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CATERINA DOGLIONI - UNIVERSITY OF MANCHESTER & LUND UNIVERSITY, SMARTHEP KICK-OFF MEETING

Brief reflections on *Code of Conduct & research ethics*



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I am not a research ethics expert
this is mostly based on personal experience

Personal bias (shared with [Caroline Jay's from the Software Sustainability Institute](#) at our faculty intro course):

People in research are nice and mean well!

*Main sources: Lund University docentkurs,
Course: Teaching and Learning in Higher Education
Documentation on ITNs provided by Lund Research Services and
by the European Union at [Coordinators Info Day \(2017\)](#)*

Strong suggestion: find a research ethics course at your
University and attend it as part of your local training
(also because requirements may vary)

Why Aren't we Talking About ML Now?



Horizon 2020 Model Grant Agreement Article 34

34.1 – Obligation to comply with ethical principles

The beneficiaries must **respect the highest standards of research integrity**...This implies notably compliance with the following essential principles:

honesty; reliability; objectivity; impartiality; open communication; duty of care; fairness and responsibility for future science generations

Ethics is one of our ITN's premises

This means that beneficiaries must ensure that persons carrying out research tasks:

- present their research goals in an honest and transparent manner
- design the research carefully and conduct it in a reliable fashion
- use appropriate techniques and methodologies (including for data management)
- exercise due care for the subjects of research
- ensure objectivity, accuracy and impartiality while disseminating
- make the necessary references
- refrain from plagiarism, data falsification or fabrication
- avoid double funding, conflicts of interest and misrepresentation of credentials

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The European Code of Conduct for Research Integrity

REVISED EDITION

Some examples:

- how is authorship treated in large collaborations?
- can you think of conflicts of interest (past/future)?
- can you think of a way to make your research/code *sustainable* (in advance of writing it?)

- **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.

Supervision as ethics training



Studies in Higher Education



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Ethics in the supervisory relationship: supervisors' and doctoral students' dilemmas in the natural and behavioural sciences

Erika Löfström & Kirsi Pyhältö

communities. Although formal ethics training is thought to be important for instilling knowledge of ethical norms and standards (e.g. Zucchero 2008; Burr and King 2012), students learn ethical guidelines and codes of conduct from their supervisors and senior colleagues as they engage in research (Alfredo and Hart 2011; Gray and Jordan 2012). The supervisory relationship is thus a crucial means of learning appropriate practices and codes of conduct. Yet we know little about whether or not doctoral supervisors and doctoral students identify similar ethical issues embedded in doctoral supervision. The present investigation focuses on analysing the fit between supervisors' and doctoral students' perceptions of ethical issues in the natural and behavioural sciences.

“But particles don’t have feelings”

Supervision as an arena for ethical problem-solving

Doctoral supervision provides a potential arena for learning to identify ethical problems and for solving them in an ethically sustainable manner. Some of the issues are internal to the research process, that is, they pertain to how researchers treat research participants, obtain or negotiate informed consent, ensuring the anonymity of participants and maintain the confidentiality of data. However, ethical issues can also involve relationships with colleagues, financing agencies and other stakeholders, or recognition of authorship. Ethical issues pertaining to these ‘external’ aspects form the primary focus of this article. Prior research has identified a variety of ethical problems

5 principles for students and supervisors

as well as in non-sustainable ways.

The present study draws on a model of ethical principles, including (1) *respect for autonomy*, (2) *avoiding harm* (non-maleficence), (3) *benefiting others* (beneficence), (4) *being just* (justice), and (5) *being faithful* (fidelity) (Kitchener 1985, 2000). This model was initially developed for counselling and advising in a university context, which are activities with much in common with doctoral supervision. The components of the model underpin many ethical codes and guidelines (e.g. European Commission 2013; Finnish Advisory Board on Research Integrity 2012; see also the analysis of European ethical guidelines by Godecharle, Nemery, and Dierickx 2013) and provide in that

Five principles, summarized

- Respect for autonomy:
 - right to self-determination, right to privacy and individual's right to make decisions concerning their own life
- Non-maleficence
 - avoid psychological, physical and social harm
- Beneficence
 - make a positive contribution to another's welfare and personal growth (—> support those in need)
- Justice
 - fairness, impartiality, reciprocity, equality
- Fidelity
 - keeping promises, being loyal, showing truthfulness and respect for others

What can go wrong? Example

- Study conducted among 42 Finnish PhD students in natural sciences

More than half of the ethical issues identified in the supervisory data were related to non-maleficence, including exploitation and abuse. Simultaneously, less than a fifth of the episodes in the student data entailed problems of avoiding harm. Within this category, the doctoral students called attention to exploitation, abuse and misappropriation. One student described experiences of exploitation in the following way:

Sometimes I've had difficulties concentrating on my own research, not to mention writing a dissertation, because I've had to assist in other people's projects. ... It is irritating when professors ask 'When will your dissertation be ready?' and you have just been sweating blood and you are like, 'I've had a bit of things to do!' But when you are in a research group, you do the work, for instance, if someone is on parental leave, then the measurements still need to be made and someone has to take care of that. It takes time away from your own research.

If anything goes wrong, let someone know!

It may be that a simple solution can be found, and if not you can be pointed to the right people & resources

Researcher Misconduct



Research Integrity

The European Code of Conduct for Research Integrity of ALLEA (All European Academies) and ESF (European Science Foundation) of March 2011.

Situation that may create confusion with respect to **fabrication, falsification, plagiarism** or other **research misconduct**:

- Missing the appropriate citation and references
- Using the same text in different proposals or ongoing projects - if it is the case provide the appropriate explanation/citation
- Missing the indication about the provenience of the text used in the proposal



This presentation shall neither be binding nor construed as constituting commitment by the European Commission

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Example: ethical considerations on recognition

My experiment: 3000 members

Only < 1/10 of the ATLAS collaboration shown here



List of contributors to notes and papers

- (implemented) Display members of analysis team in cover of paper

(implemented) INT notes backup of public documents to go for approval

- (to be evaluated) One-line summary of contribution in 2nd page of INT note and in Glance (available for SC/SCAB)

List of contributions to analysis

- Joe Student: fake bkg estimate in muon channel, MCFM calculations of diboson bkg, cross section limit calculation
- Jane Student: top background estimate, final analysis implementation
- John Postdoc: editor of internal note, fake bkg estimate in electron channel, cut optimization studies
- Joan Professor: supervised student and postdoc of Institute 1.

Analysis Team

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Joe Physicist, Jane Engineer, Contact Editor (*), Alphonse Physicien, Peter Analyzer, ATLAS member, I.M. also Editor (*), I.M. Author
 (*): Contact Editors

Editorial Board

[email: atlas-EXOT-2015-01-editorial-board@cern.ch]

EdBoard Chair (*), EB Member 1, EB Member 2, EB Member 3
 (*): EdBoard Chair

Recognition Task Force

Recognition = record of individual contributions to ATLAS

Importance of recognition

- Internal ATLAS records
- Job applications within/outside ATLAS

Current recognition indicators

- Internal note authorship
- Talks (conferences, internal meetings)
- Appointments
- OTP ...

Task force mandate:

- Review and formulate **recommendations** on:
 - Where further recognition is needed and for which purpose
 - How work can be better recorded in different areas
 - Improvement and design of new tools to aid recognition



C. Doglioni - 13/02/2014 - ATLAS Week CERN | Recognition Task Force Final Report

Differences between senior members and junior members

- perception of how “service work” (i.e. not physics analysis) is recognised

“HSF - IRIS-HEP Workshop on Software Citations” this week Nov 22/23

<https://indico.cern.ch/event/1211229/>



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Controversial: funded research *This is an older slide*

<http://www.pnas.org/content/110/37/15031>

US studies may overestimate effect sizes in softer research

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Edited by Stephen E. Fienberg, Carnegie Mellon University, Pittsburgh, PA, and approved July 19, 2013 (received for review February 14, 2013)

Abstract Full Text Authors & Info Figures SI Metrics Related Content PDF PDF + SI

Abstract

Many biases affect scientific research, causing a waste of resources, posing a threat to human health, and hampering scientific progress. These problems are hypothesized to be worsened by lack of consensus on theories and methods, by selective publication processes, and by career systems too heavily oriented toward productivity, such as those adopted in the United States (US). Here, we extracted 1,174 primary outcomes appearing in 82 meta-analyses published in health-related biological and behavioral research sampled from the Web of Science categories Genetics & Heredity and Psychiatry and measured how individual results deviated from the overall summary effect size within their respective meta-analysis. We found that primary studies whose outcome included behavioral parameters were generally more likely to report extreme effects, and those with a corresponding author based in the US were more likely to deviate in the direction predicted by their experimental hypotheses, particularly when their outcome did not include additional biological parameters. Nonbehavioral studies showed no such "US effect" and were subject mainly to sampling variance and small-study effects, which were stronger for non-US countries. Although this latter finding could be interpreted as a publication bias against non-US authors, the US effect observed in behavioral research is unlikely to be generated by editorial biases. Behavioral studies have lower methodological consensus and higher noise, making US researchers potentially more likely to express an underlying propensity to report strong and significant findings.

publish or perish | soft science | research bias | questionable research practices | scientific misconduct

Problem: "publish or perish" culture

Funding of a permanent researcher in my division:

- 25% teaching
- 25% university
- 50% grants

Research has to pay for itself

All good if grant assignment is unbiased and meritocratic, but leads to scientific malpractice that affects the students within a project if not.

An opinion: <http://www.sydsvenskan.se/2016-02-08/vore-det-inte-rimligt-att-de-mindre-hogskolorna-tar-en-storre-del-av-utbildning>

Improvement: Pronouns



University of Oslo guidelines

B. The supervisor must work systematically with attitudes and use of language that are in conformity with the student's entitlement to respect and personal integrity, and adopt a considered relationship to gender, ethnic background, personal morality, sexual preference, situation in life etc.

1. Respect decision (make an effort) to call a person as they want to be called
2. Gender neutral-ness in job advertisements and grant proposals (no reason not to use 'they')
3. Gender neutral bathrooms



	Nominative (subject)	Objective (object)	Possessive determiner	Possessive Pronoun	Reflexive
Invented pronouns					
Ne	Ne laughed	I called <i>nem</i>	<i>Nir</i> eyes gleam	That is <i>nirs</i>	Ne likes <i>nemself</i>
Ve	Ve laughed	I called <i>ver</i>	<i>Vis</i> eyes gleam	That is <i>vis</i>	Ve likes <i>verself</i>
Spivak	Ey laughed	I called <i>em</i>	<i>Eir</i> eyes gleam	That is <i>eirs</i>	Ey likes <i>emself</i>
Ze (or zie) and hir	Ze laughed	I called <i>hir</i>	<i>Hir</i> eyes gleam	That is <i>hirs</i>	Ze likes <i>hirself</i>
Ze (or zie) and zir	Ze laughed	I called <i>zir</i>	<i>Zir</i> eyes gleam	That is <i>zirs</i>	Ze likes <i>zirsself</i>
Xe	Xe laughed	I called <i>xem</i>	<i>Xyr</i> eyes gleam	That is <i>xyrs</i>	Xe likes <i>xemself</i>

Further reading

Sustainable HEPAC (HEP and Astronomy Community) [page](#)

Ethics for science and society, EU portal:

<http://ec.europa.eu/programmes/horizon2020/en/h2020-section/ethics>

American Physics Society ethics case studies:

Student edition

<https://www.aps.org/programs/education/ethics/upload/Ethics-Case-Studies-Student-Edition.pdf>

Teacher edition

<https://www.aps.org/programs/education/ethics/upload/Ethics-Case-Studies-Teacher-Edition.pdf>

Vancouver recommendations for authorship of (medical) papers:

<https://www.etikkom.no/en/library/practical-information/legal-statutes-and-guidelines/the-vancouver-recommendations/>

The Research Ethics Library:

<https://www.etikkom.no/en/library/>

Ethical guidelines from University of Oslo:

<https://www.uio.no/english/about/regulations/ethical-guidelines/>

What I took away from a “compassionate leadership” training by Steven West at Lund University (+ resources):

<https://twitter.com/CatDogLund/status/1008976047650541568>

These are rather interesting essays

Integrity and collegiality

- Fraud and plagiarism
- Guidance and collegiality
- Public interest disclosure
- Shades of grey in academic citation practice

Backup slides