PROmoting ethics and integrity in non-medical RESearch

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EXECUTIVE SUMMARY

MAIN POINTS: VALUES

- There is **conceptual ambiguity** and **terminological inconsistency** among the analysed documents.

    o **Different concepts** are used for expressing similar ideas. For instance, the concepts of *justice, equality* and *equity* addressed some aspect of treating others fairly; *intellectual freedom, freedom of inquiry* and *academic freedom* all addressed some aspects of unrestricted pursuit of truth; *independence, impartiality, objectivity* and *fairness* addressed the bias of decisions and external influences.

    o **Clarity and consistency** within a single document or framework are likely and achievable, as long as the document offers definitions, explanations and examples for each of the abstract concepts.

    o We consider it to be unlikely that a single framework could overcome all the potential differences of terminology among different organisations and their relevant documents.

- Analysed documents focus on **different values and principles**. Some values, like *integrity, responsibility* and *respect*, are more prevalent in the documents, whereas others, like *neutrality* or *stewardship* are less common.

    o Another question rises about the order or **hierarchy of these values**: which values are the most important. This question may have very practical implications, especially when solving conflicts between different principles or standards.

    o Both questions – which values to include and which values are the most important – should be considered. The second question cannot be answered solely on the prevalence of values in already existing codes and guidelines as prevalence shouldn't be translated directly into importance.

    o Additionally, the documents in general do not distinguish whether they talk about **values as virtues** or **values as the basis for principles for good conduct**. For instance, honesty, accuracy and rigour could also indicate certain characteristics that any researcher should have but they could also refer to certain rules or standards that every researcher should follow.

MAIN POINTS: ISSUES

- **Responsibility**, **respect** and **justice** are the three groups of related values or concepts, which stand out because of the variety of different meanings and standards that can be associated with them. In case of **responsibility**, one of the questions is about the extent of researcher's responsibility concerning the use and interpretation of his/her findings and results. These three groups deserve more in-depth discussions and should be balanced with the value of **freedom**.

- The analysis identified a few explicit conflicts between the values, although it is highly likely that many of these values may conflict in certain situations that the codes and guidelines did not cover. Some guidance should be given about how to solve these value conflicts. For

instance, are all the values of similar importance or perhaps some values are more important than others.

- The values of **transparency** and **openness** include an inherent conflict with confidentiality and data protection. Due to national differences in the way that data protection in the context of research is regulated, this topic would deserve additional attention.
- Researchers need to agree beforehand how to distribute **authorship and acknowledgement** and what standards and agreements to follow in **collaborative research**. Authorship criteria from Vancouver guidelines referred back in several documents. Gift or position-based authorship is rather condemned.
- **Transparency** and **reliability** are to be followed in doing research.
- It is important to create and sustain such environment that supports research integrity. For research environment, there is **difference** in the documents **who is responsible** for creating supportive research environment – some documents emphasise the role of institution, others the role of researchers in that environment.
- Researchers need to comply with laws and regulations, however, there are **differences** in documents about suggestions on **what to do, when laws and regulations conflict** with each other. Suggestions vary from to follow the code, to follow international agreements, to local regulations and standards. Fourth option is to seek guidance from their organisations or from "proper persons". There is also a **contradiction** for researcher as a citizen to cooperate with law enforcement and as a researcher not do disclose the identity of confidential sources even when they risk with penalties. Other documents state under the section "justification for breaching the confidentiality" that it is allowed to do so for several legitimate reasons, including when mandated or permitted by law for valid purposes.
- Documents agree that the **principle of confidentiality** must be followed, however, there is **difference** in emphasising confidentiality towards what (identity, information, data or findings, settling disputes etc.)
- There is **difference** in question related to **confidentiality towards sponsors or grantors** – some of the documents allow the identity of the grantor not to be revealed if the grantor wishes so, others support clear transparency about finances and all relevant financial ties.
- Partners need to agree on **intellectual property**.
- Researchers need to keep in mind possible **impacts and applications** of the research results with special attention given to **risk assessment**.
- **Natural and cultural environment** should be respected.
- Policy for **data** ownership and storage is needed. There is however **difference** in whether data should be made accessible or should it be protected from unauthorised use.
- **Research results** should be distributed openly and promptly and they should be published in honest, transparent and accurate manner. On the other hand, there is **difference** in opinion whether **restrictions from sponsors** on publishing should be followed or not. Other difference in opinion is related with **duplicate publications** where some documents prohibit multiple submission of research findings, other allow duplicate publication if they are acknowledged or cited.
- For **peer review** the principle is fair, prompt and rigorous evaluation and respect of confidentiality towards others' work.

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- There are principles of **privacy and informed consent** for people involved in the research. However, there is difference in using proxies in acquiring informed consent from **vulnerable groups** – some documents emphasise the need to use proxies as little as possible, others state parents or legal guardians of people who cannot consent themselves need to consent for them. On the other hand, there is agreement that the **opinion of the person** – if they are capable of giving it – should determine whether the person is included in the research or not. If proxy gives consent and potential participant does not, they are not included in the research.
- **Harm** to research subjects both human beings and animals **should be minimised** and benefits maximised.
- There is difference in question **whether covert methods** are allowed– there are documents that prohibit them, however there are documents that allow them under justified conditions.
- Documents agree on the need to deal with **misconduct**. The main principle is that researcher should respond to or report misconduct even if it means **whistleblowing**, however there are differences on emphasising the role of journal editors, universities, research institutes and funders. There is agreement that **FFP** (falsification, fabrication and plagiarism) are research misconduct, however, different documents name several actions they consider also to be research misconduct. Research institutions' role in research misconduct is highlighted in some documents. There is agreement that **penalties** must follow for research misconduct.
- **Conflict of interest** is seen as an issue in the documents, however, there is difference in how to deal with it – avoid and prevent or disclose and solve.
- Researchers need to **train and supervise** their students and tasks are delegated only to those who are trained and educated in the matter previously. Researchers are responsible for keeping themselves up-to-date in their field and they need to be trained in **research integrity**.

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METHODOLOGY

The aim of the analysis was to explore existing codes and guidelines in the values, principles and standards dimensions and to map conflicting values and standards. Before beginning with the analysis, the categories of *principles* and *standards* were discussed to find a practical and methodologically sound way to capture these categories in the analysed documents. The main challenge was the variety of ways that principles were phrased and the context in which they were referred to. For instance, would the addition of *students* to the principle of respectful treatment of colleagues make it into a separate principle or just a variation of the previous principle? And how would these principles relate to the more general principle of treating others with respect? These questions are challenges that a researcher needs to overcome while coding the documents. Differentiating the principles by minor differences would lead to a vast amount of categories.

Another challenge was to differentiate *principles* and *standards*. Standards could be understood in substantially different ways. Kathinka Evers (2003: 11–12[1]) sees *standard* as a neutral term for "*public and written ethical norms regulating scientific research*" and offers several examples of such *standards*: "*Scientific organisations and other relevant agencies have issued numerous distinct kinds of ethical standards, for example: ethos, pledges, oaths, sets of principles or guidelines, codes, appeals, recommendations, manifestos, statements, declarations, resolutions, conventions, charters, or laws.*" Thus, standards could be seen as normative documents. Another way would be to see standards as a specific formulation of norms or principles. For instance, the *Code of Practice for Research* of UK Research Integrity Office (UKRIO) has a list of seven general principles and the rest of the document consists of more specific *standards*, which give a more detailed account of the responsibilities of researchers and organisations. Thus, principles and standards differ in their specificity: principles can be seen as more abstract norms or rules that are more closely related to values; standards could be seen as a more detailed and specific description of responsibilities that are or should be applicable. However, it is difficult to distinguish a *norm*, *principle* and *standard* of research ethics as they often relate to similar issues, apply to similar persons and have a similar content. Moreover, the analysed documents usually do not specify their content via terms like *principles* or *standards* or, even if they do, they do it in different ways.

Because of the apparent complexity of the current task and to make the differentiation of principles and standards more manageable, we decided to approach the documents via common issues – for instance authorship or peer review – and describe all the relevant principles and standards under each of the issues. To fulfil this aim, the following research questions were used:

1. Which values are referred to in the documents?
    1. How are the referred values defined?
    2. What are the differences between the definitions?
    3. Which values are seen to be in conflict with the defined value?
2. What are the common issues covered in the documents?
    1. Which principles relate to the common issues?
    2. What are the differences among the documents in handling the common issues?

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[1]Evers, K. (2003) *Codes of conduct. Standards for ethics in research.*

The sample was drawn up from the existing range of codes and guidelines on ethics and integrity across disciplines (except medical field, emerging from the description of the project deliverable). Partners of Pro-Res suggested documents for the repository. 77 documents were submitted. The final sample consisted of 66 documents – documents that were not translated into English were not included in the analysis, also some documents were submitted several times (they were included only once). This is exploratory study, additional ethics guidelines can be found for example: http://ethics.iit.edu/ecodes/about

Two main topics were under focus – values and issues. There were two different coding systems used to categorise the material. For values thematic analysis inspired by grounded theory was used. This means the sub-codes of *values* derived explicitly from the documents and were categorised using Maxqda program. Many documents analysed included a section that mentioned or listed the most important values or basic principles of research, which were integrated into the coding system as specific categories of *values*. The list of categories was updated during the coding process, when new values were referred to. For instance, *rigour* was added as a value after reading "Rigour, respect, responsibility: a universal ethical code for scientists", because rigour was one of the central concepts in this code, but the coding system did not have such a category yet.

For the topic *issues* a coding system was developed in advance based on previous work done by the Centre for Ethics, University of Tartu in the project of PRINTEGER and Science Integrity in Estonia. Also work done by the SATORI project was used. From these projects a list of possible issues was created and material was coded using Maxqda program accordingly. If material emerged that did not fit under existing sub-codes, new codes were added. The code-tree is added to Annex 1.

The analysis of *values* focused on similarities and differences in the way the values were phrased or referred to. The most recurring similar references were used to derive the common or general meaning of the value. All the less frequent references were used to exemplify the possible different ways that a value can be understood.

For the *issues* section the analysis focused on similarities and differences in dealing with the issues in the documents. Under every issue the main principle that was common to most of the documents is presented. Differences in emphases are highlighted between documents. Where there were differences or contradictions in dealing with the issue, they are brought out. Acronyms were used for referencing documents; a full list can be found in the *Literature* section.

Many of the differences in the analysis arise on the level of applying general principles in a specific research context. These are usually covered in codes and guidelines that offer more detailed explanations and examples in addition to the general values or principles. For example, several codes for psychological research introduce the topic of *providing services*, which is rare in non-psychological codes and guidelines. Because of this, it should be considered that many of the specific differences brought out in the analysis may reflect the composition of our sample: had we used a different sample we would have most likely gotten different examples of how to apply certain principles in specific situations. However, the general values and principles would likely remain the same.

1. VALUES

1.1 INTRODUCTION

One of the challenges of coding values was the vagueness of meaning and the plurality of different concepts and words which are used to describe similar aspects of research. Some of these challenges stem from translations from one language to another. The methodological challenge was to come up with precise categories of values for all of the analysed documents so that each category would have a clear and unique content which could be easily differentiated from the content of other categories. The result is somewhat imperfect as the different categories are closely related to each other and may have similar meanings in some contexts. Some of the more explicit similarities between different values have been covered in the following sub-chapters. The following is a general overview of these similarities:

- *autonomy*, *independence* and *freedom* have some common elements in relation to making autonomous decisions and being free from external influences;

- *diversity*, *respect* and *equality* all cover certain aspects of how to cope with personal or social differences;

- *freedom* is related to *responsibility* and *accountability* by being mutually restrictive: freedom of researchers is restricted by their responsibilities towards the society and that the society should respect the freedom of science;

- *good stewardship*, *rigour*, *accuracy* and *transparency* have common elements in terms of following rules and keeping records;

- *honesty, truth, transparency* and *openness* have common elements in relation to truthfulness and readiness to disclose information;

- *impartiality, independence* and *objectivity* have common elements in terms of expert opinions and judgements and the requirement to avoid conflicting interests;

- *integrity*, *competence*, *excellence* and *rigour* are to some extent related to the quality of research and following the highest standards;

- *respect, autonomy* and *openness* cover topics related to respecting the choices of research subjects and offering them sufficient information;

- *beneficence, safety* and *responsibility* have common elements in relation to the requirement to benefit the society, minimise risks and avoid harms;

- *transparency*, *openness* and *accountability* cover similar topics of informing the public;

- *trust* and *responsibility* are related to all aspects of doing research as any activity within the research setting is someone's responsibility and any irresponsible action may lead to the loss of trust.

The current chapter is structured in the following way: firstly, main similarities and common usage of the terms are described; secondly, various differences in meaning or usage of the term are listed; thirdly, some general remarks about the value and its relation to other values are given. The overview of values is mainly descriptive and tries to depict how values are referred to in the analysed documents. It does not include an assessment of whether the documents use these terms correctly or coherently. If some values were referred to in an apparently conflicting, vague or incoherent way, a short remark about it is given.

The overview of prevalence of all the analysed values is given in the Table 1. The table includes the number of documents which include at least one verbatim mention of the category or any of its sub-categories. In total, there were 66 documents that were part of the analysis. Not surprisingly, *integrity, responsibility* and *respect* are mentioned in almost all of the analysed documents.

Table 1. Representation of values in the documents.

Accuracy	34	Impartiality	16	Care	33
Autonomy	20	Neutrality	3	Responsibility	64
Competence	26	Justice	21	Accountability	37
Cooperation	33	Fairness	46	Social responsibility	24
Inclusiveness	12	Equality	21	Rigour	14
Diversity	20	Equity	15	Safety	44
Excellence	15	Objectivity	24	Timeliness	21
Freedom	35	Openness	46	Transparency	42
Good stewardship	9	Research integrity	59	Trust	43
Honesty	44	Respect	61	Truth	46
Independence	36	Beneficence	43		

1.1 Accuracy

Accuracy is prescribed to all kinds of information that relate to research and has been mentioned in relation to different phases of doing research: collecting, storing, analysing and managing *data*; reporting *findings*; using *citations* and *references*; publishing, presenting and evaluating *results*; keeping *records*; presenting *theory* and *interpretations*; giving *credit* and *acknowledgements*; investigating misconduct allegations. Thus, accuracy can be seen as one of the fundamental values as it is ever-present in all phases of research and related activities. In addition, accuracy is referred to in relation to:

1. promoting research environment that supports accuracy (Danish Code; Australian Code);

"*Institutions should promote and maintain an environment that supports honesty, transparency, and accuracy when disseminating research findings, e.g. through policies and training relating to publication and communication.*" (Danish Code)

2. representing expertise when rendering professional and expert judgements (ASA; APA);

"*In research, teaching, practice, service, or other situations where sociologists render professional judgments or present their expertise, they accurately and fairly represent their areas and degrees of expertise.*" (ASA)

3. informing about qualification and experience (ASA);

"*When seeking employment, sociologists provide prospective employers with accurate and complete information on their professional qualifications and experiences.*" (ASA)

4. verification and replication of research (Dutch Code; UK Code);

"*Research must be replicable in order to verify its accuracy. The choice of research question, the research set-up, the choice of method and the references to sources used are accurately documented in a form that allows for verification of all steps in the research process*." (Dutch Code)

5. avoidance of misleading, overrating and over-interpreting (Belgian Code; EGE; Australian Code; WEF);

"*Researchers will endeavour to present their expertise, work and results as accurately as possible and will, in all cases, avoid creating a misleading or overrated idea of their work among their sponsors and colleagues, the press or any other third party.*" (Belgian Code)

6. potential harms of inaccurate information (BPS Internet);

"*Related to this point, the Code of Human Research Ethics highlights the potential for harm to arise from the dissemination of inaccurate or misleading information (such as invalid research results and conclusions).*" (BPS Internet)

7. potential use of research findings and results by other parties (Australian Code; WEF);

"*Researchers, in turn, should be confident that decision-makers will represent the unbiased, objective scientific information accurately and use it ethically.*" (WEF)

Considering the potential use and misuse of research, an important question is, to what degree is a researcher responsible for accuracy? The general norm seems to be that it is the researcher who should be accurate. However, there are a few exceptions. For instance, the Australian Code (point 4.6) puts forth the obligation to correct mistakes of others: "*If they* [researchers] *become aware of misleading or inaccurate statements about their work, they must correct the record as soon as possible.*" Thus, the obligation to be accurate could extend beyond one's own actions. This in turn raises the question of what is the reasonable and proportionate scope of a researcher's individual responsibility.

1.2 Autonomy

In the context of the analysed documents, autonomy has been ascribed to different subjects: the research subject, the individual researcher, the research organization and research in general. Most commonly, autonomy is referred to from the perspective of research subjects: the researchers are obligated to respect the autonomy of individual persons involved in research. *Freely given*, *informed* and *ongoing* consent is seen as the main mechanisms for such respect. Two documents, the Canadian Tri-Council Policy Statement and the "Code of Human Research Ethics" of the British Psychological Society (BPS), have explained the concept of respecting autonomy in more detail. The Tri-Council Policy Statement (2014: 6) even offers a definition: "*Respecting autonomy means giving due deference to a person's judgment and ensuring that the person is free to choose without interference.*" The BPS code of ethics includes a more detailed account of withdrawing consent. Individuals may request the data to be destroyed and the researchers must comply: "*Under such circumstances researchers will comply with any requests that any related data be destroyed, and removed from any datasets.*" (*Code of Human...*, 2014: 9) In addition, researchers are obligated to inform the individuals if there are any time-limits to withdrawal of consent (e.g. data will be aggregated afterwards).

In addition, respect for autonomy may include:

1. considering in advance possible factors and constraints that diminish personal autonomy (TCPS 2, SATORI; BPS Human);

"*Other constraints may consist of barriers to accessing resources or knowledge outside the research context. These factors and constraints should be addressed prior to any research being carried out, so as to ensure participants are sufficiently protected.*" (TCPS 2)

2. minimizing or avoiding possible risks and harms to personal autonomy (SATORI; BPS Human);

"*Ensure that the technology does not harm, or pose inherent risks to, individual freedom, autonomy, and privacy, human dignity or bodily integrity, as well as the well-being and interests of individuals and groups.*" (SATORI)

3. use of additional measures to protect the interests of individuals with diminished autonomy (TCPS 2; SATORI);

"*These measures will generally include seeking consent from an authorized third party who is entrusted to make decisions on behalf of the prospective participant, based on knowledge of that person and that person's wishes or, if such wishes are unknown, on consideration of that person's welfare. Even when the requirements of free, informed and ongoing consent cannot be met, Respect for Persons requires involving individuals in circumstances of vulnerability in decision making where possible.*" (TCPS 2)

4. respecting the autonomy of groups and communities (TCPS 2; BPS Human; BPS Internet; BERA);

"*All social science should respect the privacy, autonomy, diversity, values and dignity of individuals, groups and communities.*" (BERA)

5. minimising the use of proxies (NDA);

"*Proxies are people who speak on behalf of others or about others and decide whether to consent to their participation in research. To respect the autonomy of individuals, the use of proxy informants should be minimised.*" (NDA)

Alternatively, autonomy is sometimes ascribed to researchers and research in general. From the perspective of the researchers, they enjoy autonomy because of their expertise, knowledge or professional roles. The autonomy of research, on the other hand, is related to the general aims and functions of science and is seen as a necessary condition for scientific progress. Compared to respect for individuals, there were only a few accounts of research related autonomy in the analysed documents. And even these few examples stressed somewhat different aspects:

1. responsibility is part of professional autonomy (BPS);

"*Because of their acknowledged expertise, Psychologists enjoy professional autonomy; responsibility is an essential element of autonomy.*" (BPS)

2. a tension between autonomy and public accountability (UNESCO);

"*Each Member State should institute procedures adapted to its needs for ensuring that, in the performance of research and development, scientific researchers respect public accountability while at the same time enjoying the degree of autonomy appropriate to their task and to the advancement of science and technology.*" (UNESCO)

3. a possible tension between autonomy and financing sources (Estonian Code).

"*The researcher is free to decide from which partners to accept financing and avoids sources of financing that would compromise the autonomy of the researcher or research group members or harm the impartiality of research results.*" (Estonian Code)

There was only one mention of the organisational autonomy of organisations relating to employment and regulation of research by research organisations: "*The Concordat recognises the autonomy of employers. Employers of researchers are a diverse set of organisations that must have the freedom to strengthen policies and procedures relating to research as appropriate to their circumstances: there can be no 'one size fits all' approach.*" (UK Concordat)

It is not clear what exactly being autonomous means and towards whom it applies. It could be argued that autonomy of research implies, at least to some degree, making autonomous decisions in a wider societal context. One example can be found in the UNESCO recommendations (2017: 4), which state that researchers should be at the same time autonomous and accountable to the public. UNESCO recommendations use the phrase "*appropriate degree of autonomy*", which implies that autonomy could be somewhat restricted in the interest of public accountability. The assessment document of the SATORI project (2017: 57) raised the issue of "*balancing the autonomy of scientific pursuit with its aim to benefit society*". Both of these aims, accountability and beneficence, can be seen as good and desirable, but at the same time they can directly or indirectly limit what can be researched and how. None of the documents offer any guidance in the matter of balancing these potentially conflicting aims. Thus, it is open for discussion to what extent autonomy should be restricted by societal beneficence or public accountability.

However, in the analysed documents, issues relating to research and its role in society are rarely phrased as issues related to *autonomy*. More often the relationship of science and society is discussed in the context of *independence*, *academic freedom* or *social responsibility*.

1.3 Competence

Competence requires the researcher to have the necessary knowledge, skills and resources for conducting research in a certain field. One common requirement among the analysed documents was to recognize the limits of one's professional competence and decline any work that falls outside of those limits. In some of the analysed documents the terms *professional competence* and *expertise* were used to indicate similar concepts. In addition, competence is referred to in relation to:

1. consulting or cooperating with experts with relevant expertise (IVSA; UKRIO; APA; ASA);

"*They consult with other professionals when necessary for the benefit of their research participants as well as students and clients*." (IVSA)

2. maintaining the level of expertise and staying up-to-date with new developments in one's field (ASA; IVSA; SATORI; BPS; APA);

"*They recognize the need for ongoing education in order to remain professionally competent; and they utilize the appropriate scientific, professional, technical, and administrative resources needed to ensure competence in their professional activities*." (ASA)

3. making reasonable ethical judgments (Iphofen 2015);

"*Ethnography is extremely skilled work and so requires competent, well trained researchers, capable of making reasonable ethical judgments during the research.*" (Iphofen 2015: 2)

4. avoiding exploitation of colleagues (AACS);

"*We respect the competence of other professionals, cooperate with members of other professional organizations, and take care that colleagues are not exploited.*" (AACS)

5. providing services up to professional standards (ASA; APA; BPS, AACS).

"*Psychologists, whether academic, practitioner or in training, may offer a range of services that usually require specialist knowledge, training, skill and experience. Competence refers to their ability to provide those specific services to a requisite professional standard.*" (BPS)

The last point in the previous list is somewhat different, as it applies to services and not research. Some of the documents of sociological and psychological associations handled the issue of providing services in greater detail. Especially noteworthy was the code of conduct of the American Psychological Association (APA) which had several points covering the issue of competence in the context of providing services. The general norm is similar to research: recognise the boundaries of competence and stay within them. However, the APA code also foresees exceptions to this norm in new, emerging areas or in case of an emergency.

The British Psychological Society's "Code of Human Research Ethics" (2014: 27) requires that ethics review should be conducted by a competent body: "*This second principle addresses the need for research protocols to be properly evaluated by reviewers with appropriate expertise, and highlights the need for careful consideration of the range of membership and ethics specific training of RECs.*" The Finnish Code refers to *competency and expedience of the process* in the context of handling misconduct, which requires respect for the rights of all the parties and following all relevant instructions and procedural rules.

Although providing services, conducting research, handling misconduct and ethical review may all require somewhat different expertise, the importance of competence is similarly stressed in all of these cases. Understood this way, competence only requires training, knowledge, skills or resources, without naming any specific skills, facts, theories or models. Thus, competence seems to be inevitably vague, at least to some degree. It is also unclear who should prescribe the necessary skills and knowledge for a discipline and how they should do so, especially considering the speed at which new knowledge is produced and the need for different competences in interdisciplinary research.

1.4 Cooperation

Cooperation is a complex value that refers to working together in a general sense and covers a wide array of topics from organisational culture to international collaboration. The minimum requirement of cooperation is being open and able to work with others. The more demanding requirement is to actively foster or encourage collaboration, for instance by agreeing upon common aims, expectations or rules and by trying to prevent potential conflicts among collaborating partners. Some common elements of cooperation include open exchange of ideas, data, methods and results among researchers as well as open discussions and debates. In some documents, cooperation is closely related to good collegial relations. In addition, cooperation covers the aspects of:

1. open dialogue and reducing hierarchy (PRINTEGER);

"*Building bridges between different hierarchical levels by working toward a culture of open dialogue is an important action for strengthening integrity, as well as supporting transparency, fairness, collegiality and respect*." (PRINTEGER)

2. mutual trust (German Code);

"*Members of a working group must be able to rely on each other. Mutual trust is the basis for the conversations, discussions, and even confrontations which are characteristic of groups that are dynamic and productive*." (German Code)

3. fair competition among colleagues (IFLA);

"*Librarians and other information workers strive to earn a reputation and status based on their professionalism and ethical behaviour. They do not compete with colleagues by the use of unfair methods.*" (IFLA)

4. teaching and learning (German Code; Durham; Estonian Code);

"*Cooperation in scientific working groups must allow the findings, made in specialized division of labour, to be communicated, subjected to reciprocal criticism and integrated into a common level of knowledge and experience. This is also of vital importance to the training of graduate students in the group for independent research. In larger groups, some organized form for this process (e. g. regular seminars) is to be recommended*." (German Code)

5. researchers' responsibilities and ethical concerns (SATORI; Finnish Code; Norwegian Code; Estonian Code);

"*Before beginning the research or recruiting the researchers, all parties within the research project or team (the employer, the principal investigator, and the team members) agree on the researchers' rights, responsibilities, and obligations, principles concerning authorship, and questions concerning archiving and accessing the data.*" (Finnish Code)

6. mentoring and empowering younger researchers (WEF; Estonian Code);

"*Being a mentor means trusting and empowering less experienced researchers, especially during the early stages of their careers, to help them reach their professional goals and realize their full potential*." (WEF)

7. evidence-based decision making (WEF).

"*Many decision-makers lack the detailed knowledge required to engage in evidence-based decision-making unassisted. By contrast, researchers have detailed knowledge in their area of expertise, but often lack the power to translate their findings into policy or practice. Thus, by working together, decision-makers and researchers have the power and knowledge required for evidence-based decision-making*." (WEF)

1.5 Inclusion, democratic participation

Participation and inclusion are closely related to cooperation but focus more on engaging with interest groups and other societal actors. Participation and inclusion both refer to collaboration in all phases of research-related decision-making: designing and conducting research, disseminating results, discussing potential applications and impact. The main difference between the documents arises from the different activities where participation is required and the different parties who should be included. Two common references are either to the public – that all societal actors should be engaged – or to the communities and stakeholders who are affected by the research. In addition, the different aspects of participation and inclusion may cover:

1. staff and student unions (EU-USR);

"*Formally recognizes staff and student unions and involves them as partners in governance and decision-making.*" (EU-USR)

2. new ideas and perspectives (GREAT);

"*Inclusion – enabling the hearing of 'new voices' that may challenge what can be narrow 'we know what's good for you' top-down approaches.*" (GREAT)

The guide for community-based participatory research of Durham University (2012) offers additional criteria that are necessary for research to be participative. These are: 1) acknowledging and discussing

differences in status and power among the participants; 2) using language every participant can understand; 3) using participatory research methods.

1.6 Diversity

Diversity is referred to in connection with *equality* and *pluralism*. Diversity requires respect for cultural, social and individual differences. The main difference between documents lies in the scope of requirements. The minimal approach is that diversity should be respected. The more extensive approach states that diversity should be supported and promoted. Diversity is referred to in the context of:

1. sensitivity to differences (ASA; WEF);

"*They are sensitive to cultural, individual, and role differences in serving, teaching, and studying groups of people with distinctive characteristics.*" (ASA)

2. acknowledging biases (WEF; ASA);

"*Measures can be taken, such as recognizing that diversity in the research sector leads to the best outcomes. Acknowledging unconscious biases, for instance in hiring and promoting and in reviewing tasks, and compensating for them where possible is also needed.*" (WEF)

3. providing mechanisms to promote diversity (WEF);

"*Additionally, decision-makers must be aware of and provide mechanisms to implement best practices promoting diversity, such as organizing unconscious-bias trainings, ensuring the diversity of conference participants when designing its programme and assessing track records in relation to opportunity in grant allocation, among others*." (WEF)

4. supporting under-represented groups (WEF).[2]

"*If certain groups are under-represented in an institution's senior leadership roles, policies must be developed to identify, train and place them in those roles and to facilitate re-entry after career interruptions, enabling the transition to greater diversity."* (WEF)

Diversity is closely related to *respect* and *equality*. In addition, the requirement to avoid *bias* relates this concept to *impartiality*. Thus, it is difficult to clearly differentiate *diversity* from some of the other concepts. Nevertheless, we decided to create a separate category for *diversity*, mainly because the *Young Scientists Community Code of Ethics* (2016) of the World Economic Forum considers *diversity* a core value in science.

1.7 Excellence

In the analysed documents excellence is described as a general ideal to strive for when conducting research. Excellence is also referred to in terms of *excellent research*, in which case it refers to quality of research in a general sense. Excellence could also be understood as:

1. something an ideal researcher should commit to (Australian Code);

"*Such an agreement should follow the general principles of this Code, including integrity, honesty and a commitment to excellence.*" (Australian Code)

2. a necessary property or part of research (UK Concordat, SAN);

"*The concordat recognises that academic freedom is fundamental to the production of excellent research.*" (UK Concordat)

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[2]Identical point exists under the category of *equity*.

3. adhering to standards and good practices (EC 2008, IFLA);

"*Excellence: research activities should meet the best scientific standards, including standards underpinning the integrity of research and standards relating to Good Laboratory Practices.*" (EC 2008)

4. related to research culture or environment (Australian Code, Open Uni principles).

"*...its research environment is one where excellence and high ethical standards are promoted.*" (Open Uni principles)

The *Code of Conduct* of the National Research Council Canada (2013: 7) refers to *excellence* in the context of public trust: "*NRC's history of research excellence and scientific distinction has earned us the respect and trust of the Canadian public, its clients, research organizations and researchers around the world.*" Thus, excellence is seen not as an aim in itself but rather as a necessary means for gaining public trust. The *Ethical Guidance for Research with People with Disabilities* of the National Disability Authority (2009: 41) rather sees *excellence* in the context of scientific and ethical standards: "*As was stated in the Introduction to this document, research cannot be ethical unless it meets scientific standards but research that meets scientific standards may or may not be ethical; and only research that meets both scientific and ethical standards can be called 'good' or 'excellent' research.*" In this example, the research needs to follow ethical standards in addition to scientific ones in order to be considered *excellent*. However, it is not specified, whether *good* or *excellent* research is an aim in itself or a means for something else.

1.8 Freedom

Freedom is a complex value that covers different freedoms, rights and liberties related to research. Most common terms in the analysed documents were *academic freedom, freedom of inquiry* and *freedom of expression*. Freedom also refers to such cases where some fundamental freedoms or civil rights of the researchers were mentioned, for instance *freedom of movement*, *freedom of association* or *freedom to engage in political activities*. In some documents, researchers are also required to respect personal rights and freedoms of others, including colleagues and persons participating in research.

Freedom of inquiry means that the researcher is free to ask questions and look for answers: to choose what and how to research. *Freedom of expression* and *freedom of speech* refer to the researcher's right to free expression in general or free expression about matters related to research. *Freedom of expression* also covers the topic of participating in public debate, in which case researchers should consider the potential impact of their utterances on themselves, their profession and their research institutions. Two documents (APSA, Estonian Code) refer to the need to clearly state whether the researcher is an institutional spokesman or representing his or her personal views.

1.8.1 Academic freedom

Academic freedom includes all the necessary freedoms for conducting research and adds the institutional dimension, that universities and research organisations are free in their research and teaching. Two documents (UNESCO; SATORI) used the term *intellectual freedom* which means to "*pursue, expound and defend the scientific truth as they see it*" (UNESCO, 2017: 5). However, in this broader sense *intellectual freedom* seems to have a similar scope and meaning with *academic freedom*.

In addition, freedom may refer to:

1. freedom of publication (Belgian code; BSA; EGE);

"*Commissioners institutions must elaborate clear contractual conventions, as regards, among other things, the freedom of publication and the ownership of the results. If restrictions on the freedom of the researcher have to be imposed, this will be explicitly mentioned*." (Belgian Code)

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2. fostering creativity of researchers (Belgian Code; UNESCO);

"*Researchers must be able to carry out their research in complete freedom and independence since their creativity depends on it.*" (Belgian Code)

3. promoting access to information and ideas (IFLA);

"*Librarians and other information workers reject the denial and restriction of access to information and ideas most particularly through censorship whether by states, governments, or religious or civil society institutions.*" (IFLA)

4. freedom to choose the source of funding (Estonian Code);

"*The researcher is free to decide from which partners to accept financing and avoids sources of financing that would compromise the autonomy of the researcher or research group members or harm the impartiality of research results.*" (Estonian Code)

5. rejecting conditions, projects or offers of collaboration that undermine freedom (UNESCO; Estonian Code; APSA);

"*In those instances where the development of science and technology undermine human welfare, dignity and human rights or is "dual use", they have the right to withdraw from those projects if their conscience so dictates and the right and responsibility to express themselves freely on and to report these concerns.*" (UNESCO)

6. academic freedom applies to students and learning (EU-USR; APSA).

"*Academic freedom in its teaching aspect is fundamental for the protection of the rights of the teacher in teaching and of the student to freedom in learning*." (APSA)

1.8.2 Potential conflicts with academic freedom

The common requirement is that academic freedom should not be restricted. However, several references to freedom also mention that such freedoms should be exercised with responsibility. For instance, *A Guide to Professional Ethics in Political Science* (2012: 12) of the American Political Science Association (APSA) states that academic freedom also includes obligations towards students and the society. In general, throughout the analysed documents some potential restrictions to or conflict with academic freedom were mentioned. These include:

1. subsidiary interests (APSA);

"*Although professors may follow subsidiary interests, these interests must never seriously hamper or compromise their freedom of inquiry.*" (APSA)

2. association with industry or commerce (EGE);

"*It is important that the freedom to conduct and interpret research that forms part of the culture of universities and research institutions is not compromised by their association with industry or commerce or any other grouping.*" (EGE)

3. commissioned research (Norwegian Code);

"*In commissioned research, the commissioning agency has the right to define the topic, research questions and scope of the research assignment in cooperation with the person or institution undertaking the assignment. The commissioning agency should not seek to unduly influence choice of methodology, implementation or publication*." (Norwegian Code)

4. institutional regulations (APSA);

"*It is permissible for the employing institution to expect that members of its faculty will abide by institutional rules that do not violate principles of academic freedom or political rights of citizenship*." (APSA)

5.   administration of research funds (APSA);

"*In administering research funds entrusted directly to its care, a university or college should do its best to ensure that no restrictions are placed on the availability of evidence to scholars or on their freedom to draw their own conclusions from the evidence and to share their findings with others*." (APSA)

6.   interference from institutions and organisations that take part in the research (APSA);

"*Members of public institutions or agencies should not interfere with disinterested scholarly investigations of their actions, processes, or functions.*" (APSA)

7.   lack of anonymity (NDA).

"*Lack of anonymity could affect the rigour of the study. Researchers may feel less free to construct theory from stories that are clearly owned.*" (NDA)

1.9 Good stewardship

The *Australian Code for the Responsible Conduct of Research* (2007: 1.3) refers to stewardship as taking good care of resources. Other references mention *stewardship of research*. Even though good stewardship could be understood in terms of using research funds or resources, the documents do not specify how these funds should be used, at least not in terms of stewardship. Since stewardship could be seen as taking good care of information as well as resources, it is closely related to management and administration which could be covered in the documents without any explicit reference to stewardship. Good stewardship has also some elements in common with the values of *rigour*, *accuracy* and *transparency* in terms of following rules and keeping records.

1.10 Honesty

Honesty in a general sense means being truthful and straightforward, not misleading others, not withholding information nor concealing mistakes or misconduct of other researchers. Honesty has been attributed to individual researchers as well as to research in general. From the individual perspective the requirement of honesty applies to various activities: for instance, collaborating with others, informing participants, exchanging ideas, collecting data, publishing results, reviewing or editing publications, assessing expertise, evaluating research, giving credit, acknowledging contributions of others. From the institutional perspective, honesty is seen as an integral part of good research culture and it should be fostered by all parties. In addition, honesty is related to:

1.   motivation and intentions (UK Concordat; Irish Code; APA; UK Code);

"*Honesty in all aspects of research, including in the presentation of research goals, intentions and findings.*" (UK Concordat)

2.   acknowledging uncertainties, offering realistic estimations and making justifiable claims (Dutch Code; SAN; Irish Code; Estonian Code);

"*Researchers are called upon to be open and nuanced about margins of uncertainty and other limits on the interpretation and applicability of their own research and that of their fellow practitioners. Communication regarding research results should be dispassionate and realistic.*" (Dutch Code)

3.   presenting information for applying for funding (APSA; BERA; Estonian Code);

"*Clearly state the reasons for applying for support and not resort to stratagems of ambiguity to make the research more acceptable to a funding agency.*" (APSA)

4. describing one's own skills and expertise (Dutch Code; BSA; ASA; APA);

"*Academic practitioners provide a complete and honest overview of their skills whenever a decision concerning their career or duties is pending.*" (Dutch Code)

5. acknowledging one's errors (Estonian Code);

"*Honesty and objectivity mean that the researcher acknowledges his/her errors and, if necessary, reassesses his/her earlier work in the light of new research results.* (Estonian Code)

6. justified deception (APA; Iphofen 2015);

"*In situations in which deception may be ethically justifiable to maximize benefits and minimize harm, psychologists have a serious obligation to consider the need for, the possible consequences of, and their responsibility to correct any resulting mistrust or other harmful effects that arise from the use of such techniques.*" (APA)

7. using clear language and making complex issues understandable (SAN);

"*We require an open and clear exchange between the researchers and our leaders. The language must be clear, not academic. Complex issues must be carefully and correctly described, not simply assuming the San cannot understand. There must be a totally honest sharing of information.*" (SAN)

8. non-patronising treatment of participating groups and individuals (SAN);

"*Open exchange should not patronise the San. Open exchanges implies that an assessment was made of possible harms or problems for the San resulting from the research and that these possible harms are honestly communicated.*" (SAN)

9. not exploiting lack of knowledge (NMSBA);

"*Neuromarketing researchers shall not deceive participants or exploit their lack of knowledge of neuroscience.*" (NMSBA)

10. evaluating students' true merit (APSA);

"*Professors make every reasonable effort to foster honest academic conduct and to assure that their evaluations of students reflect each student's true merit.*" (APSA)

11. not accusing colleagues in bad faith (ASA).

"*Sociologists do not file or encourage the filing of ethics complaints that are frivolous, made in bad faith, knowingly false, or knowingly intended to harm the alleged violator rather than to protect the integrity of the discipline and the public.*" (ASA)

Honesty was one of the several values that were often mentioned in close relation with other values, especially accuracy, transparency, integrity and openness, all of which may apply to similar actions or phases of research, like publishing findings or interpreting results.

Some of the documents explicitly state that researchers should not *knowingly* deceive or lie. This implies that unintentional deception or honest mistakes are to some extent permissible. The issues of intention and motives are not usually covered in the documents. Another difficult question is how to make sure whether deception was intentional or not. All in all, intentionality is at least a point to be discussed when formulating new regulative documents.

An interesting account of prior experience with dishonesty was given in the *San Code of Research Ethics* (2017: 2): "*We have encountered lack of honesty in many instances in the past. Researchers have deviated from the stated purpose of research, failed to honour a promise to show the San the research prior to publication, and published a biased paper based upon leading questions given to young San trainees. This lack of honesty caused much damage among the public, and harmed the trust between the collaborating organisation and the San. Another common lack of honesty is exaggerated claims of the researcher's lack of resources, and thus the researchers' inability to provide any benefits at all.*" This is quite uncommon, as the analysed documents, as a rule, do not give examples of possible breaches of declared principles.

1.11 Independence

Independence refers to the condition of being free from external pressures and influences in one's decisions. The general norm in the documents seems to be that researchers should exercise independent judgement in their professional activities. Some more specific references to independence were related to:

1. influence of scientific authority (Dutch Code);

"*When presenting insights as correct and relevant, academic practitioners are independent when they only allow themselves to be influenced by others' judgements to the degree that such judgements are based on scientific or scholarly authority. They do not allow themselves to be influenced on other grounds.*" (Dutch Code)

2. independence from funders (Dutch Code; Danish Code; Estonian Code; Belgian Code; ALLEA);

"*Researchers should not enter into agreements (e.g. with funders or others) that limit their access to their own data and their ability to analyse and publish these data independently.*" (Danish Code)

3. independence from institutional and professional biases (Iphofen 2015);

"*They should be as objective and transparent as possible and 'independent' of institutional and professional biases and any form of vested interest.*" (Iphofen 2015: 2)

4. independence of ethics review (BPS Human);

"*The ethics review process should be independent of the research itself.*" (BPS Human)

5. independence of expert opinions (Estonian Code).

"*As an expert, the researcher informs the institution asking for expert opinion about any competing or private interests that may compromise his/her independence and impartiality.*"

Independence is closely related to *autonomy* and *freedom* as they all rely to some extent on the independent action of the researcher. However, when comparing these two, independence seems to be a somewhat narrower concept as it mainly covers the requirement of not being influenced by others. Theoretically, a researcher could be at the same time autonomous (making decisions on her own) but not independent as the decision is influenced by some third party or conflicting interests.

1.12 Impartiality

Impartiality commonly refers to the requirement to be unbiased in one's decisions and judgments, whether in employment, ethical assessment, misconduct investigations, peer-review and editorial decisions, teaching and advising or other academic affairs. Being unbiased means that the researcher is guided by academic or scientific interests and is not affected by prejudice, personal sympathies or other conflicting interests.

In addition, impartiality is referred to in the context of:

1. the right for personal opinions and preferences (Belgian Code; IFLA);

"*Researchers have a right to their opinions and preferences (for instance, as regards the economic or societal usefulness of certain activities) though these should not interfere with their scientific work.*" (Belgian Code)

2. acknowledging and mentioning competing scientific viewpoints (Dutch Code; SATORI);

"*Academic practitioners only take up and defend a certain scientific or scholarly viewpoint when there are sufficient grounds to support that viewpoint. Competing viewpoints must be mentioned and explained.*" (Dutch Code)

3. not influencing the choices of others (Dutch Code; APSA);

"*Academic political scientists must be very careful not to impose their partisan views, conventional or otherwise, upon students or colleagues.*"(APSA)

4. not using exclusively own textbooks for teaching (Dutch Code; APSA);

"*Academic practitioners avoid exclusively using their own textbooks for courses, in any case at undergraduate level*." (Dutch Code)

5. disclosing relevant interests or ancillary activities (Dutch Code; Estonian Code);

"*Every academic practitioner affiliated with a university provides an up-to-date and complete list of their relevant ancillary activities on the university website.*" (Dutch Code)

6. resisting societal pressure when researching controversial topics (SATORI);

"*Furthermore, as the humanities often address topics that can be politically controversial or sensitive for various groups within society, researchers are often faced with pressure from political parties or religious organisations.*" (SATORI)

7. universalism and disinterestedness (SATORI);

"*Practice universalism (hold research to equal standards, regardless of where and by whom it was performed) and disinterestedness.*" (SATORI)

8. avoidance of confusing roles and relationships (Norwegian Code);

"*Impartiality means avoidance of confusing roles and relationships in a way that may give rise to reasonable doubt concerning conflicts of interest.*" (Norwegian Code)

9. anonymity as a guarantee for impartiality (ETH Zürich);

"*The expert person's anonymity warrants the highest degree of objectivity, impartiality and confidentiality.*" (ETH Zürich)

10. providing information to decision makers (NRC).

"*Providing decision makers with all the information, analysis and advice they need, always striving to be open, candid and impartial.*" (NRC)

The analysed documents offered somewhat different solutions for acting in cases where impartiality is questionable. These differences relate to the issue of *conflict of interests* and to the different ways that conflicting interests could be managed. The minimal approach is to acknowledge the conflicting interests and to let others know about them. For instance, the *Code of Ethics for Scientific Research in Belgium* (2009: 10) states: "*If there is a risk that there could be a conflict or a confusion of interests, the researcher*

can only accept to carry out the research if his/her impartiality will not be jeopardised. His/her solution to this problem will be explicitly mentioned during the presentation of the research results." This gives the researcher the freedom to decide how to act in cases of potential conflict of interests as long as impartiality is not jeopardised. However, it is not quite clear how impartiality may be affected and how to assess this effect. The more restrictive requirement is that the researcher should not make a decision when his or her impartiality could be doubted. For instance, *The Netherlands Code of Conduct for Academic Practice* (2014: 9) states: "*In assessing the performance of others (peer review of research and manuscripts), academic practitioners are led by scientific or scholarly arguments, and they refrain from assessing a manuscript if there could be any doubt about the impartiality of their opinion.*" This implies that any doubt of partial treatment is sufficient for the researcher to refrain from assessing others.

Impartiality is related to *honesty* and *objectivity*, which are sometimes mentioned in close relation to the requirement to be impartial. There is one example where a similar definition is given to both *impartiality* and *objectivity*. *The Netherlands Code of Conduct for Academic Practice* (2014: 9) states: "*Academic practitioners are impartial and objective when they do not let personal interest, preference, affections, prejudice or the interests of the commissioning or funding body affect their judgement and decisions*." However, this is an exceptional example.

Impartiality is in part related to the concept of *equality*. The requirements to treat others without bias and discrimination both rely on similar categories and characteristics. Another similarity between the two concepts can be found in the French National Research Agency's (ANR) *Ethics and Integrity Scientific Charter* (2018: 4), which states that impartiality "*implies equal treatment between applicants, project initiators and beneficiaries*". Thus, in addition to avoidance of bias, impartial treatment could be seen as *equal* treatment.

1.12.1 Neutrality

Three of the documents refer to *neutrality* in cases where the researcher is required to treat others without preference. Neutrality was referred to in cases of:

1. access to information (IFLA);

"*Librarians and other information workers are strictly committed to neutrality and an unbiased stance regarding collection, access and service. Neutrality results in the most balanced collection and the most balanced access to information achievable.*" (IFLA)

2. adhering to professional duties (IFLA);

"*Librarians and other information workers distinguish between their personal convictions and professional duties. They do not advance private interests or personal beliefs at the expense of neutrality.*" (IFLA)

3. adhering to the interest of public service (French Code);

"*The public service's principle of neutrality prohibits the use of its duties or mission as an instrument of propaganda, or of any action aimed at promoting, gaining acceptance, imposing certain ideas which are contrary to the interest of the public service conveyed by the ANR or to its interest, discrediting it, or harming it in any way.*" (French Code)

4. religious neutrality (French Code).

"*Internal and external employees of the ANR and members of the ANR Governing Board must be neutral and respect the principle of religious neutrality.*" (French Code)

Because *neutrality* was referred to only in three documents, it should be considered whether *neutrality* and *impartiality* reflect a terminological ambiguity and diversity: different documents use somewhat different terms to denote similar concepts.

1.13 Justice, fairness, equality and equity

Justice covers a wide array of topics which are all related to treating others in a just way. It is also, in turn, is closely related to *fairness*, *equity* and *equality*. Several documents define these concepts by referring to each other. For example, the Tri-Council Policy Statement "Ethical Conduct for Research Involving Humans" (2014: 8) states: "*Justice refers to the obligation to treat people fairly and equitably. Fairness entails treating all people with equal respect and concern.*" Thus, justice entails equity and fairness, which, in turn, entails equality. In the same paragraph it is further clarified: "*Treating people fairly and equitably does not always mean treating people in the same way. Differences in treatment or distribution are justified when failures to take differences into account may result in the creation or reinforcement of inequities.*" Thus, fairness does not always entail equal, that is similar, treatment, instead fair treatment should refrain from reinforcing already existing inequalities. To generalize, adhering to the value of justice requires fair treatment of others, which in turn requires, depending on the situation and context, treating others equally or equitably.

However, the relation between these four concepts is not always so clear. For example, the EU-USR project standards state: "*Promotes equality of opportunity, guarantees equal, fair and just pay and equitable conditions, and pro-actively works to avoid inequality through flexible working and career development and progression opportunities.*" This example states that the pay should at the same time be equal, fair and just, which would imply that equal and fair pay could theoretically still be unjust.

These examples were given to illustrate the similarities between *justice* and *fairness* and their close relation to *equality* and *equity*, which makes it difficult to clearly distinguish one concept from the other. For these reasons, all four concepts were coded under one category with independent subcategories for fairness, equality and equity. The aim was to distinguish those aspects which are clearly different. However, this distinction is imperfect as the same parts of documents were often coded simultaneously under several categories. One example concerns the distribution of benefits and risks, which is referred to in terms of *justice*, *fairness* and *equity* in different documents.

1.13.1 Justice

Justice refers to the general requirement to treat others justly. More precisely, justice may refer to decision-making or distribution of resources, both of which should be just. In this context, *just* may refer to the justification of decisions or to *fair* treatment of all parties affected by distribution of resources. In the analysed document, justice is related to the cases of:

1. treating similar cases or persons in similar situations similarly (Danish Code; APSA);

2. just distribution of benefits and risks (SAN; SATORI; Estonian Code; TCPS 2);

"*We require justice and fairness in research. It is important that the San be meaningfully involved in the proposed studies, which includes learning about the benefits that the participants and the community might expect. These might be largely non-monetary but include co-research opportunities, sharing of skills and research capacity, and roles for translators and research assistants, to give some examples.*" (SAN)

3. proportionality of sanctions (Finnish Code);

"*If a violation of the responsible conduct of research has occurred, the sanction for that violation must be in just proportion to the severity of the violation*." (Finnish Code)

4. imbalance of power between researchers and participants (TCPS 2);

"*An important threat to Justice is the imbalance of power that may exist in the relationship between researcher and participant. Participants will generally not understand the research in the same way and in the same depth as does the researcher. Historically, there have been instances in which this power imbalance has been abused, with resulting harm to participants.*" (TCPS 2)

5. natural justice (BPS Human; Australian Code);

"*Rights to privacy, self-determination, personal liberty and natural justice are of particular importance to psychologists, and they have a responsibility to protect and promote these rights in their research activities.*" (BPS Human)

6. access to information and services (APA; Estonian Code; IFLA).

"*Psychologists recognize that fairness and justice entitle all persons to access to and benefit from the contributions of psychology and to equal quality in the processes, procedures, and services being conducted by psychologists.*" (APA)

1.13.2 Fairness

Fairness refers to the requirement to treat others fairly. Most of the documents do not clearly distinguish *just* and *fair* treatment, although fair is more common when referring to the treatment of persons. The Tri-Council Policy Statement (2014: 8) refers to fair treatment as "*treating all people with equal respect and concern*", which also includes the concepts of *equality* and *respect*. One common concept in several documents is *procedural fairness*, which applies in cases of misconduct investigations, handling complaints or any other decision-making procedure. In addition, fairness has been referred to in cases of:

1. recruitment and promotion of researchers (EU-USR);

"*Practices open, transparent, fair and equitable recruitment and promotion of staff, using affirmative action where appropriate, providing comprehensive staff development that incorporates social responsibility.*" (EU-USR)

2. payment of researchers (EU-USR);

"*Promotes equality of opportunity, guarantees equal, fair and just pay and equitable conditions, and pro-actively works to avoid inequality through flexible working and career development and progression opportunities.*" (EU-USR)

3. recruitment of participants (TCPS 2);

"*The recruitment process, both of participants who may become directly involved in research and those who participate as the source of information or biological materials to be used in research, is an important component of the fair and equitable conduct of research. Participation should be based on inclusion criteria that are justified by the research question.*" (TCPS 2)

4. obtaining personal data (Irish Code; MRS);

"*In order to ensure research integrity through compliance with Data Protection legislation, researchers should obtain and process the personal data fairly.*" (Irish Code)

5. institutional setting of research (SATORI);

"*Also, the institutional setting in which research and innovation takes place should be organised in a fair and accountable way.*" (SATORI)

6. due consideration of vulnerability (TCPS 2);

"*One important difference that must be considered for fairness and equity is vulnerability. /.../ Ethnocultural minorities and those who are institutionalized are other examples of groups who have, at times, been treated unfairly and inequitably in research, or have been excluded from research opportunities. People or groups whose circumstances cause them to be vulnerable or marginalized may need to be afforded special attention in order to be treated justly in research.*" (TCPS 2)

7. distribution of benefits and risks (SAN; TCPS 2)[3];

"*We require justice and fairness in research. It is important that the San be meaningfully involved in the proposed studies, which includes learning about the benefits that the participants and the community might expect. These might be largely non-monetary but include co-research opportunities, sharing of skills and research capacity, and roles for translators and research assistants, to give some examples. Any possible benefits should be discussed with the San, in order to ensure that these benefits do actually return to the community.*" (SAN)

8. design and implementation of research (Norwegian Code);

"*All research projects shall be designed and implemented fairly.*" (Norwegian Code)

9. building down hierarchies (PRINTEGER);

"*Building bridges between different hierarchical levels by working toward a culture of open dialogue is an important action for strengthening integrity, as well as supporting transparency, fairness, collegiality and respect.*" (PRINTEGER)

10. unfair discrimination (APA);

"*In their work-related activities, psychologists do not engage in unfair discrimination based on age, gender, gender identity, race, ethnicity, culture, national origin, religion, sexual orientation, disability, socioeconomic status, or any basis proscribed by law.*" (APA)

11. fair and equitable use of research outputs (ALLEA);

"*Researchers, research institutions and organisations ensure that any contracts or agreements relating to research outputs include equitable and fair provision for the management of their use, ownership, and/or their protection under intellectual property rights.*" (ALLEA)

12. fair competition (ICC/ESOMAR);

"*Researchers must conform to the generally accepted principles of fair competition.*" (ICC/ESOMAR)

13. fair portrayal of participants (NDA);

"*At the final report publication stage (particularly for qualitative research), the researcher may go back to participants with a summary of the findings and look for their feedback, including their agreement that it is a fair portrayal of what they meant.*" (NDA)

14. considering the use of informal processes for resolving ethical issues (NRC).

"*NRC employees at all levels are expected to resolve issues in a fair and respectful manner and consider informal processes such as dialogue or mediation.*" (NRC)

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[3]Identical point exists under the category of *justice*.

Somewhat noteworthy is the concept of *unfair discrimination*, which implies that some discrimination might be fair. A possible example might be the need to treat persons equitably, not equally, for instance in case of providing access to facilities for disabled persons: the basis for such decision might be positive discrimination based on the person's ability to move freely and unaided. This again shows the similarities between the concepts of *fairness*, *equality* and *equity.*

1.13.3 Equality

Equality refers to equal treatment and to the topic of discrimination which generally means treating persons differently based on one or more of their characteristics or properties, like gender, age or race. Equality is thus in conflict with discrimination. In the analysed documents, two of the most common references to equality are the prohibition of discrimination and ensuring *equality of opportunities* for all persons related to research. In particular, equality may refer to:

1. sensitivity and attentiveness towards differences (ALLEA; Open Uni Code; BERA; ASA);

"*Research protocols take account of, and are sensitive to, relevant differences in age, gender, culture, religion, ethnic origin and social class*." (ALLEA)

2. sensitivity and attentiveness towards structural inequalities (BERA);

"*The Association expects researchers to be mindful of the ways in which structural inequalities – those, for example, associated with 'race', gender, LBGT+ issues and socioeconomic status – affect all social relationships, including those that are formed in the course of research. Where relevant, attention should be paid to the ways in which such inequalities specifically affect children and young people, and their relationships.*" (BERA)

3. equal access to employment in scientific research (UNESCO; Open Uni Code; ASA; APSA);

"*/.../ all citizens enjoy equal opportunities for the initial education and training needed to qualify for research and development careers, as well as ensuring that all citizens who succeed in so qualifying enjoy equal access to available employment in scientific research.*" (UNESCO)

4. remedying past inequalities (UNESCO);

"*In order to remediate past inequalities and patterns of exclusion, actively encourage women and persons of other under-represented groups to consider careers in sciences, and endeavour to eliminate biases against women and persons of other under-represented groups in work environments and appraisal.*" (UNESCO)

5. equal access to information, scientific knowledge and its applications (UNESCO; SATORI; Durham);

"*Ensuring equal access to science and the knowledge derived from it as not only a social and ethical requirement for human development, but also as essential for realizing the full potential of scientific communities worldwide*." (UNESCO)

6. equal access to participation in research (SATORI; Durham; WEF, NDA);

"*Underrepresented groups should have appropriate opportunities to participate in research.*" (SATORI)

7. eliminating avoidable differences in opportunity for research participants (NDA);

"*The notion of equality and diversity in research involves accommodating personal and circumstantial variations and eliminating avoidable differences in opportunity, to facilitate participation. Often, simple steps will allow participation.*" (NDA)

8. payment, working conditions and career development (EU-USR);

"*Promotes equality of opportunity, guarantees equal, fair and just pay and equitable conditions, and pro-actively works to avoid inequality through flexible working and career development and progression opportunities.*" (EU-USR)

9. removing barriers affecting researchers' opportunities (Open Uni Code);

"*The Open University aims to promote and sustain an inclusive research culture, providing equality of opportunity for all who are part of its research community and advancing equality by identifying and removing barriers affecting researchers.*" (Open Uni Code)

10. balanced gender representation (RRI Tools; French Code);

"*Teams and decision-making bodies should thus have balanced gender representations. Additionally, gender needs to be considered as part of the R&I process and content itself to provide results that are useful for all citizens.*" (RRI Tools)

11. considering gender dimension in the research (GREAT; French Code);

"*Gender Equality which highlights the need to integrate the gender dimension in the research and innovation context.*" (GREAT)

12. pursue affirmative action programs to end discrimination (APSA; EU-USR);

"*In pursuit of the objective of ending discrimination, it is Association policy to support the principles of affirmative action and urge political science departments to pursue aggressively affirmative action programs and policies with regard to African Americans, Latinos, women, minorities based on self-identified sexual orientation, and other minorities. (Appropriate strategies may differ for each group.)*" (APSA)

13. equal opportunities for funding (Estonian Code);

"*Justice means that the researcher takes care that the distribution of resources is transparent and everyone has equal opportunities to apply for them.*" (Estonian Code)

14. institutional procedures for dealing with unequal treatment (Estonian Code).

"*The research institution establishes a procedure for dealing with breaches of equal treatment and other good collegial relations and bullying at work.*" (Estonian Code)

1.13.4 Equity

Equity refers to the equitable treatment of others, which generally means treating persons differently based on their relevant needs and opportunities. Thus, equity is incompatible with *equal treatment*, because one requires dissimilar treatment, while the other requires similar treatment. On the other hand, both concepts could be seen to have the same aim – to bring about *equality of opportunities* and to treat persons *fairly*. In the analysed documents, equity is referred to in the context of:

1. access to information and knowledge (UNESCO; SATORI; IFLA; Argentinian code);

"*Ensure equitable and open access to scientific literature, data and contents including by removing barriers to publishing, sharing and archiving of scientific outputs.*" (UNESCO)

2. working conditions, recruitment, promotion, appraisal, training and payment (UNESCO; EU-USR);

"*Ensure that scientific researchers enjoy equitable conditions of work, recruitment and promotion, appraisal, training and pay without discrimination on the basis of race, colour, descent, sex, gender, sexual orientation, age, native language, religion, political or other opinion, national origin, ethnic origin, social origin, economic or social condition of birth, or disability.*" (UNESCO)

3. support underrepresented groups (UNESCO; SATORI);

"*Support individuals from underrepresented groups entering and developing careers in research and development.*" (UNESCO)

4. complaints and disciplinary procedures (EU-USR);

"*Has transparent, fair and equitable complaints and disciplinary procedures and ensures that complaints and disciplinary matters are addressed swiftly and fairly.*" (EU-USR)

5. procedures for ethical approval (RCUK);

"*Where ethical approval is delegated to schools and departments, procedures should be in place to ensure the quality and equity of ethical approach across the whole of the research organisation.*" (RCUK)

6. supporting researchers' parental responsibilities (WEF);

"*One particular area of focus is to offer women an environment that offers stability in the early stages of their research career, at a time when they may bear children and take on larger parental responsibilities.*" (WEF)

7. distribution of benefits and risks (TCPS 2)[4];

"*Equity requires distributing the benefits and burdens of research participation in such a way that no segment of the population is unduly burdened by the harms of research or denied the benefits of the knowledge generated from it.*" (TCPS 2)

8. fair and equitable use of research outputs[5] (ALLEA);

9. due consideration of vulnerability[6] (TCPS 2);

10. recruitment of participants[7] (TCPS 2).

Equity is often referred to in connection with *fairness* and because of that, several topics are identical under both categories. In these overlapping cases, it is not clear, whether *fairness* and *equity* are synonymous or require different considerations and deliberations. In addition, the UNESCO (2017) recommendations refer to working conditions and payment both in terms of *equity* and *equality*. Firstly, it states that conditions must be equitable and secondly, it adds that the treatment should not be discriminative. These cases and examples blur the distinction between *fair*, *equal* and *equitable* treatment.

1.14 Objectivity

Objectivity refers to factual and unbiased judgements and decisions. It could be understood as a quality of researcher(s) – a researcher should be objective – or as a general guiding ideal that applies in certain situations – decision-making should be objective. None of the documents offer precise definitions for objectivity. However, objectivity is referred to in connection with several other concepts like *honesty*,

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[4]Identical point exists under the categories of *justice* and *fairness*.

[5]Identical requirment exists under the category of *fairness*.

[6]Identical requirment exists under the category of *fairness.*

[7]Identical requirment exists under the category of *fairness*.

impartiality, *thoroughness* (rigour), *transparency*, *accuracy* and *truth*. Objectivity as a personal quality could mean:

1. avoiding relations that may influence objectivity (BPS Teaching; Dutch Code; APA, AACS);

"*Academic practitioners avoid personal relationships that may give rise to reasonable doubts concerning the objectivity of their decisions, or that may result in any form of coercion or exploitation of a hierarchically subordinate person.*" (Dutch Code)

2. avoiding arbitrariness (Estonian Code);

"*Honesty and objectivity mean that the researcher interprets both data and research results objectively, not arbitrarily.*" (Estonian Code)

3. not letting personal preference and prejudice affect judgements (Dutch Code);

"*Academic practitioners are impartial and objective when they do not let personal interest, preference, affections, prejudice or the interests of the commissioning or funding body affect their judgement and decisions.*" (Dutch Code)

4. use of proper scientific practice and methodology (SATORI, NDA);

"*The main ethical principle is the principle of scientific integrity and proper scientific practice based upon observation, measurement and objective analysis, the testing of hypotheses through experimentation, replication of findings, and peer review through public lectures and published works*." (SATORI)

5. publishing negative findings (Australian Code; WEF; EGE);

"*The account should be complete, and, where applicable, include negative findings and results contrary to their hypotheses.*" (Australian Code)

6. disclosing positions and work outside of science (SATORI);

"*Be transparent about and disclose relevant professional positions or other work that researchers have done in political, religious or other value-based organisations that could potentially negatively affect (the perception of) those researchers' objectivity in conducting the research.*" (SATORI)

7. avoiding ethnocentricity (Iphofen 2015).

"*They should maintain as objective as possible a comparative analytical stance and avoid ethnocentricity.*" (Iphofen 2015: 11)

In the analysed documents, objectivity refers to judgements and decision-making in academic life, which covers employment, designing or assessing research, investigating misconduct, funding decision, reviewing and editing. Another common reference to objectivity is in the context of *conflicts of interests* where the personal interests of the decision-maker could compromise his or her objectivity. In particular, objectivity is referred to in the context of:

1. involving experts from outside (German Code);

"*Ideally the academic members of an institution should be in control of the proceedings and have the majority in the decision-making bodies. However, involving experts from outside will always serve objectivity and may be indispensable in smaller institutions.*" (German Code)

2. intervening in cases of maltreatment (Iphofen 2015);

"*Their scientific objectivity is certainly compromised if they intervene and there is an assumption of moral superiority by doing so. Examples include the ways in which some societies treat females as inferior citizens or societies in which AIDS is rampant blame certain individuals for the spread of the disease as sorcerers or witches. Intervention to prevent mistreatment of such individuals becomes a political and ethical act which cannot be methodologically justified and so any claimed 'objectivity' for the research project becomes undermined.*" (Iphofen 2015: 38)

3. participatory research (Iphofen 2015);

"*Any research which establishes alliances with participants may find that the research goals may have to compete with the action-oriented aims of the subjects. Researchers will carry theoretical as well as potentially ideological assumptions into the field. Thus methodological and policy/practice ideologies may lie in tension with each other, with the danger that one set of concerns dominates the other (Ruano 1991). The participant's commitment may be more to social reform than to methodological purity – in which case the researcher's pursuit of objectivity is tainted (Ruano 1991: 216).*" (Iphofen 2015: 55)

4. anonymity as a guarantee for objectivity (ETH Zürich)[8];

"*The expert person's anonymity warrants the highest degree of objectivity, impartiality and confidentiality.*" (ETH Zürich)

5. delegating work to others (APA);

"*Psychologists who delegate work to employees, supervisees, or research or teaching assistants or who use the services of others, such as interpreters, take reasonable steps to avoid delegating such work to persons who have a multiple relationship with those being served that would likely lead to exploitation or loss of objectivity*." (APA)

6. informing the public (WEF);

"*By informing the public better, sharing objective interpretations of scientific findings and discussing their potential implications, researchers may prevent the misuse of knowledge and help to support informed decision-making.*" (WEF)

7. supporting decision-makers (WEF).

"*Scientists can help to foster a culture in which decision-makers seek out information from scientific experts and are confident that the information provided is accurate, independent and unbiased. Researchers, in turn, should be confident that decision-makers will represent the unbiased, objective scientific information accurately and use it ethically.*" (WEF)

1.15 Openness
Openness may refer to a personal characteristic or a general idea of open science. On the personal level, openness refers to open-mindedness in a general sense, which includes asking new questions, open exchange of ideas and information and acceptance of new ideas and theories. In addition, being open may include:

1. being cooperative (EC 2008; Estonian Code; NRC);

"*Member States should cooperate with the Commission in order to maintain an open and pluralistic forum for discussion on N&N research*." (EC 2008)

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[8]Identical point exists under the category of *impartiality*.

2. disclosure of researcher's identity (SATORI);

"*Researchers should not disguise their identity when communicating with research subjects electronically. This contravenes ethical principles concerning informed consent and openness about the nature and purpose of the research.*" (SATORI)

3. being open to changes and challenges (Durham);

"*Being open to challenge and change and prepared to work with conflict.*" (Durham)

4. responding and adapting (RRI Tools);

"*Opinions are of little use unless they are acted upon. Therefore, the final recommendation is to change ways of thinking, working and, if necessary, entire organisational structures in response to feedback from society.*" (RRI Tools)

5. being open to differences and diversity (WEF)[9];

"*Diversity is not simply the representation of individuals and ideas but is actual inclusion, which can only be achieved by creating a culture of openness, and recognizing and addressing unconscious bias.*" (WEF)

6. discussing assumptions and customs (ALLEA).

"*Collaborating partners should openly discuss their customary practices and assumptions related to the research. Diversity of perspectives, expertise and methods, and differences in customary practices, standards and assumptions that could compromise the integrity of the research should be addressed openly.*" (ALLEA)

Openness as an abstract idea covers mainly the topics of *open science* and *open access,* which support the open exchange of data and results. Openness also covers the topics of open exchange of ideas, including mutual criticism and scrutiny, being open to the society and the public access to scientific knowledge. In addition, openness is referred to in the context of:

1. informed, knowledge-based society (RRI Tools; GREAT; WEF)[10];

"*RRI is also about achieving a more knowledge-based society. This means making the process of research and innovation more transparent and open to all actors, providing them with meaningful information during all stages of the process. This encourages all actors and the public to engage with, discuss and scrutinise science and technology, which empowers people to make more informed decisions.*" (RRI Tools)

2. considerations of confidentiality (UKRIO; Warwick; PRINTEGER; ALLEA);

"*Contribute to and promote the open exchange of ideas, research methods, data and results and their discussion, scrutiny and debate, subject to any considerations of confidentiality.*" (Warwick)

3. recruitment and promotion (EU-USR)[11];

"*Practices open, transparent, fair and equitable recruitment and promotion of staff, using affirmative action where appropriate, providing comprehensive staff development that incorporates social responsibility.*" (EU-USR)

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[9]Identical point exists under the category of *diversity*.

[10]Similar aim is covered under the category of *democratic participation*.

[11]Identical point exists under the category of *fairness*.

4. verification of data and results (Norwegian Code);

"*Research activity is a quest for new knowledge, with critical and systematic verification and peer review. Honesty, openness, systematicness and documentation are fundamental preconditions for achieving this goal.*"(Norwegian Code)

5. limiting access to data (EGE; PRINTEGER);

"*Contracts should specify what curtailment if any is imposed on openness, the reasons for this curtailment, and timeline during which some curtailment is deemed necessary. This timeline should not be excessive.*" (EGE)

6. protecting the interests of the researcher (Open Uni Code);

"*While recognising the need for researchers to protect their own research interest in the process of planning their research and obtaining their results, the University encourages researchers to be as open as possible in discussing their work with other researchers within and outside the University and with the public.*" (Open Uni Code)

7. access for the authors (EGE);

"*All data that forms the basis of any publication must be available to all those involved and named as authors of the publication.*" (EGE)

8. a means to avoid misconduct (SATORI);

"*Openness and transparency are means to avoid scientific misconduct, implying regular and open seminars, public motivations for peer-reviews regarding publications, research funding, etc.*" (SATORI)

9. building trust (RRI Tools)[12];

"*Being open about research and innovation is vital to build public trust. This means disclosing results, methods and data, and engaging in a transparent, meaningful and multiple-way dialogue with all relevant parties.*" (RRI Tools)

10. fostering accountability (RRI Tools; PRINTEGER);

"*Openness and transparency are particularly important features of RRI because they lay the foundations for accountability — making scientists and innovators answerable for their actions and the consequences.*" (RRI Tools)

11. boosting innovation (GREAT);

"*Open Access as a means to boost innovation and increase the use of scientific results.*" (GREAT)

12. avoiding waste of resources (GREAT);

"*Transparency or Openness. Ensures that research outcomes are shared; also that wheels are not re-invented (and resources wasted).*" (GREAT)

13. culture of open dialogue (PRINTEGER);

"*Building bridges between different hierarchical levels by working toward a culture of open dialogue is an important action for strengthening integrity, as well as supporting transparency, fairness, collegiality and respect.* (PRINTEGER)

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[12]Similar aim is covered under the category of *trust*.

14. declaring sources of funding (Montreal);

"*Collaborative research should be conducted and its results disseminated transparently and honestly, with as much openness as possible under existing agreements. Sources of funding should be fully and openly declared.*" (Montreal)

15. debriefing (BPS Human).

"*As outlined in the Code of Ethics and Conduct (Section 3.4), when the research data gathering is completed, especially where any deception or withholding of information has taken place, it is important to provide an appropriate debriefing for participants. In some circumstances, the verbal description of the nature of the investigation will not be sufficient to eliminate all possibility of harmful after-effects. For example, following an experiment in which negative mood was induced, it would be ethical to induce a happy mood state before the participant leaves the experimental setting.*" (BPS Human)

In some cases, the requirement to be open is closely related to being *transparent* and *honest* as they require the researchers to be forthright and forthcoming about themselves, their motives and research. For instance, the *Governance for Responsible Innovation* (GREAT) project's *Guidelines for Responsible Research and Innovation* (2016: 6) refers to "*Transparency or Openness*", which implies that these two concepts could be seen as synonymous. Openness is also related to *cooperation* and *inclusiveness* as they relate to the exchange of ideas, data and results. In addition, openness can be seen as a necessary requirement for *accountability* and *trust*.

1.16 (Research) integrity

Research integrity is a general and abstract concept, which refers to responsible conduct of research. In a narrower sense this refers to following rules and regulations, proper design of research and avoiding misconduct. In a broader sense research integrity refers to all the different aspects of responsible conduct, including *public accountability* and *social responsibility*, and covers all different areas of academic life. Integrity is ascribed to research in general or to individual researchers. Some aspects of research integrity are the responsibility of research institutions, for instance teaching, supervising, training, guidance, support, handling misconduct, reviewing, assessment and promoting environment that fosters integrity. The concept of *research integrity* may additionally refer to:

1. integrity of the profession (MRS);

"*Researchers shall protect the reputation and integrity of the profession.*" (MRS)

2. mentoring (Irish Code; ALLEA; WEF; Estonian Code);

"*Continuing education on research integrity should also be provided through mentorship by senior investigators responsible for the supervision/training of PhDs and postdoctoral researchers alike.*" (Irish Code)

3. methodology (Finnish Code; Open Uni Code);

"*From the point of view of research integrity, the premises for the responsible conduct of research are the following: the methods applied for data acquisition as well as for research and evaluation, conform to scientific criteria and are ethically sustainable.*" (Finnish Code)

4. monitoring good practice (UKRIO);

"*Organisations should encourage their researchers to consider good practice in research as a routine part of their work and monitor these measures for suitability and effectiveness and review them where necessary.*" (UKRIO)

5. social acceptance (RRI Tools);

"*Research, including its outcomes and the way it is conducted, should be morally grounded and acceptable to society. Honesty, accountability, fairness and good stewardship should be core principles of research and innovation.*" (RRI Tools)

6. self-regulation (Finnish Code);

"*Applying the guidelines for the responsible conduct of research within the research community constitutes a form of self-regulation that is bound by legislation. Furthermore, the responsible conduct of research is an integral part of the quality assurance of research organisations.*" (Finnish Code)

7. integrity as a requirement for funding (GRC; ESRC);

"*Research funding agencies should incorporate integrity in research as a condition for obtaining and maintaining funding by researchers and institutions*." (GRC)

8. dedicated persons for raising awareness (PRINTEGER);

"*Dedicated persons should be made responsible for creating awareness of research integrity challenges, guidelines and procedures, and for ensuring that information is up-to-date and available for all. The ultimate responsibility for providing information lies with the institution, which should ensure a dedicated organisational support structure proportional to the size and complexity of the organisation.*" (PRINTEGER)

9. leaders as role models (PRINTEGER; Estonian Code);

"*It is the responsibility of top and middle management to set the standards for acceptable conduct and contribute to sharing good research practices. Leaders at all levels must themselves be good role models, and must strive for, and communicate clear expectations of, research integrity. In general, senior colleagues should contribute to the socialisation of more junior colleagues into a good integrity culture.*" (PRINTEGER)

10. short-term contracts (PRINTEGER);

"*Short-term contracts, e.g., postdoctoral positions, may sometimes be unavoidable, but can be a barrier to longer term identification with the organisation and the knowledge of, and compliance with, the organisation's values and ethical standards. In short-term, project-based positions, the role of the project leader in instilling ethical standards will be crucial, as staff on shorter contracts are often not integrated in the organisation to the same extent as permanent staff.*" (PRINTEGER)

11. rectifying mistakes (PRINTEGER);

"*Organizations must ensure that they create a safe and secure environment for researchers to identify and rectify mistakes and provide researchers with tools to make correct decisions, facilitating open discussion about dilemmas of research integrity.*" (PRINTEGER)

12. relationship between different standards (OeAWI);

"*The statements of national or international agencies on the Standards of Good Scientific Practice, e.g. statements issued by the relevant scientific/scholarly societies, are to be taken into account as an aid in interpreting the Standards*." (OeAWI)

13. refusing funding and consultation (ASA);

"*Sociologists do not accept grants, contracts, consultation, or work assignments from individual or organizational clients or sponsors that appear likely to require violation of these Ethical Standards.*

Sociologists dissociate themselves from such activities if they discover a violation and are unable to achieve its correction." (ASA)

14. supporting the integrity of the host organisation (AACS);

"*As employees of organizations providing clinical or applied services, or as independent sociological practitioners serving clients in an organizational context, we seek to support the integrity, reputation, and proprietary rights of the host organization*." (AACS)

15. supporting the integrity of the public institutions (NCR).

"*As members of the federal public sector, you also share a responsibility for protecting the integrity of Canada's public institutions*." (NCR)

The last three points refer to integrity in different contexts. It is possible that collaboration with organisations may lead to potential conflict with ethical principles of research. On the other hand, depending on the context of research, the researchers may need to additionally consider the integrity and interests of the organisations and institutions they collaborate with. This may lead to conflicting loyalties in cases where principles of ethical research and the interests of the organisations are in conflict.

Integrity could also refer to personal integrity of a researcher, which includes motivational aspects, managing conflicting interests and roles. The concept of researcher's personal integrity is referred to in relation to:

1. intellectual maturity (UNESCO);

"*Member States should have regard for the fact that effective scientific research calls for scientific researchers of integrity and intellectual maturity, combining high, intellectual qualities and respect for ethical principles.*" (UNESCO)

2. open to challenge and change (CBPR);

"*Personal integrity: participants behaving reliably, honestly and in a trustworthy fashion, including a commitment to being open to challenge and change and prepared to work with conflict.*" (CBPR)

3. not accepting unjustified terms or competing commitments (BSA; ASA; APSA);

"*They should refer the sponsor or funder to the relevant parts of the professional code to which they adhere and should also be careful not to promise or imply acceptance of conditions which are contrary to their professional ethics or competing research commitments*." (BSA)

4. willingness to be criticised (OeAWI);

"*In particular, this form of integrity involves a willingness to subject oneself to professional criticism and to respond to such criticism with reasoned argumentation*." (OeAWI)

5. acknowledging conflicting roles (Estonian Code);

"*The researcher develops awareness of his/her different roles and their requirements and addresses the tensions resulting from role conflicts, considering the human dignity of all the parties and the principles of research integrity.*" (Estonian Code)

Integrity is related to the concepts of *rigour* and *excellence* as they all require the research to be of highest quality, follow the highest standards, being thorough and using well-grounded scientific methods. The Code of Conduct of the National Research Council Canada (2013: 6) states: "*Acting at all times with integrity and in a manner that will bear the closest public scrutiny, an obligation that may not be fully*

satisfied by simply acting within the law." This implies that acting with integrity requires more from the researcher than just following the law.

1.17 Respect
Being respectful

Respect refers to showing respect or being respectful. According to the analysed documents, a researcher should not limit, ignore or harm the rights and freedoms of others, for instance self-determination, dignity, freedom of expression, right to privacy and health. Respect also requires the researcher to be sensitive to cultural and social differences which may lead to disrespectful treatment. In particular, being respectful may include:

1. sensitivity to inherent worth of humans (TCPS 2; BPS; NDA);

"*Respect for human dignity requires that research involving humans be conducted in a manner that is sensitive to the inherent worth of all human beings and the respect and consideration that they are due*." (TCPS 2)

2. not intentionally offending others (ETH Zürich; BERA);

"*He must refrain from making emotional, derogatory or offensive remarks*." (ETH Zürich)

3. adherence to the law (UK Code);

"*Respect. Put simply it means adherence to the Law and making sure that subjects of studies (whether people, animals, plants or the environment more widely) are treated as humanely as possible.*" (UK Code)

4. listening to others (CBPR);

"*Mutual respect: developing research relationships based on mutual respect, including a commitment to everyone involved being prepared to listen to the voices of others.*" (CBPR)

5. avoiding coercion (NDA).

"*Avoid coercion or undue pressure to participate and safeguard wellbeing Any form of coercion, manipulation or undue influence to participate in research is unethical and potentially harmful*." (NDA)

Who and what should be respected?

Respect is an abstract concept which can be prescribed for different activities and contexts. One common reference in the documents is that the researcher should respect rules, principles, standard and laws. The researcher should also respect common agreements and promises. But respect may be also required towards more abstract ideas like dignity, autonomy and privacy. In research context respect may translate into informing research participants, asking for consent, minimising harm to health or well-being, being respectful towards colleagues and not exploiting others. Respect refers to protection of vulnerable groups and persons with diminished autonomy, considering their interests and needs. Respect should also be shown towards animals, environment, biosphere, biodiversity and cultural heritage. But respect is also required in non-research related contexts like employment or teaching. More precisely, respect is referred to in relation to:

1. respect for ideas and work of others (Belgian Code; ASA);

"*Colleagues' and researchers' beliefs must be respected; their ideas must not be wrongfully appropriated*." (Belgian Code)

2. sexual relations (ASA);

"*Sociologists do not have a sexual relationship with anyone they directly supervise or exercise evaluative authority over, including students, supervisees, employees, or research participants.*" (ASA)

3. respect for local rules and regulations (Belgian Code);

"*In the case of projects abroad, the researchers must apply the present code while also taking into account any existing codes and rules in force in the countries concerned. Within this context, respect for local culture and environment is of utmost importance. This concern will be even greater in cases where local rules and codes of ethics are absent or are not applied.*" (Belgian Code)

4. withdrawing from harmful research (UNESCO);

"*To express themselves freely and openly on the ethical, human, scientific, social or ecological value of certain projects, and in those instances where the development of science and technology undermine human welfare, dignity and human rights or is "dual use", they have the right to withdraw from those projects if their conscience so dictates and the right and responsibility to express themselves freely on and to report these concerns*." (UNESCO)

5. physical artefacts (SATORI);

"*Protect and promote 'the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.'*" (SATORI)

6. not assuming approval of a group (SAN);

"*Respectful researchers engage with us in advance of carrying out research. There should be no assumption that San will automatically approve of any research projects that are brought to us.*" (SAN)

7. how questions are asked (Iphofen 2015);

"*Anthropologists and ethnographers have to be aware of the range of ways their activities can cause distress to others. Ways of showing respect for research subjects can be embedded in both the content of research questions and the manner in which they are delivered.*" (Iphofen 2015: 3)

8. valid consent in internet-mediated research (BPS Internet);

"*Valid consent should be obtained where it cannot be reasonably argued that online data can be considered 'in the public domain', or that undisclosed usage is justified on scientific value grounds.*" (BPS Internet)

9. invasion of online privacy (BPS Internet);

"*Intrusions from researchers into spaces considered private by their users may be invasive, unwelcome and socially irresponsible. Where the scientific value of such research is considered very high, this may lead to a researcher needing to make decisions about whether joining a group without disclosure as a researcher (i.e. undisclosed observation) might be most appropriate, in order to avoid disruption and potential harm (e.g. to group levels of trust and cohesion).*" (BPS Internet)

10. avoiding inappropriate deception (BPS Human; BPS);

"*If the reaction of participants when deception is revealed later in their participation is likely to lead to discomfort, anger or objections from the participants then the deception is inappropriate. If a proposed*

research study involves deception, it should be designed in such a way that it protects the dignity and autonomy of the participants." (BPS Human)

      11. avoiding identification of participants by association or interference (BERA);

"*Researchers need to be aware of the possible consequences to participants should it prove possible for them to be identified by association or inference. They should take all reasonable precautions to avoid identification.*" (BERA)

      12. not engaging in torture (APA);

"*Psychologists do not participate in, facilitate, assist, or otherwise engage in torture, defined as any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person, or in any other cruel, inhuman, or degrading behavior that violates 3.04a.*" (APA)

      13. advancing the cause of human rights (ASA);

"*In their professional lives, sociologists strive to use their knowledge and skills to advance the cause of human rights worldwide.*" (ASA)

      14. accommodating differences of research subjects (NDA);

"*For people with disabilities, research should respect their freedom to choose to participate or not, their privacy and their confidentiality. It should respect and accommodate their difference as research subjects, for example through choosing accessible venues for focus-group research, or through facilitating alternative forms of communication that may be required*." (NDA)

      15. avoiding over-researching certain groups (NDA);

"*Researchers and funders should look at previous studies and consider the likelihood of over and under-research when formulating their research question. Some people with disabilities consider that they have been 'over-researched' (Mitchell, 2003). There can be a certain lack of respect in approaching the same people repeatedly and asking them the same questions (Woods, 2002)*." (NDA)

      16. respecting refusal to participate (NDA);

"*It needs to be highlighted that it would be unethical to proceed with research if a child or adult with an intellectual disability demonstrates that they do not want to engage in the research*." (NDA)

      17. conflict with advancement of knowledge (BSA);

"*Although sociologists, like other researchers, are committed to the advancement of knowledge, that goal does not, of itself, provide an entitlement to override the rights of others.*" (BSA)

      18. examples of disrespect (SAN).

"*We have encountered lack of respect in many instances in the past. In Genomics research, our leaders were avoided, and respect was not shown to them. Researchers took photographs of individuals in their homes, of breastfeeding mothers, or of underage children, whilst ignoring our social customs and norms. Bribes or other advantages were offered.*" (SAN)

1.17.1 Beneficence

Beneficence refers to the requirement to do good. Similar to beneficence is the principle of *non-maleficence*, which means avoiding harm. The common requirement is that the researcher should maximise benefits and minimise harms to others. Research with great harms or risks should be justified by balancing benefits or needs to be avoided entirely. The common requirement is that potential risks and harms should be continuously assessed throughout the research, new harms and risks should be reported

on and relevant parties should be notified of such risks or harms. In addition, beneficence is referred to in relation to:

1. respecting the right of research participants (NDA);

"*The planned or expected benefits of research must never be at the cost of respect for the rights of individual participants in research*." (NDA)

2. prioritising research with positive impact (EC 2008);

"*Member States, N&N research funding bodies and organisations should encourage fields of N&N research with the broadest possible positive impact. A priority should be given to research aiming to protect the public and the environment, consumers or workers.*" (EC 2008)

3. participants making the final judgement (TCPS 2);

"*Researchers and REBs must attempt to minimize the risks associated with answering any given research question. They should attempt to achieve the most favourable balance of risks and potential benefits in a research proposal. Then, in keeping with the principle of Respect for Persons, participants or authorized third parties, make the final judgment about the acceptability of this balance to them*." (TCPS 2)

4. dissemination of findings (Iphofen 2015);

"*How to disseminate findings is also an ethical concern. Before dissemination it is important to judge whether or not the information released has benefits or contains the potential for harm. Thought must be given to what to publish, how to release findings and via which media.*" (Iphofen 2015: 4)

5. consent (BSA);

"*It is incumbent upon sociologists to be aware of the possible consequences of their research. Wherever possible they should attempt to anticipate, and to guard against, consequences for research participants that can be predicted to be harmful. Sociologists, as researchers, are not absolved from this responsibility by the consent given by research participants.*" (BSA)

6. appropriate risk of harm (BPS Human);

"*Normally, the risk of harm should be no greater than that encountered in ordinary life, i.e. people should not be exposed to risks greater than or additional to those to which they are exposed in their normal lifestyles.*" (BPS Human)

7. control over research (BPS Internet);

"*In general, research involving sensitive topics or procedures might be best avoided where levels of control are low and risk is potentially high. Such IMR contexts where levels of control (over who participates, and knowledge of their reactions) are at their lowest would be, for example, an open web-based survey*." (BPS Internet)

8. explicitly accounting for compromised benefits (BERA);

"*At times, some benefits to participants may be compromised in order to achieve other gains or goals, but these compromises should be justifiable and, where possible, explicitly accounted for.*" (BERA)

9. collective risk assessment (WEF);

"*In instances where ground breaking new technologies are being developed, weighing the potential harms against the potential benefits may require consideration by a broader group than just one scientist.*" (WEF)

10. being mindful of harmful activities of clients or employers (AACS).

"*Sociological practitioners who find that their services are being used by clients or employers in ways that are not beneficial to participants, or to employees, or to significant others, should make their observations known to the parties involved and should propose modifications or termination of the activity*."

Beneficence is related to *social responsibility* as both foresee wider benefits for society or environment. Whereas beneficence focuses on harms and benefits, *social responsibility* is more concerned with taking action outside of research context, striving to improve the society and environment.

1.17.2 Caring

Care refers to caring attitude towards others and is closely related to *respect* as they both require not harming others. However, compared to *respect,* care focuses on the obligations of the researcher and not necessarily on the rights of others. Caring also refers to caution and concern for others and their welfare. In case of animal experiments, reduction, replacement and refinement, also referred to as *three R's*, should be considered. In particular, caring may refer to:

1. promoting welfare (TCPS 2);

"*Concern for Welfare means that researchers and REBs should aim to protect the welfare of participants, and, in some circumstances, to promote that welfare in view of any foreseeable risks associated with the research. They are to provide participants with enough information to be able to adequately assess risks and potential benefits associated with their participation in the research.*" (TCPS 2)

2. balancing group and individual welfare (TCPS 2);

"*Where research on individuals may affect the welfare of a group(s), the weight given to the group's welfare will depend on the nature of the research being undertaken, and the individuals or group in question. This consideration does not imply, however, that the welfare of a group should be given priority over the welfare of individuals.*" (TCPS 2)

3. care for employees (UK Concordat);

"*It is imperative that when an allegation of research misconduct arises suitable procedures are in place to deal with it effectively and fairly. Employers have a duty of care to the researchers they employ, and there needs to be appropriate protection for the rights and interests of all parties. There must be accountability when things go wrong and, where concerns are upheld, appropriate action must be taken.*" (UK Concordat)

4. care for community (SAN);

"*Research should be aligned to local needs and improve the lives of San. This means that the research process must be carried out with care for all involved, especially the San community. The caring part of research must extend to the families of those involved, as well as to the social and physical environment.*" (SAN)

5. debriefing participants after use of deception (BPS)[13];

"*As outlined in the Code of Ethics and Conduct (Section 3.4), when the research data gathering is completed, especially where any deception or withholding of information has taken place, it is important to provide an appropriate debriefing for participants. In some circumstances, the verbal description of the nature of the investigation will not be sufficient to eliminate all possibility of harmful after-effects. For example, following an experiment in which negative mood was induced, it would be ethical to induce a happy mood state before the participant leaves the experimental setting.*" (BPS)

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[13]Identical point exists under the category of *openness*.

6. notifying of data breaches (ICC/ESOMAR);

"*In the event of a data breach containing personal data researchers have a duty of care for the data subjects involved and must follow all applicable data breach notification laws.*" (ICC/ESOMAR)

7. examples of lack of care (SAN).

"*We have encountered lack of care in many instances in the past. For instance, we were spoken down to, or confused with complicated scientific language, or treated as ignorant. Failing to ensure that something is left behind that improves the lives of the San also represents lack of care.*" (SAN)

1.18 Responsibility

Responsibility is commonly referred to in terms of *responsible conduct of research*, which often includes all the various topics covered in the documents. In this context responsibility could be understood as a sense of duty or obligation, the opposite of which is irresponsible conduct and total disregard of rules and norms. Another common referral is done via distribution of responsibilities: by indicating *who* is responsible for *what*. In this context *responsibility* could be seen as synonymous with *duty* or *obligation*. In addition, responsibility is referred to in the context of:

1. freedom (German Code);

"*Freedom and responsibility – of each scientist and scholar individually as well as of the institutions of science – are inseparable from each other. Whoever practises science and scholarship as a profession is responsible for fostering the fundamental values and norms of scientific practice, to realize them in his or her daily activity and to defend them.*" (German Code)

2. autonomy (BPS)[14];

"*Because of their acknowledged expertise, Psychologists enjoy professional autonomy; responsibility is an essential element of autonomy. Psychologists must accept appropriate responsibility for what is within their power, control or management.*" (BPS)

3. willingness to explain one's choices (Dutch Code);

"*Academic practitioners acknowledge their responsibility for the societal implications of their work. They are willing to discuss and explain their choice of research themes.*" (Dutch Code)

4. reflecting on the future (RRI Tools; ETH Zürich);

"*Responsible actors consider not just the immediate impacts of their work, but look ahead and reflect on the kind of future they are trying to build. This means considering why this is a desirable future, how it will be achieved, and any possible unintended consequences that may arise along the way. Anticipating the possible impacts and reflecting on the underlying assumptions, values and purposes of research and innovation generate useful insights that allow more responsible action.*" (RRI Tools)

5. considering impacts (RRI Tools; UK Code);

"*Key to truly responsible R&I is anticipation — predicting as many of the potential effects of a project as possible, and not just those that are intended. Impact exploration should be in-depth, considering how the research and innovation might shape our collective future and what these changes might mean for society and the environment.*" (RRI Tools)

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[14]Identical point exists under the category of *autonomy*.

6. different degrees of responsibility (Danish Code);

"*All authors are responsible for the content of the publication. However, the responsibility of each author should be assessed subject to their individual role in the research by considering their area of expertise, their experience and seniority, a possible supervisory role, and other relevant factors. Thus, in some cases an author may have a wider responsibility than others for ensuring the integrity of the publication or specific parts of the publication.*" (Danish Code)

7. vulnerability (BERA);

"*The more vulnerable the participants, the greater the responsibilities of the researcher for their protection.*" (BERA)

8. errors (Belgian Code);

"*Responsibility must be taken for any errors or omissions made, as well as any resulting damage to third parties, and maximal compensation should be pursued.*" (Belgian Code)

9. balancing divided loyalties (NDA);

"*The fact that 'ethically important moments' may arise at points during the research process, when they cannot be passed on to a supervisor or manager, places considerable responsibility upon the field researcher. Divided loyalties oblige researchers to balance their responsibilities to sponsor, employer, profession and subject/respondent.*" (NDA)

10. publicly challenging the misuse of research (NDA);

"*Ethical responsibility to ensure that harm does not result from published research falls on others as well as on the researcher(s), e.g. policymakers, service-providers, media and other stakeholders. However, the researcher has a responsibility to challenge misuse when it occurs, publicly if necessary.*" (NDA)

11. agreeing on responsibilities (Finnish Code);

"*Before beginning the research or recruiting the researchers, all parties within the research project or team (the employer, the principal investigator, and the team members) agree on the researchers' rights, responsibilities, and obligations, principles concerning authorship, and questions concerning archiving and accessing the data. These agreements may be further specified during the course of the research*." (Finnish Code)

12. responsiveness (GREAT);

"*Responsiveness – making changes as experience is gained and knowledge is built, including taking action to address any unintended consequences.*" (GREAT)

13. maximise benefit, minimise harm (Norwegian Code; BERA; APA; Estonian Code);

"*Good consequences. Researchers shall seek to ensure that their activities produce good consequences and that any adverse consequences are within the limits of acceptability.*" (Norwegian Code)

14. advocacy on behalf of research subjects (Iphofen 2015);

"*There is an obligation to make use of the results of their work in an 'appropriate' fashion. Individual researchers may choose to move beyond disseminating research results to a position of advocacy on behalf of their subjects. Dissemination and reporting of research findings must be done with a view to the basic principles of beneficence and nonmaleficence*." (Iphofen 2015: 11)

15. positive change (Durham);

"*Making a difference: promoting research that creates positive changes for communities of place, interest or identity, including: engaging in debates about what counts as 'positive' change, including broader environmental sustainability as well as human needs or spiritual development, and being open to the possibility of not knowing in advance what making a 'positive difference' might mean.*" (Durham)

16. adequate notice to employers (ASA);

"*When leaving a position, permanently or temporarily, sociologists use reasonable efforts to provide their employers with adequate notice and take reasonable steps to reduce any negative effects of their leaving.*" (ASA)

17. moderating institutional pressures (AACS);

"*As employees of an institution or agency, we have the responsibility of remaining alert to, and attempting to moderate, institutional pressures that may distort reports of sociological findings or impede their proper use.*" (AACS)

18. conflicts among colleagues (APA);

"*When conflicts occur among psychologists' obligations or concerns, they attempt to resolve these conflicts in a responsible fashion that avoids or minimizes harm.*" (APA)

19. researcher's health (APA);

"*Psychologists strive to be aware of the possible effect of their own physical and mental health on their ability to help those with whom they work.*" (APA)

20. helping colleagues (APA);

"*Psychologists consult with, refer to, or cooperate with other professionals and institutions to the extent needed to serve the best interests of those with whom they work. They are concerned about the ethical compliance of their colleagues' scientific and professional conduct. Psychologists strive to contribute a portion of their professional time for little or no compensation or personal advantage.*" (APA)

21. absence of rules (Estonian Code);

"*Responsibility means that the researcher follows all the pertinent rules in research and, in the absence of precise rules, follows the good practice of research.*" (Estonian Code)

22. being a role-model (Estonian Code)[15];

"*Responsibility means that the researcher is aware that his/her conduct serves as a model for the present and future generations of researchers.*" (Estonian Code)

23. collective responsibility (Montreal);

"*Collaborating partners should take collective responsibility for the trustworthiness of the overall collaborative research and individual responsibility for the trustworthiness of their own contributions*." (Montreal)

24. delegating responsibility to gatekeepers (BSA).

"*Where sponsors and funders also act directly or indirectly as gatekeepers and control access to participants, researchers should not delegate to gatekeepers the responsibility to protect participants'*

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[15]Identical point exists under the category of *research integrity*.

interests. Sociologists should be wary of inadvertently disturbing the relationship between participants and gatekeepers, since that will continue long after the researcher has left." (BSA)

1.18.1 Accountability

Accountability refers to taking responsibility for one's actions and is thus closely related to *responsibility* as a researcher tends to be accountable and responsible for the same things. Accountability also refers to other parties towards whom is the researcher responsible: mainly to the public or society but individual researchers could also be accountable to research institutions, their profession or each other. In the analysed documents, being accountable refers commonly to following relevant regulations and standards and dealing with misconduct. In addition, accountability is referred to in relation to:

1. being accountable to partners (Montreal);

"*Collaborating partners should be accountable to each other, to funders and to other stakeholders in the accomplishment of the research.*" (Montreal)

2. being accountable to clients (ICC/ESOMAR);

"*Researchers must on request allow clients to arrange for independent checks on the quality of data collection and data preparation.*"(ICC/ESOMAR)

3. consistency with expectations (Open Uni Code);

"*Accountability: Researchers are expected to ensure that the work they undertake is consistent with the expectations of the University and any other parties involved in the research, such as funding or regulatory bodies, professional associations, collaborators or participant groups.*" (Open Uni Code)

4. answering society's questions (WEF);

"*Being accountable means taking responsibility for one's actions when carrying out research. This duty is paramount when scientific research is funded by public sources. Indeed, scientists have a moral but also financial responsibility to answer questions raised by society, a core funder of research.*" (WEF)

5. efficient use of resources (WEF; NRC);

"*It demands using resources efficiently, not being wasteful and focusing on overall social welfare in all actions.*" (WEF)

6. holding other researchers accountable (WEF; MRS);

"*They also have a duty to secure this trust and hold each other accountable for research results by engaging the scientific community through peer review, or by holding diverse positions on boards and evaluation committees.*" (WEF)

7. disclosing identities and serious accountability issues to the public (Iphofen 2015).

"*Indeed the disclosure of unanticipated but serious public accountability issues is ethically justified. There is more of an expectation that not preserving anonymity is both methodologically essential and in the public interest – enhancing the presumed public benefits to research. The full value of such research may depend upon researchers' skills in report-writing and the medium chosen for dissemination and the quality of its content. Seeking a deliberately salacious outlet may boost a researcher's notoriety and their short-term public visibility but it might not help in securing further commissioned projects for management or public organisations.*" (Iphofen 2015: 48)

Accountability is closely related to *openness* and *transparency*. According to *A Practical Guide to Responsible Research and Innovation* openness and transparency "*are particularly important features of RRI because they lay the foundations for accountability — making scientists and innovators answerable*

for their actions and the consequences." (RRI Tools: 52) However, it is not clear whether *openness* and *transparency* are important only for the sake of *accountability* or whether they hold any value of their own. Tying *transparency* and *openness* closely together with accountability seems to imply that these two are means for a greater end which is accountability. Even if this could be accepted in case of *transparency*, *openness*, however, seems to be a more abstract concept, which also includes for instance open-mindedness and adapting to change. Thus, seeing *openness* as just a means for accountability would narrow it down too much. Also, in this case *openness* and *transparency* would become indistinguishable.

1.18.2 Social responsibility

Social responsibility refers more specifically to the researcher's responsibility for the societal implications of research. Social responsibility is closely related to being *accountable* to the public, but it rather focuses on the different obligations that a researcher has towards the society or the environment. A common obligation is that research should be mindful of its impacts, strive to benefit the society, avoid harming others and solve societal challenges. In some documents the responsibilities towards environment are also referred to in terms of *sustainability*. Social responsibility also refers to awareness of societal issues and social engagement. In addition, social responsibility is referred to in relation to:

1. responsibilities toward humanity and future generations (UNESCO; SATORI; BPS Human; Estonian Code);

"*Encourage the spirit of service both to the advancement of science and to social and ecological responsibilities toward their fellow nationals, humanity in general, future generations, and the earth including all its ecosystems, its sustainable development and its conservation, as an important element in their education and training.*" (UNESCO)

2. encouraging societal progress (EC 2008);

"*N&N research activities should be conducted in accordance with the precautionary principle, anticipating potential environmental, health and safety impacts of N&N outcomes and taking due precautions, proportional to the level of protection, while encouraging progress for the benefit of society and the environment.*" (EC 2008)

3. serving the public good (IVSA; NRC);

"*They apply and make public their knowledge in order to contribute to the public good. When undertaking research, they strive to advance the field of visual studies and to serve the public good.*" (IVSA)

4. social justice (GREAT);

"*The parameters aim to ensure that 'responsibility' is demonstrated through a. research always facilitating 'doing good' and contributing to social justice.*" (GREAT)

5. balance autonomy with social responsibilities (SATORI);

"*The principle of benefit for society can draw on the long-standing tradition of reflecting on the role of the intellectual in society within the humanities. There is the need, however, to balance this principle with the principle of autonomy of scientific pursuit.*" (SATORI)

6. responsiveness (SATORI);

"*Responsiveness to the needs and problems of vulnerable or underrepresented.*" (SATORI)

7. engagement with decision-makers (WEF);

"*Situations arise in which there is an ethical responsibility to engage with decision-makers, be they representatives of government, academia, companies or other entities – for instance to correct health*

misinformation around vaccination safety or to understand the impact of climate change on populations."
(WEF)

8. evidence-based decision-making (WEF);

"*Indeed, researchers should not work in isolation, in particular when their research has major implications at the level of the individual, society or the environment. Many decision-makers lack the detailed knowledge required to engage in evidence-based decision-making unassisted. By contrast, researchers have detailed knowledge in their area of expertise, but often lack the power to translate their findings into policy or practice. Thus, by working together, decision-makers and researchers have the power and knowledge required for evidence-based decision-making.*" (WEF)

9. evaluating social responsibility performance (EU-USR);

"*Ensures that social responsibility is treated as a core commitment by the Board and senior management and that the institution's social responsibility performance is the focus for annual evaluative reporting.*"
(EU-USR)

10. investment and procurement (EU-USR);

"*Conducts ethical and socially responsible investment and procurement with comprehensive public reporting of criteria and decisions.*" (EU-USR)

11. commitment to local community (EU-USR);

"*Is a responsible neighbour, facilitating dialogue and working in partnership with and investing in the local community.*" (EU-USR)

12. rewarding social responsibility (EU-USR);

"*Recognises its staff and student social responsibility initiatives through an internal reward scheme*." (EU-USR)

13. reporting on institutional social responsibility goals (EU-USR);

"*Reports on its progress towards clear and independently verified social responsibility and sustainability goals.*" (EU-USR)

14. science education (RRI Tools);

"*Research and innovation should not just take place in society, but for and with society. Citizens should be thought of not only as the end users of science and technology, but as partners in its development. This implies science education needs to play a key role in educating the responsible citizens, researchers and innovators of tomorrow from the early stages to higher education.*" (RRI Tools)

15. popularizing science (Estonian Code);

"*The research institution acknowledges and supports researchers and appreciates the contribution of researchers who popularise their speciality or help to solve problems of social significance.*" (Estonian Code)

16. global responsibility (Norwegian Code);

"*Research institutions and researchers have a responsibility to communicate relevant knowledge to regions that are otherwise excluded for reasons of economic disadvantage. Research should help counteract global injustice and preserve biological diversity.*" (Norwegian Code)

17. funders acknowledging social responsibility (BSA);

"*Sociologists should ensure that sponsors and/or funders appreciate the obligations that sociologists have not only to them, but also to society at large, research participants and professional colleagues and the sociological community.*" (BSA)

18. avoiding disruptions of social structure (BPS Human);

"*In whatever social context they work, psychologists should acknowledge the evolution of social structures in relation to societal need and be respectful of such structures. Unwarranted or unnecessary disruption should be avoided unless the psychologist judges that the benefits of intervention outweigh the costs of such disruption (for example, in the protection of vulnerable individuals or groups).*" (BPS Human)

19. promoting peace (EU-USR; Argentinian code).

"*Ensures that all its International activities promote human and societal development and, where possible, help address the issues of poverty, quality of life, advance peace and promote conflict resolution.*" (EU-USR)

1.19 Rigour

Rigour refers to similar obligations and ideals as excellence. Rigour is mostly referred to in the context of doing research and may cover different aspects of it from collecting data to dissemination of results. Rigour also covers other parts of academic life like relationships with colleagues and communicating with the public. In the current analysis rigour has been coded as a complex concept including different aspects which could be interpreted as part of being rigorous. These are:

1. scrupulousness (Dutch Code);

"*The actions of an academic practitioner are scrupulous when they are performed with the dedication and precision that a proper exercise of the profession requires.*" (Dutch Code)

2. thoroughness (UKRIO);

"*Researchers who carry out peer review should do so to the highest standards of thoroughness and objectivity.*" (UKRIO)

3. skills and skilfulness (UK Code; Belgian Code);

"*It's all about making sure you keep your own skills fresh, and encouraging others to do so, particularly if you are responsible for a team.*" (UK Code)

4. precision (Dutch Code, Belgian Code);

"*The researcher acts in a precise and nuanced manner when carrying out research and publishing its results*." (Belgian Code)

5. adherence to proper scientific methods (UK Code; UK Concordat);

"*It's about encouraging strict adherence to scientific method whatever the subject area.*" (UK Code)

6. adherence to proper rules and standards (Belgian Code; UKRIO; UK Concordat).

"*A researcher's work is deemed to be rigorous when he/she applies the generally acknowledged rules of his/her discipline with precision.*" (Belgian Code)

Rigour is related to different concepts, namely *thoroughness*, *scrupulousness*, *skilfulness*, *rigour*, *precision*, *quality*, *high standards* and *excellence*, all of which overlap and can have, to a certain degree, a similar meaning. Thus, it is up to the writers of any new document to choose how to phrase these ideals.

Because of this, rigour is also related to *accuracy* as they both refer to the need to be precise and meticulous. However, the scope of these two concepts in the analysed documents is unclear. For instance, *scrupulousness* could relate to either *accuracy*, because it requires precision, or to *rigour*, because it also requires dedication.

1.20 Safety

Safety refers to the avoidance of harm and minimizing risks to persons, their health and well-being, as well as to the environment. The common requirement is that the researcher is responsible for ensuring the safety of all persons participating in the research. In order to fulfil this responsibility, the researcher should adhere to safety standards and legal requirements, assess the risks and potential safety hazards and inform others of potential risks and hazards. Another common requirement is that the research institutions should guarantee the safety of the academic staff and ensure a safe research environment. In addition, safety is referred to in relation to:

1. balancing benefits and risks (UKRIO; Warwick; Open Uni Code; SATORI);

"*Research should be initiated and continued only if the anticipated benefits justify the risks involved.*" (UKRIO)

2. offering safety training (BERA; AAA; UNESCO);

"*Researchers, principal investigators, students and their supervisors should ideally be offered training on researcher safety. Specialist training should be made available to researchers entering conflict or post-conflict settings internationally, or areas with high risk of disease.*" (BERA)

3. monitoring of risks (EC 2008; Iphofen 2015);

"*N&N research funding bodies' programmes should include monitoring of the potential social, environmental and human health impacts of N&N over a relevant period of time*." (EC 2008)

4. caution and precaution (Belgian Code; EC 2008);

"*Although the researcher's primary concern is to acquire or increase his/her knowledge, caution requires him/her not to impose unnecessary or disproportionate risks.*" (Belgian Code)

5. absence of long-term safety studies (EC 2008);

"*As long as risk assessment studies on long-term safety is not available, research involving deliberate intrusion of nano-objects into the human body, their inclusion in food (especially in food for babies), feed, toys, cosmetics and other products that may lead to exposure to humans and the environment, should be avoided*." (EC 2008: 16)

6. reasonable rest periods (UNESCO);

"*They should accordingly ensure that the managements of scientific establishments: enforce appropriate safety standards; train all those in their employ in the necessary safety procedures; monitor and safeguard the health of all persons at risk; take due note of warnings of new (or possible new) hazards brought to their attention, in particular by the scientific researchers themselves, and act accordingly; and ensure that the working day and rest periods are of reasonable length, the latter to include annual and parental leave on full pay*." (UNESCO)

7. harming cultural heritage (SATORI; Estonian Code);

"*Minimise harm to the local environment (including animals, plants and natural and cultural heritage) caused by any field work or experiments, and ensure that any harm done can be justified by the (potential) benefits of the research.*" (SATORI)

8.   safe venue for interviews (NDA);

"*Particular steps may be needed to ensure anonymity, privacy and confidentiality in care settings; where advocates, interpreters or proxies are used; and in situations where other people, besides theresearcher(s) and the participants, are involved in aspects of the data collection. Practical steps would include: choosing a location for interviews to ensure not only accessibility and safety but also confidentiality*." (NDA)

9.   accepting personal risks (Iphofen 2015);

"*In any case while a researcher might accept risks in the pursuit of their science, there may be a reciprocal harm to subjects/participants arising from researchers that do not take enough care of themselves. For example, a researcher studying active conflict might put themselves at risk of violence which a participant might feel they have to protect them from – thereby increasing their own potential for harm.*" (Iphofen 2015: 37)

10. public debates about safety (ETH Zürich);

"*The ETH Zurich researchers should reflect on the potential social and ecological hazards associated with their research work. They should be willing to get involved in public debates on the issues concerned.*" (ETH Zürich)

11. harassment and bullying in work environment (Estonian Code; NRC);

"*The research institution ensures a safe work environment and equal treatment to all its staff members, considering any bullying and harassment unacceptable. The research institution establishes a procedure for dealing with breaches of equal treatment and other good collegial relations and bullying at work.*" (Estonian Code)

12. safety checklist for field-work (Iphofen 2015: 39–40).

1.21 Timeliness

Timeliness refers to the need act within a *reasonable* time-frame, considering the circumstances and the needs or interests of the others. None of the documents mention any precise unit of time, instead timeliness should be one of the factors, among many, which should influence the actions and choices of researchers. Timeliness is commonly referred to in the context of publishing research results, investigating misconduct, assessment, reviewing and seeking expert opinion.

1.22 Transparency

Transparency is mentioned in 35 documents. Transparency refers to disclosure of information whether to the public or to the relevant parties. Transparency is closely related to *honesty* and *openness* as they all require the scientist to be forthcoming, not to withhold relevant information and to offer insight into the motives and interests of the researcher. Transparency is most often referred to in the context of *conflict of interest*, planning research, funding, choice of methodology, analysing data, informing participants, publishing results, investigating misconduct, reviewing and assessing. Another common requirement is that any scientific publication should have sufficient information about funding, contributions, relevant interests, methodology and analysis. In addition, transparency is referred to in the context of:

1.   publishing commissioners, sponsors and other support (Belgian Code; BERA; APSA);

"*Commissioners and external sponsors, as well as their relations with the researcher, are mentioned in the publications of the results. The possible links between sponsors and researchers, such as their expert or advisory role, will also be mentioned. Any conflicts of interests must be mentioned in scientific communications and publications*." (Belgian Code)

2.   data protection and management (Privacy by Design; Danish Code; ICC/ESOMAR);

"*Visibility and transparency are hallmarks of a strong privacy program – one which inspires trust in an organization. We describe a collection of best practices that render the organization's approach to privacy perfectly clear to its customers, clients or citizens. We also stress the importance of audit trails as an approach to help users understand how their data is stored, protected and accessed*." (Privacy by Design)

3. institutional transparency (EU-USR; Danish Code);

"*Publishes the outcomes of internal and external reviews, complaints, academic appeals and the source and use of all funding.*" (EU-USR);

4. public financial sources (APSA);

"*Political science research supported by government grants should be unclassified*." (APSA)

5. undisclosed sources of funding (APSA);

"*A university or college should not administer research funds derived from contracts or grants whose purpose and the character of whose sponsorship cannot be publicly disclosed.*" (APSA)

6. analytic transparency (APSA; Estonian Code; UK Concordat);

"*Researchers making evidence-based knowledge claims should provide a full account of how they draw their analytic conclusions from the data, i.e., clearly explicate the links connecting data to conclusions.*" (APSA)

7. acknowledgement of non-author contributions (Danish Code);

"*Fair attribution of authorship – and appropriate acknowledgement of contributions that do not meet the criteria for authorship – contributes to the transparency and credibility of research.*" (Danish Code)

8. researcher's assumptions (ASA);

"*Sociologists also disclose underlying assumptions, theories, methods, measures, and research designs that might bear upon the findings and interpretation of their work*." (ASA)

9. access to data research materials (ALLEA);

"*Researchers, research institutions and organisations provide transparency about how to access or make use of their data and research materials.*" (ALLEA)

10. contentious sources of funding (BSA);

"*In some political, social and cultural contexts some sources of funding and sponsorship may be contentious. Candour and frankness about the source of funding may create problems of access or co-operation for the social researcher but concealment may have serious consequences for colleagues, the discipline and research participants. The emphasis should be on maximum openness.*" (BSA)

11. recruitment and promotion (EU-USR; Argentinian code)[16];

"*Practices open, transparent, fair and equitable recruitment and promotion of staff, using affirmative action where appropriate, providing comprehensive staff development that incorporates social responsibility.*" (EU-USR)

12. public interest (IFLA);

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[16]Identical points exist under the categories of *fairness* and *openness*.

"*Librarians and other information workers support and participate in transparency so that the workings of government, administration and business are opened to the scrutiny of the general public. They also recognise that it is in the public interest that misconduct, corruption and crime be exposed by what constitute breaches of confidentiality by so-called 'whistleblowers'.*" (IFLA)

13. positions outside research (SATORI);

"*Be transparent about and disclose relevant professional positions or other work that researchers have done in political, religious or other value-based organisations that could potentially negatively affect (the perception of) those researchers' objectivity in conducting the research.*" (SATORI)

14. fostering accountability (RRI Tools);

"*Openness and transparency are particularly important features of RRI because they lay the foundations for accountability — making scientists and innovators answerable for their actions and the consequences*." (RRI Tools)

15. disclosure of subcontracts and consultations (NMBSA)[17];

"*Neuromarketing Researchers shall disclose prior to work commencing, when any part of the project is to be subcontracted outside the neuromarketing researchers' own organization (including the use of any outside consultants).*" (NMBSA)

16. quality assurance procedures (PRINTEGER);

"*Leaders should establish and implement clear and transparent quality assurance procedures for all research.*" (PRINTEGER)

17. learning from misconduct cases (PRINTEGER);

"*In order to stimulate organisations' capacity to learn from experience, there must be transparency. This means that organisations should be open about cases of confirmed research misconduct after they have been investigated, while safeguarding the legitimate rights to privacy and personal data protection of individuals, as regulated in national and European laws. The organisations should contribute to sharing practices and experiences in relevant fora.*" (PRINTEGER)

18. institutional reporting of misconduct (PRINTEGER);

"*National policy makers should implement national reporting procedures so that organisations that openly report misconduct in good faith, do not find themselves penalised, while those institutions that cover up misconduct are not.*" (PRINTEGER)

A somewhat different conceptualization of transparency can be found in the *ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics* (2016: 10) where it is seen as a responsibility to clients. For instance, researchers are required to "*allow clients to arrange for independent checks on the quality of data collection and data preparation*" and "*provide clients with sufficient technical information about the research to enable them to assess the validity of the results and any conclusions drawn*". This implies that research could have different degrees of transparency: while it may be transparent to partners or clients, it may not be transparent to the general public.

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[17]Identical point exists under the category of *openness*.

1.23 Trust

Trust refers to the trustworthiness of science in the eyes of all the relevant stakeholders, including the public, research participants, partners and researchers themselves. Trust also refers to the dimension of interpersonal relations, namely that researchers can and should trust each other. Trust is also sometimes referred to in terms of *confidence*. The three common forms of trust in the analysed documents are the *trust relationship* between the researcher and research participant, *public trust* in research and *mutual trust* among researchers. Trust is also related to *trustworthiness*, which applies to a subject or object which is deserving of trust.

The common requirement is that researchers should establish and maintain trust, refrain from damaging the *public confidence* in research and try to restore it in cases where *confidence* or trust has been harmed. The main source of harm to trust is the irresponsible and unethical action of researchers. In addition, trust has been referred to in relation to:

1. relationship with decision-makers (WEF);

"*However, trust between researchers and decision-makers can be fragile and easily damaged, because of their differing backgrounds, processes and priorities, leading to misunderstandings or a misinterpretation of the science. But adhering to a clear framework for engagement can make the interaction between researchers and decision-makers successful*." (WEF)

2. justification of deception (APA).

"*In situations in which deception may be ethically justifiable to maximize benefits and minimize harm, psychologists have a serious obligation to consider the need for, the possible consequences of, and their responsibility to correct any resulting mistrust or other harmful effects that arise from the use of such techniques.*" (APA)

Trust and *trustworthiness* are related to the concept of *reliability*. For instance, the *Codes of Ethics for Scientific Research in Belgium* (2009: 7) states: "*Researchers are deemed to be reliable when they act in such a way that third parties can trust them to proceed in a professional manner, both in their scientific work and in their manner of reporting on it.*" In this case the *reliability of researchers* is connected to the condition of trust. In this sense, *reliability* could be seen as synonymous with *trustworthiness* as both refer to trust. A somewhat different definition for *reliability* is given by *The Netherlands Code of Conduct for Academic Practice* (2014: 7): "*Academic practitioners act reliably when they perform their research in a conscientious manner and provide a full account of the research conducted. This ensures that scientific and scholarly research can be traced, verified and re-tested.*" This concept of *reliability* refers to *truth* and *verifiability*. Thus, the analysed documents do not offer an exact difference between the concepts of *reliability* and *trustworthiness*. However, it could be argued, that for the sake of clarity *reliability* should perhaps refer to data and results, whereas *trustworthiness* should refer to persons and institutions.

1.24 Truth

Truth refers to a general pursuit for truth or advancement of knowledge, which is the general aim of science. In the context of research, truth refers to the requirement of presenting data and results truthfully, verifiability and validity of data, reproducibility of results and replicability of research. Truth is additionally referred to in relation to:

1. proper documentation and monitoring (Dutch Code; MRS);

"*The quality of data collection, data input, data storage and data processing is closely guarded. All steps taken must be properly reported and their execution must be properly monitored (lab journals, progress reports, documentation of arrangements and decisions, etc.).*" (Dutch Code)

2. access to raw data (Dutch Code; WEF);

"*Raw research data are stored for at least ten years. These data are made available to other academic practitioners upon request, unless legal provisions dictate otherwise.*" (Dutch Code)

3. surprising results (German Code);

"*The more surprising, but also the more welcome (in the sense of confirming a cherished hypothesis) a finding is held to be, the more important independent replication within the group becomes, prior to communicating it to others outside the group.*" (German Code)

4. testing the validity of the research with participants (NDA);

"*In research that involves people with disabilities, appropriate engagement with them about the research process can help researchers to frame their research questions better, can test the validity and acceptability of the research methodology, and can assist in interpretation of the findings.*" (NDA)

5. honest mistakes (German Code; WEF);

"*Research in an idealized sense is the quest for truth. Truth is categorically opposed to dishonest methods. Dishonesty therefore not merely throws research open to doubt; it destroys it. In this, it is fundamentally different from honest error, which according to some positions in the theory of science is essential to scientific progress, and which at any rate belongs to the "fundamental rights" of every scientist and scholar.*" (German Code)

6. critical self-discipline (APSA);

"*Their primary responsibility to their subject is to seek and to state the truth as they see it. To this end professors devote their energies to developing and improving their scholarly competence. They accept the obligation to exercise critical self-discipline and judgment in using, extending, and transmitting knowledge.*" (APSA)

7. questioning current beliefs (WEF);

"*Pursuing the truth means following the research where it leads, rather than confirming an already formed opinion. This is particularly challenging but necessary when questioning current beliefs.*" (WEF)

8. fighting untruths (WEF);

"*Pursuing the truth is more than creating knowledge as it also entails fighting untruths and valuing negative results in an ethical way.*" (WEF)

9. external pressures (WEF);

"*However, the pure pursuit of truth is not easy in the face of external pressure and the temptation to make outcomes fit a specific agenda, be it a deadline, funding or publication incentives. This is particularly relevant when untruths seem to have more impact over time and yield greater rewards than truths.*" (WEF)

10. publishing negative and undesired result (WEF)[18];

"*The research community should also value negative, undesired, inconvenient and inconsistent results. These results can provide important insights, such as identifying dead ends in research, or can occasionally lead to future breakthroughs.*" (WEF)

11. offering constructive criticism (BERA).

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[18]Identical point exists under the category of *objectivity*.

"Researchers should contribute to the community spirit of critical analysis and constructive criticism that generates improvement in practice and enhancement of knowledge." (BERA)

1.2 DISCUSSION AND GENERAL REMARKS

This section covers some of the general observations and remarks concerning the analysed values. Firstly, there seem to be some conceptual ambiguity and terminological inconsistency among the analysed documents. Secondly, the documents seem to focus on somewhat different values and principles.

Conceptual ambiguity refers to the observation that the analysed documents use somewhat different concepts for expressing similar ideas. For instance, the concepts of *justice, equality* and *equity* addressed some aspect of treating others fairly; *intellectual freedom, freedom of inquiry* and *academic freedom* all addressed some aspects of unrestricted pursuit of truth; *independence, impartiality, objectivity* and *fairness* addressed the bias of decisions and external influences. This overlapping of concepts may be confusing, especially for potential readers who are not familiar with research ethics and its underling values and principles. Clarity and consistency within a single document or framework are likely and achievable, as long as the document offers definitions, explanations and examples for each of the abstract concepts. However, it is unlikely that a single framework could overcome all the potential differences of terminology among different organisations and their relevant documents.

In addition, some concepts may be used only in certain fields or regions. For instance, *rigour* was mostly used in documents originating from the UK, Ireland, Canada and Australia (the two exceptions being the Belgian code of ethics, which had a whole section about *rigour*, and the Argentinian code, which mentioned it once). This implies that this conceptual ambiguity may be related to cultural and linguistic differences, which may influence the way these concepts are translated between English and other languages.

The second observation relates to the different values that are referred to in different documents. Some values, like *integrity*, *responsibility* and *respect*, are more prevalent in the documents, whereas others, like *neutrality* or *stewardship* are less common. The choice of values that are included in the document could reflect either the importance of those values or their relevance to the organisations and communities that adopt them. In addition to this initial choice, what should be included and what not, another question rises about the order or hierarchy of these values: which values are the most important. This question may have very practical implications, especially when solving conflicts between different principles or standards. Most of the documents do not address this question. However, an interesting example can be found in the *Ethical Guidance for Research with People with Disabilities* (2009: 45) of the National Disability Authority of Ireland, which states: "*In addition to integrity, which requires, as outlined above, honesty, objectivity, rigour and diligence, other important professional values for researchers include openness, freedom of thought and independence in the conduct of research, social responsibility and relevance, fairness and reflection on practice. These professional values are underpinned by the bedrock ethical values of dignity, autonomy, equality and diversity, which underlie the rights of all persons and take precedence over research values.*" This clearly states that some values are more important than others.

Both questions – which values to include and which values are the most important – should be considered when creating and formulating a new framework for research ethics and integrity. The second question cannot be answered solely on the prevalence of values in already existing codes and guidelines as prevalence shouldn't be translated directly into importance.

An additional observation can be made about the distinction of principles and virtues. From the perspective of analysing values, the documents in general do not distinguish whether they talk about

values as virtues or values as the basis for principles for good conduct. For instance, honesty, accuracy and rigour could also indicate certain characteristics that any researcher should have but they could also refer to certain rules or standards that every researcher should follow.

2. ISSUES

2.1 Acknowledgement

This issue represents the principle of mentioning all the partners who have intellectually contributed to the research but who do not meet the authorship criteria (see more about authorship criteria in section *Authorship*). For example, ALLEA emphasises the contribution of collaborators, assistants and funders: "*Authors acknowledge important work and intellectual contributions of others, including collaborators, assistants, and funders, who have influenced the reported research in appropriate form, and cite related work correctly*."

The principle of agreeing on acknowledgement beforehand is mentioned (e.g. Montreal, Durham), moreover, APSA specifies authors have the freedom to decide "what acknowledgment, if any, to give to the professor under whose supervision they worked" (see more about teaching in 2.25 *Teaching, training, supervised students*).

There is difference between the documents on where the emphasis is added. Some codes distinguish in this section who should be named as co-author and who has to be acknowledged (e.g. OeAWI, Open Uni principles). Others state that those who do not meet the authorship criteria should be listed in acknowledgement part (e.g. UKRIO; OeAWI; Singapore; Estonian Code; Danish Code). BERA highlights the importance to disclose sponsors or commissioners to participants and other stakeholders. UNESCO highlights the importance of appropriately creditig and compensating the knowledge derived from sources.

2.2 Authorship

This issue concerns the criteria for authorship (e.g. Estonian Code, BERA, Open Uni principles, ETH, German Code, Danish Code, UKRIO, Australian Code). The Danish Code adopts Vancouver guidelines[19] about who should be named as the author:

"*Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND*

- Drafting the work or revising it critically for important intellectual content; AND

- Final approval of the version to be published; AND

- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved".

Documents state the need for authors to agree on the sequence of authorship (e.g. ALLEA, Norwegian Code, EGE, Smith 2003, German Code, Danish Code, UKRIO, Australian Code, Argentinian Code) and that the responsibilities and authorship of the research team need to be clarified (Argentinian Code). If disputes over authorship emerge, independent arbitrator may be needed (COPE).

Several documents mention the role of the supervisor and student in authorship context. Position in an institute does not justify authorship credit (APA), student is the first author if the article is substantially based on the student's doctoral dissertation (APA, ASA), expropriation of students' work is not allowed (APSA), advisers are not entitled to authorship (APSA).

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[19] International Committee of Medical Journal Editors – Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, Updated December 2013.

Other authors work must be cited correctly (Australian Code, Finnish Code, Belgian Code, Danish Code) keeping in mind all "*explicitly recognising authors of digital content*" (BERA).

Several documents consider authorship based on position or profession unacceptable, including ghost, gift and honorary authorship (e.g. Open Uni Code, ETH, Germany, Danish Code).

2.3 Collaborative research

Danish Code defines collaborative research as "*Collaborative research is research based on cross disciplinary, cross institutional, cross sectorial and/or cross border collaboration*."

Collaborative research requires clear agreement on standards to be followed (e.g. Montreal, UK Code, ALLEA, Australian Code, PRINTEGER, Durham, Open Uni Principles, RCUK, SATORI, UNESCO, UKRIO, Danish Code, AACS). Montreal Statement focuses only on principles regarding collaborative research, setting out principles and responsibilities for managing collaboration, mainly pointing out different possible conflict points that collaborative partners need to come to agreement on before starting collaboration. Danish Code specifies that agreements should also focus on intellectual property rights; procedures for addressing conflicting laws, regulations, practices, etc.; procedures for resolution of conflicts between collaborating partners; publication issues, use, sharing, ownership and management of data; confidentiality; conflicts of interest; and procedures for reporting and handling breaches of responsible conduct of research, including research misconduct.

Similar principle of agreeing on criteria and standards is presented in RCUK, Australian Code, NDA and UKRIO. PRINTEGER highlights the need to agree on how misconducts will be handled in collaborative research. Warwick and UKRIO state that the legal and ethical requirements of the UK need to be complied with, UKRIO also highlights the need to comply with the country's requirements where the research is done.

UNESCO states the need to respect human rights. The Australian Code states the responsibilities of the institution and responsibilities of the researcher in collaborative research. ASA highlights the need to acknowledge all the collaborating partners appropriately.

2.4 Quality of research

The topic of the quality of research highlights principles mentioned in other issues as well (e.g. peer review, misconduct etc.). The main idea is presented in WEF by stating "*Pursuing the truth means following the research where it leads, rather than confirming an already formed opinion*." This means transparency and reliability in the design of the research, methodology, analysis, and the use of resources, reproducibility, verifiability (e.g. ALLEA, Australian Code, OeAWI, BPS, BSA, RCUK, Warwick, APA, SATORI, Belgian Code, German Code, Dutch Code, Danish Code, ICC/ESOMAR).

The Norwegian Code states that research needs high academic quality and researchers and institutions need necessary competences. Poorly designed research is considered to be unethical because it wastes both researcher's and subjects' time and energy (Iphofen, 2015). BERA highlights the responsibility of those researchers who prefer or promote specific methods, theories or philosophies of research to demonstrate they have knowledge of alternative approaches that they have considered. BSA and UKRIO warn that research should be undertaken to provide information or explanation, not to reach particular conclusions. The Australian Code highlights the responsibility of the institutions to provide an appropriate research governance framework for assessing quality, safety, privacy, risk management, financial management and ethical acceptability of the research. The need to monitor the process of research integrity is highlighted also in Montreal, UK Concordat, BPS and RCUK. UKRIO mentions researchers carrying out monitoring and audits need to have sufficient training, resources and support for doing so.

ISC suggests the idea of clear and transparent national monitoring and advisory system.

2.5 Research environment

The principle to create and sustain a research environment that supports and encourages research integrity (e.g. Singapore, COPE, Estonian Code, UK Concordat, WEF, ALLEA, Australian Code, PRINTEGER, Open Uni Code, UNESCO, German Code, Danish Code). However, the responsibility part varies between documents – some of them state the institution is responsible for the research environment, others that it is shared between the researcher and the institution (Danish Code, UKRIO).

The UK Concordat is very explicit about what a good research environment that develops good research practice and supports research integrity includes: clear policies, practices and procedures to support researchers; suitable learning, training and mentoring opportunities to support the development of researchers; robust management systems to ensure that policies relating to research, research integrity and researcher behaviour are implemented; awareness among researchers of the standards and behaviours that are expected of them; systems within the research environment that identify potential concerns at an early stage and mechanisms for providing support to researchers in need of assistance.

The leaders' responsibilities for mentoring and being a good role model for research integrity is highlighted in WEF, OeAWI and PRINTEGER.

2.6 Compliance with laws and regulations

Many documents refer that legal and ethical regulations should be taken into account in research. Several documents state that when laws and regulations conflict, partners need to come to an agreement on how to solve the conflicts (e.g. Montreal, Estonian Code, APA, ASA, EGE, UKRIO, Open Uni Code).

Instructions how to solve conflicts are different in the codes. In the Estonian Code, collaborating partners should determine how to address these conflicts; in the ASA the suggestion is to follow the Code if Code and laws-regulations conflict; the EGE suggests to follow the EU norms for involved non-EU members; the Argentinian Code and NDA's code suggest to follow the regulations from the research area, AACS suggests to be informed about relevant regulations and standards, ICC/ESOMAR and MRS suggest to follow international and national laws and local codes and standards, the Danish Code suggests assessment to determine if there are issues that need special permits, approvals etc. The UKRIO suggests researchers should seek guidance, if necessary, from their organisation. The Open Uni Code suggests to seek guidance and to report concerns to proper persons.

The UK Code suggests a minimum standard should be agreed on for all international partners. It also emphasises all partners have the responsibility to "*ensure they have up-to-date knowledge of those that apply to their work.*"

ASA states sociologist must follow ASA ethical principles even when other laws and legal requirements are less stringent.

The data protection principle is mentioned separately in several documents (Estonian Code, BERA, Open Uni Code, Iphofen 2015, EC 2009, Warwick, Danish Code).

APA emphasises that the APA standard may not be used to defend the violation of human rights.

APSA highlights the contradiction – on one hand, researchers as citizens are obliged to follow the law and cooperate with law enforcement agencies, on the other hand, as professionals, researchers are not to divulge the identity of confidential sources and explicitly states that they are not to do so "*even though in the present state of American law they run the risk of suffering an applicable penalty.*"

2.7 Confidentiality

Many documents state the principle of confidentiality, however the emphasis of confidentiality with regard to what varies: protecting the identity of individuals or groups (e.g. Edinburgh MP, WCAA, APA, APSA; ASA; BERA, BPS, BSA, NDA), appropriate use of confidential information (WEF; ASA, AACS); respect confidentiality of data or findings when legitimately required to do so (ALLEA); research data and primary materials (Australian Code, NDA, MRS); information regards clients (MRS), investigations (ALLEA); settling disputes (Estonian Code); research results until published (Estonian Code); information known from disclosure of a conflict of interests (Estonian Code); information acquired in confidential manner (ASA); with regard to internal or external employees and members of ANR Governing Board not to disclose any personal information and must exercise professional discretion (French Code).

BSA highlights the need not to give unrealistic guarantees of confidentiality.

Principle for reviewers to maintain confidentiality (ALLEA, Belgian Code, German Code, UKRIO).

Justification for **breaching the confidentiality**: only for appropriate scientific or professional purpose and only with persons clearly concerned with such matters (APA); only when mandated or permitted by law for valid purpose, e.g. to provide needed professional service, obtaining appropriate professional consultations, protecting clients, patients or psychologist from harm, "*obtain payment for services from a client/patient, in which instance disclosure is limited to the minimum that is necessary to achieve the purpose*" (APA); for protecting life or health (ASA); clear and overriding reasons for breach like the abuse of children (BSA); for public interest in whistleblowing for exposing misconduct, corruption and crime (IFLA) (see more in the section 2.22 *Whistleblowing*). BERA states the need for researcher to consider what content and in what circumstances should be reported to relevant authorities – e.g. illegal or harmful behaviour – but the decision in BERA is on the researcher what to disclose. BPS and Open Uni Code state the confidentiality is not absolute right and may be overridden by more compelling duties for example protecting individuals from harm. Iphofen 2015 states that breach is justified when authorities require data or a court issues a subpoena, but highlights this must be made known to the participants beforehand. MRS allows details of participants to be disclosed only when they have given informed consent to do so.

ASA states confidentiality is not required when doing observations in public places or in other settings where law or custom does not provide the rule of privacy. The Australian Code states the need to cover confidentiality topic already in training.

Confidentiality towards sponsors is dealt with in several documents. APSA states the need to keep grantor's anonymity if requested by the nongovernmental grantor with the limitation that it does not endanger the integrity of research – "*the character of the sponsorship rather than the identity of the grantor should be noted*". The Australian Code brings out that if the sponsor requires, peer review may be delayed until after the results are delivered to the sponsor. BSA states towards sponsors that method and procedures are not to be kept confidential "unless otherwise agreed". ETH states research results should be made public "*except in cases where confidentiality obligations or contractual obligations prohibit publication*."

2.8 Intellectual property

Principle of respecting the intellectual property: Research partners should come to an agreement about intellectual property (Montreal, Australian Code, similar in WCAA, UKRIO). Questions of digital content and its being subject to copyright are dealt with in BERA. BPS Internet highlights the need to assess when permission for using the material is needed. Software piracy topic is dealt with in SATORI.

2.9 Finances

Different principles about using and sharing finances are dealt with in the documents. Research funds should be used in proper and conscientious way (ALLEA). Principle of sharing costs and benefits evenly between partners is highlighted in Montreal. Principle of using funds for the purpose they were meant for is mentioned in UE-USR, similar principle of avoiding double financing for the same activity is highlighted in the Estonian Code. BSA explicitly states the research should not be carried out if there are not enough funds for doing so.

Transparency about finances and disclosing all relevant financial ties is highlighted in the Estonian Code, Australian Code, APA, Argentinian Code and SATORI. The Estonian Code and APSA state finances that may compromise the autonomy of the researcher should be avoided. ASA states in special circumstances sponsors may be withhold, however the full description of the nature and interest of the sponsor must be provided. Similar principle is stated in APSA – when nongovernmental sponsor requests anonymity and it does not endanger the integrity of the researchers, the nature of the sponsorship should be noted instead of the identity of the sponsor.

2.10 Impacts and risk assessment

The main principle is that researchers keep in mind different possible **impacts and applications** of the research results and acknowledge the consequences and impacts of their work (Durham, GREAT, SATORI, UKRIO, Warwick, BERA, Estonian Code). Special attention is given to **risk assessment** with the principle of being aware of possible risks, assess risks, take measures to prevent risks, risk-benefit analysis (GREAT, Estonian Code, WEF, ALLEA, BERA, BPS, BPS Internet, SATORI, EC 2008, Belgian Code, UKRIO, AAA), foreseeable risks, to give participants enough information for them to assess the risks and potential benefits (TCPS 2, similar in WEF). Researchers have the obligation to weight the risks (Singapore). EC 2008 and UKRIO state risk assessment should be conducted in planning stage before submission for funding.

BPS defines risk as "*the potential physical or psychological harm, discomfort or stress to human participants that a research project may generate*."

Warwick and WEF explicitly state research should continue only when benefits outweigh the risks.

BPS is specific about severities of risk highlighting these range widely "*from innocuous, anonymised at source data gathering on non-sensitive topics, to research carrying multiple high-level risks that demand very detailed ethics protocols and close attention to risk obviation, minimisation and management*".

In application of research results it is also important to consider **dual use and misuse** (Estonian Code, EC 2008, UKRIO) and to consider if the work can be used for a different purpose than intended by the researcher (SATORI). SATORI also highlights the need to consider if the research might have military application with the principle to anticipate and avoid.

If misuse or misrepresentations of someone's work is discovered, reasonable steps should be taken in order to correct it (APA, ASA).

Special attention is given two topics: **natural environment** and **cultural environment**. Principle for cultural environment is to respect the local culture (SATORI) which is even more important if there are no rules and codes for ethics or they are not applied (Belgian Code). San code defines that respect "*is shown when we can input into all research endeavours at all stages so that we can explain these sensitivities*".

Principle for natural environment is maximising the benefit of research while safeguarding against the potential harm for the environment (e.g. UK Concordat, WEF, UE-USR, UNESCO, SATORI, GREAT). The Australian Code defines it as respecting the environment, the Norwegian Code as preserving biological diversity. The UK Code states the need to respect life and minimise any adverse effects on the natural environment. UNESCO states the principle to show "*social and ecological responsibilities toward their*

fellow nationals, humanity in general, future generations, and the earth including all its ecosystems, its sustainable development and its conservation".

2.11 Data

The principle is that there must be policy on data ownership and storage (Australian Code), that complies with the requirements from the law (BSA, Open Uni Code, Irish Code). Collaborating partners need to agree on the use, management and ownership of the data (Montreal, Finnish Code).

There are several principles highlighted by the documents: keeping records for accessibility for verification (Argentinian Code), protection from unauthorized access (ICC/ESOMAR), reusing data when possible (Estonian Code); access to data, reference the data used (APSA, German Code); following FAIR[20] principles (ALLEA); opening data after the research is done (ASA, Australian Code, ETH, Belgian Code, Danish Code); principle of "as open as possible, as close as necessary", meaning confidentiality of publicly funded data needs explicit justification (PRINTEGER).

When reusing data or opening it to other researchers or sponsors it has to be asked in the initial informed consent (BERA, BPS). ICC/ESOMAR highlights that if data is planned to be used for non-research purposes, this bust be clearly stated when collecting primary data. Anonymised-at-source research (e.g. web research, sensitive topics) requires clear consent process (BPS). ICC/ESOMAR states that it is researchers' responsibility to ensure that data cannot be traced back to individual via deductive disclosed "for example, through cross-analysis, small samples or combinations with other data such as a client's records or secondary data in the public domain."

Principles of primary data collection are detailed in ICC/ESOMAR and MRS.

Principles for transferring data between EU and non-EU members are presented in EGE.

Principles for analysis of research data are presented in the Estonian Code and APA.

Principles for destroying data if participant requests are presented in BPS.

Correct data management principles are given in several documents (e.g. ALLEA, ASA, Australian Code, Open Uni Code, ETH, Irish Code, Iphofen 2015, SATORI, Danish Code, UKRIO, BERA). The Australian Code is detailed about storing time principles (Australian Code). BERA gives the principle of complying with legal requirements in relation with data protection and GDPR. Durham emphasises identifying data and data for the research should be kept separately.

ASA and ETH have highlighted principles for when the researcher leaves the project, is incapacitated or dies – the data should be protected even in these situations, ETH adds the leaving professor decides who should retain access to primary data.

Institutional responsibility for data management is highlighted in Australian Code, Danish Code and UKRIO.

2.12 Dissemination

Principle of sharing the research results openly and promptly (e.g. Singapore, similar in Estonian Code, ALLEA, Australian Code, BERA, BSA, Durham, Norwegian Code, GREAT, Open Uni Code, Argentinian Code, ICC/ESOMAR). Montreal highlights the need to agree on how the results will be disseminated. Principle of public communication is given in Singapore, APA, ASA, Estonian Code – to give comments in their recognized expertise and to distinguish professional comments from personal opinion.

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20   Findability, accessibility, interoperability, reusability.

Iphofen 2015 and BPS Internet highlight the need to consider if information or dissemination practices might contain potential harm for individuals or social groups.

AACS highlights research subjects and disability groups are included in the dissemination.

Montreal states unnecessary restrictions for dissemination should be avoided. On the other hand, the Australian Code states restrictions from sponsors for dissemination should be followed. BERA, however, states contractual terms obstructing disseminating research findings for public benefit should not be accepted. BSA states similar principle – that sociologists should avoid restrictions to publish or disseminate their research findings.

2.13 Public engagement
The principle that public should be engaged and stakeholders involved in the process of research and innovation because this helps to ensure the results match with the needs and expectations of the society (RRI) and it strengthens the public trust and support for the science (UNESCO). WEF and the UK Code highlight engagement is two-way communication with the public about science and research implications and the needs of the society.

2.14 Publication
Principle of publishing research results in honest, transparent and accurate manner, reason for publishing is to make research results available to public and other researchers (BSA, SATORI, Belgian Code, Danish Code). Researchers have a right and an obligation to publish (Danish Code, similar in Dutch Code). Publishing should happen in an open, honest, transparent and accurate manner (ALLEA). BSA highlights the responsibility may be difficult if there is social conflict, competing social interest or unanticipated misuse of the research. BERA highlights that for controversial research findings the researcher should inform stakeholders before publishing and agree on publication strategy that takes into consideration the public interest, researchers need to publish and the stakeholders' concerns.

ETH states research results should be made public "*except in cases where confidentiality obligations or contractual obligations prohibit publication.*" BERA and BSA state that for fulfilling the principle of communicating findings, contractual terms that obstruct this should not be accepted. Danish Code states that sponsors and funders should respect the researchers' duty to publish.

APSA is very detailed about ethics in publication process. ALLEA emphasises the responsibilities of the authors. ASA emphasises responsibilities of editors. ISC emphasises journals' responsibilities to detect publishing errors. German Code emphasises responsibilities of scientific journals.

2.14.1 Open access
The principle of publicly funded projects should have open access to ideas and knowledge and their work should be published in accordance with principle of open access (BERA, Open Uni Code, ETH, IFLA, Irish Code, SATORI, Estonian code). RRI states open access has several benefits, GREAT states open access boosts innovation. BERA and the Estonian Code suggest to consider implications for publishing in outlets that restrict public access.

2.14.2 Duplicate publication
The principle of multiple submission of research findings is not acceptable (Australian Code, OeAWI, APA, ALLEA, Dutch Code, Danish Code, UKRIO, Estonian Code). However, there are cases where for example Australian Code, Open Uni Code and Danish Code would permit duplicate publications, such as review articles, anthologies, collections or translations. ALLEA and Dutch Code allow it when original is duly acknowledged or cited.

Submitting to a second publisher is allowed when the first one has rejected the publication (Open Uni Code, UKRIO).

2.14.3 Retraction

If errors are found or misconduct detected in published works correction (is small part of publication is affected) or retraction should be issued (COPE). If correction or retraction is issued, the reason should be stated, misconduct cases and honest errors should be distinguished and steps taken to avoid stigma and to encourage researchers to report errors (COPE, ALLEA).

2.15 Peer review

The main principle is that researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work (Singapore, similar in Estonian Code, ALLEA, ASA, Australian Code, RCUK, German Code, Dutch Code, UKRIO).

Commitment to the research community includes participating refereeing, reviewing and evaluation. (ALLEA, similar in UKRIO). With public funding comes the responsibility to participate in peer review processes (Australian Code). The Australian Code is very detailed in defining what is peer review, what role it has in research and what are institutions', peer reviewers' and researchers' responsibilities in regards of the topic. The Australian Code gives the principle of encouraging participation in peer review process (Australian Code). The German Code is very detailed about the responsibilities of peer reviewer and their selection process with the aim of avoiding conflict of interest and being transparent about the process.

EC 2008 emphasises the results should be peer reviewed before being disseminated.

APSA and the German Code emphasise that reviewer should disqualify themselves if they have reasonable doubt if they can fulfil the responsibility (e.g. possible conflict of interest).

2.16 Privacy

The principle for respecting the privacy of the persons involved in the research (BERA, BPS, BPS Internet, BSA, Estonian Code, NMSBA, AACS). APSA, AACS and IVSA emphasise the need to minimize intrusions to privacy. SATORI highlights the principle for technology not to harm individual privacy.

In for example internet studies the public/private domain distinction is extremely relevant and needs careful consideration (BPS Internet, also Iphofen 2015).

Research data should be available to other researchers, unless privacy issues prevents it (Australian Code, Danish Code).

2.17 Informed consent

The principle of informed consent which is free (voluntarily given), the participant understands what it is given for, what are the risks involved, that the person has the right to withdraw consent and data (within reasonable time until anonymization is complete) (e.g. Estonian Code, APA, ASA, BERA, BPS, BPS Internet, BSA, ESRC, Iphofen 2015, EC 2009, IVSA, SATORI, Belgian Code, UKRIO, TCPS 2, Argentinian Code, NDA, MRS). Several documents are very detailed about the issue (e.g. APA, ASA, BERA, BPS, BPS Internet, BSA, EC 2009, IVSA).

SAN code and emphasises honesty and states informed consent can only be based on honesty in the communication.

BPS suggest to test taking the informed consent, especially with naïve people whose literacy level is low. The code of NDA highlights the principle of minimizing proxies (people speaking on behalf of others and decide whether to give the consent for participating) and obtaining consent from the potential participant

themselves. If the participant does not want to participate it is unethical to proceed even when parent or legal guardian allows it (NDA).

NDA also highlights that consent is process and participants' behaviour (children getting bored, participants getting agitated etc.) might be a sign that they are withdrawing consent.

BPS Internet specifies for questionnaires that when the information sheet is given in the beginning of the questionnaire, consent can be assumed if the questionnaire has been completed, however it is a common practice to add tick-box.

Several documents state the situations when researcher is justified not to take informed consent.

APA states for psychologists "*(1) where research would not reasonably be assumed to create distress or harm and involves (a) the study of normal educational practices, curricula, or classroom management methods conducted in educational settings; (b) only anonymous questionnaires, naturalistic observations, or archival research for which disclosure of responses would not place participants at risk of criminal or civil liability or damage their financial standing, employability, or reputation, and confidentiality is protected; or (c) the study of factors related to job or organization effectiveness conducted in organizational settings for which there is no risk to participants' employability, and confidentiality is protected or (2) where otherwise permitted by law or federal or institutional regulations.*"

ASA states for sociologists that they are justified not to take informed consent if the research is carried out in public places where privacy is not expected.

IVSA states for visual researchers they are justified not to take informed consent if risk for participants is minimal and the research could not be carried out where formal informed consent would be required. IVSA states in this case approval from institutional review boards is needed. IVSA also states research in public places or publicly-available information about individuals is allowed. IVSA also deals with the waiver of seeking consent from the parent or legal guardian – "*Researchers may seek waivers of parental or guardian consent when (1) the research involves no more than minimal risk for the research participants, and (2) the research could not practicably be carried out were consent to be required, or (3) the consent of a parent or guardian is not a reasonable requirement to protect the child (e.g. neglected or abused children). (c) Usually waivers of consent from a child and a parent or guardian require approval from institutional review boards or authoritative body.*"

2.18 Research subject

The principle is that harm to **research subject** (human beings, animals) should be minimized (e.g. WEF, APA, ALLEA, MoRRi, AACS, MRS), while benefits should be maximized (e.g. WEF, Iphofen 2015, UK Code, UNESCO, SATORI, Dutch Code). There is duty of care for participants (human beings, animals, environment, cultural objects) (Irish Code).

In **animal testing,** 3R[21] principle is referred to (e.g. Estonian Code, Open Uni Code, SATORI). The main idea is to avoid unsubstantiated harm and ensure animal wellbeing, respect animals (e.g. Australian Code, SATORI, UKRIO, Estonian Code, Argentinian Code).

Treatment of **human participants** is related with informed consent, privacy and covert methods. Several codes (e.g. BERA, BSA, Estonian Code, SATORI) are very detailed about participants, and deal with the topic of free will, protection of autonomy, human dignity, privacy, wellbeing, avoiding harm. "*Individuals should be treated fairly, sensitively, and with dignity and freedom from prejudice, in recognition of both their rights and of differences arising from age, gender, sexuality, ethnicity, class, nationality, cultural*

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21   Replace, reduce, refine.

identity, partnership status, faith, disability, political belief or any other significant characteristic." (BERA, SATORI)

Principle of avoiding and reducing harm is presented in e.g. UK Concordat, ASA, BERA, Iphofen 2015, AACS and UNESCO.

Principles of avoiding adverse consequences of declining or withdrawing from participation and prohibition to coerce participants are presented in APA, BERA, ASA, Iphofen 2015, NMSBA. The Australian Code and BSA emphasise that research participants should be provided appropriate summary of the research results.

BERA emphasises fair treatment of research groups especially in a situation where research design gives perceived advantages to one group, for example an intervention turning out to be effective can be offered to control groups after the trial.

Researchers have the obligation to ensure research projects involving human participants, human material or personal data is subjected and has been approved by all applicable ethical and regulatory bodies. (UKRIO, Estonian Code, BERA, Open Uni Code)

Vulnerable groups need special attention and protection from potential stigmatization, marginalisation and damage to their interests (e.g. Estonian Code, similar in ASA, BERA, BPS Internet, BSA, TCPS 2, Iphofen 2015, SATORI, NDA). Sensitivity and awareness toward structural issues (e.g. race, gender, socioeconomic status, LGBT+ issues etc.) is important responsibility for the researcher to the participants (BERA). Researchers have the obligation to protect the vulnerable (SATORI, UKRIO) and enforce special safeguards where needed (APA, UKRIO). Children are included in vulnerable groups (BERA, ASA, BPS, BPS, BSA, Iphofen 2015). BPS Internet describes that vulnerable population includes besides children people with learning or communication difficulties, patients in care, people in custody or on probation, people engaged in illegal activities. If vulnerable people are unable to give consent, it should be sought from their legal guardian (e.g. BPS, BERA, ASA, BPS, IVSA, NMSBA, TCPS 2, MRS).

Iphofen 2015, however, emphasises that vulnerability is a social judgement and therefore there is a risk of patronising some individuals or groups of people. The code of NDA highlights the need to minimize proxies and to respect the assent of potential participants.

NDA also highlights the need to adapt the sampling, carrying out the research and disseminate the results with keeping mind the diversity of disability and engaging disabled people in the process.

2.19 Covert methods

APA, Iphofen 2015, ASA, BERA, BPS, IVSA, BSA, NDA allow covert methods to be used under justified conditions, WCAA is generally against covert research.

The principle in using covert methods is that it should be fully justified (APA, Iphofen 2015, NDA), however the researcher has the obligation to take steps to correct mistrust or other harmful effects that may follow after using these methods, and participants have to be informed *post hoc* (also in BERA and BPS) and participants have the right to withdraw their data.

ASA states 4 conditions when covert methods can be used "*(1) the research involves no more than minimal risk to research participants; (2) deception is justified by the study's prospective scientific, educational, or applied value; (3) equally effective alternative procedures that do not use deception are not feasible; and (4) they have obtained the approval of an authoritative body with expertise on the ethics of social science*" that BERA, BPS, IVSA and Iphofen 2015 agree with.

IVSA explicitly forbids to deceive participants in the aspects that may affect their willingness to participate in the study. BSA states covert methods violate the principle of informed consent and highlights legal framework surrounding privacy may be needed to take into account.

ASA also states on rare occasions when researchers may need to conceal their identity in order to carry out a research they cannot carry if participants know they are researchers.

2.20 Misconduct

All the documents highlight the need to deal with misconduct, however, different documents put the emphasis of responsibility on different partners. The main principle is that researchers should respond to or report about irresponsible research practices (e.g. Singapore, Montreal, COPE, Estonian Code, UK Concordat, ALLEA, Australian Code, Irish Code, RCUK, Finnish Code, Danish Code, Estonian Code, Edinburgh MP). Responsibilities of journal editors, universities, research institutes and funders; institutions with a national responsibility for research integrity is highlighted in ISC.

Many documents define what is considered to be science misconduct. COPE uses it in a broad sense and includes practices that may affect the reliability of the research. UK Concordat names fabrication, falsification and plagiarism (FFP) as research misconduct and adds failure to meet ethical, legal and professional obligations and improper dealing with allegations of misconduct to the list. OeAWI states the motivations – that research misconduct is wilful, conscious or gross negligent violations – and names FFP, obstruction or sabotage of research activities, providing inaccurate information in grant proposal and creating disadvantages for junior scientists and whistleblowers. Open Uni Code defines research misconduct as actions that fall short of the standards required for research integrity and names FFP; dishonesty in proposing, varying out or reporting results; deliberate, dangerous or neglected deviation from accepted practices; failure to follow agreed protocol or accepted practices; failure to exercise due care for avoiding unreasonable risk or harm to research subjects; failure to properly handle information collected during research; facilitating misconduct by collusion or concealment; failure to comply with ethics review; international non-compliance with legal and ethical requirements for conducting the research. The French Code states that concealment of conflict of interest is serious form of misconduct. Irish Code, RCUK, EGE, ALLEA, SATORI and UKRIO also name and define research misconduct. Several documents also give definition to falsification (e.g. Edinburgh MP, UK Concordat, ALLEA, ANR, OeAWI, BERA, Open Uni Code, RCUK, Finnish Code, Iphofen 2015, Argentinian Code), fabrication (e.g. Estonian Code, Edinburgh CI, UK Concordat, ALLEA, ANR, Open Uni Code, RCUK, Finnish Code, Iphofen 2015, Argentinian Code) and plagiarism (e.g. ANR, APSA, APA, ALLEA ASA, OeAWI, BERA, Open Uni Code, IVSA, Finnish Code, Belgian Code, Estonian Code, Argentinian Code), also harassment (APA, APSA, ASA), fraud (APSA, ANR) and bias (SATORI, Iphofen 2015, BPS) as topics are specifically mentioned in some documents. The Danish Code states division of responsibilities ensures research integrity between partners. RCUK highlights the importance of environment which supports good practice.

Responsibilities of r**esearch institutions** are named in several documents. The main principle is that research institutions have the responsibility to respond to irresponsible research practices (Estonian Code). COPE highlights that institutions have the responsibility to inform journals if they have published affected work (both about allegations of research misconduct and findings of misconduct investigations). The Finnish Code states parties concerned should be informed about investigation. The Estonian Code and ANR highlight the responsibility of the institution to provide training and facilities for avoiding misconduct.

Documents also highlight the need for detailed principles for dealing with breaches of principle of research integrity and state that the protocol for dealing should be transparent and fair (e.g. Estonian Code, UK Concordat, Irish Code, ETH Zürich, Finnish Code, ALLEA, German Code, Danish Code, UKRIO). COPE states

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institutions should initiate inquiries and have a system for researching research misconduct. The need for sanctions for research misconduct is highlighted (e.g. PRINTEGER, EGE, ISC, Finnish Code, SAN, RCUK) (see more about in the section of 2.23 *Sanctions*).

PRINTEGER and ISC highlight also the role of national policy makers and state that organisations who report research misconduct in good faith should not be penalised and researchers accused are innocent until proven guilty and thus their privacy should be protected.

2.21 Conflict of interest

The documents agree that researchers should disclose conflicts of interests (financial or others) that could compromise the trustworthiness of their work (Singapore) or their professional judgement (Danish Code) and should disqualify themselves if they have reasonable doubt if they can exercise the responsibility (APSA). Open Uni Code defines conflict of interest as "*situation in which a researcher, or their close family or associates has a private, personal or commercial interest which may influence the objective exercise of any aspect of their University duties*".

Edinburgh CI defines serious conflict of interest which include employee using their university position or compromising research objectivity or independence or using university resources or confidential information to achieve financial or non-financial benefits for themselves or for their relative or friend or conducting business or activity outside the university which affects their ability to perform their duties.

The principles of how to deal with conflict of interest differ between "disclose and avoid" and/or take steps to resolve the conflicts of interest. Edinburgh CI advises to avoid and disclose. The Argentinian Code however suggests to prevent and if they arise to report.

In scientific communication and publications any conflict of interest must be mentioned (Belgian Code).

ASA differentiates conflict of interest (personal interest conflict with professional work) and conflicts of commitments (different professional commitments conflict with each other) and suggest to avoid both.

Open Uni Code and SATORI differentiate actual, potential and perceived conflicts of interests that all need appropriate actions.

In investigations there is a need to find a person who is free from the conflict of interest in cases (COPE).

Principles on how to handle possible conflict of interest in both cases – when someone suspects conflict of interest and if conflict of interest concerns oneself – is given in the Estonian Code.

2.22 Whistleblowing

ANR gives the definition for whistleblower: "*A whistleblower is a physical person who exposes or reports, selflessly and in good faith, a crime or an offence, a serious and obvious breach /.../ of law or regulation, or a serious threat or harm to the public interest, of which he has personal knowledge*." IFLA emphasises whistleblowing is in the public interest. The overall principle for researchers is to report misconduct (Singapore, Edinburgh MP, UK Concordat, APA, ASA, Australian Code, BERA, RCUK, Finnish Code, German Code, UKRIO) and to react to conflict of interest (Estonian Code).

Whistleblower's (whistleblowing done in good faith) identity may need protection (COPE, Estonian Code, ALLEA, ANR, PRINTEGER, Irish Code, EC 2008, German Code, Danish Code, UKRIO), so that their career prospects are not endangered (ALLEA, OeAWI). ANR emphasises that the whistleblower's employee cannot be sanctioned.

PRINTEGER highlights that whistleblowing procedures should be in place and there should be whistleblowing channel that "*is known, safe and works efficiently*", however, the Finnish Code explicitly

forbids anonymous whistleblowing. Procedures for whistleblowers are also named in RCUK, German Code, Danish Code and UKRIO.

2.23 Sanctions

The main principle is that research institution or university agrees on sanctions and procedures for disciplining a staff member and these sanctions are enforced (e.g. Estonian Code, ESRC, Irish Code, RCUK, ALLEA, Australian Code, PRINTEGER, ISC, Danish Code, ANR, APSA, Edinburgh CI). Sanctions should be communicated and implemented (PRINTEGER). Finnish and German codes emphasise penalties must be proportional to the misconduct. Irish Code highlights that after formal investigation and disciplinary sanctions imposed, appeal may be made.

Possible sanctions are named in RCUK (for the researcher and institution): "• *Reject any application under consideration on which the individual is a named applicant or researcher; and/or • Withdraw any funding which the RO is receiving from the Research Councils in connection with research being carried out by the individual; and/or • Prevent the individual from submitting any further applications for funding to the Research Council(s), for any period of time, including indefinitely; and/or • Reclaim from the institution any and all money awarded by the Research Councils for projects involving that individual*." Possible sanctions are named also in EGE (restricting access to future funding calls) and SAN (adding researcher to "black book" and refusing collaboration in the future).

RCUK highlights the role of the institution in failing to comply with its own procedures and principle – then sanctions should follow to the institution e.g. from the funding body not to process further applications.

2.24 Science education

RRI states science education is a tool to improve science teaching, promote science as a career, to provide citizens with skills to participate in discussion and decisions on research and innovation.

UNESCO states the principle of equal opportunities in education and training in order to qualify for research and development careers.

2.25 Teaching, training, supervised students

The main principle is that researchers provide proper training and supervision to their students and only those responsibilities that the person is expected to perform based on their previous training and education are delegated to them (e.g. ASA, Dutch Code, UKRIO, Australian Code).

The German Code emphasises research institutions create standards for mentoring. ASA is very specific about principles in teaching, e.g. ensuring graduate assistants and temporary instructors have the needed knowledge and skills for facilitating learning; obligation to teach research and professional ethics; teaching researcher maintains high level of matter knowledge and pedagogical skills; complete and accurate information about the course is provided, especially about subjects to be covered and bases for evaluation; course materials are chosen based on educational criteria only, without taking into account financial or other incentives; confidentiality of students records and other personal information is kept; proper training is provided to teaching assistants and trainees; personal animosities or intellectual differences should not interfere into students learning, academic progress, or professional development; being alert about entering dual-role relationship with students, because it may lead to perceived or actual favouritism.

APA highlights not requiring students to disclose personal information in course- or program-related activities, but gives the exception if the requirement of personal information is given in admission or in program materials or the information is important in evaluating or assisting student with personal problems. APA explicitly states psychologist does not engage in sexual relationships with students over

whom they have evaluative authority. APSA highlights political scientist does not impose their views on students. APSA also states academic work of the students is not to be expropriated.

The relationship between supervisor(s) and supervisee(s) is dealt with in the Estonian Code, Open Uni Code and Smith 2003. The Danish Code states undergraduate and graduate programmes should include introduction to research integrity and PhD and postdoc programmes specific training in the matter; mentors also should receive special training for supporting their students.

2.26 Training for researchers

The main principle is for the researchers to keep themselves up-to-date in their field and to ensure they have necessary skills and knowledge to carry out the activities (Warwick, UNESCO). The need for training for research integrity is highlighted in WEF, ALLEA, UK Concordat, GREAT, Open Uni Code, UKRIO and Australian Code. Danish Code, PRINTEGER, UKRIO, Irish Code and Estonian Code highlight the **role of the institution** in fostering a culture of research integrity and emphasises the responsibility of the institution for ensuring teaching, training and supervision to the researchers. Danish Code also describes what research integrity teaching, training and supervision should include: principles of research integrity; responsible conduct of research; procedures for handling research misconduct and breaches of responsible conduct or suspicions of it and relevant regulations. ALLEA also highlights the role of the institution, but states also the responsibility of the researchers from different levels in career path to take training in research integrity and also highlight senior leaders have the responsibility to educate their team members in research integrity.

GRC states that **research funding agencies** should promote continual training in research integrity.

2.27 Mentoring

The main principle is for the supervisor to guide the professional development of their students including research integrity (German Code, WEF, UK Concordat, Australian Code, Danish Code, UKRIO, UNESCO, Iphofen 2015). UKRIO highlights the need for qualified mentors while PRINTEGER warns that inadequate mentoring is a risk factor for research misconduct.

The role of the research organisation in mentorship is emphasised in the German Code and Open Uni Code. The Australian Code and Estonian Code highlight the responsibility of research institution to have qualified and trained supervisors and the need to provide students and researchers with adequate materials and instructions for research integrity.

2.28 Concluding remarks

The analysis of issues shows there is high level of agreement on every issue presented in this document.

The main differences or potential for conflicting understandings emerge in the topic of confidentiality, especially confidentiality towards sponsors or grantors. Some of the documents highlight the need for full openness, others emphasise the need to maintain a grantor's anonymity if it does not endanger the integrity of the researcher. (See more from 2.7 *Confidentiality*).

Potential conflict emerges also with regard to results where the Australian code sees the possibility that peer review may be delayed until after the results are delivered to the sponsors, however EC 2008 emphasises results should be peer reviewed before dissemination.

Similar conflict runs with principles under the topic of finances where some codes highlight the need to disclose all relevant financial ties, others (e.g. ASA) sees the possibility for special circumstances where only the nature and interest of the sponsor is given without the sponsor's name.

Another potential conflict is related to dissemination and with the question of what restrictions if at all should be accepted. The BSA explicitly states that sociologists should avoid all restrictions for publishing

or disseminating their results. BERA on the other hand suggest in regards of controversial results to seek balance between researcher's need to publish and stakeholder's concerns.

In regards of informed consent, the overall agreement is that informed consent should be sought, however ASA allows sociologists to not to take informed consent from participants/subjects if the research is carried out in public places where privacy is not to be expected.

Another topic is related to the implementation of GDPR in EU. Several points in different topics contradict GDPR, for example asking for broad consent for research projects which is allowed in some codes (e.g. BERA and BPS). ASA also allows researcher to hide their identity when carrying out research that cannot be carried out if participants know they are researchers, which is now not allowed under GDPR in the European Union.

With regard to who should be sanctioned when research misconduct is detected, the overall agreement seems to be that the researcher solely is responsible. RCUK on the other hand emphasises the need to sanction also the institution.

LITERATURE

Nr	Abbreviation	DOCUMENT NAME	
1	AAA	American Anthropological Association - Briefing paper on Determining what constitutes a Health emergency and hot to respond in the course of anthropological research within human subject	http://www.americananthro.org/ParticipateAndAdvocate/Content.aspx?ItemNumber=13140
2	AACS	ASSOCIATION FOR APPLIED AND CLINICAL SOCIOLOGY: Ethics Standards for Sociological Practitioners	http://www.aacsnet.net/mission/
3	ALLEA	European Code of Conduct for Research Integrity	http://www.allea.org/publications/joint-publications/european-code-conduct-research-integrity/
4	APA	American Psychological Association - Ethical Principles of Psychologists and code of conduct - 2017	http://www.apa.org/ethics/code/
5	APSA	A guide to professional ethics in political science - Second edition revised 2012	http://www.apsanet.org/portals/54/Files/Publications/APSAEthicsGuide2012.pdf
6	Argentinian Code	Proposals for a socially responsible science and technology	http://www.cecte.gov.ar/pdf/000072-en.pdf
7	ASA	ASA Code of Ethics	http://www.asanet.org/code-ethics
8	Australian Code	Australian Code for the Responsible Conduct of Research	https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/r39.pdf
9	Belgian Code	Codes of Ethics for Scientific Research in Belgium	https://www.kuleuven.be/english/research/integrity/practices/belspo-code
10	BERA	Ethical Guidelines for Educational Research	https://www.bera.ac.uk/researchers-resources/resources-for-researchers

11	BPS	British Psychological Society - Code of Ethics and conduct - 2018	https://www.bps.org.uk/news-and-policy/bps-code-ethics-and-conduct
12	BPS Internet	British Psychological Society Ethics Guidelines for Internet-Mediated Research (2017)	https://www.bps.org.uk/news-and-policy/ethics-guidelines-internet-mediated-research-2017
	BPS Human	British Psychological Society – Code of Human Research Ethics	
13	BPS Teaching	British Psychological Society Guidance on Teaching and Assessment of Ethical Competence in Psychology Education (2015)	https://www.bps.org.uk/news-and-policy/guidance-teaching-and-assessment-ethical-competence-psychology-education-2015
14	Brussels Declaration	The Brussels Declaration - Ethics and Principles for Science and Society	https://www.acsh.org/news/2017/02/22/brussels-declaration-ethics-and-principles-science-and-society-10876
15	BSA	Guidelines on Ethical Research	https://www.britsoc.co.uk/ethics
16	COPE	Cooperation between research institutions and journals on research integrity cases: guidance from the Committee on Publication Ethics (COPE)	https://publicationethics.org/files/Research_institutions_guidelines_final_0_0.pdf
17	Danish Code	Danish Code of Conduct for Research Integrity	https://ufm.dk/en/publications/2014/the-danish-code-of-conduct-for-research-integrity
18	Durham	Community-based participatory research. A guide to ethical principles and practices - 2012	https://www.dur.ac.uk/resources/beacon/CBPREthicsGuidewebNovember20121.pdf

19	Dutch Code	The Netherlands Code of Conduct for Academic Practice	http://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/The_Netherlands_Code%20of_Conduct_for_Academic_Practice_2004_(version2014).pdf
20	EC 2008	COMMISSION RECOMMENDATION of 07/02/2008 on a code of conduct for responsible nanosciences and nanotechnologies research	http://ec.europa.eu/research/science-society/document_library/pdf_06/nanocode-apr09_en.pdf
21	EC 2009	European Commission, Data Protection and privacy ethical guidelines, Expert working group on data protection and privacy, 2009	http://ec.europa.eu/research/participants/data/ref/fp7/89827/privacy_en.pdf
22	Edinburgh CI	University of Edinburgh Policy on conflict of interest	https://www.ed.ac.uk/governance-strategic-planning/research/research-integrity/policies
23	Edinburgh MP	University of Edinburgh Research misconduct policy	https://www.ed.ac.uk/governance-strategic-planning/research/research-integrity/policies
24	EGE	European Group on Ethics in Science and New Technologies: Statement on the formulation of a code of conduct for research integrity for projects funded by the European Commission	https://ec.europa.eu/research/ege/pdf/research_integrity_ege_statement.pdf
25	ESRC	Economic Social Research Council - Framework for Research Ethics (FRE)	https://esrc.ukri.org/funding/guidance-for-applicants/research-ethics/
26	Estonian Code	Estonian Code of Conduct for Research Integrity	https://www.eetika.ee/en/ethics-estonia/estonian-code-conduct-research-integrity
27	ETH Zürich	Guidelines for Research Integrity	https://www.ethz.ch/content/dam/ethz/special-interest/itet/department/Studies/ETH_Research_Integrity_2011.pdf

28	Finnish Code	Responsible conduct of research and procedures for handling allegations of misconduct in Finland	http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf
29	French Code	Ethics and Integrity Scientific Charter	http://www.agence-nationale-recherche.fr/en/about-anr/quality-and-ethics/code-of-ethics/
30	German Code	Safeguarding Good Scientific Practice	http://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/index.html
31	GRC	Statement of Principles for Research Integrity	https://www.globalresearchcouncil.org/fileadmin//documents/GRC_Publications/grc_statement_principles_research_integrity_FINAL.pdf
32	GREAT	Guidelines for Responsible Research and Innovation	http://www.great-project.eu/Deliverables10
33	ICC/ESOMAR	ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics	https://www.esomar.org/uploads/pdf/professional-standards/ICCESOMAR_Code_English_.pdf
34	IFLA	IFLA Code of Ethics for Librarians and other Information Workers	https://www.ifla.org/files/assets/faife/publications/IFLA%20Code%20of%20Ethics%20-%20Long_0.pdf
35	Iphofen 2015	Research Ethics in Ethnography/Anthropology	http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/ethics-guide-ethnog-anthrop_en.pdf
36	Irish Code	National Policy Statement on Ensuring Research Integrity in Ireland	http://www.iua.ie/wp-content/uploads/2014/06/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf
37	ISC	Statement on promoting the integrity of science and scientific record	https://council.science/cms/2017/04/CFRS_research_integrity_2008.pdf

38	IVSA	Code for Research Ethics and Guidelines	https://visualsociology.org/?page_id=405
39	Montreal	Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations	https://wcrif.org/guidance/montreal-statement
40	MoRRI	Monitoring the Evolution and Benefits of Responsible Research and Innovation (MoRRI) Analytical report on the dimension of research and innovation ethics	https://morri.netlify.com/reports/2015-04-01-d2.4.1
41	MRS	Market Research Society Code of Conduct	https://www.mrs.org.uk/standards/code-of-conduct
42	NDA	Ethical Guidance for Research with People with Disabilities	http://nda.ie/Policy-and-research/Research/Research-Ethics/Ethical-Guidance-for-Research-with-People-with-Disabilities.html
43	NMBSA	The NMSBA Code of Ethics for the Application of Neuroscience in Business	http://www.nmsba.com/ethics
44	Norwegian Code	General guidelines for research ethics	https://www.etikkom.no/en/ethical-guidelines-for-research/general-guidelines-for-research-ethics/
45	NRC	Code of Conduct of the National Research Council of Canada	https://www.nrc-cnrc.gc.ca/eng/about/ethics_integrity/code_conduct.html

46	OeAWI	Austrian Agency for Research Integrity – Guidelines for good scientific practice (OeAWI Guidelines for good scientific practice)	https://www.cdg.ac.at/fileadmin/main/documents/Sonstige_Dokumente/160418_OeAWI_Richtlinien_Broschuere_DE_EN.pdf
47	Open Uni Code	Code of Practice for Research at The Open University	http://www.open.ac.uk/research/sites/www.open.ac.uk.research/files/files/ecms/research-pr/web-content/Code-of-Practice-for-Research-at-The-Open-University-FINAL-for-the-external-research-website-July-2017.pdf
48	Open Uni principles	Open University Ethics Principles for Research with Human Participants	http://www.open.ac.uk/research/sites/www.open.ac.uk.research/files/files/Documents/Ethics-Principles-for-Research-with-Human-Participants.pdf
49	PRINTEGER	The Bonn PRINTEGER Statement	https://printeger.eu/the-bonn-printeger-statement/
50	Privacy by Design	Operationalizing Privacy by Design: A Guide to implementing Strong Privacy Practices	http://www.ontla.on.ca/library/repository/mon/26012/320221.pdf
51	RCUK	RCUK Policy and Guidelines on Governance of Good Research Conduct	https://www.ukri.org/files/legacy/reviews/grc/rcuk-grp-policy-and-guidelines-updated-apr-17-2-pdf/
52	RRI	RRI Tools – A practical guide to responsible research and innovation – key lessons from RRI Tools	https://www.rri-tools.eu/documents/10184/16301/RRI+Tools.+A+practical+guide+to+Responsible+Research+and+Innovation.+Key+Lessons+from+RRI+Tools
54	SAN	San Code of Research Ethics	http://trust-project.eu/wp-content/uploads/2017/03/San-Code-of-RESEARCH-Ethics-Booklet-final.pdf
55	SATORI	SATORI – A reasoned proposal for shared approach to ethics assessment in the European context - May 2017	http://satoriproject.eu/media/D4.1_Proposal_Ethics_Assessment_Framework.pdf
56	Singapore	Singapore Statement on Research Integrity	https://wcrif.org/guidance/singapore-statement

57	Smith 2003	Five principles for research ethics	http://www.apa.org/monitor/jan03/principles.aspx
58	TCPS 2	Tri-Council Policy Statement – Ethical Code of conduct for research involving humans – 2014	http://www.pre.ethics.gc.ca/pdf/eng/tcps2-2014/TCPS_2_FINAL_Web.pdf
59	UE-USR	UE-USR Project standards	http://www.eu-usr.eu/wp-content/uploads/2014/09/USRstandardsv15.pdf
60	UK Code	Universal ethical code for scientists	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/283157/universal-ethical-code-scientists.pdf
61	UK Concordat	The concordat to support research integrity	https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2012/the-concordat-to-support-research-integrity.pdf
62	UKRIO	CODE OF PRACTICE FOR RESEARCH. Promoting good practice and preventing misconduct	http://ukrio.org/publications/code-of-practice-for-research/
63	UNESCO	UNESCO Recommendation on Science and Scientific Researchers, 13 November 2017	http://portal.unesco.org/en/ev.php-URL_ID=49455&URL_DO=DO_TOPIC&URL_SECTION=201.html
64	Warwick	Warwick Research Code of Practice	https://warwick.ac.uk/services/ris/research_integrity/code_of_practice_and_policies/statement_ethical_conduct_research
65	WCAA	World Council of Anthropological Association - WCAA Ethics Taskforce Report November 2012	https://www.wcaanet.org/about/task_force.shtml
66	WEF	World Economic Forum WEF Young Scientists community Code of Ethics 2016	http://www3.weforum.org/docs/WEF_Code_of_Ethics.pdf

ANNEX 1. CODE TREE

Category	Sub-category	Specification
Values	Accuracy	
Values	Autonomy	
Values	Competence	
Values	Cooperation	
Values	Cooperation	Democratic participation, inclusion
Values	Diversity	
Values	Excellence	
Values	Freedom	
Values	Freedom	Freedom of inquiry
Values	Freedom	Freedom of expression
Values	Freedom	Academic freedom
Values	Good stewardship	
Values	Honesty	
Values	Independence	
Values	Impartiality, neutrality	
Values	Justice, fairness, equality	
Values	Justice, fairness, equality	Equity
Values	Justice, fairness, equality	Equality
Values	Justice, fairness, equality	Fairness
Values	Objectivity	
Values	Openness	
Values	Openness	Adaptiveness
Values	Research Integrity	
Values	Respect and caring	
Values	Respect and caring	Privacy
Values	Respect and caring	Care
Values	Respect and caring	Beneficience
Values	Respect and caring	Dignity
Values	Responsibility	
Values	Responsibility	Accountability
Values	Responsibility	Social responsibility
Values	Rigour	
Values	Safety	
Values	Safety	Caution
Values	Timeliness	
Values	Transparency	
Values	Trust	

Values	Trust	Confidence
Values	Trust	Reliability, trustworthiness
Values	Truth	
Values	Truth	Validity
Values	Truth	Reliability
Values	Truth	Verifiability
	Issues	
Issues	Acknowledgment	
Issues	Authorship	
Issues	Collaborative research	
Issues	Compliance with laws and regulations	
Issues	Concerns about naturalness	
Issues	Confidentiality	
Issues	Conflict of interest	
Issues	Conflicts, disagreements	
Issues	Consulting	
Issues	Covert methods	
Issues	Cultural environment	
Issues	Data	
Issues	Dissemination	
Issues	Dissemination	Open Access
Issues	Dissemination	Access to information
Issues	Dual use /Misuse	
Issues	Finances	
Issues	Impacts and applications	
Issues	Informed consent	
Issues	Intellectual Property	
Issues	Misconduct	
Issues	Misconduct	Harrassment
Issues	Misconduct	Fraud
Issues	Misconduct	Plagiarism
Issues	Misconduct	Falsification
Issues	Misconduct	Fabrication
Issues	Monitoring	
Issues	Natural environment	
Issues	Peer Review	
Issues	Planning	
Issues	Privacy	
Issues	Public Engagement	

Issues	Publication	
Issues	Publication	Duplicate publication
Issues	Publication	Retraction
Issues	Quality of Research	
Issues	Questionable practices	
Issues	Questionable practices	Bias
Issues	Research Environment	
Issues	Research subjects	
Issues	Research subjects	Animal testing
Issues	Research subjects	Human participants
Issues	Risk assessment	
Issues	Sanctions	
Issues	Science education	
Issues	Teaching, training, supervising students	
Issues	Training for researchers	
Issues	Training for researchers	Mentoring
Issues	Vulnerable groups	
Issues	Whistleblowing	