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Promoting and safeguarding research integrity; a European Code of Conduct

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Elements required in training of scientific and scholarly researchers

- Concepts, theories, accumulated knowledge
- Methods of data collection, experimental design and data analysis
- Values of science and principles of research integrity

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Why emphasis on research integrity?

- Harmful effects of research misconduct for:
  - Science itself
  - Individuals and society
  - Trust in science as a useful source of information and a dependable base for decision making

Prevalence

- Classical reaction (denial, ‘seldom and atypical’, under control through peer review) no longer valid
- Increasing number in public press (Schön, Subo, Das, Hwang Woo-suk, Zu Guttenberg, Hauser, Stapel, Poldermans, Smeesters....)
- Increasing number of retractions (because of fraud)
- Confirmation bias (Fanelli)
- Recent survey and self report studies: alarming rate of misconduct; not only major cases of fraud, but also minor misdemeanours (cutting corners, tampering with data, leaving out a few unwelcome observations, ‘favourable’ figures, etc.)

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Conditions

- Pressure to publish
- quantification of evaluation criteria
- stronger competition for funding
- commercialisation
- more opportunities (internet)

What do we need?

- At national and institutional level:
  - Proper and accepted definition of (forms of) misconduct
  - Reliable means of identification
  - Effective and fair procedures to deal with cases of misconduct
  - Effective means of prevention, the most important of which is well-considered education and coaching
- At international level (the more important with increasing international collaboration):
  - Common agreement on norms and standards
  - Common rules and procedures

A European Code of Conduct for Research Integrity

- Europe: Lack of uniformity, consistency, harmonisation
- Joint effort of European Science Foundation (ESF) and All European Academies (ALLEA)
- European Code of Conduct for Research Integrity
  - **Principles** of integrity in scientific and scholarly research
  - Possible **violations** thereof
  - Guidelines for **good practice**
- Accepted by ALLEA and ESF

Principles

- Researchers, research institutes, universities, academies and funding organisations commit themselves to observe and promote **principles** of scientific integrity. These include:
  - Honesty
  - Reliability
  - Objectivity
  - Impartiality and independence
  - Open communication
  - Duty of care
  - Fairness
  - Responsibility for future science generations
- Research employers have a responsibility to ensure that a **culture of research integrity** prevails.

Violations

- Two most serious violations:
  - **Fabrication**
  - **Falsification**
- Third category of misdemeanours:
  - Infringement of **intellectual property rights** (including plagiarism)
- Not or Improper **dealing** with violations of integrity
- **Petty misdemeanours** (‘adjustment’ of a figure, cutting a corner, trimming of data, omitting an unwelcome observation): unacceptable as well; may not give cause to a formal charge, but should be reprimanded and corrected.

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Standards for good practice

- Data management (administration, storage, availability)
- Proper research procedures (careful, scrupulous, confidentiality, aiming at publication)
- Responsible research procedures (respect, safety, cultural sensitivity, care for object of research (human, animal, envirionment))
- Publication-related conduct (honest, rapid, authorship issues, acknowledgement)
- Reviewing and editorial issues (honest, timely, accurate, ‘conflict of interests’, use of information)

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Nature of ECoC

- Nature and functions of Codes:
  - *Aspirational* - ideal to pursue
  - *Normative* - reference base, collective understanding
  - *Educational* - training, supervision, guidance
  - *Regulatory* - controlling, monitoring, sanctions
- ECoC is stronger than a recommendation or an appeal, but weaker than than a Charter or a body of law.
- ECoC is a canon for self regulation: more aspirational than regulatory

Objectives ECoC

- Stimulation and furthering of the emergence of institutional settings that enforce research integrity
- Basis for the development/improvement of national or institutional codes
- Benchmark for proper behaviour in international collaborative research

Final word

- Codes, guidelines, formal procedures, regulations, protocols, sanctions..... all useful and necessary, but the real issue is whether the researcher him/herself has developed a matured scientific conscience and a deep-seated sense of responsibility.
- The stimulation and nurturing of these qualities, rather than the risk of being caught or the fear of sanctions, will enable the scientist and scholar to resist the temptation that incites misconduct and fraudulent activity.
- Professors, supervisors and senior scientists should be aware of this and should convey it to students and their younger colleagues by teaching and setting an example.
- The creation of a culture of integrity is undeniably one of the more important challenges for the leadership and senior staff of universities and research institutes