



ERASMUS+ PROJECT

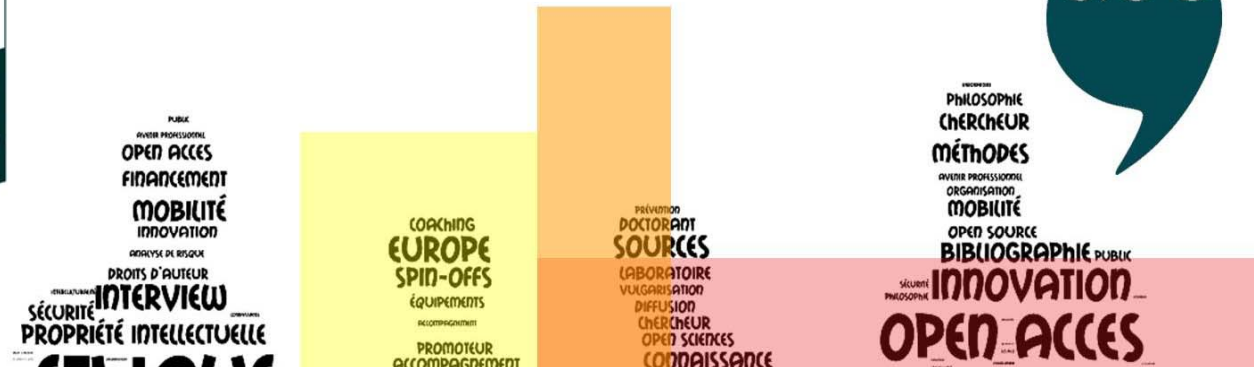
Re@WBC

Enhancement of HE research potential
contributing to further growth of the WB region

Part II : Training researchers to ethics and quality in research

Isabelle Halleux,
University of Liege, Belgium

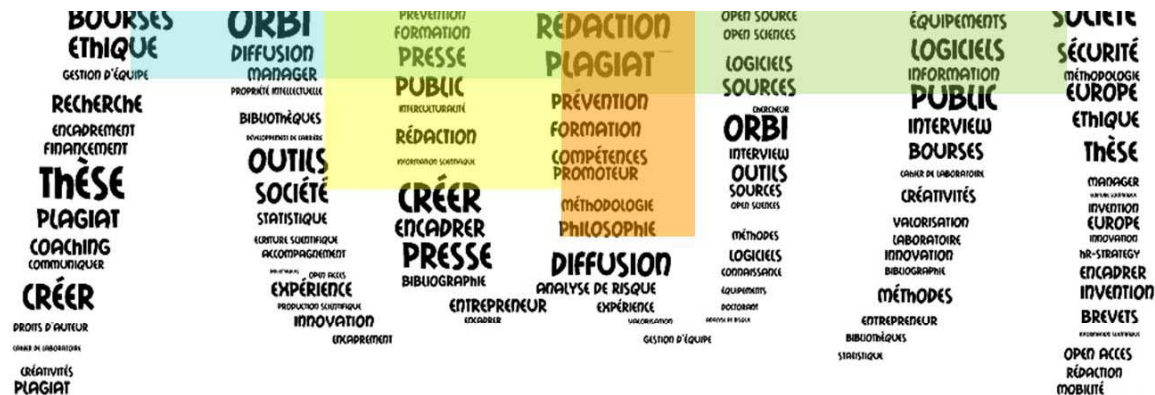
Kragujevac, 10-11/11/2016



Researcher's professional attitude and responsibility

Partim 1: Ethical Decision Making

I. Halleux, isabelle.halleux@ulg.ac.be



Objectives of the training

- Make the researchers aware of ethics appraisal, as an individual and collective positioning on ethical dilemma related to ethics ethics
- Recognize moral issue in research
- Exchange on how to solve practical moral problems and/or dilemma
- Think on how to make moral judgments about actions

Training system:

The seminary is based on case-studies. The participants' findings are exchanged and help to integrate the concepts. All kind of questions and comments are welcome.

Tricks and tips are given for going further, depending of the participants' needs.

At the beginning of the seminary, the researchers are requested to present themselves and to give their expectations. Expectations are written on the blackboard in order to keep it in mind. If expectations can not possible to meet, it has to be said (i.e. if the participant choose a wrong training session)

Case-studies from participants are welcome. If they put it on the table, rules regarding confidentiality and kindness will be reminded

Ethical decision making

Participants are encouraged to identify key issues, make assumptions as needed, and articulate options for resolution. In addition to the specific question for each case, participants might consider the following **questions** :

- What is the problem/issue/dilemma to be solved?
- Who are the affected parties in this situation (individuals, institutions, a field, society)?
- What interest does each party have in the situation? Which interest are in conflict?
- Where the actions taken by each of the affected parties acceptable (ethical, moral, common sense)? If not, are there circumstances under those actions would have been acceptable? Who should impose sanction(s)?
- What other courses of action/options are open to each of the affected parties? How do ethical codes or policies as well as legal rules apply to these different options? What is the likely outcome of each course of action?
- For each party involved, what course of action would you take, and why?
- What actions could have been taken to avoid conflict? How can we find consensus for action ?

Ethical dilemma – Case study 1

(from David B. Resnik, 12/2015, <http://www.niehs.nih.gov/research/resources/bioethics/whatis/>)

- The research protocol for a study of a drug on hypertension requires the administration of the drug at different doses to 50 laboratory mice, with chemical and behavioral tests to determine toxic effects.

Tom has almost finished the experiment for Dr. Q. He has only 5 mice left to test. However, he really wants to finish his work in time to go to Florida on spring break with his friends, who are leaving tonight.

He has injected the drug in all 50 mice but has not completed all of the tests. He therefore decides to extrapolate from the 45 completed results to produce the 5 additional results.

-
- What do you think about that ?
 - What should he do?

Ethical dilemma – Case study 2

(from David B. Resnik, 12/2015, <http://www.niehs.nih.gov/research/resources/bioethics/whatis/>)

- Dr. T has just discovered a mathematical error in his paper that has been accepted for publication in a journal. The error does not affect the overall results of his research, but it is potentially misleading. The journal has just gone to press, so it is too late to catch the error before it appears in print. In order to avoid embarrassment, Dr. T decides to ignore the error.
-
- What do you think about that? Is it really a misconduct?
 - What should he do?
 - Do you know about other deviations in publishing?

Ethical dilemma – Your case study

- Do you have any case study you would like to share or to discuss with the others ?
- Please explain the situation and the problem/the ethical issue you had to be solve. Do not present your hypothesis and solutions.

Ethical dilemma – Case study 3a

(from Graduate Research Ethics: Cases and Commentaries. Vol. 6, 2002, ed. B. Schrag)

- Mark, a graduate student from Tom's lab, is studying the genetics of breast cancer. Tom and Mark have worked very hard to get IRB approval to collect human DNA samples from breast cancer patients and their family. Through this process, Mark has learned a great deal about human subject research. According to IRB-approved protocol, blood will be drawn, DNA extracted and samples coded by clinical technicians with no connection to Tom's lab. The linking identifiers for each samples will be locked in a file cabinet and only 2 clinicians who are not involved in the study will have access to the files. This arrangement is intended to maintain the donor's confidentiality and is outlined in the consent form/ Tom's lab received only the vials of donor DNA number-coded with highly visible red tags attached to each tube.

Ethical dilemma – Case study 3b

(from Graduate Research Ethics: Cases and Commentaries. Vol. 6, 2002, ed. B. Schrag)

- Fan, a new post-doc in Tom's laboratory is studying the genetics of a neurological disorder. Fan is still learning English and adjusting to a new culture and research environment.
- One morning, as Mark enters the lab, he walk past Fan's bench and greets him. Something catches Mark's eye. He notices the red-tagged tubes in a bucket of ice sitting on Fan's bench. Mark knows that Fan is not working on the breast cander study. At first, he believes there has just been a mistake or a misunderstanding. He explains to Fan that the red-tagged tubes contain DNA samples collected for use in the breast cancer study. Fan replies that Tom authorized the use of a small amount of the breast cander DNA as a control in the neurology study and shows Mark a handwritten note from Thomas that confirms Fan's account.

Ethical dilemma – Case study 3c

(from Graduate Research Ethics: Cases and Commentaries. Vol. 6, 2002, ed. B. Schrag)

- Mark feels uneasy about this use of the breast cancer DNA. He returns to his desk to review an unsigned consent form he has on file, which is just like the one that every donor signed before participating in the study. He notes that the consent form doesn't state that the DNA will be used in other studies; however Marko also notices that the consent form doesn't directly indicate that the samples will not be used in other studies, either.
 - Mark keeps coming back to the introductory statement of the consent form, which contains the following wording: "... you are being asked to participate in a breast cancer study to test for ...". He can't seem to dismiss this statement.
-

Ethical dilemma – Case study 3c

(from Graduate Research Ethics: Cases and Commentaries. Vol. 6, 2002, ed. B. Schrag)

- What should Mark do? What is Fan's responsibility?
- Suppose that Mark ignores Fan's use of the DNA, but later he hears that Fan is planning to publish a paper based on some of the results he obtained from the use of the DNA. Does this development change what you think Mark should do?
- What if Mark ignores Fan's use of the DNA and Mark hears nothing of it afterwards?
- What are the institution's role and responsibility?

Ethical dilemma – Case study 4

(from David B. Resnik, 12/2015, <http://www.niehs.nih.gov/research/resources/bioethics/whatis/>)

- Dr. Wexford is the principal investigator of a large study on the health of 10,000 agricultural workers supported by the government. She has an impressive dataset that includes information on demographics, environmental exposures, diet, genetics, and various disease outcomes such as cancer, Parkinson's disease (PD), and ALS. She has just published a paper on the relationship between pesticide exposure and PD in a prestigious journal. She is planning to publish many other papers from her dataset (i.e. relationship between pesticide exposures and skin cancer). She receives a request from another research team that wants access to her complete dataset for examining the same question.

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- What do you think she has to do?
 - Could it be an ethical problem?

Ethical dilemma – Case study 5

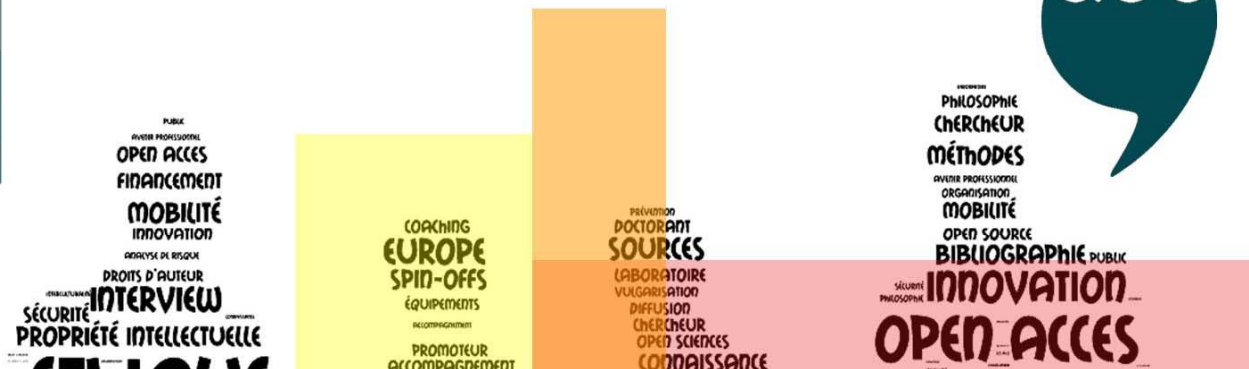
- Sandra is doing a PhD on Health Disease A. She is now in her 4th year and get no more financial support/salary. She applied unsuccessfully to different grants. Her supervisor decided to support her for several months.
- She decided to open an account on a crowdfunding platform and to promote her research. She needs 10.000 EUR. With the help of a friend who is journalist, she wrote a press release and sent letters to known patients, by saying that she is working on new imminent treatments
- The supervisor learns about the initiative while reading the newspaper and was not really happy

-
- What do you think about that? Could it be an ethical problem? Why?
 - Would it be different if she wrote to patients' associations?
 - What do you suggest for conciliating conflict between Sandra and her supervisor ?

Ethical decision making

Recommendation for solving dilemma:

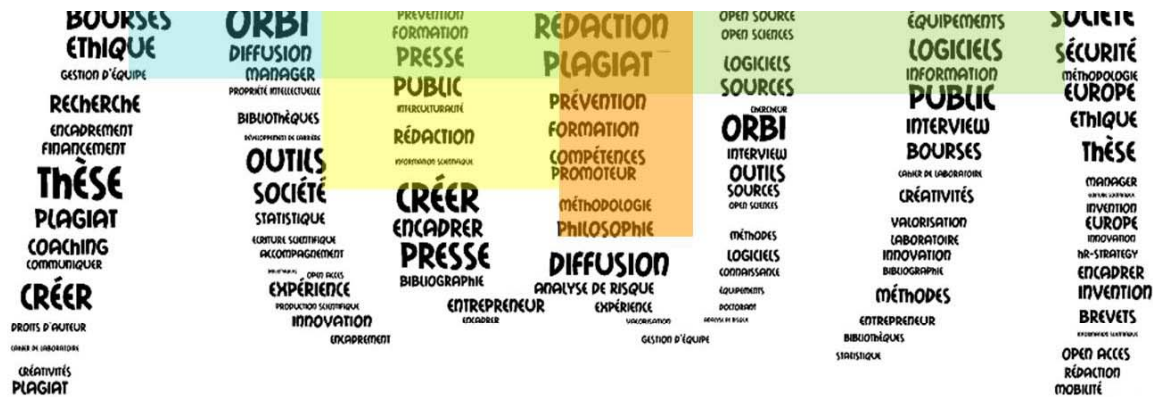
- Ask for complements, explore options, consider other ethical rules
- Be ready to explain and justify the decision:
 - Which choice will probably have the best overall consequences for science and society?
 - Which choice could stand up to further publicity and scrutiny?
 - Which choice could you not live with?
 - Think of the wisest person you know. What would he or she do in this situation?
 - Which choice would be the most just, fair, or responsible?
- If you feel bad:
 - Remember that the real world contain uncertainties and ambiguities
 - Think that there are limits to ability to solve all ethical dilemmas
- Take action and go further



Researcher's professional attitude and responsibility

Partim 2: Ethics and quality

I. Halleux, isabelle.halleux@ulg.ac.be



Version revised of the presentation given at the Re@WBC meeting in Liege, 19/04/2016

Objectives of the training

- Make the young researchers aware of ethics and quality in research and know about what are the characteristics of research at the university
- Learn and exchange about the individual and collective responsibilities in the academic environment
- Think about the daily work and ad hoc behavior of the researcher for developing a professional and responsible attitude
- Learn about the structures, rules, tools and resources for attending training or having references or help in case of need

Training system:

The seminary is based on examples and activities. The participants' findings are exchanged and help to integrate the concepts. All kind of questions and comments are welcome.

Tricks and tips are given for going further, depending of the participants' need.

In this file, the findings and comments from the last seminary are given in blue.

In black is the information prepared for the slide presentation.

At the beginning of the seminary, the young researchers are requested to present themselves and to give their expectations. Expectations are written on the blackboard in order to keep it in mind. If expectations can not possible to meet, it has to be said (i.e. if the participant choose a wrong training session)

The story of a promising researcher...

小保方 晴子

Haruko Obokata

HARUKO OBOKATA



Biologist
Stem cells specialist
Japan

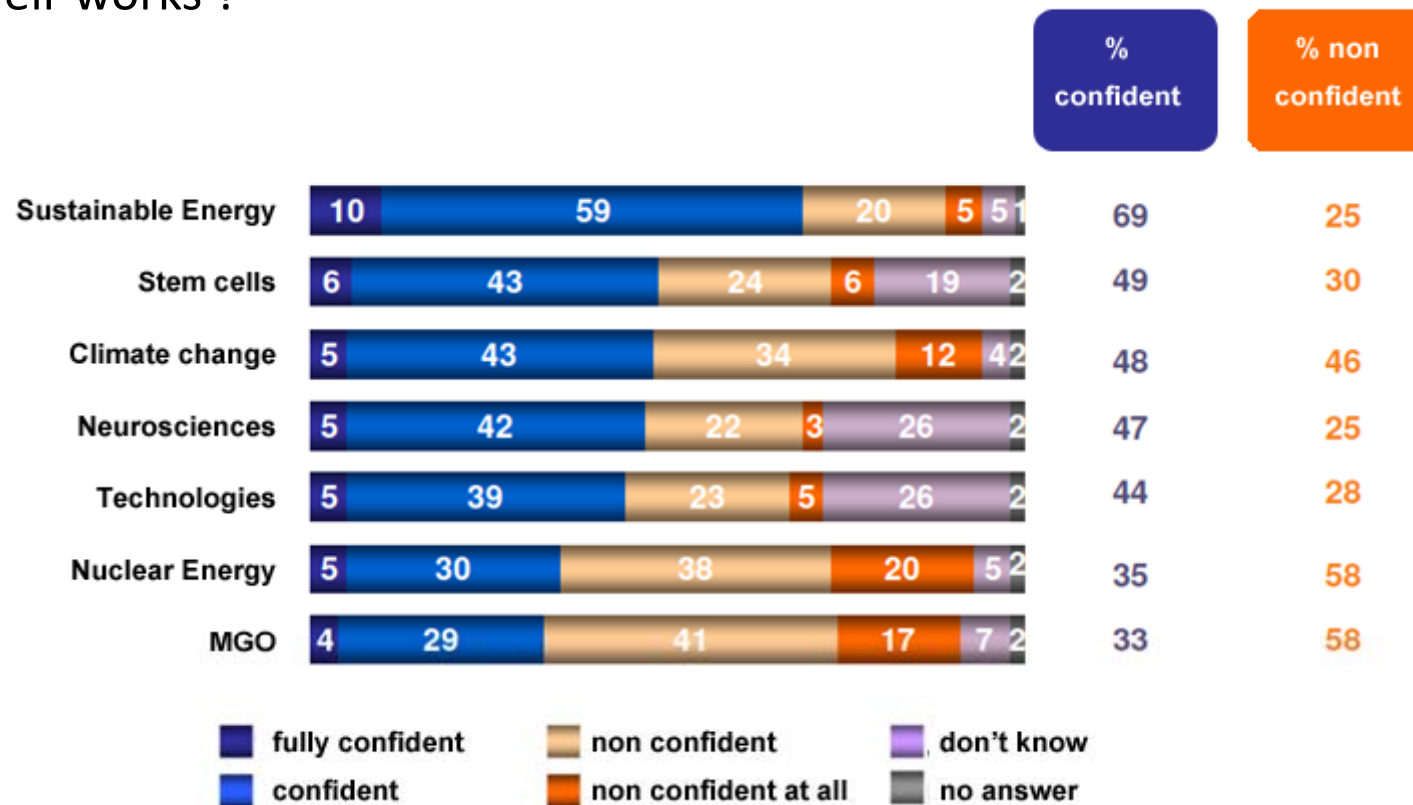
« The story » of Haruko Obokata

Date	Parcours
1983	Born in Japan
2011	PhD thesis (Univ. Waseda + 2 years in Harvard Medecine School)
2013	<u>Lab Manager at Riken</u>
1/2014	<u>Publication in Nature STAP cells</u>
4/6/2014	<u>A question of image</u>
5/8/2014	<u>Her Director's point of view (Yoshiki Sasai)</u>
12/2014	<u>Reproducibility of the results</u>
11/2015	<u>Ms Obokata</u>

A good analysis of her story : [The Guardian, 2/2015](#)

Do you know that ...

Results of a survey in France : Are you confident in the researchers for telling the truth about their results and the consequences of their works ?



(Source : [Monde de la Recherche, 2011](#))

And...

92 %

of the French are confident in the researchers
for explaining the scientific challenges and
for participating in the public debates
They expect from them to be engaged ...

(Source : [Monde de la Recherche, 2011](#))

However...

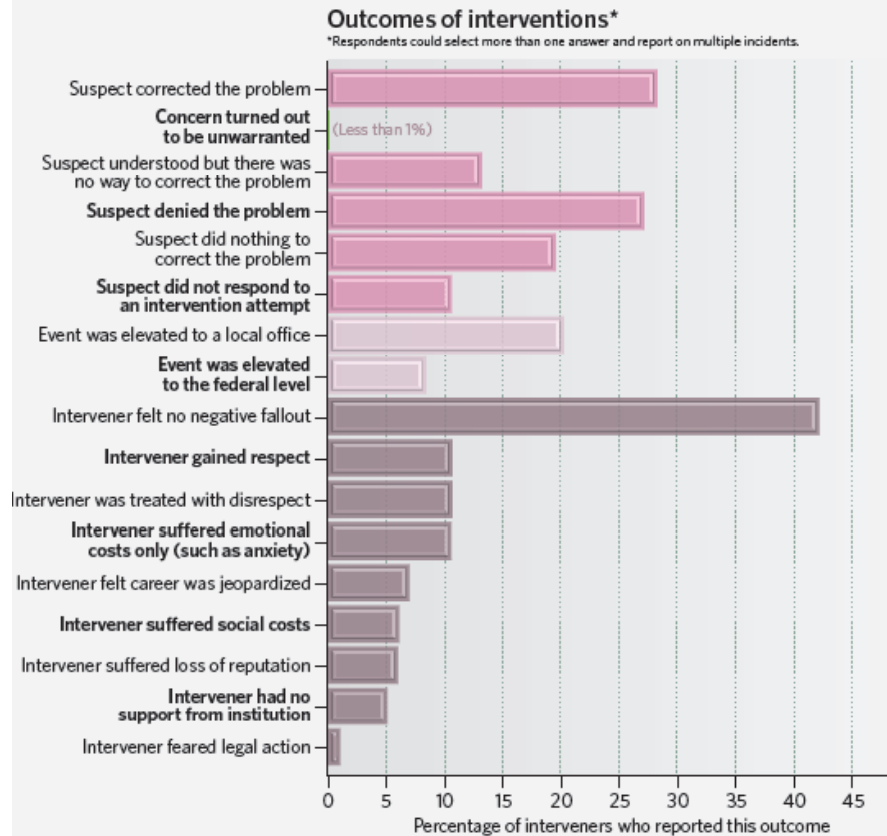
85%

of 2600 NIH researchers
say that they still observed
and report on bad practices

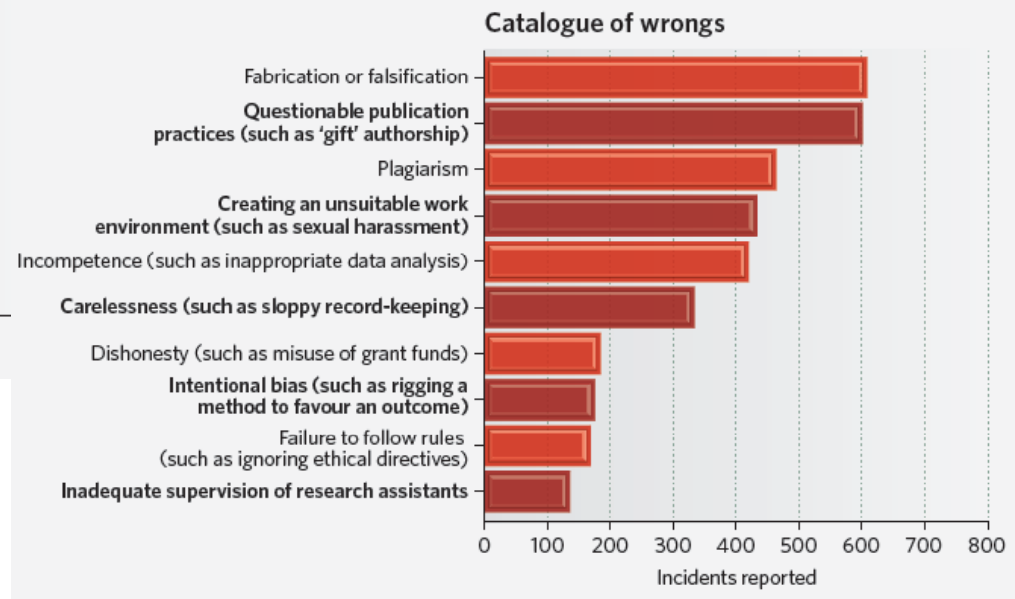
(Source : Koocher G & al., Nature, 2010)

FIGURE 1 | ACTING ON THEIR SUSPICIONS

A total of 2,599 scientists responded to a confidential survey about dealing with wrongdoing in the lab; 2,193 shared one or more incidents, of whom 1,386 reported having intervened.



Read the article !
-50% of the problems were solved by discussing with the protagonists
-- 37% of the problems were not analysed



Peers nip misconduct in the bud, Koocher G. and Keit-Spiegel P., Nature, 466 : 438-440, 2010

And ...

33%

of 8000 researchers recognize they misconduct
at least once in they career :

- 28% of the young researchers
- 38% of experienced researchers

Source : *Scientists behaving badly*, Martinson C., Anderson M., de Vries R.,
[Nature, 435 : 718-719, 2005](#))

It is a real problem?
Why ?

How to avoid misconduct?

The participants are requested to enunciate
what they are doing/ have to do (their tasks)
using verbs of action

What's your job?
What are you doing?
What is expected from you?

I'm doing ... : Answers (2015 seminary)

NB : 15 participants from all sectors, all PhD students, 1st -> 4th year of PhD



I'm doing ...: Groups of answers

1

Criticize
Find
Interpret
Analyse
Publish
Publish or Perish
Communicate

2

Solution
Results
Originality
Innovation

3

Motivation
Rigor
Fast experience
Integrity
Work Attitude
Performance
Productivity

Comments:

We can make 3 groups of answers :

1. Verbs - most of them are related to intellectual activities
2. Results – innovation and « new things » are at the heart of the PhD
3. Personal qualities - related to personal efficiency or performance

Nobody spoke about:

- Measurement, Data, Field work , Bibliography
- Rules and regulation
- Collaboration, team work, meeting with the supervisor

They it was mostly spoken about the finality, not about the process

On the basis of the previous comments, participants
are requested to speak about the competences
that are necessary for doing the job

What do you have to do ?
What is expected from you?
(in terms of competences)

Competences : Answers

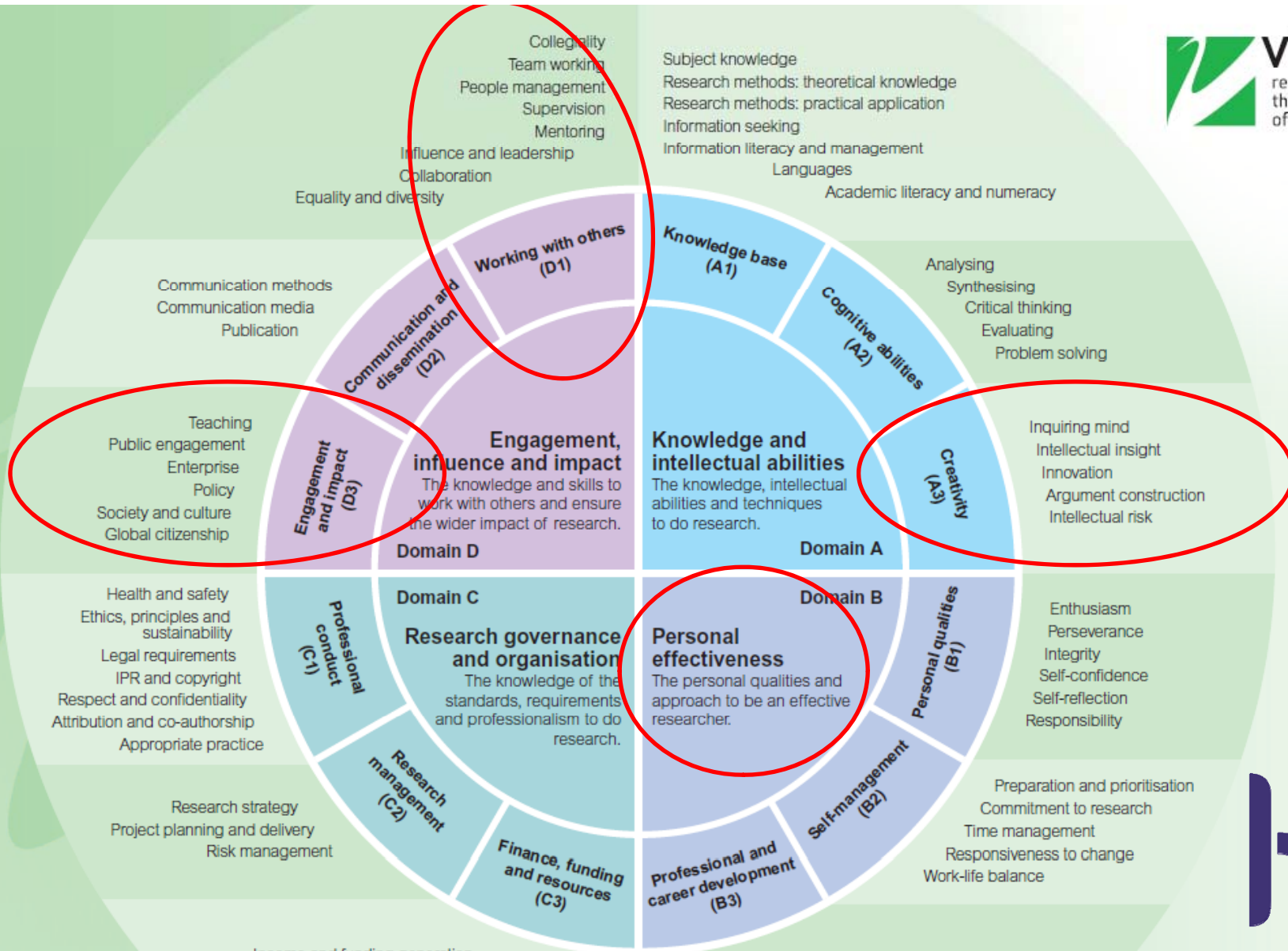
Reflection	Know-how	Teaching (assistants)	Patience
Autonomy	Know-know	Imagination	Versatility

Comments :

Most of the competences are also related to intellectual and knowledge abilities. Patience, versatility, autonomy, creativity are linked to personal efficiency.

Some other competences are needed that are linked to relation, management, communication, exchange of knowledge and practices, use of tools, etc.

The next slide presents the Vitae Researcher Development Framework (RDF). It's a reference at the EU level. The 4 quarters are explained. In Red are what is absolutely necessary for developing a researcher's Career (independent leader)



Let's come back to the question of
the professional and responsible attitude.

What do you have to do ?
What is expected from you?
(in terms of behavior/conduct)

NB :

- Another seminary is focalised on professional attitude: <http://hdl.handle.net/2268/194727>
- See also the European Charter and Code:
<http://ec.europa.eu/euraxess/index.cfm/rights/europeanCharter>

Professional behavior : Answers



Comments :

We have here different types of answers, related to behavior, organisation, morals.

What I am, my values, and what the others are, what are their values.

What the other think about me seems also to be important.

The attitude has to be « professional ».

Ethics and Integrity are mandatory.

The research has to be done with quality

Ethics : Moral principles and personal positioning

Ethics

Ethics in business

moral principles

rules and regulation

of right conduct rec

values that guide t

Integrity is part of Ethics



Quality is a process for doing good research



Quality in research

A working process that give guarantee of quality by providing good management evidences:

- Working plan with Gantt chart
- Ethocs appraisal
- Track of the experiences, measures, reflexions, reading, thinking evolution (HS)
- Exchange and discussions
- Professional analysis of results
- Production (results, publication)

About doing research: What are the differences amongst research sectors?

In small multidisciplinary groups, exchange on ethics in your sector and your research.
Discuss on ethical issues, specificities, differences, similarities

Differences amongst sectors?

In small multidisciplinary groups, exchange on ethics in your sector and your research.
Discuss on specificities, differences, similarities

Comments:

- In each discipline/sector, rules and regulations exist and ethics has to be managed
- The European Ethical Check-list is to be filled with projects :
 - Humans (individuals, embryos, cells),
 - Animal use
 - Individual and personal data
 - Work with developing countries

And :

- Safety and environment protection
- Dual use
- Misuse of results
- Difficulties can arise due to collaborative research, pressure for results and publication, values, international research, etc.
- One common difficulty comes from a lack of knowledge/misuse of the interpretation tools (i.e. statistics)

What is misconduct ?

Unacceptable behavior for

- Knowledge acquisition
- Collaboration and publication
- Financial support acquisition
- Scientific expertise

(Source : <http://www.ulg.ac.be/CEIS>)

Misconduct list

- Knowledge acquisition:
 - Invent results
 - Falsification of data or of results
 - Pressure for falsification
 - Refuse to give access to raw data
- Collaboration and publication:
 - Data copy or hacking
 - Sabotage
 - Publication, co-authorship
 - Wrong citations

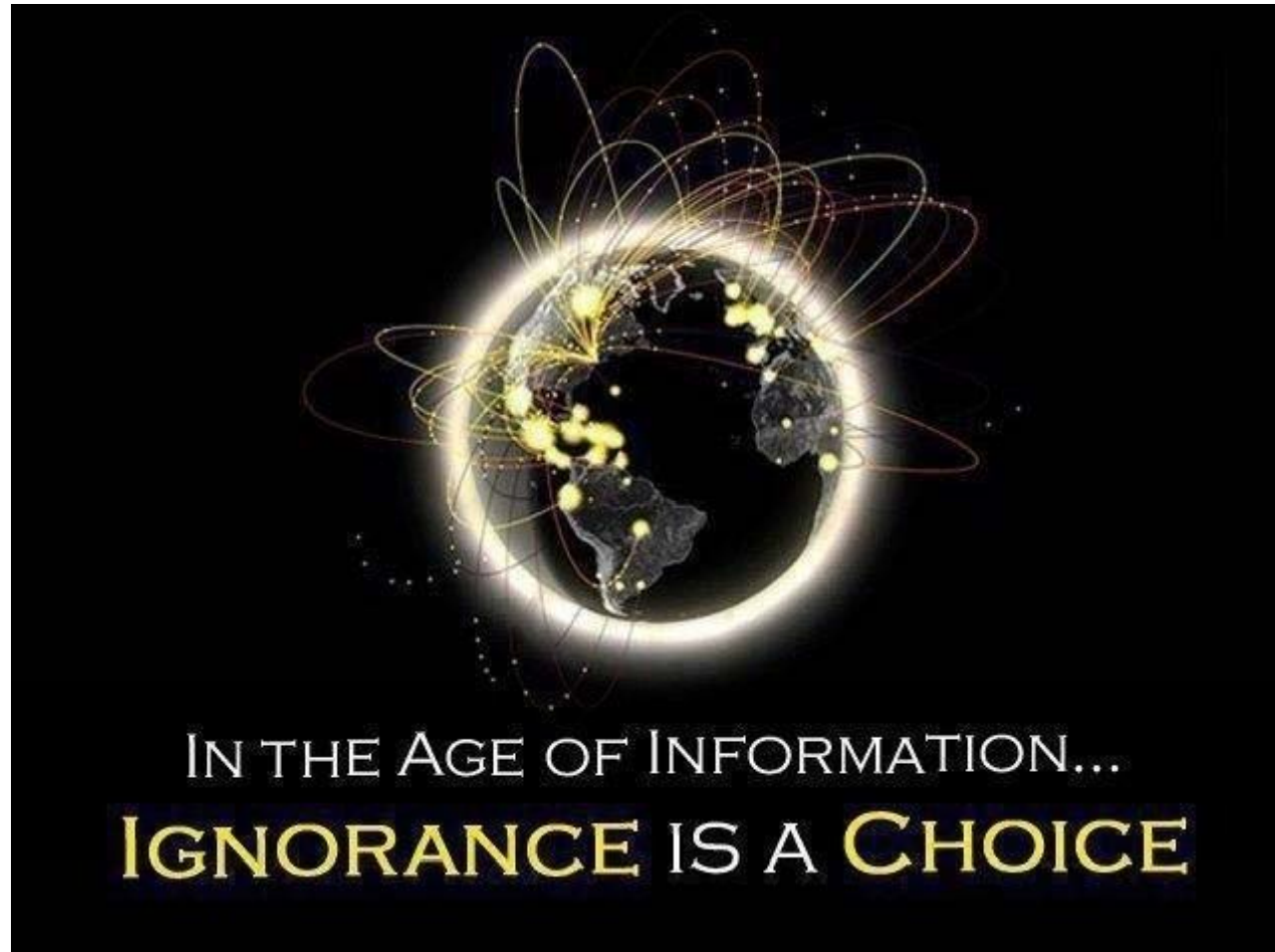
Misconduct list

- Financial support acquisition
 - Conflict of interest
 - Freedom of research restriction + IP
 - Ethical incompatibilities
 - Biased research
- Scientific expertise
 - Conflict of interest
 - Confidentiality
 - False critics of projects, publication

The list is long and not exhaustive
We generally forget these 2 series

All cheaters ? Surely not !





Thus ignorance is not excusable!

Which tools for doing good research?

- Rules and regulation: see ethics committee
- Specialised trainings (i.e. statistics, ethics rules)
- Soft skills training (prof. attitude, project management)
- Dialogue, help services
- Lab book, reports



Who can help me?

- Me (I can evolve - remember the RDF)
- My supervisor (the 1st to be addressed)
- My colleagues (research unit, peers, PhD association)
- My thesis committee, the doctoral college, the doctoral council
- The administration and the confidence persons (Student and Research offices, HR Office, Law Office)
- The Council for Ethics and Scientific Integrity

For going further (@ULg) ...

- Contacts for ethics appraisal of Research Projects :
 - Experiments on humans: vgeenen@ulg.ac.be, V.Seutin@ulg.ac.be
 - Use of animals: pvdriion@ulg.ac.be
 - Psychology: Ezio.Tirelli@ulg.ac.be
 - Human and Social Sciences : Florence.Caeymaex@ulg.ac.be
 - Others : CEIS : CEIS@ulg.ac.be
- Procedure in case of misconduct:
 - http://www.ulg.ac.be/cms/c_6045662/en/ethics-and-scientific-integrity
- [Belgian code of ethics for research](#)
- [European code of conduct for research integrity](#)
- Annual Ethics Day à l'ULg (see agenda)
- International Offices:
 - [Office or Research Integrity](#)
 - [Science-Europe WG on Research Integrity](#)

Back to the expectations

- Before closing the session, it is important to check if some questions or expectations have not been discussed.
- Additional information is to be given if needed.
- An evaluation form is to be filled