only 3,8% (1) over 30 years old. Based on these data, considering that 80,5% (21) of the respondents were under 24 years of age when starting the USR, we can see the realization of one of the main purposes of the USR, which is to promote the initiation of young people in the research activity, as recommended by CNPq in Normative Resolution No. 017 (Brazil, 2006).

It is interesting to note that only 7,7% (2) of beginners remained in the survey for less than 6 months, while 65,4% (17) stayed for more than a year and 26,9% (7), between 6 months and 1 year. Through an open answer, 96,2% (25) positively evaluated the experience in USR and, on a scale of "1 to 6", to quantitatively represent the dedication to activities in USR, 61,5% (16) scored "6", 30,8% (8) chose "5" and 7,7% (2) represented their own dedication with the number "4". These data indicate that USR is a pedagogical strategy well accepted by the students, who did not spare praise when describing the experience: "great" (R1, R6, R7, R11); "determinant" (R3); "very good" (R4, R8, R9); "incredible" (R5); "rewarding" (R10); "enriching" (R12, R13); "necessary" (R15); "best choice" (R16); "contributed immensely" (R18); "fantastic and essential" (R22); "most impactful experience of my student life." (R25) The following answer stands out:

USR research is very rich for undergraduates who are beginning to enter academic research and also to deepen their training experience. It emphasizes the importance and complexity of research scientific for the construction of serious and well-founded knowledge; in addition to encouraging continuous study, whether in the training period or already graduated. The experience with USR also points to the need for dedication and a favorable environment for several aspects interfere in a good immersion in academic research, such as: favorable environment, encouragement of scholarships, dialogue between advisor and advisor, valuing the area of work and training, etc. (USResearcher 02, Questionnaire, 2021).

The good results of USR can be understood, in part, because participation in the activity is an initiative of the student. It is possible to infer from the answers that 100% sought USR on their own initiative, with the following answer being representative: "The USR is your initiative and you need to go after it" (R26).

The motivations for such decision, object of an open question, can easily be separated into four groups: 38,5% (10) said they were interested in the research, 26,9% (7) intended to complement the training, 26,9% (7) demonstrated a desire to become researchers and 7,7% (2) reported interest in remuneration.

¹⁰ Based on this, a detailed description of the questionnaire will not be carried out, which can be found in the following articles: (omitted to preservation of anonymity).

It is understood that the interest in research and the intention to complement training (65,4%) can be grouped around the understanding that only theoretical training, a general characteristic of primarily expository undergraduate classes, is seen as insufficient by students.

Regarding the 26,9% (7) who expressed the desire to become researchers, they materialize the mimetic desire of wanting to be a researcher (Wulf, 2016: 555). More than the scientific question, a fundamental aspect of the educational relationship emerges, which is the underlying human relationship. In this sense, one of the answers is quite significant, stating that the main motivation to perform the USR was the “possibility of working with Prof. [name withheld]” (R9). In the same sense there were responses that affirmed as the most positive aspect of the USR the advisor:

It was great, I had an incredible advisor and I realized that I love researching! (USResearcher 01, Questionnaire, 2021).

Every supervisor should be like mine (modesty aside). It gives us a lot of motivation for research and autonomy in developing it. (USResearcher 08, Questionnaire, 2021).

If, on the one hand, having a good advisor, in the students' opinion, can be considered the most positive aspect of the USR experience, on the other hand, the opposite can also be stated. This reinforces the argument that mimetic experience does not generate perfect copies, but allows the visualization of models. To that extent, the importance of USR in the moral training of researchers should not be understood as necessarily positive. With Adorno (1995), it is understood that there are individuals who repress their mimetic stimulus to assert their rationality and, having done this to themselves, they feel legitimized to reproduce the same process of violence against others. This profile is growing in the academic environment, increasingly competitive (and sickly), and seems to be represented in the following answers to the question about what they liked least about USR:

In my first scholarship, I shared a room with a teacher who was unnecessarily harsh with its fellows, demanding more hours than expected for the student's dedication. (USResearcher 05, Questionnaire, 2021).

Pressure from my advisor. (USResearcher 14, Questionnaire, 2021).

My advisor sometimes did not understand my doubts and was a little rude. (USResearcher 20, Questionnaire, 2021).

In this line, an experienced researcher may or may not be a model to be followed. This is in line with the argument that mimetic behavior is not just passive, as the opportunity to visualize a model can move the beginner's rationality to seek personal affirmation as opposed to the model.

Asked, with two possible answers offered, about which context the respondents considered to have developed more autonomy, 92,3% (24) said that in USR, and 7,7% (2) said in regular classes. Such percentages are consistent with the argument that creating opportunities for a model does not mean encouraging passive behavior on the part of students; on the contrary, the model conveys some security for the formation of own thought and action. Representing this understanding, when asked openly about the reasons why one or another instance favors autonomy more:

The experience in USR was/is decisive in relation to my interest in continuing to work in the research. There is a lot of learning that it provides, but I feel much more autonomous and responsible since I started to be part of a research group. (USResearcher 03, Questionnaire, 2021).

I was lucky to have an advisor who was very engaged in the academic process of undergraduate students. It gave me autonomy to develop my own academic research, which became my TCC and which could have been developed even in later stages. (USResearcher 13, Questionnaire, 2021).

It is interesting to note in the answers the constant use of a material aspect in the description of the USR experience, which can be understood along the lines of what Benjamin (1985) understands as the formation of mental images, linked to the human tendency to read the world first by the images. In this sense, the respondents used verbs that refer to the senses, such as seeing and looking, and words

that materialize concepts, such as distancing, which characterize mimetic learning as one that is experienced throughout the body (senses and reason):

In the room the teacher tells me what I have to do and how to do it. Scientific initiation taught me to try new methods, in which I could myself **see** directly within the research, the advisor supports me and always helps me with any questions I have, but the path and **each step** new to take comes from me, and the classroom doesn't give me that. (USResearcher 23, Questionnaire, 2021, emphasis added by the authors).

My greatest learning was the **look** of a researcher. (USResearcher 14, Questionnaire, 2021, emphasis added by the authors).

In regular classes I found a great **distance** between teachers and the training process of students. (USResearcher 13, Questionnaire, 2021, emphasis added by the authors).

To that extent, the answers corroborate the understanding that the aesthetic aspect of the USR experience, as an instance of training that enables mimetic learning, favors the understanding of abstract concepts, such as those that characterize the field of foundation of moral behavior. The tension between theory and practice in USR, especially in the moral field, can be evidenced by the expressive percentage of 73,1% (19) of respondents who said they had already experienced an ethical dilemma in the research, contrasting with 80,5% (21) who admitted that they were not sufficiently familiar with Resolution NHC No. 510 (Brasil, 2016). In other words, students were able to recognize an ethical dilemma, despite their little knowledge of the applicable standard.

And this is even more important given the percentage of only 23,1% of respondents who claimed to have attended a course on ethics in graduation. On the other hand (and perhaps as a result of this training lapse), in the following question, only 23,1% said they did not look for alternative ways to deepen their knowledge about ethics.

Based on the percentages presented, it is possible to affirm the importance of USR as a tool for the formation of researchers' morality. However, this instrument is currently little and poorly used in Brazil, which is evidenced by the percentage of 50% of the respondents who, in some way, made reference to the little appreciation of the research activity carried out by the students. Among the evidences of devaluation, the reference to the scholarship value, of R\$ 400.00¹¹ per 20 hours of research per week was the main issue mentioned by the respondents. It is worth noting that the value of the scholarship has not changed since 2012 and that the USR programs are being subject to a significant reduction in the number of scholarships, in the current context of retraction in funding for education and science in Brazil.

FINAL CONSIDERATIONS

Based on the theoretical arguments and data presented, it is possible to affirm that mimetic behavior is at the center of the experience provided by USR and, to that extent it can be an important resource to be mobilized for the moral formation of subjects. In line with Benjamin's (1985) argument, this resource is capable of mobilizing the aesthetic dimension, as necessary as it is mistreated in the context of formal education, and acquires even more relevance in a context of proliferation of control norms, often alien to interests and needs of the CHS field.

However, following Adorno (1982, 2009), it is important to consider that the use of mimetic behavior is necessary, but not sufficient, and should be combined with the development of students' conceptual reasoning skills, only accessible through adequate and guided theoretical reflection. The mimetic stimulus is an excellent instance of sensitization, but it needs to be accompanied by a rational effort by the subject, under penalty of transmitting the idea as naive as it is dangerous that the foundation of the moral field is simplistic. This warning is especially necessary in a context in which self-proclaimed norms of abound codes of ethics, which hide control interests over scientific activity and norms that intend to regulate research.

¹¹ Equivalent to EUR 62,50 at the commercial exchange rate of September 3, 2020.

Thus, the best path seems to be a balanced training between mimetic stimuli and the development of theoretical reasoning, as the excess of the discursive transmission route through lectures is pointed out, even by the questionnaire respondents, as insufficient to enable training proper. Finally, it is understood that the relationship established between researcher and beginner in USR has characteristics that foster a mimetic relationship between them and, to that extent, can function as a powerful instance of moral training in research, efficient and legitimate, as it is produced a on the research practice in the respective area, more authentic than the simple recourse to external standardization.

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