

ETHICS AND INTEGRITY IN SCIENTIFIC RESEARCH: THE HEALTH OF
SCIENCE

ÉTICA E INTEGRIDADE NA PESQUISA CIENTÍFICA: A SAÚDE DA CIÊNCIA

*ÉTICA E INTEGRIDAD EN LA INVESTIGACIÓN CIENTÍFICA: LA SALUD DE LA
CIÊNCIA*



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ABSTRACT: The discussion on ethics and integrity in scientific research has been gaining strength in the world scenario. Some cog in the machine called science seems to be noisy, something is out of place. The most different types of complaints of misconduct within the scientific community pile up and science is placed under suspicion. Scientific entities stand up to inhibit abuses, create clear rules and educate their members. Our objective is to situate the debate and reflect on some issues that are on the agenda: the insertion of false information in the curriculum, especially the Lattes, the idea of authorship and co-authorship, the retractions of articles and their correlates, research involving human beings and plagiarism practices. We start from investigation into the debates that have moved the scientific community, using guide to ethics and conduct of research institutions. We also analyzed some notes that call our attention in relation to infractions committed by researchers, in addition to general references on the subject. The result shows a worrying situation, which points to a necessary and urgent reflection on doing research in the most different scenarios where it takes place.

KEYWORDS: Scientific research. Ethics. Research integrity. Curriculum. Plagiarism.

RESUMO: *A discussão sobre ética e integridade na pesquisa científica vem ganhando força no cenário mundial. Alguma engrenagem da máquina chamada ciência parece ter ruído, algo está fora do lugar. Avolumam-se os mais diferentes tipos de denúncias de más práticas dentro da comunidade científica, e a ciência é colocada sob suspeição. As entidades científicas levantam-se para coibir os abusos, criar regras claras e educar seus membros. Nosso objetivo é situar o debate e refletir sobre algumas questões que estão na ordem do dia: a inserção de informações falsas no currículo, especialmente aquele inserido na Plataforma Lattes, a autoria e coautoria, as retratações de artigos e seus correlatos, a pesquisa envolvendo seres humanos e as práticas de plágio. Partimos de uma investigação nos debates que têm movido a comunidade científica, utilizamos manuais de ética e conduta de instituições de pesquisa. Nós também analisamos algumas notas que nos chamaram a atenção em relação às infrações cometidas por pesquisadores, além de referências gerais sobre a temática. O resultado mostra um quadro preocupante, que aponta para uma necessária e urgente reflexão sobre o fazer da pesquisa nos mais diferentes cenários onde ela acontece.*

PALAVRAS-CHAVE: *Pesquisa científica. Ética. Integridade na pesquisa. Currículo. Plágio.*

RESUMEN: *La discusión sobre la ética y la integridad en la investigación científica ha ido cobrando fuerza en el escenario mundial. Algún engranaje de la máquina llamada ciencia parece tener ruido, algo está fuera de lugar. Los más diversos tipos de denuncias de malas prácticas son cada vez mayores dentro de la comunidad científica, y la ciencia se pone bajo sospecha. Los organismos científicos se levantan para frenar los abusos, crear reglas claras y educar a sus miembros. Nuestro objetivo es situar el debate y reflexionar sobre algunos temas que están en la agenda: la inserción de información falsa en el currículo, especialmente la insertada en la Plataforma Lattes, la autoría y coautoría, las retractaciones de artículos y sus correlatos, las investigaciones con seres humanos y las prácticas de plagio. Partimos de una investigación en los debates que han movido a la comunidad científica, utilizando manuales de ética y conducta de las instituciones de investigación. También analizamos algunas notas que llamaron la atención con relación a las infracciones cometidas por los investigadores, así como referencias generales sobre el tema. El resultado muestra un panorama preocupante, que apunta a una necesaria y urgente reflexión sobre la práctica de la investigación en los más diversos escenarios donde se desarrolla.*

PALABRAS CLAVE: *Investigación científica. Ética. Integridad en la investigación. Currículo. Plagio.*

Introduction

Our text aims to raise some ethical questions about scientific research and its background. We start from the idea that living in society – living well – requires respect and observance of a set of rules, laws. The ethical conduct of a group reflects the type of society it builds, the way it chooses to deal with others and with public affairs. For Aristotle, the core of ethics is *hexis*, the way of being, the disposition to act good or bad, which is not innate, it is a construction. This way of being is at the root of what constitutes habit and shapes the character (*ethos*) of each individual being, since everyone is absolutely unique (ARISTÓTELES, 2017).

It is not a small difference that we get used to performing actions [*hexis*] in this or that way from a young age. This makes a big difference. Better yet, it makes all the difference [...] Because actions are, as we said, decisive for the production of the qualities of the permanent dispositions of character [*ethos*] (ARISTÓTELES, 2017, p. 40, 1103b 2-26, our translation).

For Aristotle, good actions are born from practice, from experimentation and improvement, and have an end (*telos*) in itself. The end of each action must be happiness (*eudaimonia*), experienced in the journey, and not in a distant future projection. And it is in excellence (*areté*), the quality of what is best, when we are excellent in what we do, that we find happiness. Ethics, therefore, is intertwined with a set of values that make life in society possible and fair (ARISTÓTELES, 2017).

We will talk about the scientific community, a small stratum of society, and the inexorable observance of ethical principles, in order to produce serious, healthy, and credible science. The idea for producing this text arose from an invitation to speak about ethics and integrity in scientific research in a postgraduate program in 2020. Our modest intention is to contribute to reflection on the topic, especially among students and teachers, bring to life a most urgent issue that is on the agenda. As Aristotle states above, it is necessary to create habits; Let us therefore create the habit of talking about ethics and good practices, so that we internalize them. Without aspiring to any ready and definitive answer, we selected some aspects that involve the integrity of scientific research and ethical issues: the insertion of false information in the curriculum, especially that inserted in the Lattes Platform, authorship and co-authorship, retractions and their correlates in articles scientific, research involving human beings and issues of plagiarism practices; other issues will be addressed to a lesser extent. We do not intend to exhaust the topic, but only to add to the debate, to provoke some reflections.

The idea of scientific

Let's start by sketching an idea of the meaning of scientific based on Rubem Alves' reflection. Psychoanalyst, writer, educator/thinker, he needs no further introduction. Rubem Alves received an unexpected visit from a renowned colleague, whom he had not seen for a long time (ALVES, 2007). Without asking permission, and without further ado, the colleague burst into his office and asked: what is scientific? According to Rubem Alves, that man was somewhere between indignation and perplexity. He had tried to publish a work about what he had learned throughout his life, but despite having the most notable credentials, he was rejected. His work was not scientific, was the justification he had heard. Rubem Alves wrote a set of very interesting chronicles to reflect on that unusual question of his friend – what is scientific? I will mention just one of them. Rubem Alves states that as soon as he heard that disturbing question, many images filled his mind telling the following story.

There was a village bathed by a huge river. Mysterious creatures inhabited those waters, everyone was aware of this truth. However, no inhabitant of the village had ever seen any of these fantastic beings. One day, a man wove a mesh - called a net, and threw it into the river. Behold, when you bring it to the surface, the surprise. A fantastic being, who possessed many credentials, had been pulled from the depths of the water – a fish. Amazed, those villagers wanted to learn how to make nets and remove those creatures from the water. This is how fishing began. Everything evolved and the fishermen created a brotherhood, full of rules. Rule for entry: the fisherman needed to prove his skills. He would have to present a fish caught in nets that he had woven himself. The most interesting thing about the brotherhood is that its members developed their own language, used obligatorily for communication only between the initiated: Ichthyolase, which meant, based on the etymology of the Greek language, the language of fish; nothing more original.

Those men, entangled in the fraternity's many rules, forgot the language of the other inhabitants of the village:

The members of the brotherhood, due to their language habits, began to think that only what they knew how to talk about was real, that is, what was fished with nets and spoken in Ichthyolase. Anything that wasn't fish, that wasn't caught in their nets, that couldn't be spoken in Ichthyolase, they refused and said, "It's not real" (ALVES, 2007, p. 17, our translation).

The fishermen did an excellent job: they wove good nets and caught great fish. But the world was not limited to nets and fish, nor to the universe of the brotherhood. Much was ignored

by those conceptions and those men. Therefore, not everything could be answered by them, cloistered in that orthodoxy.

After telling this story to his colleague, Rubem Alves thought he had answered the question “what is scientific?”

Answer: it is what fell into the networks recognized by the fraternity of scientists. Scientists are those who fish in the great river... But there are also the skies and the forests that are filled with the songs of thrushes... There the scientists' nets are always empty (ALVES, 2007, p. 18, our translation).

We said we would only tell a chronicle, but let's not shy away from reporting another case, one of those very real, almost an interpolation. A great writer and poet wrote a book of beautiful poems. Professor of the Law course at a public university, he decided to send the institution a request for an incentive for scientific production based on this work. The incentive legally provides for a ten percent increase on the teaching base salary over a period of two years. A three-member judging committee was formed, which not only approved the claim, but also gave the most noble praise to that work. Process forwarded to one of the chambers of the university council for a final verdict, its president did not accept the committee's opinions and assessed that the work did not follow the line of work carried out by the professor. There was supposedly a pathetic mismatch between legal letters and literary letters. The misaligned teacher should then justify such intertwining. Yes, it seems, to the hardened eyes of some scholars in academia, that Law – an austere entity of some sort of abstraction – runs regardless of everyday life, even in the kitchen. Life immersed in the most different sensibilities – of a flock of birds, of contrasting feelings, of reflection on the human soul and of the cries of the unequal. There was no point in the teacher and poet summing up his long experiences and translating them into rhythmic verses, a skill possessed by so few. The work was not scientific. As a literary work, the professor, *data venia*, did not directly quote cold articles and sections.

Welcome to the world of academia/university. Let us learn, therefore, that underlying being scientific is a set of rules from which it is not possible to escape at the risk of the text losing its scientific character. Scientific writing is expected to be able to follow a set of premises.

The scientific text presupposes the possibility of verifying its content; This can only happen if the text follows a determined, controlled path. It is this control that will allow its verification, its scientificity. There needs to be coordination between the exposition of theories and methods, dialogue with peers. The language must be appropriate, we say scientific,

endorsed by standards from the Brazilian Association of Technical Standards (ABNT) or by Vancouver Standards, in some cases. Particular attention must be paid to policies inherent to ethics, good practices and integrity in scientific research.

In summary, scientific writing follows clear standards, which must be appropriate to the type of writing intended. Each modality – from an article to a doctoral thesis – has its own writing rules that must be obeyed.

Therefore, when claiming to be scientific, it is necessary to adapt to the rules of the fraternity – or the scientific community. You need to speak your ichthyolase, your language. On the one hand, failure to comply with the dictates and precepts of the initiatory ritual in the scientific community (selection, competition, etc.) leads the initiate to the penalty of not entering this particular universe. On the other hand, once initiated into this sphere of few, failure to comply with the rules leads its member to exclusion, or to be liable for bad practices and violations of established norms.

Ethical aspects in research

Once admitted to the fraternity of researchers, it is necessary to comply with a code of ethical conduct. We talk about ethics and integrity in research in order to protect science. We take as science, in a broad and general sense, this controlled knowledge that we are dealing with.

Science is understood as any rationally systematized and justified body of knowledge, obtained through the methodical use of observation, experimentation and reasoning. This broad definition applies to the so-called Exact, Natural and Human Sciences, as well as to technological disciplines and those ordinarily included among the so-called Humanities (FAPESP, 2014, p. 15, our translation).

Scientific activity, it is worth noting, presupposes not only the carrying out of research in the established manner of scientific practice, but also its dissemination, interaction with other researchers and the process of guidance and supervision in the training of researchers (FAPESP, 2014). We are thinking about all levels of scientific activity, from Scientific Initiation, often starting in high school, to postgraduate research and more.

An important reflection needs to be raised: why does the world mobilize to discuss ethics and integrity in scientific research? The focus stopped being research and fell on the process of construction, execution and dissemination of its results. We must assume that some piece of this mechanism called research has collapsed, or been lost. In the 21st century, at a time when

research is taking great strides, perplexed researchers and research entities from all over the world realize the flaw in the research mechanism and come together in a chain to discuss ethical and integrity problems in research to Finally, think about possible solutions. There can be no credibility without clear rules universally followed by the entire scientific community.

The world is mobilizing and Brazil is closely and actively following events. Universities and other Brazilian educational institutions are moving to write and/or update their manuals on good practices, ethics and integrity, in order to guide the academic community.

Brazil hosted the IV International Conference on Research Integrity ², which was held in Rio de Janeiro, in 2015. The conferences, which began in 2007, in Europe, aim to deepen the debate on research integrity through dialogue with interlocutors from all over the world. The First Conference (1st WCRI), held in Portugal, was attended by diverse entities, governmental and non-governmental, from fifty countries. From this meeting, an agenda was created to tackle problems such as plagiarism, image manipulation and the issue of inappropriate attribution of authorship. The initiative involves the efforts of publishers and various entities that have worked to detect and inhibit such practices. The primary objective of the conferences was “the need to promote public confidence in science”³. For a long time 'being scientific' was synonymous with credibility, respectability, but something has gone out of place and the world needs to make efforts so that science returns to its course, and is reliable.

The Second Conference, held in Singapore in 2010, was marked by the launch of the document *Singapore Declaration on Research Integrity*, translated and used by several countries, including Brazil. The aforementioned document, although it recognizes the singularities in conducting research in different countries, lists four *principles* and fourteen *responsibilities* common to all researchers from any part of the world. The text is translated into Portuguese and its wide dissemination and debate on the topics raised are of fundamental importance ⁴.

The first principle suggested by the *Singapore Declaration on Research Integrity* seems to us to summarize the entire issue on the topic. It must be the motto of the serious researcher, and every researcher must be serious: honesty: “ **Honesty** in all aspects of research” (SCIELO, 2010, p. 1), states the Document. In other words, all phases of the research, from its proposal,

²Access to the Event website: <https://wcrif.org/wcri2015>. Accessed on: 4 Nov. 2020.

³Information taken from the Background *section of the World Conferences website on Research Integrity*. Available at <https://wcrif.org/2015-background>. Accessed on: 4 Nov. 2020.

⁴The document can be consulted in full on the Scielo website: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0011-52582010000300008. Accessed on: 4 Nov. 2020.

through the entire construction process to the publication of results, must be conducted honestly. It is at least uncomfortable that we, as researchers, need to learn to be honest. We need to touch our wounds, recognize our problems and seek treatment. We are not just talking about Brazil, or Brazilians, but about a worldwide concern with the healthy issue of honesty, an indispensable quality against bad practices in scientific research. In summary, integrity in scientific research, therefore, is the observance of a set of *principles* and *responsibilities*, which involves trust, respect, good management, honesty and compliance with scientific rules.

This international movement for good practices in science began in Portugal, passed through Singapore, Montreal, Rio de Janeiro, Amsterdam, Hong Kong, and the most recent conference took place in 2022, in Cape Town. In 2024 it will be the Greeks' turn to host the VIII conference. The movement gains strength with each encounter. Good practices in research and encouraging education on this topic are on the agenda in order to ensure trust in science ⁵.

An article in Revista da Fapesp, edition 297, entitled 'Collection of examples to improve scientific integrity', presents numerous project initiatives from institutions and researchers from various parts of the world who come together to rethink and solve problems that endanger the research integrity. One action is titled Standards of Operating Procedures for Research Integrity. This is an international project, involving several European countries and the United States, coordinated by Denmark and the Netherlands, financed by the European Union's Horizon 2020 program, which is investing considerable money. Its objective is to bring together good initiatives to preserve integrity in research for open dissemination to the scientific community. Part of this material is already available on its website (MARQUES, 2020b, ed. 297).

The issues relating to ethics, related both to carrying out the research and to the dissemination of results, are numerous, despite for a long time focusing on topics essentially involving plagiarism and self-plagiarism. But these questions go far beyond this problem. Let us mention just a few of these concerns present in numerous scientific research codes of conduct, although we cannot address them all in this brief text: data adulteration/manipulation; image manipulation; rapid publication of results based on questionable methodologies; authorship issues; duplication of publication; plagiarism and self-plagiarism; insertion of false information in CVs and excessive self-citation, a ruse used to impact scientific production.

⁵On the Conferences website there is a link that directs the reader to a set of websites from various parts of the world on research integrity, it is worth checking out. Available at <https://wcrif.org/links2019>. Accessed on: 13 Nov. 2020.

The Lattes CV and the insertion of false information

In the late 1980s, CNPq began to organize itself to gather data from Brazilian researchers into a curriculum, Lattes. Césare Giulio Lattes (1924-2005), who lends his name to the Brazilian curriculum, was a scientist from Paraná, a physicist who carried out important research. At the beginning of the 90s, Lattes was still initially available to researchers, who had to enter their data on floppy disks and send them to CNPq. With advances in technology and improvement of the system, in August 1999 the entity launched the standardized curriculum. Since then, the Platform has been constantly improved, reformulated, perfected, in order to make it increasingly reliable. In this way, the Lattes Curriculum gained wide space in universities and several other entities, which use it as an evaluation tool (CNPq, 2020). Lattes has a strong influence both on the provision of research grants by research funding agencies and on admission to postgraduate programs, competitions and much more.

The Lattes Curriculum then became a presentation and identification card for both the beginning student and the more experienced researcher. However, since the Platform does not have control over the data entered by its users, problems multiply and an important tool, including as a memory holder for research in Brazil, is in the news due to misuse by users.

From the most common users to the famous, we see reports of false data being entered into Lattes: from an article that was not published to a postgraduate degree or postdoctoral internship that was not carried out. The examples are countless and growing. A case that caused a scandal in Brazil involved Carlos Dacotteli, appointed to the Ministry of Education in the Government of Jair Bolsonaro, in 2020. Dacotteli was presented as a doctor at the National University of Rosario, in Argentina, and a post-doctor at the University of Wüppertal, information contained in your Lattes CV. The media quickly announced with enthusiasm the good credentials of the new minister, the third for the Ministry in the Bolsonaro Government. Enthusiasm soon gave way to despair, when the institutions mentioned in Dacotteli 's CV denied such information. He had not completed his doctorate or completed a postdoctoral degree. The scandal provoked his immediate resignation (OLIVA, 2020) and reignited the controversial debate: is lying on Lattes a crime? If it is a crime, what is its nature?

The Bill (6561/09) that was being processed in the Chamber of Deputies since 2009 provided for the criminalization of falsifying CVs. In 2013 the Project was rejected. The majority of deputies understood that the legislation already provided for this type of situation, with the offender being able to fall either under Article 298 of the Penal Code, which provides

for document forgery, or under the crime of embezzlement (CÂMARA DOS DEPUTADOS, 2013).

The crime of ideological falsehood, provided for in Article 299 of the Brazilian Penal Code, was pointed out by many debaters as a possibility of framing those who lie in the Lattes Curriculum. The Law, however, deals with the omission of information or insertion of false data in a public or private document. A new question comes into discussion: is the Lattes Curriculum a document?

A decision by the Superior Court of Justice (STJ)⁶, in the judgment of an appeal to a *habeas corpus*, in 2017, was categorical: there is no criminal act in the insertion of false information in the Lattes CV. Among others, the STJ's first justification rests on the fact that Lattes is not considered a digital document, as stated in the Brazilian Key Infrastructure (ICP – Brazil). Secondly, the Lattes Curriculum is not digitally signed and can only be used via *login* and password. Following the reasoning, the STJ postulates: it is up to those interested in using the Lattes Curriculum to investigate their information (BRASIL, 2017).

The unbridled race for some kind of prestige, some or many benefits, obviously goes beyond *terra brasilis*. Issue 323 of Revista Pesquisa FAPESP presents the suggestive article 'How to inflate CVs and influence people'. The renowned company *Clarivate Analytics*, indexer of the *Web of Science* (WoS), annually publishes the list of the most influential researchers in the world. In 2022, it acted more rigorously when publishing the aforementioned list. Exaggerated self-citation and hyper-authorship were already known to the company, which has continually developed filters to detect bad practices. A partnership with *retraction Watch*, a database of retracted articles, led to the exclusion of many researchers manipulating data from the list (MARQUES, 2023).

Here or elsewhere, the inexorable observation remains: the ethical misconduct of researchers who build lying and dubious CVs, wanting to be the first, has brought science into disrepute and shaken the foundations of a world that was unsuspected until recently.

⁶The text of the decision is available in full on the Page: <https://stj.jusbrasil.com.br/jurisprudencia/494384691/recurso-ordinario-em-habeas-corpus-rhc-81451-tj-2017-0043808-8/inteiro-teor-494384709>. Access: 10 Jan. 2023.

Authorship, co-authorship, collaboration (contribution)

The scientific community has paid attention to issues of authorship, seeking to define the definition of author, co-author and possible collaborator. It is necessary to understand how the role of each of these characters is defined.

According to Helena Donato (2014), the guidelines pointed out by the *International Committee of Medical Journal Editors* (ICMJE), adopted by numerous journals and funding agencies in various parts of the world, define a series of requirements for compliance with the authorship criteria. Helena Donato points out two main concerns with the ICMJE requirements: first, ruling out unrealistic authorship, attributed without the person actually having contributed to the process of producing the text. Second, preserve the austerity of the means of communication itself, attributing full responsibility for the content of the text to the authors and protecting themselves when, for example, one of them files a lawsuit alleging ignorance of the publication and its non-authorization (DONATO, 2014).

The concern outlined by the ICMJE is present in several codes of conduct in Brazilian academia. The Report of the CNPq Research Integrity Commission expresses in item 16 of its Guidelines: “The inclusion of authors in the manuscript must be discussed before starting collaboration and must be based on already established guidelines, such as those of the International Committee of Medical Journal Editors” (CNPq, 2011, p. 6, our translation).

In the *Code of Good Scientific Practices* (FAPESP, 2014), in article 3.2.6 it is stated:

In a scientific work, all and only those researchers who, having expressly agreed with this indication, have made direct and substantial intellectual contributions to the conception or carrying out of the research whose results are presented in it, must be indicated as its authors. In particular, the provision of infrastructural or financial resources to carry out research (laboratories, equipment, inputs, materials, human resources, institutional support, etc.) is not a sufficient condition for an indication of authorship of work resulting from this research (FAPESP, 2014, p. 23-24, our translation).

Although each research institution and each area has its own regulations and codes of conduct, they generally comply with international standards. All with the common concern of safeguarding research and its dissemination, with respect to the production of quality science, recognized by the public.

The Guide to Good Scientific Practices of the University of São Paulo points out four examples of fraud inherent to authorship:

ghost authorship - omission of author to hide, for example, conflicts of interest; **honorific authorship** - attribution of authorship to those who did not

contribute to the work; **orphan authorship** - unfair omission of an author; **forged authorship** - inclusion of a renowned researcher unrelated to the research, to increase the chances of publication (PRPUSP, 2019, p. 16, our translation).

Regarding the publication of research results, the authors are co-responsible in all aspects, except if there is a tacit mention in the text of each author's contribution to the publication (FAPESP, 2014).

An article published in the journal *Accountability in Research* publicized Michael Reisig's research. One of the questions he asked his interviewees, a group of 613 researchers from the most renowned North American universities, was what were the most frequent types of misconduct in academia. Of the 26 answer options, first place goes to *the gifted author*. That is, when the person who received the authorship did not actually participate in the production. Another problem related to authorship still appears in this research – the presentation of the sequence of authors that does not reflect the true order of contribution of each one in the publication (TIPOS, 2020).

It remains for the researcher, when publishing a text, to pay attention to the fundamental issue of not inserting the name of another person without prior authorization. It cannot be assumed that such an act will have no implications, that it is something innocent. Authorship must have the consent of all authors. We draw attention to researchers, especially those who have just started, not to insert the name of their supervisors as co-authors without their prior knowledge and without their real participation. Sometimes, scientific journals require a doctorate from the author or, in the case of co-authorship, from one of the authors. Faced with the need to publish, or rather, the pressure to publish, the researcher sometimes ends up using the supervisor's name without his or her consent. The opposite also happens, when the advisor takes ownership of the student's research, inserting his name as co-author without actually having worked on producing the results of the text or, even, when he uses the student's research data without mentioning his name. Is there a bridge or a chasm between co-authorship and mentorship?

The question remains: are advisors co-authors? Advisors play a specific role in the research guidance and monitoring process. No matter how many of the ideas developed by his students are his, even if he contributes significantly to the production process, or even produces part of the research (and this happens), he continues to be the advisor. Regardless of your level of investment, there is a marker that distinguishes you from an author or co-author. Your DNA

is imprinted on your mentee's research, it's undeniable. However, his official role is as advisor, with clear responsibilities in the postgraduate regulations.

Some postgraduate programs, especially professional ones, have formally established students and advisors as authors and co-authors of educational products; the development of an educational product is a requirement of professional-level postgraduate studies. Despite the student and teacher already knowing their roles in advance, we believe that this decision requires in-depth and more informed reflection on the concept of authorship and its implications.

In the FAPESP Code of Good Scientific Practices, one of the duties of the tutor/advisor, in its article 3.6.2, is co-responsibility throughout the research production process and dissemination of results, paying special attention to ethical issues: "During the period of guardianship, tutors are co-responsible for the scientific and ethical quality of their tutees' research activities, as well as the reports of their results" (FAPESP, 2014, p. 27-28, our translation).

Based on this principle, it is necessary to be attentive to all aspects of publicizing the production and the issue of authorship. In relation to publications involving the student and advisor, the question is: is it in fact a joint work or part of the student's research that, when published, bears the name of the advisor as co-author? A practical example: let's imagine that a question arises from the student's research that the advisor and student decide to develop together and publish; in this case, the attribution of authorship to both seems legitimate. But, as Marcelo Krokosz (2012) warns, many advisors take advantage of the work of their students, taking a 'free ride' on the publication.

The Report of the CNPq Research Integrity Commission (2011), after talking about authorship and authorship criteria in its item 17, is exhaustive in the following item: "Collaboration between professors and students must follow the same criteria [...] Ghost authorship in Science is ethically unacceptable" (CNPq, 2011, p. 6, our translation).

Author, co-author and eventual collaborator must take their place explicitly in the production. The collaborator, someone who read the text and made some contributions/suggestions, should only be mentioned in the form of thanks in a note, an elegant and fair stance.

In mid-2020, Sérgio Fernando Moro and Beathrys Ricci Emerich were accused of plagiarism in the publication of an article signed by both; the article reproduced an excerpt of text without mentioning the author. Sérgio Fernando Moro, former federal judge, was Brazil's

Minister of Justice between January 2019 and April 2020, professor at Centro Universitário Curitiba (UNICURITIBA)⁷ and master's advisor to Beathrys Ricci Emerich. She is a lawyer and master's student at Unicuritiba. The article was published in the scientific journal *International Relations in the Current World*. The text “The practice of law and the crime of money laundering: possibility or not of holding lawyers responsible for receiving legal fees tainted by illicit capital” (EMERICH; MORO, 2019, our translation) was received by the periodical on December 5, 2019, accepted on February 18, 2020 and updated on June 27, 2020. When the accusation of plagiarism came to light, the Journal removed the article from the air for adjustments with due retraction, hence the update of the publication in June, with the formal retraction of Beathrys Ricci Emerich⁸.

The Journal informs in the header of the updated article about the existence of a Publication Clarification Note, presented in an Annex, on page 16. In the Note, signed only by Beathrys Ricci Emerich, she unilaterally assumes responsibility for what she names as a “methodological failure consistent in the absence of citation from the illustrious Author Dr. Marcelo Augusto Rodrigues de Lemos⁹. I recognize the unintentional failure” (EMERICH; MORO, 2019, p. 16, our translation). He also informs that he apologized to the author for omitting the quote and adds the apology to Unicuritiba College and the advisor, Sérgio Fernando Moro.

Added to the Annex with the Clarification Note at the end of the text, just below the name of the authors, a retraction was added. Although only Beathrys Ricci Emerich signs the retraction, the text discreetly adds the name of Sérgio Fernando Moro to the request: “I take the opportunity to begin this work by retracting myself, together with my advisor, Dr. Sérgio Moro, for the methodological error that I committed, by inadvertently omitting references to the quote in this study [...]” (EMERICH; MORO, 2019, p. 16, our translation).

The news, initially released by the website *Metrópoles*, with wide repercussion in the press, is titled: “Lawyer accuses Moro of plagiarism in article. Former judge says co-author wrote it” (VELEDA; WALTENBERG, 2020). The weight fell on the accusation of plagiarism and the use of the famous name of Sérgio Moro.

⁷Information available on the Unicuritiba website: <https://www.unicuritiba.edu.br/Corpo-Docente-de-Mestrado/Corpo-Docente-em-Direito-Empresarial-e-Cidadania/Page-3.html>. Accessed on: 06 Aug. 2020.

⁸The republication of the article presents all this information. Consult the website: <http://revista.unicuritiba.edu.br/index.php/RIMA/article/view/3905/371372236>. Accessed on: 06 Aug. 2020.

⁹The article “The degradation of the free practice of law in times of crisis” by lawyer Marcelo Augusto Rodrigues de Lemos was published on September 1, 2019 (LEMOS, 2019).

Two issues run together in this case: plagiarism and the authorship of the text. Although the emphasis has fallen on the first, the second seems equally or more relevant to us. When contacted by the press, Sérgio Fernando Moro stated that it was a co-authored work, and added: “The writing is basically the advisee’s” (VELEDA; WALTENBERG, 2020).

An article, published on the ConJur website, on June 26, 2020, presents a clarification note attributed to Sérgio Fernando Moro. According to the note, he states:

The article in question was written in academic co-authorship, with all the writing being done by the student. Unfortunately, she made a methodological error by using two short excerpts without citing the author. The article was removed from the journal, it has already acknowledged the error and apologized to the author. It is the work of a graduate student who made a mistake and has since corrected it, which is commendable. (SERGIO, 2020, our translation).

In the aforementioned note, Sérgio Fernando Moro attributes *all* writing of the text to the student and states that the work is hers. He tries to minimize his responsibility by stressing that this is the work of a *graduate student*. He took on the role of advisor, although he says the production was co-authored. We are, therefore, faced with an authorship problem that may be questioned. How and why did the advisor sign his student's work without actually participating as a co-author?

The much debatable appeal to unbridled publication sometimes generates problems of this nature. One of the important aspects for evaluating postgraduate programs is the quantity of their scientific production. We are talking about numbers, not quality. In fact, we are talking about Qualis/Capes, since not even publishing is enough. It is necessary to publish in scientific journals with an excellent Qualis classification, awarded by CAPES (Coordination for the Improvement of Higher Education Personnel). Here we jump from number to letter, or letter and even number: Qualis A1, A2, A3, etc. The qualification of the journal in which the text was published matters. The discussion throughout 2020 dealt with the new rules, focusing on 'impact factors', a topic that is beyond the scope of this text.

Ultimately, in this gloomy scenario, it is increasingly common to call for collective production to optimize the number, and the lyrics as well. As a rule, scientific journals do not accept publication from undergraduate, master's and doctoral students, if they are not in a co-authorship system with doctors.

Beathrys Ricci Emerich, as a master's student, could not have published her work alone, no matter how much merit it may have had. The co-authorship of a doctor represented an

indispensable condition for publication in this journal. The Guidelines for Authors of the journal *International Relations in the Current World*, item 14.2, warn:

Articles or reviews written by academics will only be received for analysis if presented in co-authorship with professors supervising research projects, extension projects, undergraduate or postgraduate coursework (specialization, master's, doctorate and post-doctorate) (*REVISTA RELAÇÕES INTERNACIONAIS DO MUNDO ATUAL*, 2020, our translation).

Despite making efforts to correct the problems involving the article, the Journal maintains¹⁰ Sérgio Fernando Moro as the first author in the summary, while in the body of the text this role is attributed to Beathrys Ricci Emerich. What happened? Would it have been the first version of the text published under Moro's name and after the repercussion of the case there was a reversal of authorship, since Moro himself assumes that the work belongs to the student? We checked another issue: the order in which authorship was established – first author, second author (co-author?).

To conclude this discussion of extraordinary learning for all of us, we arrive at the Journal's Editorial Code of Conduct. In the topic that deals with Article Authorship, we see:

Authorship should be limited to those who made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions must be listed as co-authors. Others who have participated in certain substantive aspects of the research project should also be recognized or listed as contributors. The author must ensure that all suitable and no inappropriate co-authors are included in the article, and that all co-authors have seen and approved the final version of the document and agreed to its presentation for publication (*CODE*, 2020, our translation)¹¹.

Therefore, despite the failure to cite the source, which is plagiarism, even if unintentional, as the author stated (and this actually happens), we have the problem of attributing authorship, and also the order of authorship (who, after all, is the first author?).

In the case of advisor/student publications, the question remains: what is the limit for these publications? What are the elements that should guide this partnership, especially when it involves publishing the results of student research? The debate is open, or needs to be. Wouldn't it be plausible that instead of co-authorship, the student could give credit in a footnote

¹⁰This information can be verified in the summary of the issue of the Journal in which the article was published; consult the website: <http://revista.unicuritiba.edu.br/index.php/RIMA/issue/view/152/showToc>. Accessed on: 07 Nov. 2020.

¹¹Available at <http://revista.unicuritiba.edu.br/index.php/RIMA/pages/view/ethycspolicy>. Accessed on: 6 Nov. 2020.

to the advisor, and that's all? Isn't the call for publication behind this problem, especially on the part of institutions that promote research and evaluate Postgraduate Programs? An appeal that, unfortunately, most researchers do not seem to question.

As stipulated in the FAPESP Code of Good Scientific Practices, mentioned above, the advisor is co-responsible for reporting the results (FAPESP, 2014). In fact, it is important that the advisor receives credit for the guidance when publishing a student's work, an issue that is often forgotten and should be highlighted very well on the CV. It is worth remembering that guidance work is hard and the teacher does not receive any additional salary for guidance. Once again, the FAPESP Code of Good Scientific Practices is clear in this regard: "Tutors must ensure that scientific contributions resulting from research activities guided or supervised by them always receive credit appropriate to their nature and importance." (FAPESP, 2014, p. 28, our translation). Funding agencies demand to be cited by fellows in their publications, which is perfectly correct.

In relation to journals, we point out two significant problems, which will not be discussed at this time, but which are clear symptoms that the publish-publish policy needs to be seriously evaluated. The first is the space that so-called predatory journals, especially foreign ones, have been gaining. These are journals that publish for payment without paying significant attention to ethical rules and a thorough assessment of the quality of the text. The number of articles by Brazilian researchers published in these media is increasing, according to research carried out by the School of Administration of the Federal University of Rio Grande do Sul with articles published between 2005 and 2015 (MARQUES, 2018).

The second issue concerns certain requirements of some journals, always in the race to achieve and maintain a good Qualis/CAPES evaluation. Sometimes, editors require the author, during the text review process, to cite articles present in their own journal, a measure that serves to increase visibility and impact the journal's qualification, since one of the aspects used to evaluate periodicals is the citation number of their articles. The author is therefore coerced into making the citation in order to have the submission accepted and published.

Bill 2096/20 is being processed in the Chamber of Deputies of São Paulo. The Project proposes changes to the Penal Code, with the purpose of punishing the abusive practice of journals that require the citation of their articles in new publications. The coercive citation, then typified, named, one that is not intended to contribute scientifically and significantly to the proposed discussion, but to increase the journal's impact factor, will become subject to imprisonment of one to six months or a fine for editors and reviewers. The deputy responsible

for the Project, Fausto Pinato, alleges two considerable reasons for approving the Project: the increasing number of scientific journals that resort to this artifice and the unruly appeal to the culture of *publish or perish* (CÂMARA DOS DEPUTADOS, 2020).

Retractions from scientific journals and their correlates

As our focus is scientific production, from its embryonic phase to publication, it is important to emphasize care with publications. To this end, let us briefly note the retractions in scientific journals. That is, when after a publication, an error is noticed in it and it needs to be corrected. We cited above the example of article retraction, the case of Emerich and Moro. But post-publication corrections can be used in many other situations, from small errors, when the author unintentionally omitted some data and needs to be corrected, to plagiarism, data falsification and much more. Either the author can request the article to be removed from publication, justifying the request, or the editors can do so, in a justified manner.

Important publishers and indexers, such as Scielo, the Online Scientific Electronic Library, have prepared guides, based on international indicators, which must be followed by the journals indexed to them. Its objective is to ensure good research practices. The *Guide for recording and publishing errata, retractions and expressions of concern* from Scielo (SCIELO, 2015) cites the case of the editors withdrawing an article already published from the journal. The process must follow a complete procedure. Scielo advises that the article remains with the watermark and a type of stamp throughout the text, marking it as portrayed and making the text difficult to read. Once corrected, it can be published in the next issue. An example is when editors detect that an article they had already published in their journal had been published in full or partially in another publication (SCIELO, 2015, p. 2-3). This practice violates the principle of original publication, postulated by scientific journals, with exceptions.

The consequences of a publication with methodological, theoretical, or other flaws can have very serious implications. In recent difficult times, when we faced the Covid-19 pandemic and the acceleration of the publication of research results, many problems were detected. A publication in January 2020 made a comparison between the new coronavirus and HIV, related to AIDS. The article was on the air for two days and was enough to cause a lot of inclement weather in the scientific community, which is why its authors requested its retention, alleging weakness in the methodology (MARQUES, 2020c). Examples like this are multiplying, and in internationally renowned journals. The scientific community is concerned about the

acceleration in the dissemination of research results, especially at times such as that of a pandemic that required an urgent response to placate the fury of the coronavirus.

The speed of the media and the possibility of downloading published files mean that the retraction of an article, or even its removal from the air, does not make it impossible for it to continue to have a life of its own, and remain in circulation. The Fapesp Journal, edition 297, presents the article 'The resilience of an article after its retraction'. An article published in 2005 and retracted in 2008 for falsifying data continues to be cited as valid twelve years after its retraction (MARQUES, 2020b).

It is necessary to make it very clear that not all retractions of scientific publications result from the author's misconduct, the failure may be unintentional. However, as there is, in principle, no differentiation between one retraction and another, it may happen that a well-intentioned author suffers serious losses in his career when having an article retracted. This was a widely discussed topic at the 5th World Conference on Scientific Integrity, in 2017, in Amsterdam. The lecturers were concerned with more precisely delimiting the term retraction (UM NOVO, 2020).

Research involving human subjects

A Chinese researcher, biologist He Jiankui, was the target of severe criticism when he announced the release of two genetically modified babies in 2018. The scientist reported having altered the DNAs, still at an embryonic stage, of two twin girls, with the aim of that they did not contract the HIV virus; the babies' father was HIV positive (ROBERTS, 2018). He Jiankui was tried and sentenced the following year by Chinese courts to three years in prison and to pay a fine for the illegality of the genetic manipulation committed (DA REDAÇÃO, 2019). The news spread across the international press, scared the world and earned the revulsion of the global scientific community. The question remained: what is the ethical limit of science? What does the scientific community predict in research involving human beings?

In Brazil, the National Health Council of the Ministry of Health, following international policy protocols, launched Resolution 466 on December 12, 2012 (BRASIL, 2012). The Resolution established guidelines and standards for research involving human beings. The objective is to protect the rights of the people involved in the research (called participants). From then on, research institutions began to establish research ethics committees (CEP) to

monitor this type of scientific production. Committees must be registered with the National Research Ethics Commission (CONEP) of the Ministry of Health.

It is understood as research involving human beings, according to Resolution 466, II. 14: “research that, individually or collectively, has human beings as participants, in their entirety or parts thereof, and involves them directly or indirectly, including the management of their data, information or biological materials” (BRASIL, 2012, our translation).

Despite being linked to the Ministry of Health and the National Health Council, any and all research involving human beings, directly or indirectly, must be submitted to the CEP of the institution where it will be carried out. The measure applies to all areas of science, including the Humanities.

The research can only be carried out with the approval of the CEP of the institution to which it is linked. Therefore, starting research before approval is considered bad practice, which violates ethical principles. The committee examines the research protocol in light of general legislation, especially Resolution 466/12, CONEP legislation, and each institution's own rules.

Another CONEP Resolution is 510, from April 2016 (BRASIL, 2016). It specifically provides for the standards applicable to the Humanities and Social Sciences. It does not eliminate Resolution 466/12, but it addresses some singularities in the area.

The concern with ethical principles and safeguarding the rights of human beings, preventing abuses as recorded in the past, in which research was carried out imposing suffering on participants, was initially outlined in the Nüremberg Code, drawn up in 1947. The Code provided for the complete responsibility of the researcher, the necessary care for the participant, including their exact knowledge of the research, the benefit and/or harm that the research could cause and the explicit possibility of the participant withdraw at any stage of the research (THE NUREMBERG CODE, 1949).

It was a long journey for the international community to come together with a common set of ethical principles. Today, it is necessary for the researcher to know the regulations of the ethics committee where he intends to carry out his research, and the procedure for forwarding the process of requesting authorization to carry out the same. All processing takes place through Plataforma Brasil. The committees are responsible for approving research and monitoring it, as well as investigating complaints involving projects and researchers. As a rule, the committee regulations present step-by-step instructions for registering the research protocol via Plataforma Brasil. Here we are taking as an example the CEP Regulations of the State University of Bahia (UNEB, 2012).

At the moment the CEP issues the project's Certificate of Approval, authorizing its completion, it becomes co-responsible for the ethical aspects of the research. Everyone involved directly or indirectly in carrying out the research is responsible for it, and may even be liable to legal action for problems arising from it. The following are co-responsible for the research: the CEP, the institution where the research is carried out, the research funding body and the researcher; also the advisor or supervisor, if applicable.

It is important to highlight that the researcher protects himself from possible problems as he follows the CEP protocol, in addition, obviously, to acting ethically. The consent form, therefore, is a guarantee of peace of mind for the researcher in many aspects.

Ana Paula Magalhães, in a lecture entitled 'Ethics in Research with Human Beings', broadcast via YouTube, on November 21, 2019, presents a set of important considerations about the CEP, its functioning and its creation. Let's move on to some of them. According to the speaker, responsible for the Good Research Practices Committee at the University of São Paulo, the CEP is interested in the degree of involvement of human beings in ethical terms. In other words, in the methodology procedures presented by the researcher when requesting the release of a project. It is not enough, for example, to talk about conducting interviews and applying questionnaires. It is necessary to clarify what types of questions, who and how will be interviewed. Given this set of information, the CEP can judge the ethical feasibility and relevance of the research.

The speaker continues. The participant must sign a consent form to participate in the research. The term must be enlightening in several ways for the participant, from the time he will spend to the risks and benefits. Minimal aspects that may seem trivial must be recorded in the consent form, such as warning the participant that he or she may cry when answering a question, or that he or she may find answering a series of questions tiring. Another relevant aspect is when the research involves vulnerable beings. In the case of children and those legally incapable, care must be even more vigilant. In cases involving vulnerable communities – indigenous people, quilombolas, for example – as far as possible, they must receive feedback from the research, which must, in some sense, bring benefits to their community/population. Finally, regardless of whether the research is carried out virtually or by sending questionnaires online, or in person, the protocol must follow the same standards (MAGALHÃES, 2019).

No less important than good conduct during research involving human beings is the responsibility for disseminating its results, which must always protect those involved. It is important that, when publishing the results of this type of research, the number of the Certificate

of Approval issued by the CEP is provided at the end of the text. All of this precaution is primarily intended to protect those involved in the research. Obviously, the Certificate alone does not constitute a guarantee that the research will take place within good scientific practices: the seriousness of the researcher is the *sine condition qua non* for so much.

Plagiarism and self-plagiarism: ethical and legal issues

Academic production presupposes that the author is able to propose a topic and discuss it based on the essential dialogue with his peers. Establishing dialogue requires referencing who your interlocutor is, observing precise rules. When complying with this premise, the text must clearly present the boundary between the author's speech – his reflection – and what he borrows from his peers. What is expected between one act and another is originality in the writing process.

Marcelo Krokosz (2012) clearly differentiates originality from novelty. Originality presupposes treating or talking about something for the first time, being the first enunciator. Originality, on the other hand, is related to a specific, authorial way of dealing with a certain topic. In this case, the author must express his or her ideas or those of others without originality, but with originality.

In this way, a text for an undergraduate course conclusion work (TCC) or a master's degree, which does not have to be unpublished, can be completely original, and must be. The text requires active participation and positioning from its author. It should not be a patchwork quilt, a mosaic made up of small pieces extracted here and there, which informs nothing about the author's reflection.

In this interweaving, it is imperative to care for the other – the one with whom you are in dialogue. It is necessary to correctly cite the source from which an idea, concept or content was extracted. It is not allowed, it is good to reinforce, to take someone else's idea or line of reasoning as belonging to you¹². The omission of the source summarizes the definition of plagiarism, unable to translate the originality of the text.

Marcelo Kroskocz (2012) states in a beautiful statement: “The plagiarist claims to be an author, but he lacks the work and this exists under the condition of an act of creation, which

¹²There are cases in which the plagiarizing author reads someone else's work and writes his text based on the same line of reasoning as that work, as if this were not plagiarism. For example: a work presents a theme based on the discussion of some authors, the plagiarist goes to the work, takes the line of reasoning and the authors cited. Then, he goes to the cited sources and uses them with those ideas without giving credit to the work read, the original *locus of reflection*.

is always personal” (KROKOSZ, 2012, p. 5, our translation). Anyone who has the habit of writing develops a writing style that is their own, like the craftsman who repeats certain lines in his pieces, which are always unique, or the poet who repeats himself without ever being repetitive. The author silently creates and signs his work, without the need to deny his peers.

In the writing production process, the author deals with a large number of references. The following are part of this arsenal: primary sources (material or textual) and the most diverse genres (newspaper, photography, legal texts, letters, among many others). They are found in different media: books, databases, emails, electronic journals, personal information, and much more. When dealing with this entire apparatus, two precautions are essential.

Between surveying the state of the art, various readings and planning the text, the author selects excerpts from one work, then another and another. Thus, he builds his reflection, maturing his initial idea. The first precaution in the process of mobilizing an excerpt or an idea from someone else's work is to immediately note the source from which it was taken. Sometimes the author copies a passage without this attention. After time, and after so many readings, he may get lost and, due to an oversight, fail to reference that passage. Unintentional plagiarism then occurs, but it remains plagiarism. Quite different from when the author deliberately manipulates and signs a section of someone else's work with numerous subterfuges to plagiarism.

The second precaution to be taken is to reference citations throughout the text and ensure that the final bibliographic references contain all the works used, and only them. Furthermore, each work must be referenced at the end in accordance with the established standard. Articles, journals, legal documents, in short, each genre has its own specific referencing. Everything is regulated by ABNT standards (or Vancouver Standards). There are several guidance manuals, with synthesized information accessible on the internet. Educational institutions, in general, make this type of material available. There is also an interesting tool to help the author make references correctly, a free service available on the internet, based on ABNT – More –, a program developed by the Federal University of Santa Catarina (MORE, 2013). Of course, memorization of this immense set of reference rules is not required. It is essential, however, to know that they exist, and that they should be consulted when necessary.

In this sensitive universe, it is necessary to mention self-plagiarism, the act of copying excerpts from one's own publications without proper referencing. Self-plagiarism is considered bad scientific practice, and is a type of plagiarism. But is it possible to never repeat it? Ongoing research carried out by a group of researchers from six American universities is looking at the

topic in the Text Recycling Research Project (MARQUES, 2020a, ed. 294). The general citation rule is necessary in the case where the author needs to take an idea, methodology or content developed in work that he has already published. There is no problem, as long as the author mentions that he is revisiting certain aspects of a text to develop new reflection. You must always be careful not to fall into another problem: exaggerating the citation of your own works, also considered a bad practice, very reprehensible.

There are countless examples of plagiarism and, sometimes, allegations of all types erupt. It is almost unbelievable, for example, that people take an entire article, written by someone else, in one language and publish it in another, in another country, as their own. This case happened in the United Kingdom with Editora Iop Publishing. She received a complaint from an author who stated that his text had been published by the Editora in the name of another, an alleged author. When investigating the case, in addition to confirming the complaint, the Editor found numerous other articles in a similar situation (FRAUDE, 2020). Ethical issues, plagiarism and ideological falsehood are mixed together. The numbers are frightening. We are not talking about beginners in research.

A famous Australian neurologist and editor had his entire production under suspicion after the discovery of what could have been unintentional plagiarism. When editor of the scientific journal *The British of Sports Medicine* (BJSM), in 2005, Paul McCrory signed an editorial with plagiarized excerpts and then apologized. In the subsequent scanning of his production, it was verified that plagiarism was routine in his publications (EVIDÊNCIAS, 2022).

Copyright is protected by legislation and varies from country to country. In Brazil, the Civil and Penal Codes define what intellectual works are and guarantee civil and criminal punishment for those who break the law, who commit plagiarism. Faced with such a relevant problem, a proactive attitude is necessary. Law enforcement is not enough. It is necessary to educate and raise awareness, especially beginner students. Revista Migalhas published the case of three students who, when publicly and harshly accused of plagiarism by their teacher, went to court. The professor and the University were forced to pay compensation for moral damages (DA REDAÇÃO, 2016).

Laws exist because bad practices exist and reparations are needed. However, good training and the researcher's awareness process, from the beginning of their academic life, can prevent this type of practice. Institutions must have as a constant agenda the training of researchers, the discussion of ethical issues and their legal implications.

Some considerations to *start the conversation*

The global movement for the integrity of science has as one of its levers 'promoting public trust in science'. All research institutions and researchers need to come together to protect science. Science, however, is not an abstraction, it is not in a distant place, or a non-place, where we do not inhabit. It is what we try to do. When it is questioned, disrespected and placed under suspicion, we researchers are the target of accusations and doubts. We can only ask: what is our share of responsibility in this scenario? More than that, how can each of us, and should, invest in serious and quality science, which deserves public respect and funding from funding bodies, money from the people? Without definitive answers, or any answer at all, we know it is necessary to widely discuss the topic from its foundations, when the student begins to undertake scientific initiation, and that back in high school, up to universities and other institutions where science is produced.

There is an urgent need to transform the topic of ethics and integrity in research into a constant debate in all instances, aiming for the good training of researchers, getting them used to good practices. And it is not just about the formal inclusion of the topic in the curriculum of undergraduate and postgraduate courses, something essential. It is about debate, dialogue, which must permeate academic life, on a daily basis.

The issue goes beyond punishing, the principle must always be to educate. It is necessary to believe that the path is education, and to work for it. We must fight for the day when the topic of ethics and integrity in scientific research is just a research topic, an object like any other in the past, when we have already achieved a respectable, serious science that moves towards the common good.

Of equal importance: it is urgent to rethink the weight given by educational and research funding institutions to the amount of publication of scientific production, a problem that may be the basis of many others. We can no longer admit that we are measured by numbers, which often, or most of the time, do not truly reflect our research, or our contribution to science.

Most institutions encourage competition among researchers¹³, already naturalized, by rewarding and assigning specific roles to those who have the greatest number of publications. Research grants are also awarded based on production indices. The environment of free thinking, from which great and innovative ideas must emerge, becomes an unsustainable space

¹³Among many other topics, international discussions are already putting on the agenda the risks of competitiveness in the scientific space and the exaggerated weight of publication requirements (MARQUES, 2020b).

for dispute, an arena for foolish vanities. Asking permission from Charles Chaplin, we need to say: we are not numbers, researchers are what we are.

Here's a reflection: just as science is not an abstraction, neither are funding agencies. They are composed and directed by researchers. It was researchers, teachers, scholars who created these rules, which everyone has to follow. However, we are entangled, imprisoned by our own nets, just like the fishermen of Rubem Alves.

Some areas can produce research with faster results and these can be published within all standards of research integrity. There are others, however, that require time for the work to actually be considered complete. In general, the researcher no longer has that time to produce a great work, one in which leisure is imperative for the enjoyment and maturation of ideas. In order to adapt to the production machine, we chop up our texts, transforming them into numbers, which are often disposable. Other times, we participate in articles with multiple authors. All for one more number. Something is out of order.

We need other metrics, other impact factors. We must ask whether researchers are happy, healthy, satisfied, to be measured with numbers. To what degree have these productions added to your life, an integral life? One of the most relevant metrics, which needs to be accounted for, is the happiness index, translated into desire, enthusiasm, disposition and love for what one does. Happiness as thought by Aristotle, which is the end of each action and principle of ethics: "Happiness seems, therefore, to be of full completeness and self-sufficiency, being the ultimate end of all possible actions" (ARISTOTLE, 2017, p. 26, 1097b 120, our translation). This experience, typical of the human soul, which we experience according to our excellence, as Aristotle thinks, must cover all areas of our lives. Happiness is, and should be, an integral part of our professional lives. It should not be left to *happy hour moments*, when we must forget about work, almost a burden, and live the pleasant moment. Happiness is, in essence, a strange metric for a capitalist, corrupting system, which insists on completely taking over the university institution, which grows louder by insistently shouting for freedom.

In view of the issues raised, our intention is only to add, modestly, to the debate on the health of science – the observance of ethical principles and integrity in scientific research. May we not get lost in the tangle of our own networks, so that our ichthyolase does not prevent us from seeing beyond our fragile windows.

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