Research Integrity

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Introduction

Welcome to this special issue on research integrity!

The headlines have spoken for themselves. Recent research misconduct portrayed in the media, such as the Paolo Macchiarini case, illustrates in graphic details how the incessant pressure bestowed upon scientists is now taking its toll. Invoking external pressure does not absolve researchers from their responsibility in the case of scientific fraud or even when displaying unethical behaviour. But it shows that beyond that personal responsibility, the entire research system is not currently adequate to support greater level of research integrity.

We hope you will enjoy this special issue and don’t forget to share it widely in your circles and to comment using the box at the end of each article.

The EuroScientist Team!

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What funding agencies and journals can do to prevent sloppy science, by Lex Bouter, professor of methodology and integrity at VU Medical Center, Amsterdam, The Netherlands.

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Read this post online: http://www.euroscientist.com/research-integrity/
Macchiarini scandal: overstepping the research ethics mark

By Sabine Louet

Lessons from the story of a superstar scientists overstating his progress at a complacent research institute

It has taken several deaths for Paolo Macchiarini to be found guilty of scientific fraud and medical misconduct. He was the ultimate star surgeon, delivering the promises of regenerative medicine. He focused on building artificial trachea seeded with the stem cells of his patients.

However, his work, experts have since revealed, was closer to fiction than life-saving clinical treatment. In reality, his experimental research on what turned out to be human guinea pigs had no sound preclinical research foundation. Indeed, one of the issues, was that the vascularisation of such artificial graph has not been proven to work in the lab–let alone in patients.
To save or prolong life in the absence of any alternative treatment could have made such transplants medically acceptable. The trouble is that the life of the three patients transplanted in 2011 and 2012 at the Karolinska Institute Hospital was under no immediate threat. Two of the three have since died. And there were five other additional transplant of this kind, among others, at the Kuban State Medical University in Krasnodar, Russia.

If we give Macchiarini the benefit of the doubt, his intentions to treat patients were good. At least in principle. Except, that he had not fully been open and transparent about his academic and clinical track record, when the Karolinska Institute recruited him. Nor, did he strictly follow the expected good practice of both research and medical standards when he designed his new treatment of trachea regeneration and transplantation.

**Vanity culture**

The vanity culture pervading research can partly help explain what happened; even if it does not absolve the researcher. Macchiarini appears driven by a motivation similar to that early scientific pioneers who experimented on themselves. Except, that he experimented on other people. And he did so without a sufficient evidence base from prior research to legitimately and ethically support his work. He simply overstepped the research ethics mark.

He wanted to go jump ahead, directly experimenting with patients. He had an ego that was a little too keen on receiving the media exposure. A star scientist, like few others. In the end, it was a TV programme, called *The Experiments* aired in January 2016 by the Swedish public broadcaster SVT, that triggered his downfall in March 2016.

The scientific community’s own safety nets had not been sufficient to stop him, despite the presence of repeated red flags from colleagues and reviewers.

Now, his personal responsibility is not to be excluded. But, clearly, the Macchiarini scandal has revealed the responsibility of his institution too. Its appetite for the positive publicity associated with Macchiarini’s pioneering treatment is not to be underestimated.

**Fast-tracked translational research**

This scandal debunks a number of myths, reversing the stereotypes between Northern and Southern Europe. It opposes a scientist originally from Italy whose career progressed tremendously as he was working in Sweden, at one the most prestigious Universities in Europe. This happened, of all places, in a country which epitomises the Scandinavian sense of transparency and trustworthiness. And yet, had Macchiarini stayed in his own country, he would, arguably, have been found out sooner. As he had previously been banned from being recruited as a professor in an Italian university.

What the Macchiarini scandal also reveals is that the culture of research at the Karolinska Institute was such, that the pressure to translate clinical research into actual treatment has had some serious consequences. One
the of reports published in the wake of the scandal, known as the Heckscher report, denounced Karolinska’s “fixation on excellence” and a “nonchalant attitude towards regulations”.

This case is symptomatic of an era of superstar scientists, who are familiar with media spotlight. These attract the attention of research institutions vying for high-profile research likely to bring positive publicity. Before the rules of showbusiness start impacting the way research is conducted, it may be worth remembering that giving due consideration to sound ethical practice may help to avoid future scandals of this nature.

However, turning the vanity culture into a culture of integrity will require more than just tightening the rules for institutions and individual scientists alike—as proposed by Karolinska. Now is the time for a discussion on the way the research community evaluates and assesses research, to strive towards greater scientific quality. Change will inevitably necessitate a shift in our conception of what makes research successful.

Sabine Louët

EuroScientist Editor

Photo credit: SVT The Experiments
Wider view

Sheila Jasanoff: framing research with citizens’ perspectives

By Luca Tancredi Barone

Research without society's input lacks balance

Sheila Jasanoff is director of the program on science, technology and society at the John F. Kennedy School of Government at Harvard Kennedy School, Cambridge, Massachusetts, USA. She is one of the world-expert on dissecting what’s in the mind of scientists when they take decisions about their research.

She often likes to strike a discordant note when speaking with scientists. As she did at ESOF2016 in Manchester, UK, where Euroscientist met her in July. In this interview, she warns that regulatory bodies alone cannot take decisions on thorny issues, such how to regulate gene editing technology CRISPR-Cas9,
without involving society at large. She believes consulting citizens is a priority, even before framing the scientific problem.

Science of looking at science

Born in India, Jasanoff studied mathematics as an undergraduate at Radcliff College, Cambridge, MA, USA, before turning to a Masters in linguistics, at the University of Bonn, Germany. She then completed a PhD in linguistics in 1973 at Harvard, Cambridge, MA, USA. Subsequently, she studied law at Harvard Law School in 1976 and practised environmental law. Today, she is professor and her academic discipline, which she founded in the nineties, referred to as 'science and technology studies', lies at the frontier of sociology, law, ethics, and epistemology. It is motivated by the idea that “science and technology can be put under the lens and studied for themselves,” as she puts it.

Her core idea, reaffirmed in her latest book *The Ethics of Invention: Technology and the Human Future*, is that technology is never neutral. Indeed, choices – even when scientists themselves are often unaware of it – are always associated with values. And decisions are always inextricably entangled with their social context.

“The idea that scientists ought to know something about society”, “the awareness that there could be social implications” in their work “now across the industrial Western world is quite well accepted,” she admits. And this is in part a result of her year-long efforts. In the accompanying Euroscientist podcast, Jasanoff explains that often “scientists’ understanding of what it is that the public doesn’t understand is very poor.” It’s much easier to think that people are just not getting the science.

Finding the facts about the right things

She draws a parallel between the lack of trust of the public in scientists and the lack of trust in government, exemplified by the recent Brexit debate where UK politician Michael Gove famously commented: “people in this country have had enough of experts.” She explains: “the reasons for public distrust are very understandable and don’t have much to do with whether they trust the scientist to be finding the fact or not.” She believes, instead, that “they do not trust the scientist to be finding the facts about the right things necessarily.”

She maintains that people react to how the research is being framed. “Scientists think that the first order of framing is to frame in scientific terms,” she contends, “The idea that there is a prior step before you got to say what is the science, namely what is the issue, does not occur to them as a problem worth thinking and reflecting on.”

CRISPR technology in the spotlight

To take a concrete example, Jasanoff uses a famous novel technology, the gene editing technology CRISPR-Cas9. “Scientists think that now that they have this technique and it’s cheap and easier,” she says, no obstacle should be put in the way.
“I have no doubt that the enzymatic reactions work as brilliantly well as people think. But that the release of an uncontrolled number of CRISPR animals into the biosphere, I think that is something to worry about,” she adds.

There’s a tacit agreement with the use of gene editing, that is that there should be no germ line gene altering. Obviously, she says, the dominant discourse in the scientific community is that if this norm exists, it is old-fashioned, and it needs to be set aside. "May be we should set it aside, but surely it will not be that we will tolerate germ line gene editing for every possible purpose." “First of all as a lawyer,” she says, “if we have a tacit human-right-kind-of-convention about a matter like that, we shouldn't throw it overboard without thinking just because scientists say we are in a big rush to do it. There are reasons why that norm is in place.”

Even the language used by scientists referring to CRISPR-Cas9 gives away what Weltanschaung, or world view, they have. Jasanoff said at the ESOF’s opening session—attended by Emmanuelle Charpentier, one of the gene editing technique’s co-discoverer-- that the editing metaphor “worries” her. The use of this expression, she thinks, implies that scientists have an over-simplified idea of what the genome is like. “The simplicity or accuracy metaphor, the snipping, the cutting with the scissors... these things are dangerous because they breed a kind of self satisfaction about how well we understand something.” She believes that the word “editing” implies a correction of something that is wrong, with respect to something “right”: “you can’t get the text right until you know what the right text is.”

**Epistemic charity**

In a second podcast excerpt of the EuroScientist interview, Jasanoff, while rushing on her way to the hotel, reflects on what scientists should do to tackle people who have objection against science, introducing the concept of “epistemic charity.”

Instead of just reading extremely critically and figuring out the weakness in an opponent's argument, epistemic charity involves figuring out what this person really means and assessing them critically in terms of what that project is. This implies, Jasanoff suggests, giving them the benefit of the doubt, assuming an inner rationality to what they want and trying understand that. She sums up his view: "Instead of anti-science, the focus of the inquiry would be: what are they for that’s making them what looks to me as anti-science? If you say: let me try to understand what they are for, that reopens the door for discussion and debate.”

Luca Tancredi Barone

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Navigating SSH research integrity straits: between Scylla and Charybdis

By Ioana Galleron

Social science and humanities research needs to re-appropriate the fundamentally humanist concepts of integrity and ethics

Talking about research integrity is like navigating the sea between the two mythological sea creatures from Homer’s Odyssey, named Scylla and Charybdis. In the same way that avoiding sea monsters on either side of a sea channel, requires zig-zagging, drawing the line between acceptable and contemptible in research is not straightforward. And it appears to be a much more complicated matter in the social sciences and humanities (SSH) than in the other sciences. Today, there is a clear need to reassess the principles governing SSH research to provide a solid basis for enforcing good practices and rejecting bad ones.

Read this post online: http://www.euroscientist.com/research-integrity/
Different realm

One of the cornerstones of research integrity principles is to conduct research without ideological bias. However, many anthropologists, historians and sociologists have grown cautious of this approach. Instead, they prefer an "objectivation of the subjective relation to the object (of knowledge)", as defined by sociologist, philosopher and anthropologist Pierre Bourdieu. In other words, objectively analysing the subjective approach towards the object of research. They know full well that attitudes and beliefs are unavoidably and even necessarily interfering with research in the SSH.

In practice, applying the concept of research integrity to the social sciences and humanities raises a number of questions. Isn't SSH research, by nature, the domain of blatant misconduct? According to a recent ScienceEurope report on the topic, the definition of research integrity is: "to produce knowledge that is true, complete and unbiased by ideological, economic or political influences.” However, it may not necessarily be applicable to the SSH. What is the truth when applied to readings of literary works? Aren't inspirational readings often rooted in ideologies and beliefs? And how is the completeness to be appreciated in, at least, certain studies of philosophy or architecture?

The magnitude of the intellectual effort required to address all of the above issues, may explain why, in many cases, the SSH have neglected introducing committees or offices for ethics in research.

There are, however, existing online recommendations specifically geared towards the SSH and even codes of conduct for research in these disciplines. Nevertheless, large parts of academia do not feel concerned. Nor have they even heard of such activities. The problem is that existing guidance covers almost exclusively “research involving human subjects,” a kind of research many SSH scholars do not practice.

Misconduct in the SSH

Still, cases of research misconduct exist in the SSH. Plagiarism is a hot subject. There are highly publicised cases of complacency PhDs awarded to politicians in Romania, for example. But this is not the only country where such practice has happened.

SSH researchers too are caught in the universal process of acceleration of academic life (see H. Rosa’s concept of “social acceleration.” They are under pressure to “publish or perish”. This, in turn, incites them to adopt questionable research practices and governance. They routinely resort to craft publications aimed at artificially inflating their CV and heighten their reputation via the use of predatory journals, double publication, parroting, unnecessary self-citation, complacent cross-citation and cronyism.

Scholars' reluctance

Strengthening and improving evaluation methods and procedures of the SSH research is therefore of paramount importance. This will help maintain--and, in some cases, to introduce--new levels of trust and accountability in SSH research.
Yet some scholars do not like the idea of being evaluated, let alone that their research integrity is placed under scrutiny. Some are concerned about the discomfort that questioning colleagues’ work brings to a professional group based on collegiality. Others argue that after all, in SSH research lives are not, in the great majority of cases, under threat. Some others may consider that a quite Don-Quixotesque attachment to honesty and personal responsibility, is unnecessary. Thus, these SSH scholars blur the message about their societal relevance and impact, mainly because they are reluctant to engage in defining an adapted understanding of research integrity and in fighting research misconduct.

Besides, there is no institutional pressure to comply with research integrity. Indeed, it is not in the interests of funders to push the issue too far, as this would inevitably lead to a more general discussion of the place given to these disciplines in national and European research funding frameworks. There, the SSH are under-considered, in spite of recent efforts for embedding SSH research in Horizon 2020 funding programmes.

Suggested solutions

Overcoming the reluctance of SSH researchers towards adopting good practice in research integrity requires a thorough understanding of the ways the SSH generate knowledge. We also need to assess the underlying representations of quality among SSH scholars. In addition, we need to find the most adapted metrics for evaluation of SSH research, taking into account the specificity of dissemination practices. This is precisely what the European Network for Research Evaluation in the SSH (ENRESSH) aims to accomplish, by coordinating research projects across Europe.

ENRESSH has been recently launched as a European Cooperation in Science and Technology (COST) Action, dedicated to support the SSH research and to improve its evaluation. As such, ENRESSH is a step towards strengthening the integrity of European research as a whole. It also represents a call to all SSH researchers to better appropriate the ethics agenda. After all, 'integrity' and 'ethics' are fundamentally humanist concepts.

Ioana Galleron

Ioana is a senior lecturer in French literature at the University of Grenoble-Alps, France, and she is the Chair of the ENRESSH COST Action.

Illustration credit: SmiteGame
**Pragmatic solutions**

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**Shaping tomorrow’s research integrity**

By Maura Hiney and Tony Peatfield

**European research integrity could stem better uptake of good practices across funding agencies and research organisations**

The ultimate responsibility for good research practice lies with individual researchers. However, such practice can only flourish in a favourable environment. Addressing research integrity requires a holistic approach encompassing all aspects of the research system, such as access to publications and data, research careers, evaluation, peer review and research collaboration.

The [Science Europe working group on research integrity](http://www.euroscientist.com/research-integrity/) set out to understand the prevailing policy and processes currently in place in Europe. Our objective was to identify future actions that our members - who
are mainly large public research organisations and funding agencies - could take to effect change. The working group thus undertook a members' survey, which led to the recent publication of a set of recommendations.

Among others, the report suggests the need to further raise awareness of research integrity among researchers. In addition, it points to the need to introduce greater levels of training and to design new measures to take into account the cross-border nature of research.

Ultimately, it is hoped that these measures could drive behavioural change at both institutional and individual level. The objective is to promote research excellence and to ensure an unsullied research record; continuing societal support for public investment in research; avoidance of harmful impacts and research waste; and enhanced economic advancement.

Variable practices

The report gives an account of various approaches to dealing with research integrity across Science Europe member organisations, which are diverse by nature and operate in different regulatory and legal environments. In analysing the survey responses, it became clear that organisations take the issue of research integrity seriously.

However, there are some differences in definitions and approaches. Some member organisations have detailed policies, guidance and procedures in place, while others are still refining them. Most member organisations display irregular promotion of research integrity and varying levels of implementation.

The report recommends that, at a minimum, policies should include promotion of good research practice, clear procedures for dealing with misconduct and the possible sanctions available. In addition, whistle-blower protection should be integral to research integrity policies.

Meanwhile, policies should be clear as to what types of misconduct are covered. To encourage transparency, the report underlines that the outcomes of proven misconduct cases should not be hidden. And data on cases - either under investigation or proven - needs to be collected centrally to help with monitoring and future planning.

Raising awareness

Raising awareness of research integrity helps to promote its importance amongst the research community. This approach may contribute to preventing research misconduct. However, the survey found that member organisations often struggle to raise awareness and achieve adequate support for research integrity policies and processes among their stakeholders.

Further recommendations towards greater awareness include the need for policies to be publicly accessible, downloadable and available in English. A named responsible person for such policy - including contact details - should be provided.
It should also be clear that these policies and procedures apply from the earliest stages of proposal writing, right through to publication of completed work. For example, application forms for funding should emphasise research integrity, and grant terms and conditions, as well as contracts, should have provisions for good research practices and the consequences of misconduct.

**Training is vital**

Training is vital in engendering a culture of responsible conduct among researchers at all stages of their careers. However, provision of research integrity training at national and local level is highly fragmented in most countries. Many member organisations are not in a position to offer training.

Nonetheless, the report recommends that, given its importance, training should be actively supported, either directly or as a condition of funding. The authors of the report believe that training should not be optional; it needs to start at undergraduate/PhD level and continue throughout a researcher’s career. Those delivering training also need to be trained: train-the-trainer courses to introduce knowledge sharing and harmonisation and to maintain training standards need to be developed.

**Mobility challenge**

The huge increase in the mobility of researchers and the increasingly collaborative and cross-border nature of European research pose particular challenges for the protection and promotion of research integrity, the report finds.

For example, where there is a national body responsible for research integrity, there are processes in place to ensure that investigations of misconduct allegations will continue if a person moves from one institution to another. In the absence of a national body, this is not the case, and whether an investigation continued is ad hoc.

Furthermore, the survey unveiled that no organisation explicitly requires applicants for a position or a grant - or their current employer host institution - to declare any previous proven cases of research misconduct. The report proposes that misconduct cases should be pursued by the employer at the time of misconduct, even where a researcher subsequently moves to another institution or country.

As part of the recruitment process, the report suggests that employers should check with potential employees whether they are involved in an ongoing investigation or have any proven misconduct case against them. All collaborative agreements should include a clause on research integrity and potential collaborators need to reach agreement on a common approach to research integrity.

**Next steps**

Safeguarding research integrity is undoubtedly a shared task between scientists, institutions, funding agencies and publishers. Science Europe's member organisations are committed to continue to work towards
improving research policies and processes to ensure maximum benefit from public funding of research. They are also keen to encourage other research organisations to place integrity at the core of the research endeavour.

Maura Hiney

Maura is head of post-award and evaluation at the research funding agency Health Research Board, in Dublin, Ireland, and Chair of the working group on Research Integrity of Science Europe, a non-profit organisation based in Brussels representing major Research Funding and Performing Organisations across Europe.

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Can ethics training improve the quality of research?

By Randy Watson

The jury is still out of the value of research integrity training

What is research integrity really about? "What many people first think of is misconduct, falsification of data," said Johannes Klumper, head of the European Commission unit, which will support the scientific advisory mechanism (SAM) in the Directorate General Research & Innovation, during a panel discussion, held at ESOF2016 in Manchester in July. "But what’s more important is the smaller wrongdoings or smaller weaknesses," he pointed out, "This can start with inappropriate choice of statistical methods, neglecting to cite data that are contrary to your opinion, not wanting to publicise your data."

Clearly, the issue of research integrity is not fully understood throughout the scientific community. Yet, the need for such standard to be adopted by all researchers is even more pregnant today. Research has become increasingly competitive, as scientists are struggling to get funding from the limited available financial resources. For example, in academia, "there’s strong dependence on external [funding] sources and this is a huge risk for a university if you would like to see a more intrinsic culture of ethical rules and standards," said Dan Brändström, chairman of the board of Linnaeus University, in Sweden.
This prompted the *EuroScience Policy Working Group* to discuss the issues of training as one of the solutions to help promote research integrity at ESOF2016. In this article, *EuroScientist* shares the contrasted perspectives of experts on this current issue.

**Who is responsible?**

The matter of "research integrity is a shared responsibility," said Amanda Crowfoot, director of Science Europe, a group of European research institutions and funding agencies, based in Brussels, Belgium. This organisation recently published a report on research integrity practices among its member organisations. "The ultimate responsibility is with the researcher," she noted, "but the funders and performers have a huge role in actually supporting that and allowing them to actually carry out good research practice."

To do so, researchers could, for example, undergo research integrity training. "There’s not a lot of training available right now," said Crowfoot. She thinks that what is needed is a "train the trainer approach to really make sure that the quality of training is there." She also believes, that, where possible, provide training throughout the whole career span of a researcher from postgraduate, postdoctoral researchers right up to senior researchers.

**Disconnect in practice**

However, there is a lack of awareness in the community. Currently, "Young researchers don’t talk about research integrity and don’t know much about it," pointed out Slobodan Radicev, member of the *EuroScience* Governing Board, who was representing the voice of early career researchers. "And when they do know about it, it’s because a policy came out after a scandal happened," he noted. He believes that many young researchers say that their institutions are "reactive instead of proactive." And they stressed that funders should fund more training for research integrity and as this is what’s missing.

Funders clearly have a role to play. "If you want to go down a slightly more formal route, it’s even possible to look at mandating researchers who receive money from a particular funding source to undergo training in research integrity," said Crowfoot. She also believes that funders can support scientists through the provision of guidance about "how to manage your data, encourage researches to make raw data available..... support the transition to open access."

**One size does not fit all**

For example, "EMBO has a policy programme where we look at research integrity and other issues in responsible conduct from a policy perspective: looking at options, understanding gaps, thinking about how we can improve the process," Michele Garfinkel, manager of the science policy programme at the European Molecular Biology Organisation (EMBO) pointed out. This resulted in EMBO setting up training for the scientists they are funding. The organisation became involved in *EPIGEUM*, an online training programme on research integrity.
There are, of course, **differences between the disciplines** when it comes to research integrity. "We decided that it should be broken down into natural sciences, humanities, social sciences and engineering," added Garfinkel.

In interdisciplinary research, for instance, there was a question about how much scientists themselves need to understand about others’ speciality to ensure interdisciplinary research integrity. A good example of this dilemma occurs, for example when using statistical methods in multidisciplinary research. When we examined this matter, "there seemed to be too many students that did not have proper statistical competences," points out EC's Klumpers.

**Trust and reliability**

Many recognise that fostering research integrity in Europe partly hinges on training. However, some critiques question the reliance on private companies for implementing such training. To remedy this situation, the European Commission itself is now planning to fund research integrity training programmes. Two calls for Horizon 2020 grants will be dedicated to such training, according to the EC's Klumper. EMBO's Garfinkel expressed her support for the introduction of standardised, open and well-vetted training.

Clearly, training cannot be the only solution to remedy research malpractice. But it helps to create an "overall climate of trust and reliability," noted Crowfoot. She added: "Most of the issues are about people who did not understand the subtleties of the practice rather than stopping someone who would actually commit fraud."

Despite training's own limitations, it can still help raise awareness of the need for ethical behaviour in research. "We know many institutes have nothing [no formal research integrity policy] and we know training isn’t perfect," concludes Garfinkel, "but at least there is some recognition that [research integrity practices] are important things that you as a researcher should be thinking about."

This is a topic that is far from resolved, and the EuroScience Science Policy Working Group will be looking into this issue in more depth over the coming year. If you are interested in being involved, just contact EuroScience.

EuroScience Science Policy Working Group

Photo Credit: Randy Watson (CC BY-NC-ND 2.0)
Pragmatic solutions

What funding agencies and journals can do to prevent sloppy science

By Lex Bouter

How best to improve research transparency and accountability is still up for debate

Surveys suggest that gross breaches of research integrity are probably quite rare, while lesser offences seem to be alarmingly more common. On the aggregated level, these questionable research practices – in short: sloppy science – may do more harm than the three forms research misconduct can take: fabrication, falsification and plagiarism.

In biomedicine, some argue, the ‘research waste’ may be as large as 85%, due to irrelevant study questions, poor research methods and selective reporting. John Ioannidis elegantly explains how we can make clinical
research more useful and more true. These insights will likely be an important consideration in the current revision of the European Code of Conduct for Research Integrity. A recent ScienceEurope report explains what can be done to foster responsible conduct of research and to prevent sloppy science. Next to scientists and their institutions, funding agencies and scientific journals clearly have an important role to play.

**Funding agencies' role**

Funding agencies should make sure that institutions receiving grants have adequate processes for dealing with putative breaches of research integrity, provide good training in responsible conduct of research, and have adequate quality control, including internal audits. They should also require that funded research has transparency ‘from protocol to publication’ and complies with the principles of ‘open access’ and ‘open data’.

Furthermore, funding agencies ought to demand that grant proposals make clear why the study question is relevant for the envisioned end-users and show that the research question has not already been answered, using a recent systematic review. With a clever combination of eligibility criteria and postponing the last payment until all conditions have been met, funding agencies can be really effective in changing the behaviour of scientists and their institutions.

Finally, it’s important that there is a healthy balance between innovation and replication in the portfolio of granting programs and that funders also invest in research on research integrity.

**Journal’s input into the debate**

Scientific journals should first and foremost prevent selective reporting by making sure that the decision to accept or reject a manuscript does not depend on the results of the study, but solely on the relevance of the research question and the soundness of the methods used. Registered reports is a promising way to ensure this, because the decision is made before data collection and data analysis.

Journals also have a key role to play in enforcing more transparency by demanding registration and publication of the study protocol, data analysis plan, data set and a full report on all results. The Transparency and Openness Promotion guidelines provide a matrix to clarify journal policy regarding the various aspects of transparency. Finally, journals need to move from double-blind prepublication peer review to an open debate on the merits of a report that continues after publication. F1000research offers an interesting example by immediate publication after submission and by also keeping the rejected manuscripts on public file. Disrupting innovation comes from initiatives like Retraction Watch and PubPeer.

**Transparency and accountability**
An important forum for reflection and debate on ways to improve research practices are the world conferences on research integrity. The next one will be in Amsterdam in May 2017. The 5th World Conference on Research Integrity (WCRI) will be organised around the interlinked themes of transparency and accountability, building on the premise that the honesty and reliability of research are best served by openly sharing all aspects of research and by taking personal responsibility for it.

The conference program will explore the challenges of promoting transparency and accountability and the consequences of the failure to do so, with the overall goal of developing an evidence-based agenda for addressing the various lapses of integrity that seem to have become an endemic problem in research today.

Previously, the world conferences on research integrity have produced two consensus documents: the Singapore Statement on Research Integrity and the Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations.

One goal of 5th WCRI will be to develop the Amsterdam Agenda for Promoting Transparency and Accountability. This is initially envisioned as an action-oriented one-page statement drawing attention to the urgent need to fight questionable research practices. Next to the above-mentioned actions that funders and journals can take, the Amsterdam Agenda will recommend what research institutes, professional organisations and international governments can do. Early 2017 a web-based survey will be conducted among 5th WCRI participants. A draft of the Amsterdam Agenda will be made available during the months before the conference. And there will be ample opportunity for discussion and debate with a view to improving and focusing the final document.

European scientists, funding agencies and journals have a responsibility to improve the relevance, quality and integrity of research. I very much hope to welcome you to the 5th World Conference on Research Integrity.

Lex Bouter

Lex is professor of methodology and integrity at VU University Medical Center, Amsterdam, The Netherlands, co-chair of the 5th World Conference on Research Integrity and chair of Netherlands Research Integrity Network, Vrije Universiteit Amsterdam.

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