



Mapping Normative Frameworks
of ETHics and Integrity of Research

**D3.3. REPORT ON SIGNIFICANT SIMILARITIES AND
CONTRADICTIONS WITHIN NATIONAL-LEVEL CODES
AND GUIDELINES**

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REPORT ON SIGNIFICANT SIMILARITIES AND CONTRADICTIONS WITHIN NATIONAL-LEVEL CODES AND GUIDELINES

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List of contributors

Prof. Dr. Hugh Desmond and Prof. Dr. Kris Dierickx

Introduction

In this document we provide a report containing the most significant similarities and contradictions (at level of content and approach) within the different guidelines in the member states (deliverable 3.3).

The methodology we use is to compare the leading code or guideline in national contexts to the European Code of Conduct for Research Integrity, and to investigate to what extent the national-level documents replicate the stated research integrity principles, good practises, and definition of research misconduct of the European Code of Conduct for Research Integrity.

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1. Executive Summary

In the past decade, policymakers in science have been concerned with harmonizing research integrity standards across Europe. These standards are encapsulated in the European Code of Conduct for Research Integrity. Yet, almost every European country today has its own national-level code of conduct for research integrity. In this report we document in detail how national-level codes diverge on almost all aspects concerning research integrity – except for what constitutes egregious misconduct. This raises fundamental questions about the envisaged function of the ethical content in codes of conduct. We argue that policymakers need criteria on how to deliberate and decide on what to include in a code of conduct.

2. Background

In one of the first surveys of research integrity (RI) standards, the European Science Foundation concluded that there was a “wide range of approaches” across European countries (ESF 2008, 49) and that there was a need for “harmonized standards across Europe” (ESF 2008, p. 50). This was the original rationale for the European Code of Conduct for Research Integrity (ECoC), which was first published in 2011 and revised in 2017.

Yet the ECoC has never sought to impose complete uniformity in RI standards in Europe. A background paper stated that the ECoC was designed to provide a reference point for a “common understanding of the demands of research integrity” (ESF-ALLEA 2010, 4). Such a reference point was explicitly held to be compatible with national-level differences:

However, unlike the fundamental values of scientific integrity and the violation thereof, which have a universal character, [poor and inappropriate] practices¹ may be subject to different national traditions, legislative regulations or institutional provisions (ESF-ALLEA 2010, p. 14).

Similarly, the 2017 ECoC explicitly aims to be a reference point that “allows for local or national differences in its implementation” (ESF-ALLEA 2017, 3).

In other words, policymaking with regard to research integrity has implicitly aimed to implement what we call the *European core versus national periphery* model. In this model, the ‘core’ aspects of RI – the principles, the good practices, and the definition of misconduct – must be specified by Europe-wide standards set by the European Code of Conduct for Research Integrity (ECoC). By contrast, the ‘peripheral’ aspects, such as defining questionable research practices, may vary from country to country.

In this report we investigate whether the *actual* European regulatory situation with regards to RI fits this model. Thus we aim at (1) providing an overview of leading regulatory documents on RI (as we will see later, in practice these documents are always codes or guidelines), (2) charting the extent to which they have diverged from the ECoC, and (3) discussing how these divergences should best be interpreted.

¹ For instance: “questionable procedures for obtaining informed consent, insufficient respect and care for participants in the research, improper research design and carelessness in observation and analysis, unsuitable authorship or publishing practices, and reviewing and editorial derelictions” (ESF-ALLEA 2010, p. 14).

Some previous studies have also aimed at detailing differences in national-level codes and guidelines on RI (Godecharle, Nemery, and Dierickx 2013; Aubert Bonn, Godecharle, and Dierickx 2017). However, a new overview of RI regulations in Europe is needed for several reasons.

First, the regulatory situation for RI in Europe has continued to change at a fast pace. A second European code of conduct was published in 2017, while countries such as France, Estonia, The Netherlands, Italy, and the UK have published new codes or guidelines in the past few years (see supplementary materials). These developments raise the specific question whether the new ECoC has been an impetus for national-level codes and guidelines to converge more closely. In other words, has the 2017 ECoC been used as a paradigm for the authoring of national-level codes and guidelines?

Next, the methodologies of previous studies suffered from limitations in two different ways. First, the methodology to establish differences was to list which virtues or rules (i.e., types of misconduct) were mentioned by a code or guideline (Godecharle, Nemery, and Dierickx 2013), or quantify how often a given virtue or rule was mentioned across national-level codes and guidelines (Aubert Bonn, Godecharle, and Dierickx 2017). In each case, the methodology depended on interpretative decisions were made about the meanings of words. For instance, Godecharle et al. 2013 distinguish between “honesty” and “openness or open communication”, even though – at least, by dictionary definitions of these words – they are near-synonyms. An example in Aubert Bonn et al. 2017 is the way in which similar virtues are lumped together: thus “Openness; Verifiability” form one category, and “Objectivity; Scrupulousness; Transparency” another. However, others might have, with equal justification, have put ‘transparency’ together with ‘openness’ and ‘verifiability’. The lesson we draw from such problems is that, when aiming to understand the differences between different national-level approaches, one should avoid inevitably controversial interpretative decisions on whether different words signify the same rule/virtue or not (e.g., transparency, openness, honesty). A method allowing for replicable research is needed.

Besides problems in establishing differences, previous studies did also not establish to what extent differences are significant. It is one matter to establish differences, but if differences between codes consist merely in one code listing ‘transparency’ as a virtue and the other ‘openness’, then few would find this to be a significant difference. This report aims to make possible some structured discussion of the significance of differences.

3. Goals

The aims of this report are:

- (1) to provide an up-to-date overview of national-level codes and guidelines on RI in Europe,
- (2) to use a minimal but replicable method to chart differences,
- (3) to discuss the extent to which these differences are significant.

4. Methods

4.1 Search Methodology

The purpose of the search methodology was to represent national-level approaches to research integrity (RI) by a single document that can be considered as the leading document in the national context.

Initial Collection. For the initial collection we cast the net widely and included all national-level ‘regulatory documents’ directly pertaining to RI. A ‘regulatory document’, as we understand it, can in principle refer to a document regulating both the actions of individuals (e.g. an ethics code) or the actions of institutions. Thus, a regulatory document can refer to any of the following: codes of conduct, guidelines, policy documents, laws (statutes, charters), and even more descriptive documents such as survey reports, meeting reports, and position papers. We included a document if it contained substantial *normative* position statements on any one of the following: (1) the principles underlying research integrity (e.g., honesty), (2) behaviors constituting good research practice, (3) behaviors constituting research misconduct, (4) a plea for the importance of research integrity for science and society.

For the initial collection of regulatory documents, we used the following six independent search methods for each member of the 32 EFTA countries (EU28 + Norway, Switzerland, Liechtenstein, and Iceland). This means that if, for instance, five documents were found through a search following method 1, these were double checked with searches

following methods 2 through 6. We used these six independent methods to minimize the probability of missing an important regulatory document.

1. Exhaustive search of following websites, if available:
 - a. national research council
 - b. national agency on research integrity
 - c. national scientific fund
 - d. national academy of science
2. Search of the websites of academy members of ALLEA
3. Search for “integrity” and “<integrity translated into local language>” of websites of prominent universities in that country -whenever possible, websites in original language (through Google translate).
4. A search by means of an internet search engine (Google) with search terms (“research integrity” OR “scientific integrity” OR “science integrity”) AND <name of country>).
5. Search of the resources for that country listed on the website of the European Network of Research Integrity Officers (enrio.eu).
6. Resources listed on European Science Foundation “Stewards of Integrity” document (URL: <http://digital.csic.es/bitstream/10261/8663/1/StewardsOfIntegrity.pdf>)

This initial collection was completed in March 2019 and updated through November 2019.

Selection. The selection consisted of three steps. In the first step, we selected candidates for the national ‘leading’ regulatory documents for inclusion in the comparative study. We considered a document to be a ‘candidate leading document’ if it contained the ‘authoritative’ formulations of (1) principles of RI, AND (2) definitions of good practices, AND (3) definitions of misconduct. (The initial search yielded documents that might only concern particular good practices.) In many national-level contexts, this procedure was sufficient to identify the national leading document. However, some countries proved to have multiple potentially leading documents. For instance, in Denmark or Norway, both a law and a national code of conduct can be considered leading. In the UK or France, there are multiple national codes of conduct, as well as national documents aimed primarily at institutions (Concordat in the UK, Charter in France: see supplementary materials).

When this was the case, in the second step we chose a single candidate leading document based on following additional criteria:

- We prioritized documents aimed at guiding individual researchers over those designed for guiding institutions (when the latter seek to author an institution-

specific code or guideline). The reason for this was to facilitate a comparison between each country’s leading document and the ALLEA code, which is primarily focused on individual researchers.

- If the previous criterion yielded a tie, we prioritized documents with detailed statements on the constitutive elements of RI over those with few detailed statements on the elements of RI.
- If the tie was still not broken, we then prioritized the document with the most institutional signatories.

This decision-making process allowed us to select a single candidate leading document for each country.

In a final step, we presented this choice, together with our justification, to local RI experts so they could verify our choice (or offer corrections if necessary). A person was deemed a local expert if he or she (1) had been appointed as a contact person by a national research council, a national agency for research integrity, a national scientific fund, or a national academy, OR (2) was a member of ENRIO (European Network of Research Integrity Officers), OR (3) was part of an ERC or Horizon2020-funded project on research integrity, OR (4) a member of EARMA (European Association of Research Managers and Administrators).

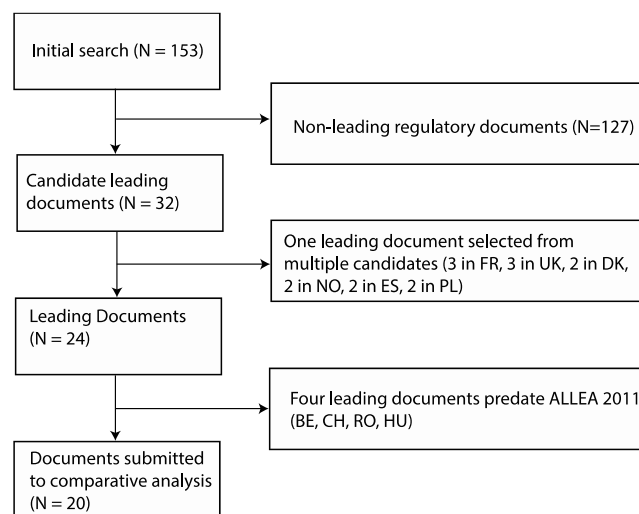


Figure 1: Flowchart for the initial search and selection of national regulatory documents for inclusion in the comparative analysis

4.2 Methodology of Comparative Analysis

In light of the methodological problems faced by previous studies (see background), we chose the methodology of simply verifying whether national-level documents *replicated*

the ECoC in the following three areas: (1) principles of RI, (2) definition of good research practices, and (3) definition of research misconduct. ‘Replication’ was defined as the literal copying of the principles listed by the ECoC, the categories of good research practices, and the categories of misconduct. Thus, for instance, the 2017 version of the ECoC lists four values of RI: reliability, honesty, respect, accountability. By contrast, the leading regulatory document in Estonia lists six principles (or categories of principles): freedom, responsibility, honesty and objectivity, respect and caring, justice, openness and cooperation. The leading regulatory document in The Netherlands contains five values: honesty, scrupulousness, transparency, independence, responsibility. We categorized both Dutch and Estonian documents as ‘non-replications’, thus abstracting away from the obvious overlap between all three lists.

In focusing on the actual words used rather than their meaning we consciously avoided attempting to quantify any conceptual overlap between documents, since this would have led to verbal disputes of dubious importance (e.g., is ‘scrupulousness’ the same as ‘reliability’? Is ‘responsibility’ the same as ‘accountability’? ‘Transparency’ and honesty’?).

While this strict methodology avoided the worst dangers of interpretative bias, it yet allowed for interesting results: non-replications are significant because they most likely indicate a *conscious decision* by the authors of the national-level regulatory document to deviate from the ECoC – or at least to actively disregard the ECoC. We regarded this as a justified inference given the fact that authors of national-level documents can be presumed to be experts on RI and to be familiar with the ECoC.

To sum up, our chosen methodology has the following two advantages over previous studies:

- It avoids any controversial interpretative decisions about the meaning of words, whether these words refer to virtues or types of action.
- Given the expertise of authors of national-level documents, any deviation from the ECoC, no matter how small, indicates a conscious decision.

5. Results

5.1 Evolution of national regulatory documents

Twenty-four countries (out of a total of 32) were found to have a leading regulatory document on RI. Among those without such a document, two (Bulgaria, Luxemburg) explicitly adopt the European Code of Conduct. A further two (Greece and Slovenia) have stated the intention to develop a national-level framework. For four countries – Malta, Liechtenstein, Cyprus, and Iceland – no statement concerning any national-level framework could be found. However, institutional-level RI-regulatory documents exist in Malta, Iceland, and Cyprus. No institutional code was found for the three Liechtenstein higher education institutions², but given the fact that the University of Liechtenstein, the largest institution in Liechtenstein, is small by international standards (1200 students), it is perhaps not surprising that an explicit code has not (yet) been deemed necessary. In any case, we concluded from the search that, with the exception of Liechtenstein, all countries in Europe have a *de facto* leading regulatory document, whether that is the ECoC itself, a specific national code or guideline, or, for small countries, a code or guideline in a large university.

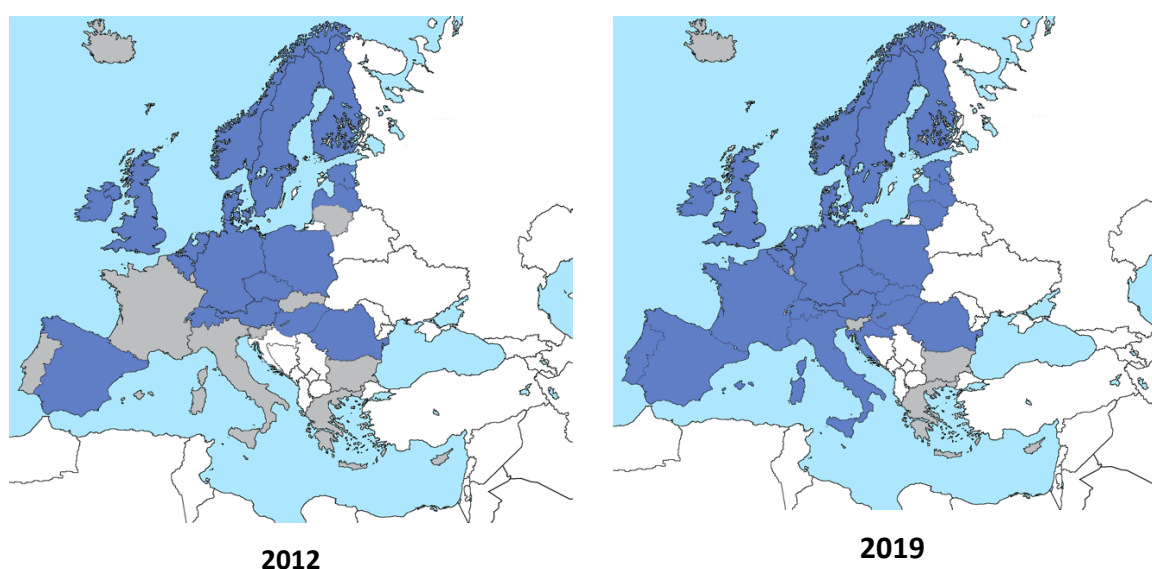


Figure 2: Countries with leading regulatory documents concerning RI in 2012 (left) and 2019 (right). The left figure is based on the data in (Godecharle, Nemery, and Dierickx 2013).

² See <https://www.liechtenstein.li/en/education/higher-education/>.

= Leading national-level code not found
 = Leading national-level code present

5.2 Differentiation of Functions

Our investigation of the regulatory documents corroborates ESF’s prior finding that there is a broad variance in types of regulatory document (ESF 2008). In other words, there is a wide variety of *envisaged uses* of the different regulatory documents. Since this will be one of the obvious explanations to be discussed (in section 4), we also mapped some of this variance. A difficulty here is that the codes of conduct themselves do not always explicitly state what their purposes are. Hence we used the simple metric of word count (Figure 4): this gives an indication of whether a document aims to be a portable vademecum (low word count), a listing of important values and practices without much discussion (middle word count), or an in-depth exploration of RI (high word count).

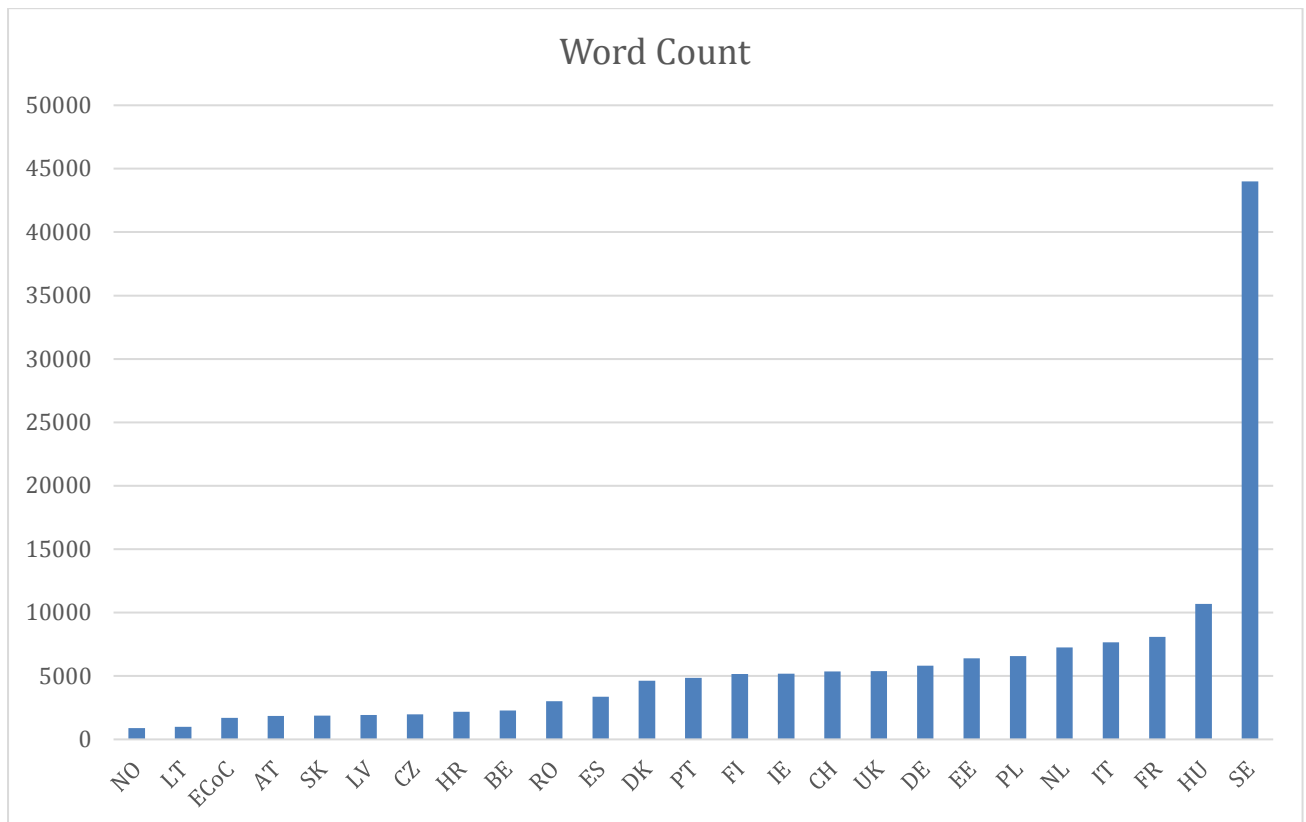


Figure 3: The longest regulatory document analyzed in this report was over 50 times longer than the shortest. Even if one cuts out the two largest and two smallest outliers, the variation in length is still one order of magnitude. This in itself is a strong indication that different documents are intended for different uses. (Preambles but not tables of contents, annexes or appendices, or references are included in the word count.)


5.3 Comparison with the ECoC


We found that the formulations of the ECoC – whether ECoC 2011 or ECoC 2017, and whether concerning the values of RI, definitions of misconduct, or definitions of good practices – are almost never replicated by national-level documents. Twenty countries published their national-level regulatory document *after* the first ECoC (2011), and of the 60 points of comparison with the ECoC (3 per country), the formulations of an ECoC were replicated only twice: the Irish code replicates the values listed in the 2011 ECoC, and the Portuguese code replicates the values listed in the 2017 ECoC.


Note that ‘non-replication’ is a broad category that contains both very similar and very different formulations. Hence, substantive overlaps do exist between the wording used in some national documents and the ECoC. As Tables 1 and 2 show, the strongest overlap concerns the core definitions of research misconduct: all codes mention falsification, fabrication and plagiarism (FFP) as instances of misconduct. There is also some convergence with regard to principles of RI (honesty is increasingly mentioned) and, to a lesser extent, with regard to good practices (in data management, supervision, and authorship).



Figure 4: National-level regulatory documents almost never replicate the ECoC with regards to either principles of RI (left), definitions of good practices (center), or definitions of misconduct (right). For details, see supplementary materials.

 = Relevant sections from ALLEA 2011 or ALLEA 2017 replicated

 = Relevant sections from ALLEA 2011 or ALLEA 2017 not replicated

 = National-level code absent or predates ALLEA 2011

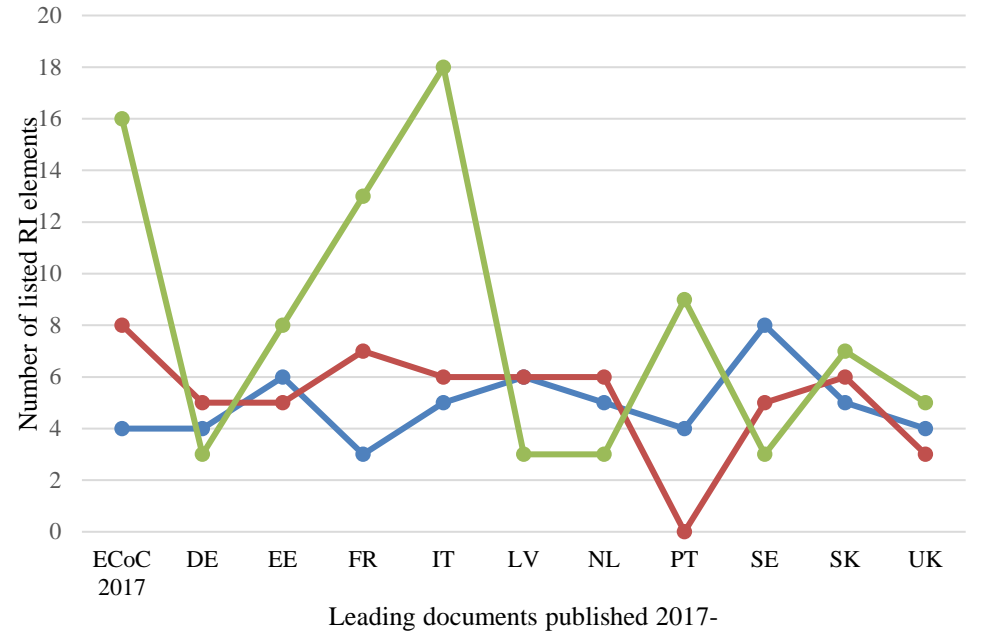
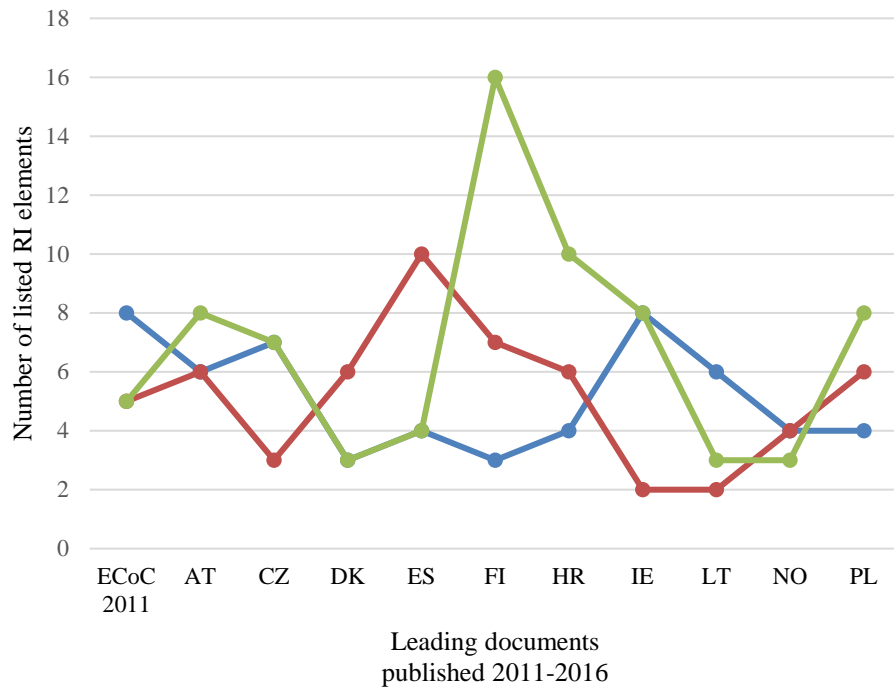
We show in Figures 4, 5, and 6 how the national-level codes and guidelines diverge from the ECoC. Figure 4 represents the total number of principles, good practices, and categories listed by a code or guideline. In the 2011 ECoC these numbers are 8, 5, and 5, respectively. As the left side of Figure 4 shows, the number of listed core RI elements varies from country to country, sometimes dramatically. The ECoC 2017 gives a detailed list of categories of misconduct, but only a few countries follow this approach. For instance, the Dutch code of conduct lists certain criteria for judging whether a behavior is misconduct, rather than attempting to provide a (non-exhaustive) list of behaviors.

Figure 5 shows this variance in more detail, charting the distribution of the number of listed core RI elements. A first observation is that the ECoC does not correspond either to the mean or the mode of the distribution. The number of principles in the 2011 ECoC lies at the extreme value of the distribution. The second observation is that the variance in the number of principles (4 out of 10 outside the range [4,6] in 2011-2017 and 2 out of 10 outside the same range after 2017) and number of categories of good practice (6 out of 10 outside the range [5,6] in 2011-2017 versus 4 after 2017) decreases for the documents published after 2017, while the variance in categories of misconduct increases (standard deviation increased from under 4 to over 5). This may reflect a growing uncertainty about the way in which misconduct should be defined.

However, the decrease in variance in the number of listed principles in documents published after 2017 does not necessarily reflect increased consensus. Figure 6 zooms in further on the situation regarding the principles of RI and shows how principles listed in the ECoC are not likely to be listed in national-level codes or guidelines. The only exception is ‘honesty’, which has been increasingly listed by national-level codes and guidelines, as evidenced by the right half of Figure 6. In all other cases, one can only assume that the authors of the national-level code or guideline saw good reasons for not adopting the principles of the ECoC in the national-level document.

To sum up the results: no national-level RI code or guideline entirely adopts the ECoC’s formulation of core elements of RI, nor even the number of RI elements listed in the ECoC

(Figure). The only unambiguous consensus is that fabrication, falsification, and plagiarism (FFP) count as misconduct, but since FFP figures prominently in other important regulatory documents (e.g. OSTP 2000), it is difficult to argue that the consensus on FFP is due specifically to the influence of the ECoC. Similarly, there is a relatively strong consensus about the importance of honesty, but honesty is also the first principle listed by the Singapore Statement on Research Integrity (WCRI 2010). In other words, the European core is much more limited than expected, and is not specifically European.



—●— Principles
 —●— Good practices
 —●— Categories of misconduct

Figure 5: The number of listed RI elements fluctuates across leading national-level regulatory documents.

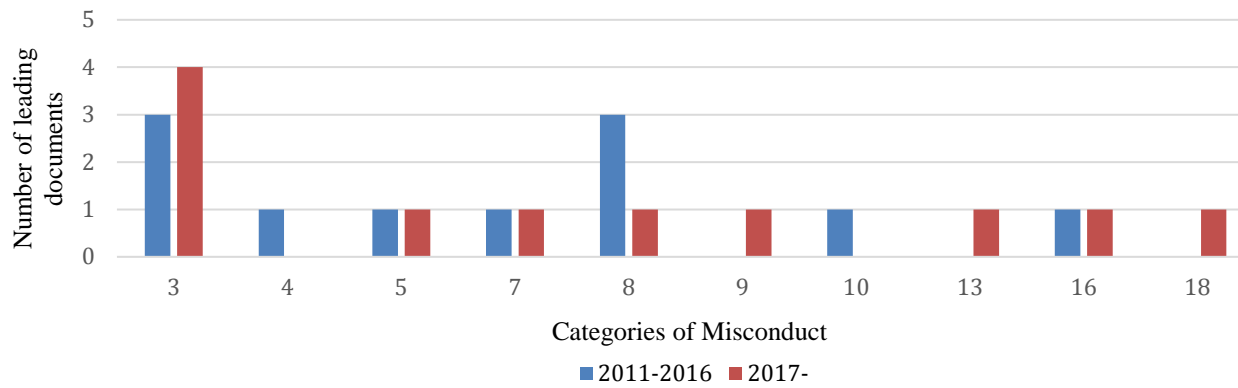
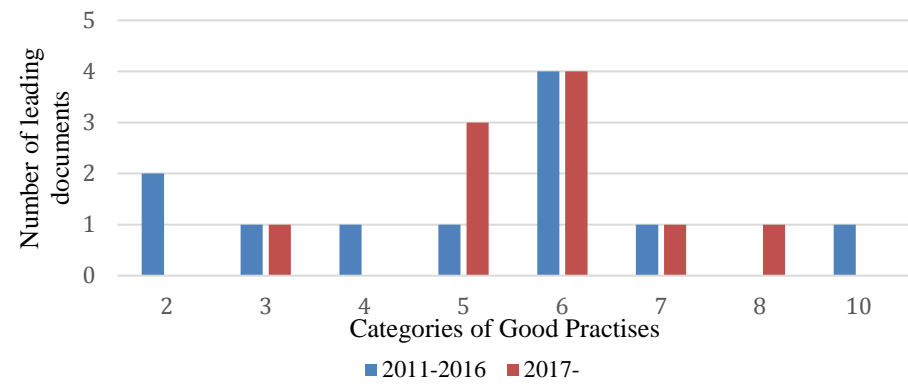
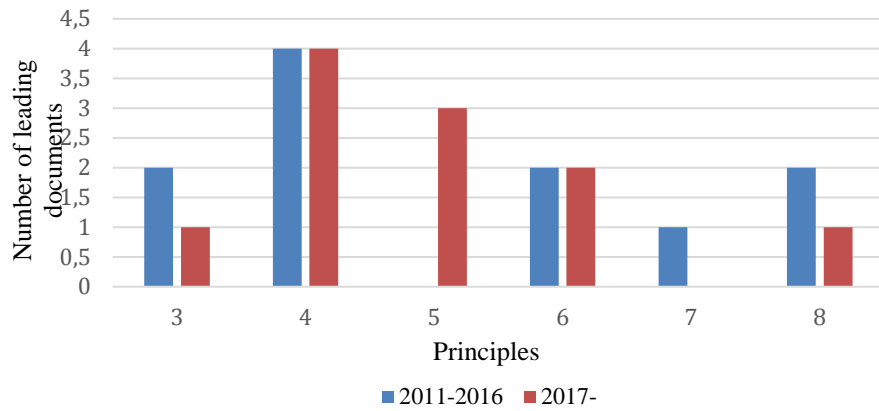


Figure 6: The distributions of the number of core RI elements across leading national regulatory documents

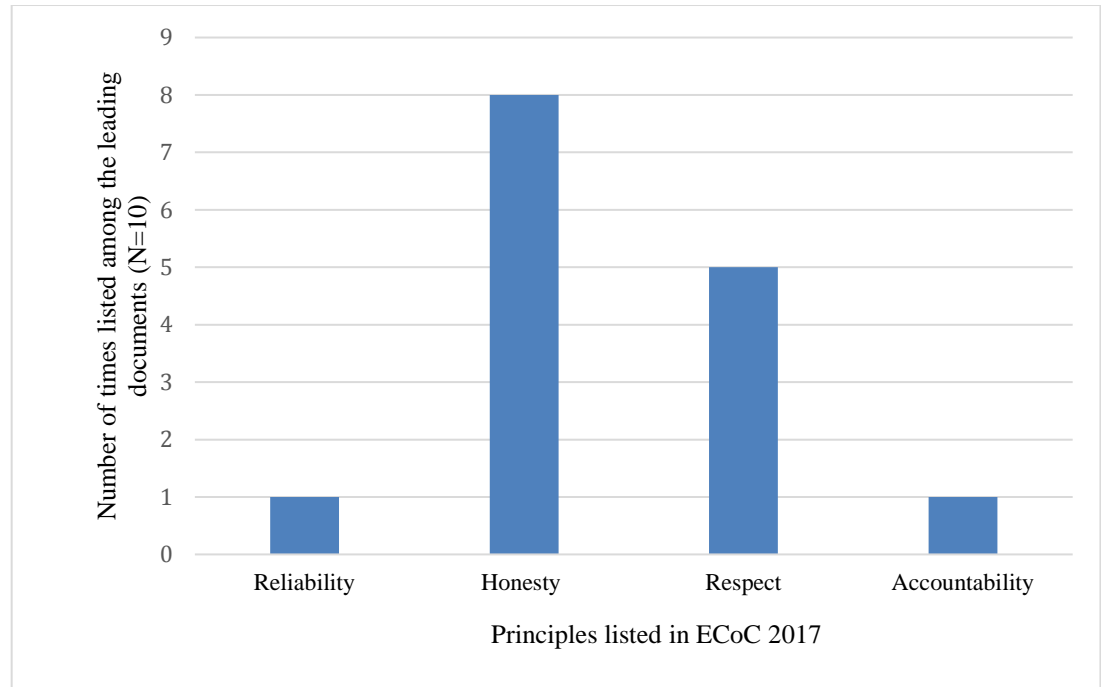
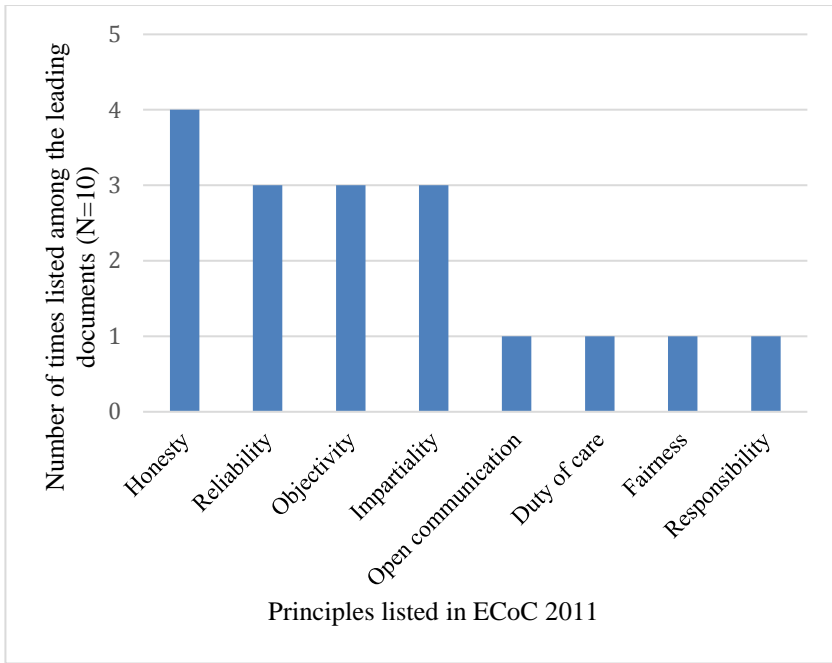


Figure 7: Number of times a principle listed in the ECoC is also listed in a leading national regulatory document

6. Discussion

6.1 Causes of Divergence

Since any divergence by a leading national-level regulatory document from the formulations of the ECoC can be assumed to be a conscious decision, the ubiquity of that divergence calls for an explanation. As is clear from Tables 1 and 2, the reason for the divergence on the very foundational aspects of RI is not obvious: for instance, why should a code of conduct in Portugal list one set of values, and a code of conduct in Denmark another set? Why should a code of conduct in Austria define scientific misconduct in one way, and a guideline in Italy in another?

In this section we consider three possible explanations for these differences: different envisaged uses; different legal and institutional contexts; and finally, different ideas about research integrity. We will argue that only the latter explanation is plausible.

Different envisaged uses? The first explanatory factor to consider is that different regulatory documents have different envisaged uses (see Figure 4). For instance, the Norwegian *General Guidelines for Research Ethics* is only a single page and contains concise statements about the nature of science, and advice for action. By contrast, the Swedish *Good Research Practise* is over fifty times longer than the Norwegian document and contains detailed discussions about different ways of defining misconduct, and philosophical reflections on the difference between law and ethics. It is clear that these two documents have very different envisaged uses by researchers. Another example is the way in which some guidelines contain directives on institutional responsibilities, such as *The Netherlands Code of Conduct for Research Integrity*, the *Croatian Code of Ethics*, or the UK's *Concordat to Support Research Integrity*. By contrast, other codes like the *Ethical Code of Scientific Research in Belgium* do not emphasize institutional responsibilities to the same extent, and thus mainly target individual researchers.

Yet, this explanation cannot account for how national-level documents diverge on issues that are fundamental to RI, like the values of RI or the definitions of misconduct. Different envisaged uses cannot explain why one document lists four values and another six,

or why one document defines misconduct in one way while another document adopts a different definition.

Different legal and institutional contexts? A second explanatory factor is that each national-level regulatory document is designed to be finely attuned to specific needs or legal constraints within the national context. As mentioned in the introduction, the background paper to the 2011 ECoC acknowledges explicitly that national-level documents could and even should diverge:

However, unlike the fundamental values of scientific integrity and the violation thereof, which have a universal character, [poor and inappropriate] practices³ may be subject to different national traditions, legislative regulations or institutional provisions (ESF-ALLEA 2010, p. 9).

However, here too this factor hardly explains much of the observed divergence from the ECoC. The divergences at national level go beyond mere differences in implementation. That there are differences in “national traditions” and “legislative regulations” between European countries is undeniable but, given the universal character of what counts as research integrity, such differences should not be relevant for what counts as research misconduct, or for what values underlie research integrity.

Author-driven divergence? A final, and in our view the most plausible, explanation for the divergence should be sought not in the properties of the national contexts for which they were written but rather in the ideas and convictions of the authors of the codes and guidelines. Such documents are written by people, not machines, and given the complexity of a set of ethical issues such as in research integrity, it would not be so surprising that views would diverge.

³ For instance: “questionable procedures for obtaining informed consent, insufficient respect and care for participants in the research, improper research design and carelessness in observation and analysis, unsuitable authorship or publishing practices, and reviewing and editorial derelictions”.



As a first nuance, note that individual-level factors cannot be separated entirely from national-level factors. Thus, even though codes or guidelines are written by small teams of people, they nonetheless tend to be used as touchstones in many institutions. So even when they were written by small teams of people, and may sometimes reflect the idiosyncrasies of powerful figures within such teams, the documents nonetheless can come to have a wide-ranging and long-term impact on how, for instance, integrity training programs are set up within universities, or how integrity commissions actually judge allegations of misconduct.

Note also that author-driven divergence is not necessarily negative, because it can reflect a genuine difference of opinion, and a genuinely different understanding of research integrity. Thus, if some of the differences arise because the ECoC has one group of authors, and a national regulatory document another, this may be due to legitimate differences of opinion on what constitutes research integrity and how it should be communicated to the research community.

What are the reasons in support of this explanation? The first lies in the fact that the authors of national-level documents are viewed as experts on RI in their national context, and one can assume that they are already deeply familiar with the ECoC. Hence given this expertise, any deviation, even if it is so small as to substitute ‘honesty’ for ‘transparency’, can be assumed to be a well thought-out decision, even if the reasons for such decisions are not publicly communicated.

Given this, and given the fact that national-level documents do not deviate from the ECoC only on ‘peripheral’ issues – for instance, on what is considered “inappropriate” but falling short of misconduct (ESF-ALLEA 2010, p. 14) – it is reasonable to conclude from this that authors of different national-level documents hold different ideas and convictions about (1) what constitutes research integrity, and (2) how best to communicate this.

Part of this may be a reaction to perceived ambiguities within the ECoC itself. For instance, questions could be raised about the category of ‘unacceptable behavior’, which includes violations of the code without being “direct violations”, i.e., FFP (ESF-ALLEA 2017, 8). A lack of clarity as to whether such unacceptable behaviors are to be considered ‘core’ may partially explain why they have not always been taken up in national-level codes. An



instance of such a behavior is “exaggerating the importance and practical applicability of findings” (ESF-ALLEA 2017, 8). Since the ECoC does not define what constitutes ‘exaggeration’, and since exaggeration is otherwise a context-dependent and slippery term, it is unclear what are the concrete implications of listing this behavior as unacceptable.

Finally, there are also more direct indications of author-driven divergence from the ECoC. For instance, in the *Netherlands Code of Conduct for Research Integrity*, the rationale for constructing a new code is summarized in the following way:

The situation has now evolved to the point where a new text is needed, one that has clearer standards and greater internal coherence, that accords with international developments and that covers applied, fundamental and practice-oriented research alike. (...) On certain points, the Code presented here offers more specifics and details than the ALLEA code (KNAW 2018, 7–8).

So, on the one hand the divergence from the ECoC is downplayed (except for offering more specifics and details on some points), while on the other, the stated rationale is to keep up with international developments and to broaden the scope of the Dutch code of conduct. The latter suggests that if the ECoC was in fact deemed to be paradigmatic, then the stated intention would have been ‘to update the [Netherlands] code of conduct in light of the recent updates to the ECoC’. There was some level of intent here to rethink RI from the ground up, and not to take ECoC’s formulations as paradigmatic.

Note that we are implicitly distinguishing between the intention to remain *compatible* with the ECoC, and the intention to *reflect* the ECoC as closely as possible. In the former, care is taken that the national-level document does not diverge *too far*; in the latter, care is taken that the national-level document is *as close as possible* to the ECoC. Presented in this way, it becomes quite clear that many if not most national-level documents are *not* concerned with reflecting the ECoC.

6.2 Consequences of Divergence

Even if most national-level documents are not concerned with reflecting the ECoC, is this necessarily an undesirable state of affairs? How should we normatively evaluate the



divergences of national-level documents from the ECoC? We see two potentially negative consequences.

Codes of conduct may appear as window-dressing. The 2017 ECoC lists reliability, honesty, respect, and accountability as principles of RI; the Dutch leading document lists honesty, scrupulousness, transparency, independence, and responsibility. Does it matter which principles are or are not listed? When serious forms of misconduct (FFP) are in question the consensus is unambiguous; can one then conclude from the almost complete lack of consensus regarding principles of RI that it does not matter what principles are listed – just as long as some principles are listed?

Such a conclusion can relatively easily support a skeptical stance towards research integrity as a whole. There are voices that are skeptical about the ability of scientific research (and academia) to effectively self-regulate and hence call for more robust external regulation. Calls for more robust criminal investigations of scientific misconduct (Collier 2015; Sovacool 2005) are instances of such voices. While they are currently met with at least as many calls for caution (Bülow and Helgesson 2019), and while the dangers of ‘overcriminalization’ are well known (Husak 2008), self-regulation can only be successful when the deontology of a profession is not mere window-dressing, presenting a morally agreeable façade to the rest of society and hiding a harsher reality of competition and prestige-maximization.

A related but slightly different point is that the listed principles of RI are arguably rather generic. Values such as honesty and reliability are applicable to any economic activity or interpersonal relation. They are not specifically applicable to the activity of scientific research, and hence one could legitimately ask what precise guiding function they have for the researcher. The lack of envisaged function of the values of RI would also explain why different codes formulate the values of RI in different ways.

A deflationary view of professional codes of conduct, and of the values they prescribe, has long been a viable view in the sociology of the professions (Larson 1977) and has underpinned the increased external regulation of other professions such as medicine or law in the past decades, for instance through New Public Management (Carvalho and Correia



2018). In this sense, the current drive for increasing attention to research integrity issues would be partially self-defeating if the impression were created that the fundamental principles of research integrity are more or less arbitrarily chosen (except for honesty).

Unequal treatment of partners in international collaborations. Some types of divergence clearly have the potential to lead to unjust situations, when a researcher may be judged more harshly or leniently in country X than his or her collaborator in country Y. These legal difficulties were anticipated by the ECoC 2011, which states that potential misconduct should be investigated in the country/institute of the project leader (ESF-ALLEA 2011, 9). However, this passage has been deleted in the 2017 version of ECoC, most likely because of the serious legal obstacles faced by an institution or committee in country X investigating a researcher at a different institution in country Y.

One potentially problematic issue is the extent to which co-authors can be held responsible for fabrication, falsification, or plagiarism in a research paper. For instance, the Austrian OeAWI Guidelines for Good Scientific Practice state that all co-authors of a publication are jointly responsible for it (OeAWI 2015, 6). By contrast, the main regulatory documents in France (CNRS and INRA 2015; COMETS 2017) do not contain a provision similar to the OeAWI document.

Another problematic issue is how negligent misconduct should be judged. Negligent violations of research integrity standards occur when (1) the individual did not know about those standards, and (2) should have known about those standards. Some codes of conduct include negligent violations of the code as potential misconduct (e.g. DE, AT, FI, NO), while others purposely restrict research misconduct to behaviors with a conscious intention to deceive (e.g., IE, UK). For a fuller overview of this issue, see Desmond (2019).

6.3 A positive proposal

Dealing with discrepancies in any set of international policies is a complicated and delicate matter, and one conclusion that should not be drawn from the problems outlined in this report is that codes of conduct for researchers should be determined at the European level in a more top-down way. The top-down approach, by which international uniformity in



research integrity policy would be guaranteed by centralizing decisions about codes of conduct, would not necessarily be effective. When codes are constructed at the institutional and/or national level, the resulting code may be experienced as more authentic and hence more useful as a guide to actual decision-making. Institutional and/or national level codes may also identify important aspects of RI missed by the European-level authors.

And yet, the paradigmatically bottom-up approach to policy of common law systems (see Rachlinski 2006), where individual decisions form precedents, would not be possible in a research integrity setting. The decisions by scientific integrity committees do not always publicly communicate the details involved, so there is no path for a research misconduct case in country A forming a precedent for a research misconduct case in country B. Thinking in terms of the choice between top-down and bottom-up – a common framework in international lawmaking (Levit 2005) – is not necessarily helpful in the context of codes of conduct for research integrity.

In this regard, we suggest that a line of more fruitful inquiry would be to investigate the role codes of conduct play in the social structures of the professions, and to construct codes of conduct *in function of* the desired social structures. Scientific research, being the application of knowledge to an activity (i.e. research), can be analyzed as a professional activity whereby individual practitioners have considerable autonomy (e.g., in designing methodologies, selecting data, interpreting data, and communicating results) and are preferably oriented towards a service ideal (such as truth or understanding) rather than towards more self-oriented goods (such as a career). A better understanding of the specificities of scientific research – compared to other professional or economic activities – would help to identify the specific principles (as opposed to the generic ones, like ‘respect’ or ‘honesty’) that underlie scientific research. Some groundwork in this regard has been done (Desmond 2019), but more remains to be said.



7. Conclusion.

On the whole we conclude that the authors or authoring committees of national-level documents most likely do not view the ECoC as paradigmatic. The ECoC's formulation of three elements of research integrity – values, definition of misconduct, and definition of good practices – are basically never adopted by national-level documents. That is not to say there are no pockets of overlap: many list honesty as a value, and all documents list fabrication, falsification, and plagiarism as categories of misconduct.

This divergence between the ECoC and national-level documents is a problem for two reasons. First, the impression is created that the choice of principles on which RI should be grounded is not important. This gives ammunition to those who believe such codes are mere window dressing, and that integrity problems in science require more robust external regulation, such as criminal prosecution. Second, divergences on the definition of misconduct can lead to different partners in the same international collaboration being judged according to different standards.

We call for more professionalism in constructing codes of conduct – in effect, a guideline on how to write guidelines. At the moment, too much depends on who happens to author the code. Instead, criteria based on academic research should be elaborated on how to deliberate and decide on what to include in a code of conduct. Only by giving RI codes a more secure theoretical footing can we hope to realize the 'European core versus national periphery' model.



8. References

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9. Supplement: List of Selected Leading Documents

1. AT

Title: OeAWI Guidelines for Good Scientific Practice

Author: Austrian Agency for Scientific Integrity

Date: 2015

URL: https://oeawi.at/wp-content/uploads/2018/06/Brosch.-GWP-Richtlinien-WEB-2017_neu-1.pdf

Word Count: ca. 1860

Language of document: English and German

2. BE

Title: Code of Ethics for Scientific Research in Belgium.

Author: Royal Flemish Academy of Belgium for Science and the Arts, The Royal Academy of Science, Letters and Fine Arts of Belgium.

URL: http://www.belspo.be/belspo/organisation/publ/eth_code_nl.stm

Date: 2009

Word Count: ca. 2290

Language of document: Dutch

3. CH

Title: Scientific integrity: principles and rules of procedure.

Author: Swiss Academies of Arts and Sciences

Date: 2008

URL: http://www.akademien-schweiz.ch/en/dms/E/Publications/Guidelines-and-Recommendations/e_Integrity.pdf

Word Count: ca. 5350

Language of document: English



4. **CZ**
Title: Code of Ethics for Researchers of the Czech Academy of Sciences
Author: Czech Academy of Sciences
Date: 2016 (Latest version)
URL: http://www.avcr.cz/opencms/export/sites/avcr.cz/.content/galerie-souboru/INc-16-12_AJsmm.pdf
Word Count: ca. 1980
Language of document: English

5. **DE**
Title: Guidelines for protection good scientific practice
Date: 2019
Authors: German Research Foundation (DFG)
URL: https://www.dfg.de/download/pdf/foerderung/rechtliche_rahmenbedingungen/gute_wissenschaftliche_praxis/kodex_gwp.pdf
Word Count: ca. 5820
Languages of document: English and German

6. **DK**
Title: Danish Code of Conduct for Research Integrity
Date: November 2014
Authors: Ministry of Higher Education and Science
URL: <https://ufm.dk/en/publications/2014/the-danish-code-of-conduct-for-research-integrity>
Word Count: ca. 4610
Language of document: English

7. **EE**
Title: Estonian Code of Conduct for Research Integrity
Author: the Estonian Academy of Sciences, the Estonian Research Council, and the Ministry of Education and Research.
Date: 2017
URL: https://www.eetika.ee/sites/default/files/www_ut/hea_teadustava_eng_trukis.pdf
Word Count: ca. 6380
Language of document: English



8. ES

Title: Code of Good Scientific Practices of CSIC.

Author: Spanish Research Council (CSIC)

Date: 2011

URL: https://www.cnb.csic.es/documents/CBP_CSIC.pdf

Word Count: ca. 3350

Languages of document: English and Spanish

9. FI

Title: Responsible conduct of research and procedures for handling allegations of misconduct in Finland

Author: Finnish Advisory Board on Research Integrity

Date: 2012

URL: http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf

Word Count: ca. 5140

Language of document: English

10. FR

Title: Integrity and responsibility in research practices: a guide

Author: CNRS-CPU

Date: March 2017

URL: <http://www4.cnrs-dir.fr/comets/IMG/pdf/comets-guide-en.pdf>

Word Count: ca. 8090

Language of document: English

11. HR

Title: Etički Kodeks Odbora za Etiku u Znanosti i Visokom Obrazovanju (Ethical Code of the Board of Ethics in Science and Higher Education).

Author: Agency for Science and Higher Education (ASHE)

Date: 2015 (consolidated text).

URL:

https://www.azvo.hr/images/stories/tijela_agencije/Eticki_kodeks_OE_ZVO_pro%C4%8Di%C5%A1%C4%87eni_tekst_nakon_izmjena_i_dopuna_s_8._sjednice_15.6.15.doc

Word Count: ca. 2170

Language of document: Croatian

12. HU

Title: Science Ethics Code of the Hungarian Academy of Sciences

Author: Hungarian Academy of Sciences

Date: 2010



URL:

http://mta.hu/data/dokumentumok/english/background/Science_Ethics_Code_English.pdf

Word Count: ca. 10670

Language of document: English

13. IE

Title: National Policy Statement on Ensuring Research Integrity in Ireland

Date: June 2014

Authors:

Irish Universities Association (IUA)
Health Research Board (HRB)
Royal Irish Academy (RIA)
Science Foundation Ireland (SFI)
Institutes of Technology Ireland (IoTI)
Higher Education Authority (HEA)
Dublin Institute of Technology (DIT)
Enterprise Ireland (EI)
Teagasc
Irish Research Council (IRC)
Royal College of Surgeons in Ireland (RCSI)
Quality and Qualifications Ireland (QQI)

URL:

<http://hea.ie/assets/uploads/2017/04/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf>

Word Count: ca. 5170

Language of document: English

14. IT

Title: Linee guida per l'integrità nella ricerca (Guidelines for Research Integrity)

Date: 10 June 2015

Authors: Commission for Research Ethics and Bioethics of the National Center for Research (Commissione per l'Etica della Ricerca e la Bioetica del CNR)

URL:

https://www.cnr.it/sites/default/files/public/media/doc_istituzionali/linee-guida-integrita-nella-ricerca-cnr-commissione_etica.pdf?v=1

Word Count: ca. 7650

Language of document: Italian



15. LT

Title: Mokslininko etikos kodeksas (Scientist's Code of Ethics)
 Author: Lithuanian Academy of Sciences (Lietuvos mokslu akademija)
 Date: 2012
 URL: <http://www.lma.lt/mokslininko-etikos-kodeksas>
 Word Count: ca. 990
Language of document: Lithuanian

16. LV

Title: Scientist's Code of Ethics
 Date: 2017 (reapproval of 1997 code)
 Author: Latvian Academy of Science, Latvian Council of Science
 URL: https://www.lzp.gov.lv/index.php?option=com_content&task=view&id=149&Itemid=113
Word Count: ca. 1920
Language of document: English

17. NL

Title: Netherlands Code of Conduct for Research Integrity
 Date: 2018
 Authors: Koninklijke Nederlandse Akademie van Wetenschappen (KNAW), et al.
 URL: <https://doi.org/10.17026/dans-2cj-nvwu>
 Word Count: ca. 7250
Language of document: Dutch

18. NO

Title: General guidelines for research ethics
 Date: September 2014
 Authors: The Norwegian National Research Ethics Committees
 URL: <https://www.etikkom.no/globalassets/general-guidelines.pdf>
 Word Count: ca. 880
Language of document: English

19. PL

Title: The Code of the National Science Centre on Research Integrity and Applying for Research Financing
 Author: National Science Centre
 Date: 2016



URL: <https://ncn.gov.pl/sites/default/files/pliki/Code-of-the-National-Science-Centre-on-Research-Integrity.pdf>

Word Count: ca. 6580

Language of document: English

20. PT

Title: Integridade na Investigação Científica: Recomendação (Integrity in Scientific Research: Recommendation)

Author: Conselho Nacional de Ética para as Ciências da Vida (National Council of Ethics for the Life Sciences)

Date: 2018

URL:

http://www.cneqv.pt/admin/files/data/docs/1523888172_IntegridadeCNEC_V2018.

Word Count: ca. 4850

Language of document: Portuguese

21. RO

Title: Codul General de Etică în Cercatarea Ştiinţifică (General Code of Ethics in Scientific Research)

Author: Ministerul Educaţiei, Cercetării şi Tineretului; Autoritatea Naţională Pentru Cercetare Ştiinţifică; Consiliul Naţional de Etică (Ministry of Education, Research and the Youth; National Authority for Scientific Research; The National Council of Ethics)

Date: 2007

URL: <http://www.academiaromana.ro/consiliuCercetare/doc2007/ccc2007-0913-IEI-CodEtica.doc>

Word Count: ca. 3000

Language of document: Romanian

22. SE

Title: Good Research Practice

Author: Swedish Research Council

Date: July 2017

URL:

https://www.vr.se/download/18.5639980c162791bbfe697882/1529480529472/Good-Research-Practice_VR_2017.pdf

Word Count: ca. 44 000

Language of document: English

23. SK

Title: Etický kódex SAV (Ethics Code of the Slovak Academy of Sciences)

Author: Slovak Academy of Sciences





Report on significant similarities and contradictions within national-level codes and guidelines

Date: 2018

URL (original): https://www.sav.sk/php/download_doc.php?doc_no=7663

URL (appendix): https://www.sav.sk/php/download_doc.php?doc_no=7664

Word Count: ca. 1880

Language of document: Slovak

24. UK

Title: The Concordat to Support Research Integrity

Date: October 2019

Author: Universities UK

URL: <https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2019/the-concordat-to-support-research-integrity.pdf>

Word Count: ca. 5370

Language of document: English

