

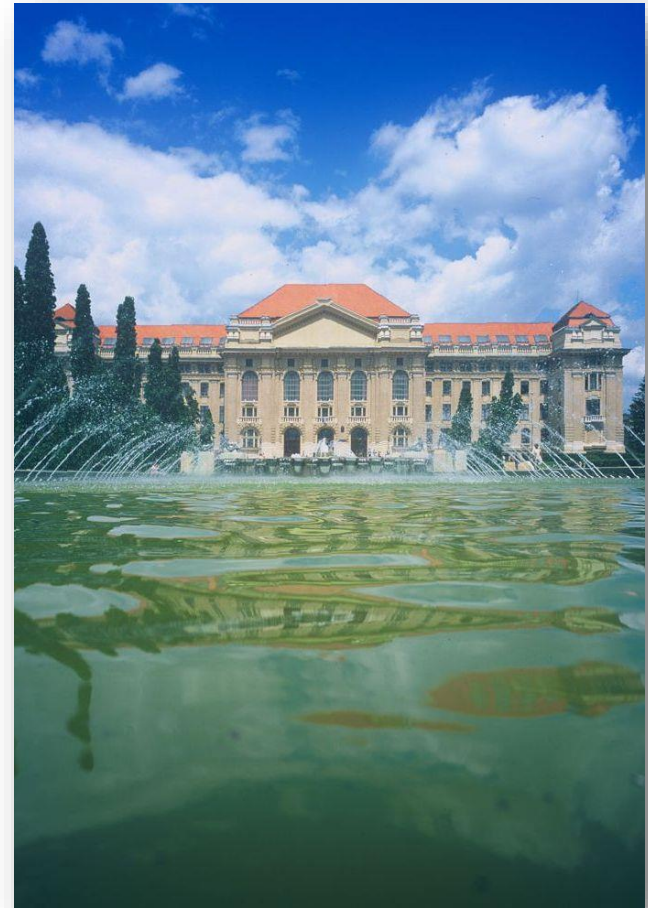
University of Debrecen

Code of Conduct
for
Research Integrity

Science ethic codes
in
Europe and Hungary

László Fésüs

Február 08. 2019



SCIENCE ETHICS

RESPONSIBILITY

TRUST CREDIBILITY

„External”, science ethics in a broad sense

Issues in science and society context, general ethical aspects and consequences of scientific research, freedom of research and limits of this freedom

„Internal” science ethics

Integrity of the researcher, ethical rules and self regulation of research activity, behavior norms of proper research activity, recognition and handling of research misconduct.

There is no a sharp borderline between the two

SCIENCE ETHICS

RESPONSIBILITY

TRUST CREDIBILITY

„External”

Scientific research and technical developments continuously lead to results which raise new ethical challenges and considerations., Nowadays this especially frequent in biomedical research and biotechnology (cloning organisms, stem cell therapy, editing human genomes, GMO, synthetic biology, bioterrorism, etc).

**Unfortunately, open and unbiased discussion or interpretation of ethical and beneficial aspects of new opportunities provided by science is often unsuccessful in society and with political decision makers.
Different regulations and practice varying by countries.**

Responsibility of scientists is critical, though many of them are not active in discussions with society or not trained in or familiar with science ethics.

SCIENCE ETHICS RESPONSIBILITY TRUST CREDIBILITY

INTERNATIONAL ORGANIZATIONS IN SCIENCE ETHICS

UNESCO

Commission on the Ethics of Scientific Knowledge and Technology (COMEST – 1998) Human rights, environment, climate, nanotechnology,

World Medical Association (WMA) Helsinki Declaration 1964

Basic document of ethics related biomedical research in humans

International Council of Science (ICSU – 1931)

Committee: „Freedom and Responsibility in the Conduct of Science”

InterAcademy Council (IAC - 2000)

Report: „Responsible Conduct in the Global Research Enterprise (IAC-IAP 2012)

SCIENCE ETHICS RESPONSIBILITY TRUST CREDIBILITY

INTERNATIONAL ORGANIZATIONS IN SCIENCE ETHICS

Council of Europe „Steering Committee on Bioethics” (CDBI – 1992)

It has a determining role in regulation of medical research in Europe.

In 1997: „Oviedo Convention on Human Rights and Biomedical Research”
signed so far by 27 European country – including Hungary

Compulsory documents::

Prohibition of human cloning

Prohibition of trading human organs

Regulation of biomedical research

Regulation o genetic studies for health

**Recommendations: Xenotransplantation, Protection of the rights
of mentally ill**

SCIENCE ETHICS RESPONSIBILITY TRUST CREDIBILITY

INTERNATIONAL ORGANIZATIONS IN SCIENCE ETHICS

EUROPEAN UNION

European Group on Ethics in Science and New Technologies (EGE)
advises the president of EU

European Academies Science Advisory Council for EU (EASAC)
Statements and reports on various issues like synthetic biology,
„Guidelines for scientific policy advice”,

**There are EU directives for human biomedical studies, testing of
pharmaceuticals drugs, animal experiments,**

SCIENCE ETHICS RESPONSIBILITY TRUST CREDIBILITY

„Internal” science ethics

Integrity of the researcher, ethical rules and self regulation of research activity, behavior norms of proper research activity, recognition and handling of research misconduct.

Research misbehavior and misconduct in science are more and more frequent

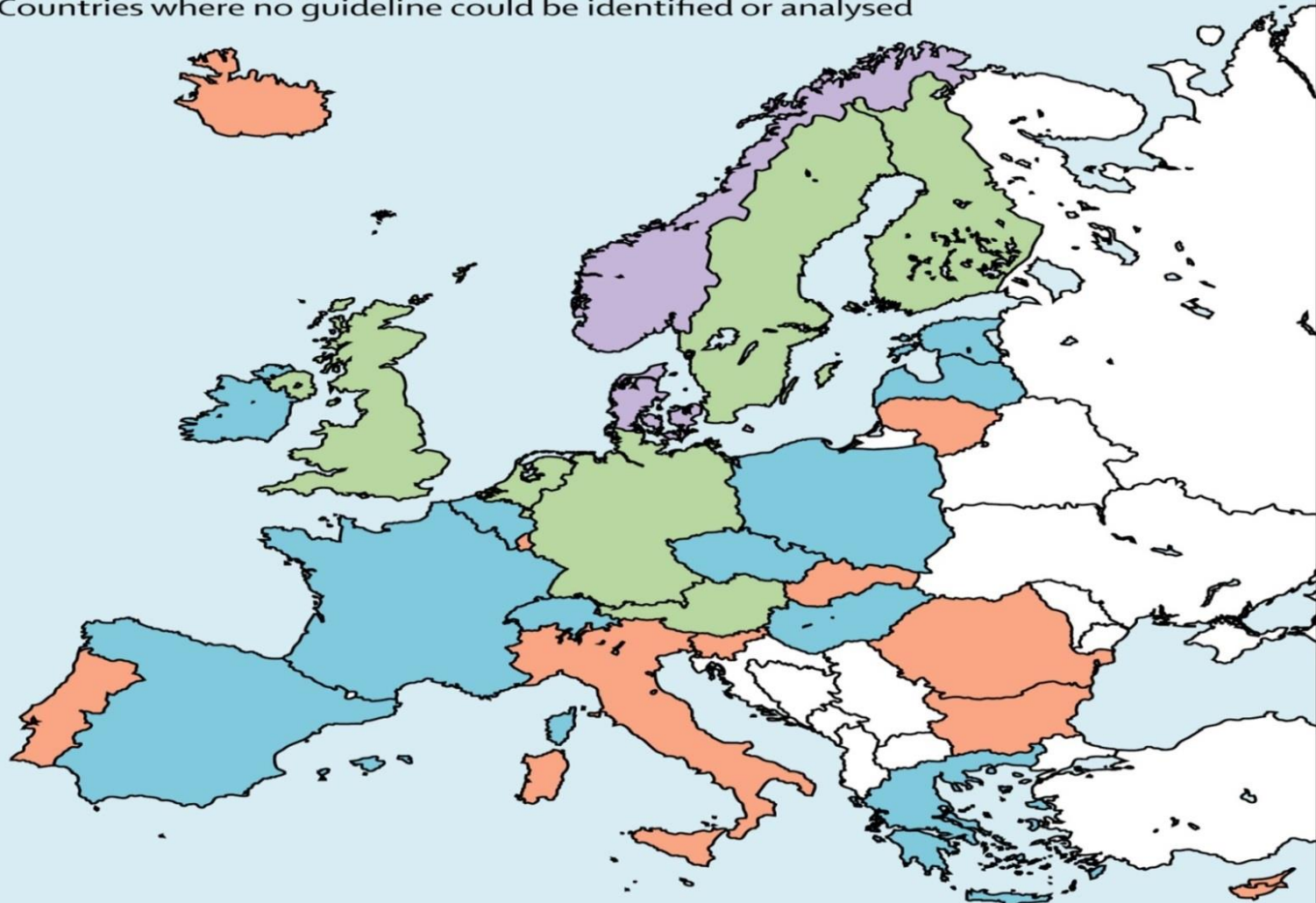
As a result codes of conduct for research integrity have been formulated and published.

Increased attention and activity at national and international levels.

Varies by countries

•

- Countries having a national framework to deal with research integrity or misconduct, established by law
- Countries having a national framework (or equivalent) to deal with research integrity or misconduct, not established by law
- Countries that do not have a national framework to deal with research integrity or misconduct
- Countries where no guideline could be identified or analysed



**„Guidance on research integrity: no union in Europe.”
Goecharle, Nemery and Dierickx (2013) Lancet 381: 1097-1098**

Topology of national policies/guidelines on RI (2013-2017)

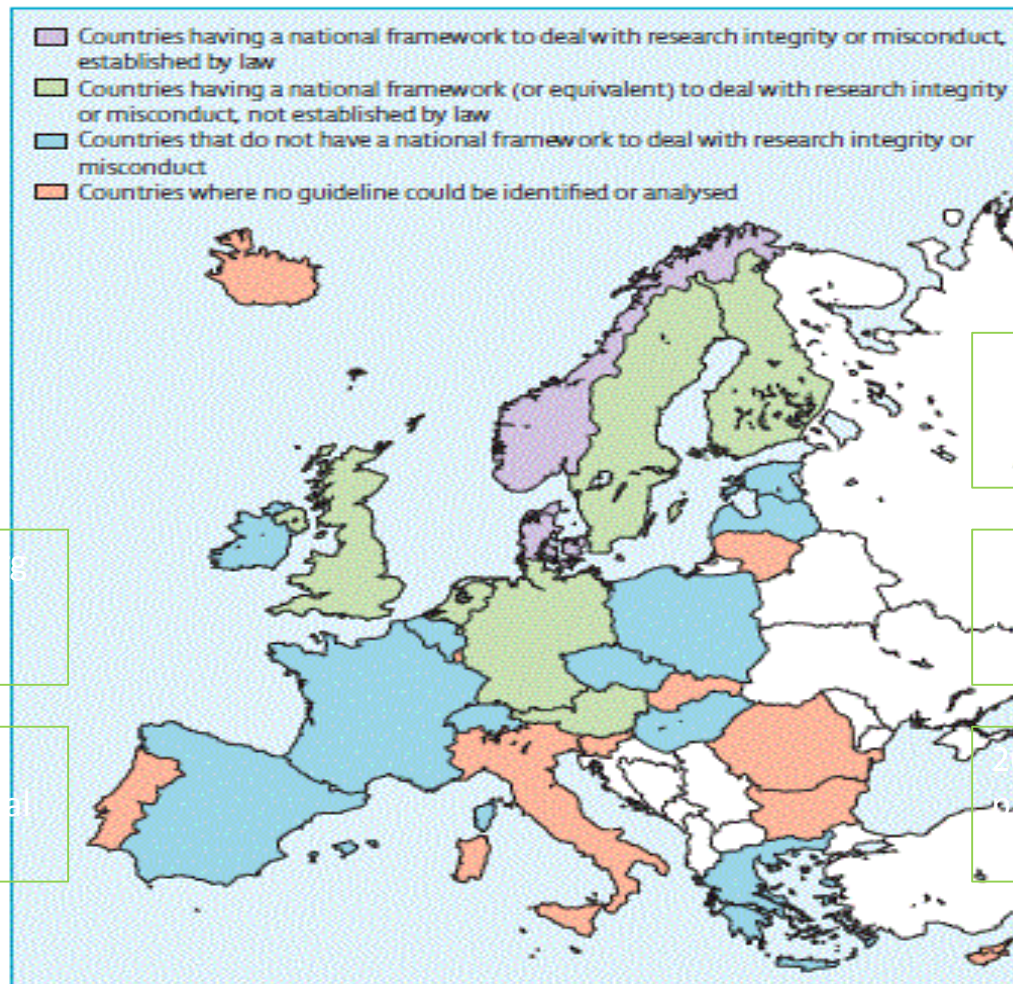
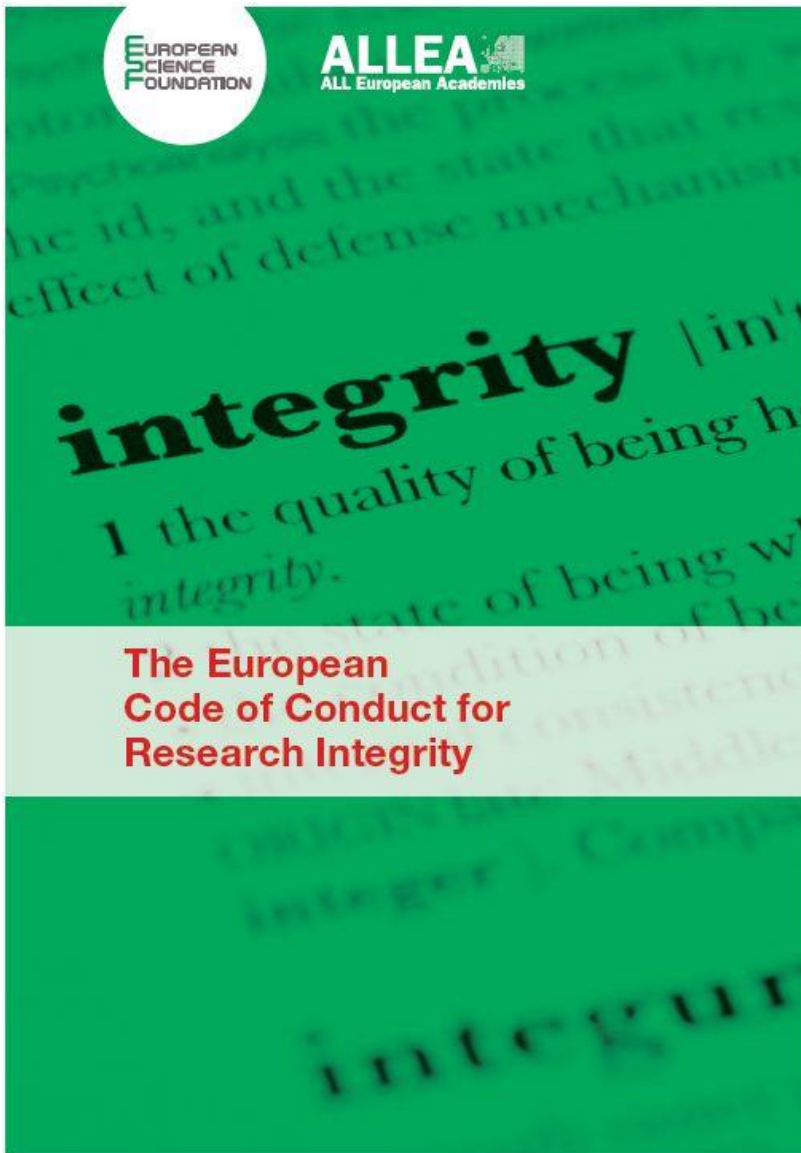


Figure: Classification of countries belonging to the European Union and European Free Trade Association according to some broad categories defined by how they deal with scientific integrity

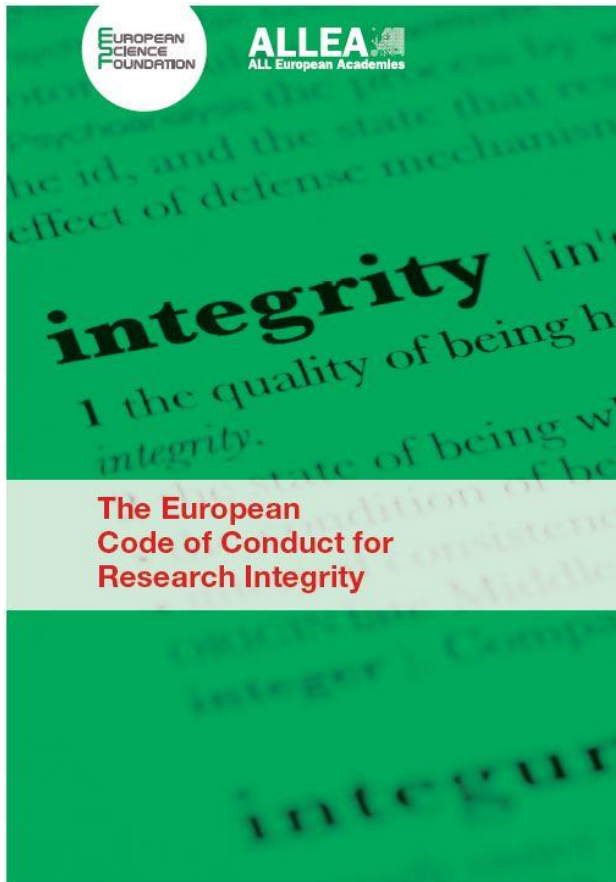


„Science as the process of knowledge augmentation is embedded in a wider socio-ethical context, and scientists must be aware of their **specific responsibility towards society and the welfare of mankind.**”

In this Code, however, we confine ourselves to standards of integrity while conducting research, and do not consider this wider socio-ethical responsibility.”

„The standards and principles discussed refer to **fundamental and universal** norms for responsible conduct in research. There is no need for cultural or regional adaptations or compromises in a Code of Conduct.”

2010



www.allea.org

2017



http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

A living document that is updated regularly and that allows for local or national differences in its implementation.

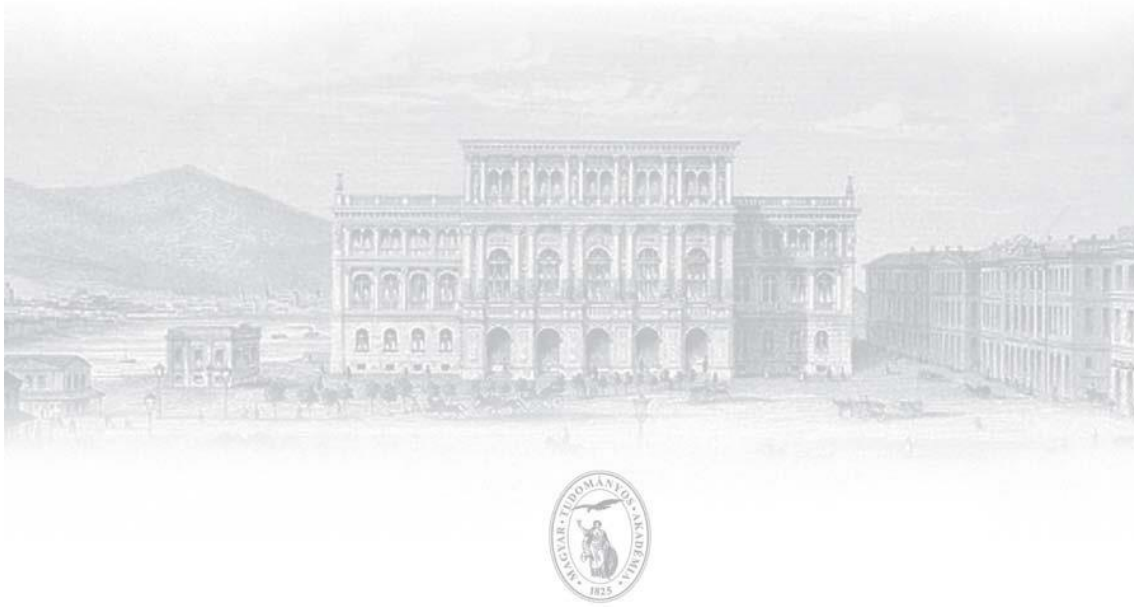
List of stakeholders

Multilateral stakeholders organisations that provided written feedback* and/or participated at the stakeholder consultation meeting in Brussels in November 2016*:

- BusinessEurope**
- Centre for European Policy Studies (CEPS)*
- Committee on Publication Ethics (COPE)**
- Conference on European Schools for Advanced Engineering Education and Research (CESAER)**
- DIGITALEUROPE**
- EU-LIFE**
- European Association of the Molecular and Chemical Sciences (EUCHEMS)**
- European Association of Research and Technology Organisations (EARTO)**
- European Citizen Science Association (ECSA)*
- European Commission**
- European Group on Ethics in Science and Technologies (EGE)*
- European Network of Research Integrity Offices (ENRIO)**
- European University Association (EUA)**
- Euroscience**
- FoodDrinkEurope**
- Global Young Academy (GYA)**
- League of European Research Universities (LERU)**
- Open Access Infrastructure for Research in Europe (OpenAIRE)**
- Open Access Scholarly Publishers Association (OASPA)*
- Sense about Science*
- Science Europe**
- Young European Associated Researchers (YEAR)**
- Young European Research Universities Network (YERUN)**



In April 2017
this became
the official
code of conduct
of the
European Union



Science Ethics Code of the Hungarian Academy of Sciences

2010

Standing Committee on Science and Ethics

Hungarian Academy of Sciences



The Standing Committee on Science and Ethics was established at the initiative of the leadership of the HASC in 1985 for giving advise on issues related to science ethics and to deal with cases of misconduct .

Each of the eleven sections of the HASC nominates 2 members (one of the two can be a member of HASC) to serve in the Committee; they are elected by the Assembly of HASC for a three years period.

One of the 22 members is elected by the Committee members to serve as chairperson.

The Committee is autonomous, responds only to the Assembly of HASC, works on the basis of „The Science Ethics Code of The Hungarian Academy of Sciences”.

The Science Ethics Code of the Hungarian Academy of Sciences



Proposed and formulated by the Standing Committee on Science and Ethics.

The document „Code of Conduct for Scientific Integrity” of ALLEA and ESF was used as a reference and for steering.

It serves as the general guide for the Hungarian research institutions and universities and has become the basic reference document in Hungary.

The Science Ethics Code of the Hungarian Academy of Sciences



Introduced by a

MEMORANDUM ON MORAL AND ETHICAL QUESTIONS OF SCIENTIFIC RESEARCH

- **The autonomy of scientific research and the obligations of researcher**
- **Moral self-control of scientific research**
- **Dangers of infringing upon science ethic norms**
- **The role of the Hungarian Academy of Sciences in maintaining the integrity of science and ethics**

The autonomy of scientific research and the obligations of researchers

Scientific research shall **be independent, unbiased, and autonomous.**

The realization of this is **often hampered** or even prevented by strong personalities or institutions, political pressure, economic or financial interest.

However, it must be seen clearly that the researcher shall fulfill his/her task in order to produce value: his/her presumptions, starting points of research, the selection of the research object, the method of collecting data, and the effect of its results and discoveries on society **are connected to the moral, ethical and social relations in the midst of which science is proceeding.**

Moral self-control of scientific research

Extended administrative duties, a lack of time, financial austerity, tensions generated by competition, ever harder competition for resources, the possibilities provided by the internet, human frailty and social changes are all factors raising the **temptation for the researcher** to achieve fast scientific success by questionable and unacceptable means, or to try to gain more attention to him/herself than deserved.

Therefore it is necessary that rules laid down in a **code of conduct** delimit such attempts so that **scientific research remains moral and authentic.**

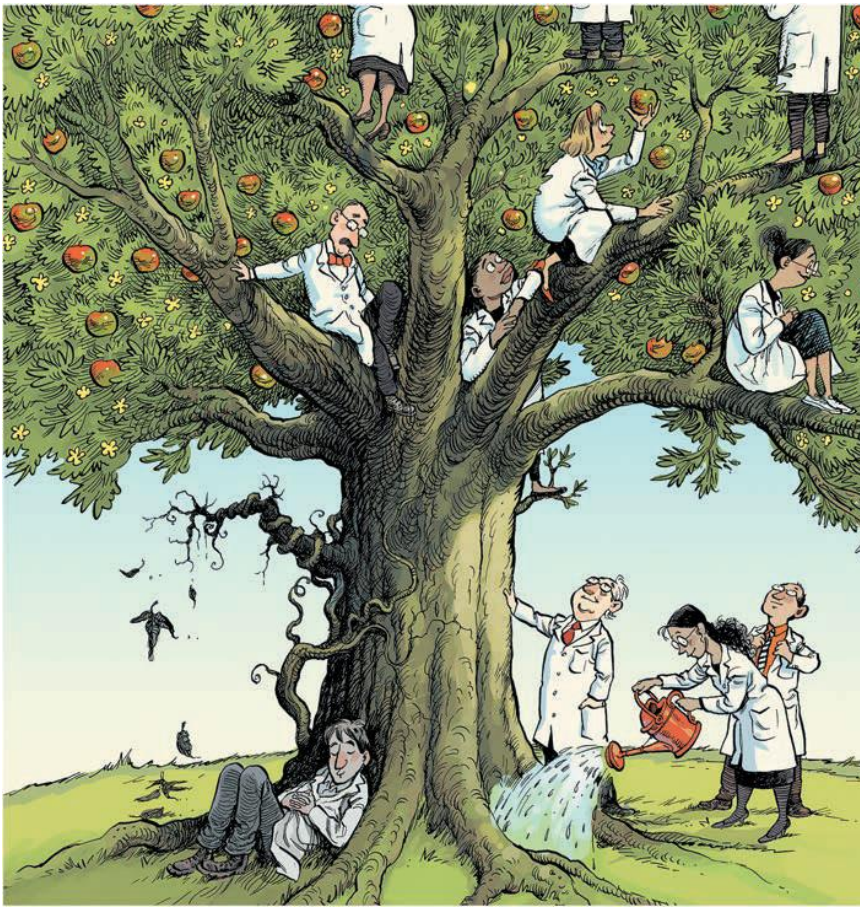
Dangers of infringing upon science ethic norms

The researcher's behavior going against science ethics is **harmful to science itself** as it can give false guidelines to other researchers and so it can result in a continuous misrepresentation.

Behavior infringing upon science ethic can be **harmful to society** as well: false research may result in e.g. the commercial marketing of hazardous medicines or other industrial products. Further, if science policy or legislation is based on false research results, the harmful consequences are unforeseeable.

It can also have **a harmful effect on the trust of the public in science.**

Finally, behaviour infringing upon science ethic can also be **harmful to the researcher him/herself** since sooner or later he/she will be rejected by the researcher community.



Stop ignoring misconduct

Efforts to reduce irreproducibility in research must also tackle the temptation to cheat

Donald Kornfeld and Sandra Titus
Nature September 1, 2016

A **metastudy** (D. Fanelli PLoS ONE 4, e5738; 2009) and a detailed screening of all images in papers accepted by The Journal of Cell Biology (M. Rossner The Scientist 20 (3), 24; 2006) each suggest that roughly 1% of published papers are fraudulent. That would be about 20,000 papers worldwide each year.”

A review of 2,047 life-science papers **retracted** from 1973 to 2012 found that around 43% were attributed to fraud or suspected fraud.

A compilation of anonymous surveys suggests that 2% of scientists and trainees admit that they have fabricated, falsified or modified data.

More than 1,000 postdocs found that more than **one-quarter would select or omit data** to improve their chances of receiving grant funding.

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Fundamental moral and ethical principles of scientific research

Honesty in presenting scientific goals and research intentions, a precise presentation of scientific methods, procedures and interpretations, and honesty also in explaining possibilities, dangers and justifiable claims inherent in the possible application of results

Reliability in performing research, recording, storing and presenting data. Eliminating negligence and inattention. Full reporting on the accomplishments and results of previous research.

Objectivity: interpretations and conclusions must be exclusively founded on facts or impartial and logical proof and on data the correctness of which can be verified at least on a theoretical level.

Fundamental moral and ethical principles of scientific research

Impartiality and independence from any interested party or group interest, from ideological or political pressure groups, and from economic or financial influence.

Openness in discussing the results with other researchers and contributing to the augmenting of public knowledge through the publication of results.

Duty of care for participants in and the subjects of research, be they human beings, experimental animals, the environment, or cultural objects.

Good research practices are based on fundamental principles of research integrity. They guide researchers in their work as well as in their engagement with the practical, ethical and intellectual challenges inherent in research.

These principles are:

- **Reliability** in **ensuring the quality** of research, reflected in the design, the methodology, the analysis and the use of resources.
- **Honesty** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.
- **Respect** for colleagues, research participants, society, ecosystems, cultural heritage and the environment.
- **Accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts.



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Performing scientific research

Planning the research program

Defining the goals of research

The validity of the principle of freedom of scientific research **shall not mean that the planning of the particular research program is unlimited**. Such restrictions may arise especially in the case of questionable research goals and methods, or indeed if the research planned may endanger or injure the individual, society, or the environment.

Morality and quality of research

The morality and quality of research presupposes **self-critical and ethical judgment** on the part of both the researcher and the scientific public.

It is especially important that **unrealistic goals should not be conceived** of as research topics, and the researcher should not arouse unfounded expectations.

It is necessary to consider the **originality of the problem arising, the preliminary data**, the necessary **financial** and other circumstances.

The research should **not be determined by an effort to produce fast results** or the largest possible number of publications.

Documentation of the research plan

The research plan shall be recorded in a form stipulated by the financier of the research. Generally, the research plan includes **who is responsible** for the research program, what is the **role of the participants**, what is the form and resource of the financing of the research, and **how data and experimental observations shall be processed**.

Clarification and recording of influence and incompatibility

Supporters of the research and external financiers shall accept that the researcher performs his or her work **without being influenced**. However, **if by any special reason the research is influenced, it must be clearly stated** under what circumstances and to which extent this is occurring whether during planning, performing, or in the course of the reviewing and publishing of data..

Considering patents

In case the possibility or consideration of patent application arises, **necessary rights and obligations** shall be clarified in time, in an agreement concluded between participating persons and institutes and the supporters of the research, preferably in a written form.

Fulfilment of the research program

Documentation of data and other research materials

In the case of sciences performing experiments and observations, - **data shall be accurately documented so that the research can be controlled and varified.** Data and other documentation materials produced during the research, both those contained in electronic data storage devices and hard copies shall be stored in a way that the damage, loss or manipulation thereof cannot occur. In case loss of data occurs, it must be documented separately.

Following the closure of the research program the program leader must see that after the completion of the program the **data and documentation materials are stored for a time accepted and common in the respective research area.**

Handover of the information relating to the research program

Within the research working group the free circulation of information relating to the research shall be ensured. During the execution of the research program all participants shall be aware of what can be revealed on the research to persons outside the research.

Following the accomplishment of the research program, data and other documentation materials necessary for the data **to be controllable or reproducible** or for the program **to be continued** must be **made available** for such purposes.

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Communication of scientific results

The primary forum the researcher reports on his or her results and publishes them shall be a scientific communication (publication) with the form accepted in the respective area of science and produced on the basis of independent professional review procedure.

The scientific communication

A scientific communication must be **published in a recognised periodical or book published in printing or electronically and having an independent editorial committee**. Prior to the publication, the scientific results may be placed in an internationally known archive, but this cannot be deemed a scientific communication. Indicating a non-scientific work (informative article, communication not published in a professional issue, educational excerpt etc.) as scientific communication constitutes an ethical misconduct.

Entirety and impartiality

Results shall be published **impartially and in their entirety**. In the communication the description of **methods applied** in experiments and examinations, and their **proper literature references** shall be given, In the communication attention shall be called to the dangers occurring during the experiments. **Arbitrary selection of data cannot be tolerated** and results not in accordance with the conclusions cannot be withheld.

Proper quotation

The quotation of the widest possible range of substantial precedents of the research and the possible all-inclusive quotation of scientific publications containing disputed questions must be attempted. **If one expropriates others' ideas, methods or data** to him- or herself through incomplete quotation, he or she commits an **ethical misconduct**.

Author of the communication

The person who, due to his or her scientific work, has given an **important contribution to the planning or accomplishment of experiments, the evaluation and control of results** shall be indicated as author. A position held in the institution or institute, or a role played in the financing of the research shall in itself not entitle anyone to pose as the author of the publication. **Honorary authorship can not be allowed.**

In the case of **several authors** and the presentation of the results of substantially differing experimental processes it must be aspired after that the **particular contributions of the individual authors should be made obvious** - many journals already require this.

Author of the communication continued

The indication **corresponding author** may only be used by the consent of the other authors. Only those who have played a decisive or co-ordinating role in the communication may be indicated as such.

It is not proper practice to communicate a particular experimental result in several separate publications for the purpose of augmenting the number of articles published by the researcher. Cases where the original article was written in a foreign language shall be excepted. In such cases, while in full deference to copyrights, publication of the Hungarian/other language version is desirable for the purpose of the availability of the research results to wider Hungarian or other professional circles and for the care of an Hungarian scientific-professional terminology. The practice of **after-publication accepted in certain professional areas** may also be an exception.

Correction

In case during the research work it emerges that someone's own data or conclusion published previously are faulty or wrong, the authors shall publish this fact without delay, preferably **in the periodical that had carried the original article** in the first instance. In the case of a publication of several authors the initiation of the correction is **the obligation of the first author**.

Good research practices in the following contexts:

• Collaborative Working

All partners in research collaborations are properly informed and consulted about submissions for publication of the research results.

• Publication and Dissemination

- All authors agree on the sequence of authorship, acknowledging that authorship itself is based on a significant contribution to the design of the research, relevant data collection, or the analysis or interpretation of the results.

- Authors ensure that their work is made available to colleagues in a timely, open, transparent, and accurate manner, unless otherwise agreed, and are honest in their communication to the general public and in traditional and social media.

- 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.

- Authors and publishers consider negative results to be as valid as positive findings for publication and dissemination.

- Researchers adhere to the same criteria as those detailed above whether they publish in a *subscription journal, an open access Journal or in any other form*



Good research practices in the following contexts:

- **Reviewing, Evaluating and Editing**

Researchers take seriously their commitment to the research community by participating in refereeing, reviewing and evaluation.

Researchers review and evaluate submissions for publication, funding, appointment, promotion or reward in a transparent and justifiable manner.

Reviewers or editors with a conflict of interest withdraw from involvement in decisions on publication, funding, appointment, promotion or reward.

Reviewers maintain confidentiality unless there is prior approval for disclosure.

Reviewers and editors respect the rights of authors and applicants, and seek permission to make use of the ideas, data or interpretations presented

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Grievous forms of infringement of research ethical norms

Fabrication is the publication of “results” without any base.

Falsification is the manipulation, alteration, or deliberate neglect of data or results. Publication of falsified data also qualifies as an ethical misconduct.

Plagiarism is the takeover of ideas, scientific results, words, texts of others and indicating them as one’s own. It is an aggravated case of plagiarism when the editor or reviewer of the publication expropriates new thoughts or experimental results of an article submitted for publication

Bringing personal influence to bear usually offends the dignity of persons, an offence that can easily turn into injury.

- It can aim at the acquisition of a position favourable to the person bringing his/her influence to bear, but also at the making of a decision unfavourable to a third party.
- Threat of reprisal against the **whistleblower** shall also be qualified as personal influence.
- Involves the attempt of raising the number of references through personal pressure.

The Stapel case

Diederik Stapel, the Dutch social psychologist who has made news on a rather regular basis over the last several years, and who had even become popular on some television chat shows, **has been found to be a complete fraud, making up data, rather than conducting field trials as he claimed.** In his so-called studies of social phenomena, he's made claims suggesting for example that eating meat makes people more aggressive, or that scientists working in messy labs tend to discriminate more.



INTERIM-RAPPORTAGE INZAKE DOOR PROF. DR. D.A. STAPEL GEMAAKTE INBREUK OP WETENSCHAPPELIJKE INTEGRITEIT

Tilburg, 31 oktober 2011

„...three young researchers under Stapel's supervision had found irregularities in published data and notified the head of the social-psychology department...”

"We have some 30 papers in peer-reviewed journals where we are actually sure that they are fake, and there are more to come," says Pim Levelt, chair of the committee that investigated Stapel's work at the university."

Violations of Research Integrity

Research Misconduct and other Unacceptable Practices

Research misconduct is traditionally defined as fabrication, falsification, or plagiarism (the so-called FFP categorisation) in proposing, performing, or reviewing research, or in reporting research results:

- ***Fabrication*** is making up results and recording them as if they were real.
- ***Falsification*** is manipulating research materials, equipment or processes or changing, omitting or suppressing data or results without justification.
- ***Plagiarism*** is using other people's work and ideas without giving proper credit to the original source, thus violating the rights of the original author(s) to their intellectual outputs.



Violations of Research Integrity

Research Misconduct and other Unacceptable Practices

There are further violations of good research practice that damage the integrity of the research process or of researchers.

Examples of other unacceptable practices include, but are not confined to:

- **Manipulating authorship** or denigrating the role of other researchers.
- **Re-publishing** substantive parts of one's own earlier publications, without duly acknowledging or citing the original ('self-plagiarism').
- **Citing selectively** to enhance own findings or to please editors, reviewers or colleagues.
- **Allowing funders/sponsors to jeopardise independence** in the research process or reporting of results so as to introduce or promulgate bias.
- **Exaggerating** the importance and practical applicability of findings.
- Delaying or inappropriately **hampering the work of other researchers**.
- **Misusing seniority** to encourage violations of research integrity.
- Ignoring putative violations of research integrity by others or **covering up** inappropriate responses to misconduct or other violations by institutions.
- **Establishing or supporting journals that undermine the quality control of research ('predatory journals')**.



„According to a recent report, honorary authors were attached to 25% of research reports, 15% of review articles, and 11% of editorials published in six major medical journals. It is time to end this practice.”

Concerted efforts by institutions, authors, and journals are needed to put an end to this fraudulent and unethical practice

Greenland and Fontanarosa Science August 31, 2012

Author scandal China's science ministry announced on 27 July 2017 that 486 authors were guilty of misconduct in a scandal concerning **fake peer reviews**. In April, the journal *Tumor Biology* retracted 107 papers written by Chinese scientists after its publisher, Springer Nature, determined that fabricated reviews had been submitted to support those publications. The ministry found 172 authors responsible for the fraud; the remaining 314 were found guilty of neglecting their obligations as supervisors. Those guilty of misconduct face **punishments** including temporary bans on conducting research, having grant proposals cancelled, being forced to return funding and losing awards.

Nature June 22, 2017

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A recent survey suggest that selective reporting, selective citing, and flaws in quality assurance and mentoring are the major evils of modern research. Many scientists may be cutting corners and engage in sloppy science, possibly with a view to get more positive and more spectacular results that will be easier to publish in a high-impact journal and will attract many citations.

Bouter et al. Research Integrity and Peer Review (2016)



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In their most serious forms, unacceptable practices are sanctionable, but at the very least every effort must be made to prevent, discourage and stop them through training, supervision and mentoring.



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Fundamental principles of an ethical investigation in science misconduct

Ascertaining the seriousness of the misconduct

In case of an ethical misconduct the proper steps shall depend on the **seriousness** of the act.

In this respect the level of demonstrable **deliberateness and the weight of consequences** shall be considered. Any person subject to the investigation can only be reprimanded in case it can be demonstrated that he or she committed the ethical misconduct deliberately and knowingly. As a standard of considering evidence the principle of „strong body of evidences” shall be applied.

Ensuring the internal integrity and legal regularity of the procedure

Balance

Persons accused of ethical misconduct shall be given full details of the ethical misconduct attributed to them and given the possibility for responding to allegations in writing, asking questions, presenting evidence, calling witnesses, and providing responses to the information presented.

Presumption of innocence

Publicity of the resolution of the Science Ethics Committee

University of Debrecen

