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A DIPLOMATIC VIEW FOR RESEARCH INTEGRITY

Sarah Carvallo

Abstract

The difficulty of implementing scientific integrity on an international scale is not just a factual problem: it expresses an internal tension in the globalisation of science faced with the pluralism of disciplines, cultures and institutions. A divide is often drawn between scientific integrity, which should be universal, and research ethics, which are always specific because they are encumbered by cultural values. However, the irreducibility of cultural differences obliges us to leave behind an idealistic or sovereignist vision of scientific integrity: it rather indicates a difference in degree between ethics and integrity, which requires the deployment of diplomacy to collectively elaborate international rules in research.*

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1. Introduction

Ethics is a thick concept, in that it involves an irreducible hierarchy of values and significations, which are structured within a determined cultural background. Within ethics, there are key concepts—such as freedom or justice—which seem to support an international consensus.[57] Integrity is one of those key concepts within the field of ethics applied to research. Just as everyone agrees that freedom and justice are necessary, every scientist agrees that integrity is important. But do we really know to what extent we agree? Although we can give negative definitions of those key concepts (freedom means no slavery or dictatorship, justice means no corruption, and integrity means no Fraud, Falsification, or Plagiarism, or FFP), nobody is able to precisely clarify their meaning or create consensus on their interpretation, as they imply different and incompatible world views. Neoliberalism, Socialism, and Marxism give different interpretations of freedom and justice. The same may be true of research integrity: there is no way to have ethics without integrity; nevertheless, research integrity is not the foundation of ethics nor does it replace ethics: it impacts research, if and only if it finds ways to make sense with researchers' ethics here and now, through the diversity of their cultures, their subjects, and their institutions. From this perspective, integrity contributes to the theoretical thickness of ethics: this situation does not condemn it to relativism or nihilism, but it explains why it is difficult to agree on its interpretation and why ethics cannot be reduced to codes or unequivocal injunctions. It opens up a hermeneutic task and calls for discriminating knowledge of the values, injunctions, and interdictions involved in research. The cultural thickness of a country, of a language, of a scientific discipline, or of a research establishment encompasses certain intrinsic values, which characterize the singularity

[57] M. Walzer, *Thick and Thin: Moral Argument at Home and Abroad* (Notre Dame, IN: University of Notre Dame Press, 1994).

of a complex symbolic structure. Therefore, every researcher must assess the issues of their research in their domain, in their institution, in their culture. Because there is no consensus on the matter of values, scientists must take responsibility for their choices: this position requires responsibility and reflexivity.

Regarding this conceptual thickness, on one hand, integrity seems to rely on universal injunctions, which apply everywhere around the globe, similar to the prohibition of incest, murder, torture, etc. Those universal obligations are transcribed into codes and charters, which are summarized in three prohibitions: no fraud, no falsification, no plagiarism. Integrity seeks to preserve and stand up for research in the face of certain potentially dangerous acts.[58] In this universal interpretation of research integrity, it should answer unequivocally to the international consensus of peers who agree on the rules that are necessary—if not sufficient—for a project to be recognized as scientific. In this way, it should express consensual criteria concerning what research should be, no matter what the subjects, institutions, country, and culture may be. Of course, this does not exhaust all the issues related to research, but it determines its hard core: without this necessary condition, a work is not scientific research. It should not be a locus of interpretation, but of application. It should apply everywhere, and these criteria should be consistent in every culture. Consequently, for some scientists, there is a frontier between ethics and integrity. Thus, Pierre Corvol writes, 'Research integrity is not question of morals, but it is founded on universal moral principles, according to which one should not lie, steal… research integrity should not be discussed. It should be

[58] M. do C. P. Neves, On (scientific) integrity: Conceptual clarification. *Medicine, Health Care and Philosophy*, 21(2) (2018), 181-87 (p. 182).

respected: it is a professional code of conduct…'.[59] This declaration presupposes a clear distinction between ethics, which is dependent on culture, and integrity, which is universal.[60]

But, on the other hand, research integrity internalizes a deep tension resulting from the globalization of science in the face of the plurality of subjects, cultures, and institutions. This tension characterizes the issue of interculturality at two levels: the first one concerns local cultures, the second specific disciplines. Although globalized and *de facto* international, science is challenged by the difficulty of supporting a claim of universal legitimacy: research integrity should be its warranty, but it needs to reconcile universal legitimacy with the realities on the ground. Although there are international organizations defending research integrity, can they claim to be universally legitimate? They must admit the plurality of disciplines, cultures, and institutions and allow space for hermeneutical interpretation. Even though international declarations and research integrity offices try to impose it as a consubstantial hard core of science, or a metaculture, they are contested. Their relative failure to impose clear norms and implement research integrity at an international level is not merely a factual problem.

In this paper, we defend a conceptual and practical distinction between science, which is universal, and research integrity, which is

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[59] P. Corvol, *Bilan et propositions de mise en œuvre de la charte nationale d'intégrité scientifique. Remise du rapport à Thierry Mandon, secrétaire d'État chargé de l'Enseignement supérieur et de la Recherche,* 29 June 2016.

[60] Note that in English *ethics* does not distinguish professional deontology from ethics founded on practical norms and personal morals. By extension, various disciplines—including medicine—use the word *ethics* to mean professional deontology. In other words, when there are codes of ethics, there is often a confusion between ethics and deontology. M. Bergadaà, 'Évolution de l'épistémè économique et sociale: Proposition d'un cadre de morale, de déontologie, d'éthique et de responsabilité pour le marketer', *Recherche et Applications en Marketing,* 19(1) (2004), 55-72.

international. In order to understand and accept this tension between universal science and international research integrity, we propose to deploy research integrity as a kind of diplomacy; that is, a network of translations between several scientific modalities.

2. Science in the light of universal culture?

Scientific globalization internalizes a tension: does it refer to an intrinsic horizon, which would suppose that science is universal, and thus able to transcend cultural particularities, or does it correspond only to a state of affairs that imposes standardized ways of doing through a common language, common tools, and common structures (universities, calls for projects, publications)? This problem precedes and determines the issue of research integrity. It qualifies an epistemic and anthropological question in philosophy of sciences that Max Weber (1904-5) raised in his analysis of Western civilization; he considered that European modernity, characterized by scientific and economic rationality, constituted the horizon of culture: only in the West does valid science exist.[61] This thesis has since been criticized at two levels: anthropological and epistemic .[62] In both cases, critics champion science as pluralism, depending on particular cultural contexts (in the sense of

[61] M. Weber, *The Protestant Ethic and the Spirit of Capitalism* (originally published in 1904-5) (New York: Pocket Books, 1991) (Foreword).

[62] Anthropological: J. Goody, *Production and Reproduction: A Comparative Study of the Domestic Domain* (London: Cambridge University Press, 1977); J. Goody, *The Theft of History* (New York: Cambridge University Press, 2006); C. Taylor, 'Two Theories of Modernity', *The Hastings Center Report,* 25(2) (1995), 24-33. Epistemic: J. Dupré, *The Disorder of Things: Metaphysical Foundations of the Disunity of Science* (Cambridge, MA: Harvard University Press, 1993); I. Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge, UK: Cambridge University Press, 1983); H. Lacey, *Values and Objectivity in Science: The Current Controversy about Transgenic Crops* (Lanham, MD: Lexington Books, 2005).

both traditions and disciplines), without considering that pluralism clashes with scientific universality.

Due to a lack of space, we will focus on an emblematic case: geometry. Can mathematics support cultural pluralism without ruining its own universality? Karine Chemla has compared the demonstration of the Pythagorean theorem in ancient Greece with the Gou Gu construction procedure in ancient China. According to Weber, there is only one way of doing mathematics; this way was developed in the West and justifies the fact that Western mathematics is taught all around the world. In this case, the Gou Gu procedure is not really a demonstration and does not prove a theorem, because it deals with a particular kind of triangle (the base—*gou*—of which is 3 chi and the height—*gu*—of which is 4 chi). Or is it the *same* demonstration in two different ways? The comparative study concludes that it is the *same* theorem, if you do not assume a European monopoly on science and rationality.[63]

This particular case corresponds to the general issue raised by ethnoscience: how do we recognize geometry, when it takes such different forms in other cultures, such as string games, mandalas, or drawings on sand?[64] And this problem refers in its turn to the cultural conditions under which science develops: why, for example, did science did not develop as fast in China as in Europe, even though it was at least as advanced in the East as in the West in Antiquity, and considering that the Chinese already had printing at their disposal? Scientist, Sinologist, and historian of ancient and modern sciences in China Joseph Needham

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[63] K. Chemla, 'Penser sur la science avec les mathématiques de la Chine ancienne', in *La pensée en Chine aujourd'hui,* ed. by A. Cheng (Paris: Gallimard, 2007), pp. 374-80.

[64] M. Ascher, *Mathematics Elsewhere: An Exploration of Ideas Across Cultures* (Princeton, NJ: Princeton University Press, 2002); M. Chemillier, *Les mathématiques naturelles* (Paris: Éditions Odile Jacob, 2007).

explains this difference by two sorts of cultural conditions.[65] Europeans value science as essential in relation to a certain conception of truth and power: thus, scientists benefit from high social, institutional, and symbolic recognition. Meanwhile, the Chinese value poetry and political sciences more; they do not set much store by discoveries or scientific professions.[66] In addition, they are more interested in practical sciences related to their own historical context (e.g. seismology, botany, medicine). More generally, historical studies have shown that there are national styles in scientific research.[67] Even if it is universal, science cannot be removed from its cultural dimension. Contemporary scientists often forget this and conflate the two dimensions: the universal and the international. Therefore, it is not surprising that research integrity must necessarily face the question of interculturality at the exact moment when it tries to enact international norms, at the risk of conflating the universal and the international.

Many institutions promote international charters: are they now universal, in the same way as science is? This ambiguous claim is rooted in medical ethics, starting with the Nuremberg Code (1947), which assumes a view of humanity supposed to be universal, in concert with the promulgation of the Universal Declaration of Human Rights in 1948.[68] Promoted by the World Medical Association and updated

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[65] J. Needham, *Science and Civilisation in China, Vol. 2, History of Scientific Thought* (Cambridge, UK: Cambridge University Press, 1956).

[66] *La pensée en Chine aujourd'hui,* ed. by A. Cheng (Paris: Gallimard, 2007); T. Zhao, 'Une analyse philosophique du concept Monde. Empire en termes de Tout sous le ciel', in *Le renversement du ciel–Parcours d'anthropologie réciproque*, ed. by A. le Pichon and M. Sow (Paris: CNRS Éditions, 2011).

[67] M. J. Nye, 'National Styles? French and English Chemistry in the Nineteenth and Early Twentieth Centuries', *Osiris,* 8 (1993), 30-49; J. Harwood, *Styles of Scientific Thought: The German Genetics Community, 1900-1933* (Chicago: University of Chicago Press, 1993).

[68] United Nations, *Universal Declaration of Human Rights,* 1948; Carvallo, S., 'Enjeux transculturels de la mondialisation', in *L'ingénieur citoyen: Synergies*

several times, the Declaration of Helsinki (1964) internationalizes ethical criteria for research and considers its own particular conceptions to be universal. The Belmont Report proposes three supposedly universal principles—respect for persons, beneficence (with the sub-principle of nonmaleficence), and justice—in order to provide a structure and some rules for research with and care of human beings.[69] Because it is supposed to be founded on a neutral conception of the human being, this principles-based approach is meant to go beyond cultural differences and values.[70] This conception recurs in the International Ethical Guidelines for Biomedical Research Involving Human Subjects promoted by the Council for International Organizations of Medical Sciences (CIOMS) in 2002 and 2016. In 2005, it led to the universal Declaration on Bioethics and Human Rights by UNESCO.[71] This conception of universality has been strongly contested in the domain of ethics as a deviation or a new form of imperialism that imposes a Western viewpoint of the rational autonomous individual.[72] Yet research integrity has returned to this principles-based approach and

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entre les langues-cultures et les sciences humaines dans la formation de l'ingénieur du XXI^e^ siècle, ed. by D. Bottineau, M. di Tillo Lacruz, and J. Eschenauer (Paris: Presses des Ponts, 2018).

[69] Commission nationale pour la Protection des sujets humains dans le cadre de la recherche biomédicale et béhavioriste, *Rapport Belmont: Principes éthiques et directives concernant la protection des sujets humains dans le cadre de la recherche,* 1979; T. L. Beauchamp, and J. F. Childress, *Principles of Biomedical Ethics* (Oxford: Oxford University Press, 1979).

[70] R. Gillon, 'Medical Ethics: Four Principles Plus Attention to Scope', *The BMJ,* 309(6948) (1994), 184-88 (p. 188).

[71] UNESCO, *Recommendation on Science and Scientific Researchers* (Paris: UNESCO, 2017).

[72] K. K. Haggerty, 'Ethics Creep: Governing Social Science Research in the Name of Ethics', *Qualitative Sociology,* 27(4) (2004), 391-414; Z. M. Schrag, *Ethical Imperialism: Institutional Review Boards and the Social Sciences, 1965–2009* (Baltimore, MD: Johns Hopkins University Press, 2010.

formulated international criteria for research without claiming to establish the virtues of a player, but only their duties as a researcher. On one hand, in comparison with bioethics, it has abandoned the domain of values and restricted its own field in order to consider only duties. But on the other hand, it has opened and extended the field, in the sense that research integrity claims to deal with all subjects (human and social sciences and natural sciences).

During the same period, the research community as a whole became aware of misconduct as a result of investigations in the field.[73] The World Conferences on Research Integrity (WCRIF) aim to bring together researchers from all the countries in the world and from every discipline in order to identify consensual international criteria against misconduct, such as honesty, responsibility, professional courtesy, impartiality, and good administration of research, with an additional fourteen professional responsibilities (Singapore Statement on Research Integrity).[74] The 2007 conference highlighted how important it is to clarify and publish standards promoting good practices and procedures allowing one to identify bad practices.[75] At the European scale, All

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[73] W. Broad and N. Wade, *Betrayers of the Truth: Fraud and Deceit in the Halls of Science* (New York: Simon & Schuster, 1982 ; B. C. Martinson, M. S. Anderson, and R. de Vries, 'Scientists Behaving Badly', *Nature*, 435(7043) (2005), 737-38; M. S. Anderson, B. C. Martinson, and R. De Vries, 'Normative Dissonance in Science: Results from a National Survey of US Scientists', *Journal of Empirical Research on Human Research Ethics*, 2(4) (2007), 3-14; M. S. Anderson, and others, 'Research Integrity and Misconduct in the Academic Profession', in *Higher Education: Handbook of Theory and Research: Volume 28,* ed. by M. B. Paulsen (Dordrecht: Springer Netherlands, 2013), pp. 217-61.

[74] World Conferences on Research Integrity, *Singapore Statement on Research Integrity,* 22 September 2010.

[75] T. Mayer and N. Steneck, *Final Report to ESF and ORI: First World Conference on Research Integrity: Fostering Responsible Research (Lisbon, Portugal, 16-19 September 2007),* November 2007 (p. 1).

European Academies (ALLEA) enacted a code of conduct referring to reliability, honesty, respect, and responsibility. Theoretically speaking, Resnik justifies the need for international standards in order to bring research into line with high value norms and transform bad research practices into good ones.[76] He makes four arguments: (1) if science is international, we need standards able to transcend national borders in case of disagreements between researchers from different countries; (2) in the absence of local standards, researchers can and must refer to international ones; (3) the presence of international standards will enhance the development of local standards; and (4) those criteria contribute to enhancing trust between scientists working in different countries. Therefore, there is a need for a written document that can be used as a reference at the international, national, and local scales and for all subjects.

Nevertheless, this concern with international agreement faces two difficulties linked with the original confusion between international and universal. First, when a concept such as research integrity seeks to enlarge its extension, it runs the risk of shrinking its intension. Indeed, Kathinka Evers shows how the trap of analyticity may ruin the attempt to formulate a universal and definitive description of research integrity.[77] The more one searches for a consensus on general norms, the more one is compelled to reduce its substantial claims, because they always refer to the specificity of each subject and culture. Second, even though we may suppose that there are some common norms accepted by all scientists as scientists, the fact remains that the meaning of responsibility or plagiarism or the very definition of misconduct changes according to culture. Let us conclude. As it relates to research practices, research integrity cannot purport to be universal in the same sense as

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[76] D. B. Resnik, 'International Standards for Research Integrity: An Idea Whose Time Has Come?', *Accountability in Research,* 16(4) (2009), 218-28.

[77] K. Evers, *Codes of Conduct. Standards for Ethics in Research,* October 2004;

mathematics is. But since science is not only universal but international—a distinguishing feature of science as a historical reality since the end of the Second World War—research integrity must be international too. But how?

3. An accepted plurality

Many studies show that scientific integrity, conceived of as an international ethical norm, is often not formulated properly to deal with the reality of research. The explanation is easy: a norm falls within the jurisdiction of reference, while integrity is supposed to transcend cultural specificities. Thus, Resnik and his colleagues compared national regulations and observed considerable disparities between definitions of misconduct in research. A regulatory gap exists between the European Union, Japan, and the United States concerning post-marketing studies of drugs.[78] The PRINTEGER project investigated documents and laws within several member countries of the European Union and concluded that the notions, definitions, field of application, and extent of research integrity and misconduct changed according country.[79] In 2019, the French Senate carried out a comparative survey concerning the definition and organization of research integrity in France, Denmark, Italy, Germany, and the Netherlands.[80] The report explained the diversity of choices made by the variety of organizational and legal cultures of each state, but also by the timing of implementation of their own research integrity system. Earlier legislation and organization shape more recent orientations. Two countries chose a legal approach: Italy

[78] Urushihara, H., and others, 'Bridge the Gap: The Need for Harmonized Regulatory and Ethical Standards for Postmarketing Observational Studies', *Pharmacoepidemiology and Drug Safety,* 26(11) (2017), 1299-306.

[79] G. G. Fuster, and S. Gutwirth, *Promoting Integrity as an Integral Dimension of Excellence in Research. D II.4 Legal Analysis,* 2016 (p. 26).

[80] http://www.senat.fr/lc/lc288/lc2880.html.

updated a penal law dating from 1925; in case of plagiarism, it stipulated a prison sentence. After striving to regulate failures of research integrity since 1992, Denmark enacted a law on research dishonesty in 2017. The other three countries preferred the contractual approach. In 2018, the Netherlands published a code that was 'strict in its legal writing, precise in its prescriptions, and concerned with distinguishing between the personal obligations of each researcher in their own field and the collective responsibilities of institutions'. Germany favored a model of engagement, whereby calls for projects are submitted through the German foundation for research (Deutsche Forschungsgemeinschaft, DFG), which is an original institution in the field of research, as it is not a state institution but a non-profit organization. The United Kingdom opted for a flexible model of self-regulation (the Concordat to Support Research Integrity) coordinated by Universities UK (UK Research Integrity Office, UKRIO). Considering that, for the moment, there is no legal definition of research integrity, France applies a national policy, with frames of reference, referees, and a research integrity office (Office français de l'intégrité scientifique, OFIS), in order to supervise the implementation of international standards. [81] A topic for discussion is whether OFIS is really independent of HCERES, the organization dedicated to the evaluation of research, inasmuch as OFIS is a department of HCERES. [82]

This diversity among countries applies even more to the various subjects and professions involved in research. Can research integrity be applied in the same way in musicology, mathematics, medicine, literature, engineering sciences, anthropology, informatics, philosophy,

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[81] OFIS, https://www.hceres.fr/fr/ofis.

[82] P. Henriet, P. Ouzoulias, and G. Longuet, *Office parlementaire d'évaluation des choix scientifiques et technologiques—Communication de MM. Pierre Henriet, député, et Pierre Ouzoulias, sénateur, sur leur rapport Intégrité et publications scientifiques,* Compte rendu n° 77, 9 July 2020.

economics, law, archeology, etc.? Of course, one may admit that each discipline demands respect for research integrity, but do they mean the same thing across disciplines? We may first note that even the scientific nature of each subject is not defined unequivocally: it is true that they are all academic, in the sense that they are taught at the university (following the German definition of science as *Wissenschaft*, or academic topics), but we would struggle to define a common method.[83] Incidentally, some fields do not even claim to be sciences: for example, the scientific nature of philosophy is still under discussion. Moreover, it is not clear if it belongs to the social sciences or not.[84] And there are also strong cultural differences: is there a French or a German philosophy?[85] Along the same lines, since the nineteenth century, an important debate has divided economics: under what conditions is it a science?[86] Based on his involvement in European research projects, Ron Iphofen highlights a kind of anesthesia among economists regarding their responsibility; meanwhile, their results inform political decisions.[87] Is it really honest that the great majority of economists share the same ideological posture? Does this unanimous theoretical choice undermine the reliability of their work, in the absence of discussions for and against within the economic community? It also highlights a deep tension

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[83] B. Readings, *The University in Ruins* (Cambridge, MA: Harvard University Press, 1996.

[84] C. König-Pralong, 'L'histoire de la philosophie appartient-elle au champ des sciences humaines et sociales?', *Revue d'histoire des sciences humaines*, 30 (2017), 49-70; G. Calafat, C. Lavergne, and É. Monnet, 'Philosophies et sciences sociales: Les enjeux de la conversion', *Tracés,* 13 (2013), 7-25.

[85] J.-L. Fabiani, *Qu'est-ce qu'un philosophe français? La vie sociale des concepts (1880-1980)* (Paris: Éditions de l'École des Hautes Études en Sciences Sociales, 2010).

[86] Boyer, R., *Économie politique des capitalismes: Théorie de la régulation et des crises* (Paris: La Découverte, 2015).

[87] *Handbook of Research Ethics and Scientific Integrity,* ed. by R. Iphofen, (Cham, Switzerland: Springer International Publishing, 2020).

between public official assertions in favor of research integrity and the efficiency of the publish or perish injunction: '*Unless the important academic journals assess this routinely (with sanctionable consequences), the profession is unlikely to change given that "publish or perish" acts as an overriding incentive.'*[88] Awareness of the risk of dishonesty varies in different fields. Although physicians have long been aware of those injunctions, particularly because they faced some serious scandals, this is not the case in all fields.

Other difficulties appear when politicians and the media meddle in science, as we observed recently during the COVID-19 pandemic when the French government and some presidents of other nations got involved in giving advice.[89] In France, the affair concerning Professor Didier Raoult's claims concerning treatment with hydroxychloroquine for COVID-19 triggered a triple tension between medical deontology, research ethics, and research integrity in a context where science could no longer function autonomously.[90] On the integrity side, the fact that he co-authored more than 3,500 papers raised questions about the legitimacy of his signature, the quality of his publications, the holding of multiple positions, and conflicts of interest (e.g. publishing in a journal for which he was a member of the editorial committee).[91] From the perspective of science as a public institution, a question concerns the legitimacy of the incentive created by the Sigaps bibliometric system used to calculate government grants for university hospitals, because

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[88] Iphofen, ed. (p. 743).

[89] A. London, and J. Kimmelman, 'Against pandemic research exceptionalism', *Science,* 1 May 2020.

[90] Henriet and others.

[91] H. Pearson, 'How COVID Broke the Evidence Pipeline', *Nature,* 12 May 2021; Y. Gingras, and M. Khelfaoui, 'Être juge et partie, ou comment contrôler une revue scientifique', *The Conversation,* 21 June 2020; A. Marcus, and I. Oransky, 'The Science of This Pandemic Is Moving at Dangerous Speeds', *Wired,* 28 March 2020.

certain hospitals received national grants depending directly on Raoult's notoriety and impact factor. For his own part, Raoult has blamed the partiality of medical research, which is partially funded by pharmaceutical laboratories. Even though they focus on specific individuals, these questions in fact transcend particular individual cases and concern the whole medical research system. And we have to admit, that for a few weeks during the public health crisis, most people felt that research integrity was secondary to the pandemic emergency. More generally speaking, as soon as research becomes interesting to societal stakeholders (government, journalists, organizations, industry), research integrity criteria are severely tested.

4. Avenues for resolution

There are three possible avenues to reconcile research integrity with cultures (traditional or disciplinary).

The first option corresponds to the choice made by the big research organizations: enacting international ethical norms, which serve as benchmarks; instituting international and national offices and observatories; establishing ombudspersons or referees at the international, national, and local levels; and implementing systems of penalties within the research institutions. This option is the most obvious and the easiest; it has been applied since 2007. But, as we have seen, this approach is not sufficient and it faces a major harmonization problem. At the national and local scales, definitions and legislation are sometimes not congruent; disciplinary measures or national and local actions may be incompatible. Even though there have been calls to harmonize rules within the pharmaceutical domain (International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use, ICH), genomics, nano-medicine, and the regulation of scientific data—particularly genetic data—it is evident

that differences still persist at the international level.[92] Thus, data protection law is developing and diverging in Europe, the United States, and China. Of course, the European Union is trying to harmonize regulations within the European academic network, but discrepancies are increasing at the international level, with serious financial and legal consequences; therefore, researchers and research organizations find themselves with very different duties depending on where they are.

The second option consists in making research integrity a scientific culture that should be shared by all researchers, a kind of deontological metaculture that would serve as the common melting pot for all disciplines and traditional cultures. This approach emphasizes the stakeholders' responsibility: they must be educated and trained to assume their own duties not only in terms of academic excellence, but also in terms of honesty, responsibility, impartiality, and professional courtesy. Developing those professional soft skills would allow researchers to avoid a logic based on supervision and sanction, by inculcating behaviors that spontaneously respect rules. *Mutatis mutandis* there would be a kind of *ethos*, a set of professional norms as described by Merton, when he generalized his historical study of the Royal Society of London in the seventeenth century to science itself; these norms include communalism, universalism, organized skepticism, and

[92] International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH), *Harmonisation for Better Health,* 2020; J. A. Molzon, and others, 'The Value and Benefits of the International Conference on Harmonisation to Drug Regulatory Authorities: Advancing Harmonization for Better Public Health', *Clinical Pharmacology and Therapeutics*, 89(4) (2011), 503-12; D. Townend, 'Conclusion: Harmonisation in Genomic and Health Data Sharing for Research: An Impossible Dream?', *Human Genetics,* 137 (2018), 657-64.

disinterest.[93] By *ethos*, Merton does not mean ethics but rules imposed by the scientific community: all researchers must observe them or be subject to sanction. If deviance exists, and therefore deviant scientists, the scientific community is in charge of regulating and setting things right, even excluding deviant scientists from the community. But did this *ethos* ever really exist? Does it not represent an ideal, the image that scientists project about what they would like to be? And sometimes ideals are counterproductive.

In order to test this claim that a scientific *ethos* exist, some surveys have investigated whether, concretely, deviance is rare and therefore does not cast doubt on the general description of science promoted by Merton, or whether it actually occurs frequently.[94] The investigation of scientists' regular behaviors indicates that problems are frequent enough that we cannot consider misconduct only as an accident. Moreover, those same studies show that misconduct is not always punished. Finally, recent surveys highlight that the current conditions of competition, urgency, excellence, and double-bind situations in which individuals and teams must work heighten the risks of misconduct.[95]

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[93] R. K. Merton, 'The Normative Structure of Science', in *The Sociology of Science: Theoretical and Empirical Investigations,* ed. by R. K. Merton (2nd edition) (Chicago: University of Chicago Press, 1973), pp. 267-78.

[94] I. I. Mitroff, *The Subjective Side of Science: A Philosophical Inquiry into the Psychology of the Apollo Moon Scientists* (Amsterdam: Elsevier, 1974) ; Martinson and others; Anderson and others, 'Normative Dissonance'; K. J. Galbraith, 'Life After Research Misconduct: Punishments and the Pursuit of Second Chances', *Journal of Empirical Research on Human Research Ethics,* 12(1) (2017), 26-32.

[95] D. Fanelli, 'Do pressures to publish increase scientists' bias? An empirical support from US States data', *PLoS One*, 5(4) (2010), Article e10271; S. Chatelain-Ponroy, and others, 'Is Commitment to Performance-Based Management Compatible with Commitment to University "Publicness"? Academics' Values in French Universities', *Organization Studies*, 39(10) (2018), 1377-401.

Anyway, transforming the scientific culture cannot result from a decision at the top and must necessarily involve a general and radical approach, such as slowing down science and organizing the use of scientific data in other ways, as Sabina Leonelli highlights in her field surveys, in which she calls for slow science.[96]

The third option seems more promising to us. It would aim to introduce a kind of diplomacy between researchers, teams, and institutions. Maintaining diplomatic relations entails not accepting and imposing others' criteria on ourselves but rather agreeing to listen to what others want to tell us about themselves and about us, according to their own viewpoint. This attitude requires renouncing the sovereignty model: nobody knows what to do. Research integrity is not universal *a priori* in itself but shapes a perspective that researchers build together by assuming the plurality of science. Of course, research integrity—in the sense of a set of consensual standards—is international, but it is not universal. It looks rather like Globish—global English—which is neither the English language nor a universal language such as mathematics but expresses a relation of power, which was historically and politically established in the scientific and economic fields at the global level.[97] As a globalized language, Globish is used as a bartering system between languages and translations, but it also distorts them, and English most of all. Research integrity creates a platform for discussions; yet we should at least discuss. This is the issue for diplomacy: agreeing to listen and to understand why scientists resort to misconduct in particular contexts. Accepting that there are diplomatic crises, for example, when a

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[96] H. Chneiweiss, and others, 'Fostering Responsible Research with Genome Editing Technologies: A European Perspective', *Transgenic Research*, 26(5) (2017), 709-13; S. Leonelli, *Data-Centric Biology. A Philosophical Study* (Chicago: University of Chicago Press, 2016).

[97] J.-P. Nerrière, *Parlez Globish! Don't Speak English* (Paris: Eyrolles, 2006); B. K. Sharma, 'World Englishes, English as a Lingua Franca, and English Pedagogy', *Journal of NELTA,* 13(1-2) (2011).

researcher transgresses against the pact, as Olivier Voinnet did at the CNRS (French national center for scientific research) and the Zurich polytechnic: this crisis does not concern one individual alone but the whole institution, not forgetting the scientific journals—even the highest-ranked ones—and the international scientific community.[98] Implementing an interpretation strategy requires us to learn how to think from other people's perspective. This diplomatic approach demands that we recognize the thickness of research integrity.

Being diplomatic means endorsing the idea of irreducible differences (differences in local cultures or subjects, divergent interests) and trying to build some spheres of consensus, which are neither always exactly the same nor uniform according to the various geopolitical scales. It entails learning some lessons from cultural anthropology. There are various levels of thickness within human phenomena, which never reduce to mere natural or physical facts.[99] If, as Aristotle said, fire burns the same way everywhere, in Persia and in Greece, values, norms, and laws are always lodged within a particular history and society, which give them their specific thickness, which remains irreducible. There may be a thin description of burning, but not of traditions or laws, which always involve a hermeneutical approach.

5. Conclusion

We are honest or dishonest neither *naturally nor necessarily*, but intentionally: we have the intention of being honest or dishonest. Otherwise, in cases of FFP, there would be no fault but only error. This intention requires interpretation: what is the agent's intentionality? Gilbert Ryle, an analytic philosopher of mind, proposes distinguishing

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[98] Wikipedia, 'Olivier Voinnet', *Wikipédia,* 2020.

[99] V. Descombes, 'L'idée d'un sens commun', *Philosophia Scientiae,* 6(2) (2002), 147-61.

between thick and thin concepts in order to link together two levels of action; he uses three examples.[100]

- Let us consider two boys winking: the first one because he suffers from twitches, the second because he wants to give a signal. It is the same action; the eyelid makes the same movement; but it has two distinct meanings. Understanding the former case means linking it to its root cause, that is, explaining it; understanding the latter means relating it to an intention, which necessarily involves interpretation. The observer does not know *a priori* if this winking is a twitch or a signal: he must identify the intention. When the boy winks in order to communicate, he does not engage in two different actions (winking and communicating), but one and the same action.
- Let us now consider two persons who are thinking: a tennis player concentrates on the action he is making, while Rodin's *Thinker* seems to have abandoned his urgent tasks in order to think. In the first case, the thought serves the action; in the second, it is its own goal. By analogy, research integrity serves science; it does not define some other or higher goals for science but the mere necessary conditions that permit science to develop over the long term. When a scientist respects research integrity, her intentions look like the tennis player's. In the same vein, ethics introduce values, which may prohibit or guide research on specific subjects or goals: consider, for example, the field of research concerning gender, which has grown so fast in the last fifty years, or the current research on SARS-CoV-2. Research integrity and ethics are not equally thick; nevertheless, both are thick.

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[100] G. Ryle, *The Concept of Mind* (London: Hutchinson's University Library, 1949).

- In the third example, Ryle presents a soldier and his officer who orders him to lower his gun. The soldier does not lower his arms because he has a cramp; the officer does not ask him to obey in general. Here, obedience has a specific content and can be assessed only in terms of that content. The soldier's obedience implies two dimensions: the act of lowering his weapon, and the relationship between the officer and the soldier, which presupposes his submission to the military authority. In other words, the act makes sense only under the condition of the obligation to obey. But nobody can obey in absolute terms. Lowering his weapon when the officer calls for it requires the soldier first to internalize the relationship of obedience/authority which binds him with the officer. And the soldier can always disobey; in fact, sometimes he must disobey for higher reasons having to do with ethics. The action has thickness. This also applies to research integrity: not committing fraud, falsification, or plagiarism does not describe an intrinsic property of research; someone may break these interdictions; and the interdictions are relevant only in practical and local situations depending on the discipline. Not committing FFP may look quite different in philosophy or in biology, in mathematics or in chemistry, in archeology or in literature. Research practices possess thickness, which always implies that one must first have learned what research means, just as soldiers learn why they must obey. These three examples show that research can be described at different levels: research can never be reduced to a reflex or a mere fact. It always implies intentions, but those intentions do not deal with the same issues. So, we must distinguish between research integrity, which requires the intention in the service of research,

and ethics, which includes the consideration of other values than just research itself.

Research integrity is not universal in the same way as mathematics, but it is expressed through international rules. No ongoing monitoring or administrative penalty from outside or from above can ensure that a laboratory or a publication will respect the research rules. Peers must get involved in identifying and establishing the criteria when they analyze the thickness of research practices. As an anthropologist interprets winking or a soldier's behavior, peers must understand research practices within the specific culture of a discipline, a country, or an institution. Here are the issues for diplomacy: how can we build a common world despite our diverging interests and different cultures? If conflicts between (local or discipline-based) cultures, financial pressure, legal regulations, and obligations toward research integrity generate contradictory duties, those tensions weaken the whole system. This is a risk for research. Diplomacy does not claim to impose an international justice, which in fact has no jurisdiction and no way of being imposed. Instead, it tries to identify the potential risks raised by internal contradictions and to establish some areas for mediation. There is no international court of ethics. Research integrity and ethics do not differ in nature but only in degree of thickness. Interculturality does not mean a danger for research integrity but is a reality that requires us to abandon an idealist or nationalist view of science in order to implement research policies that take disciplinary and cultural diversity into sufficient account. In this view, diplomacy may contribute to developing right knowledge, in the double sense of correct and of just.

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