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Scholarly Integrity

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Integrity and Compliance in Globalized and Culturally Diverse Settings – Perspectives from Industry

Klaus Moosmayer | Siemens AG, Germany

It is a great honor for me to speak to you this evening. This means really a lot for me. Also for personal reason as my deceased father-in-law, the Spanish law professor and Supreme Court judge Marino Barbero Santos was for many years the president of the Alexander von Humboldt Association in Spain.

The title of my speech is “Integrity and Compliance in Globalized and Culturally diverse Settings - Perspective from Industry”. This may sound at a first glance very high level, so what does this mean? First of all, it seems that we have something in common. Your foundation which is of utmost importance for the development of science is a real global player - as we would call it in the industry. The program and the participation list of your 10th International Forum which starts today is the best proof. And Siemens, founded here in Berlin 1847, with its more than 350.000 employees in more than 200 countries is regarded as one of the most international business organization worldwide. Werner von Siemens, the founder who was born 200 years ago, already expanded his business to Russia, England, the USA and other countries.

Although we certainly differ in many regards, we face similar cultural challenges and have difficult decisions to make. One example: I just arrived from a travel to the Middle East – and the start country of my trip was Iran. I can imagine that you have similar discussion in your foundation as we have in our company. To which extent we can and should start relationships with Iran? Can we – given our responsibility towards and friendship with Israel - start cooperation and business with Iran after the sanctions have been lifted to a certain extent? Or do we maybe even owe the people in Iran such a dialogue and – in our case – need to provide the country with a modern state of the art infrastructure when it comes to energy supply, mobility and industrialization? I believe it is important that science and industry talk about these difficult questions.

Now let’s have a look at Integrity and Compliance. It is interesting that we use these words in parallel. Maybe it is this way because Compliance is traditionally used in a more narrow way - as Compliance with law and regulations - and we start to realize that this might not be enough. But let us take step by step. When preparing the speech I thought, the best way to explain what Compliance means to me and to our company is just to tell you our story of “Non-Compliance” and the lessons learned from this disaster.

It is now exactly 10 years ago and it was the 15th of November 2006 when Siemens, this icon of German industry, was dawn raided by several hundred Bavarian prosecutors, police officers and tax inspectors. This dawn raid developed to one of the biggest international corruption cases. The internal and external investigations discovered and sanctioned a systematic violation of the Anti-Bribery laws and we nearly lost our license to do business.

And we lost for some time our pride and our reputation. Let's forget for a moment the enforcement authorities, rating agencies, investors and other "stakeholders" which are important for a company. Let's talk about young people. Siemens was always one of the preferred employers for young engineers. In 2007, we had a threatening loss of interest of young people joining Siemens. This is because nobody – if he or she is not a criminal – wants to work in an environment of corruption.

I learned in these years, as a member of the new Compliance management team, what Compliance is all about: It is about leadership in an organization which is committed to do the right thing and talks about it. This is of utmost importance – and I have never seen there a cultural difference around the world. If am looking back the 10 years of our efforts to make Siemens a better company, I believe that communication is the key. When I ask managers what is the biggest difference in Siemens today and Siemens before 2006, they often say to me: Before 2006, in not a single business meeting we discussed openly the risk of corruption and other misconduct. This is different today. The way how we are doing this with our more than 350.000 employees then of course takes cultural differences into consideration. We work a lot with Integrity Dialogues where managers discuss with their colleagues dilemma situations and day-by-day Compliance challenges.¹ Here, the local environment is of utmost importance and you can imagine that the Integrity dialogue I witnessed in Lagos, Nigeria was quite different from the one in Helsinki, Finland. But to be here crystal clear: I do not believe in the distinction in "good" and "bad countries". Such a distinction is a defamation of the many great people who are in their environment trying to fight for what is right and to change the often difficult situation they are living in. And look at many of the famous corruption cases: Often it is a manager from a so called "good" western country who is bribing in a so called "bad" country. And as "globalization" is in the headline of my speech: This has a huge impact on Compliance. Years ago, a bribery case in a country far away from Europe or the USA would most likely not become known and visible. This has drastically changed. Due to social media the allegation will become public within minutes.

Compliance and Integrity have also something to do with honesty. You know, corporations – and maybe even foundations and public organizations – love nice reports about sustainability and what they do for societies. But the fact is quite simple: All organizations are indeed part of society – but with all opportunities and risks. We as Siemens are part of society in more than 200 countries. We are like a quite big city. Does anybody believe that in a big city nothing bad happens? Does anybody believe that individual misconduct can be avoided in organizations 100%? I don't. But I believe that especially in such a situation, you have the reality test if Compliance is effective or not. To take up an allegation, conduct a fair and professional internal investigation under the presumption of innocence and in case the allegation is proven to take clear and coherent decisions is of utmost importance. Because the employees are watching these efforts very carefully. Is the successful manager who was involved in bribery judged by the same standards as a blue collar worker who has stolen

¹ More about the Siemens Compliance system:
<http://www.siemens.com/global/en/home/company/sustainability/compliance.html>

copper? I get sometimes emotional here because I still observe that journalists, NGOs and enforcement authorities are negative when companies do report detected misconduct. You will then hear often the statement “The compliance system has failed”. The opposite is true. We should be very suspicious if big organizations are claiming that everything is fine. In the best case, they may simply not know what is going on.

Another aspect of the globalization is that fighting alone is not sufficient any more if we want to overcome the structural problem of corruption and related misconduct. We need collective action, a joint effort by government, civil society, industry – and of course science. It starts with talking to each other, in order to get a better understanding – especially with regard to the cultural environment. The next step is to define joint targets and then start concrete projects. I have the great honor to be able to drive this at the level of the OECD as the Chair of the Anti-Bribery Taskforce of the Business², as the Chair of the B20 Anticorruption and Responsible Business Conduct Group under the German G20 2017 Presidency³ and of course daily in my own company. Our Siemens Integrity Initiative supports with a funding volume of more than 100 Mio. USD currently 56 anti-corruption projects around the globe and more will follow. And it is amazing to see - just to mention one project - hundreds of students at Cairo University being enthusiastically engaged in anti-corruption workshops. These are moments you will never forget in your life. And when we talk about culturally diverse settings – the success of such projects is the best proof that we have the same understanding of Compliance and Integrity.⁴ We just need to try – although – I must also admit this openly – it’s a long way with many setbacks. Just a few days ago I heard again this famous sentence from a businessman who presented a typical German medium sized company: “We will never root out corruption, everybody does it, and therefore we have also to do it in order to stay competitive.” We have to fight jointly against this still persistent perception.

Closing my speech let me come back to my initial remark about Compliance and Integrity. For us, it is a long journey. We started at “point zero” at the 15th of November 2006 when our corruption scandal broke out and focused – naturally – on establishing a sound Compliance system with all its processes, tools and innovative risk assessments. But we know that there must be more for a sustainable long term success. This is the cultural element. This is about integrity which I try to translate in very simple words like “walk the talk”. Or, I propose to people to ask themselves if they would be able to tell their husbands, wives, children or parents what they have done today at work without being ashamed. And maybe there is not a lot of a difference if a sales manager or a scientist is asking himself/herself this question.

² More about the Compliance work of BIAC at the OECD: http://biac.org/policy_groups/anti-bribery-and-corruption/

³ More about the B20 2017 Anti Corruption work: <https://www.b20germany.org/priorities/responsible-business-conduct-anti-corruption/>

⁴ More about Collective Action and the Siemens Integrity Initiative: <http://www.siemens.com/about/sustainability/en/core-topics/compliance/collective-action/>

Thank you very much for your attention, enjoy the evening and I wish you enriching discussions during the next days.

Section I: Scholarly Integrity - Individual Level (Academic Disciplines)

Panel I: What does scholarly integrity entail on the level of individual researchers in different disciplinary areas?

Scholarly Integrity - Recommendations of the InterAcademy Partnership

Mohamed H.A. Hassan | InterAcademy Partnership

1. About IAP:

- global network of 150 merit based academies of Science, Medicine and Engineering (SME);
- academies are independent merit-based organizations of individuals whose members are drawn from the most accomplished scientists and elected by peers solely on the basis scientific excellence and merit;
- as the most prestigious global merit-based scientific body, IAP and its academy members need to provide leadership on matters related to scholarly integrity and help to establish global standers for the responsible conduct of research.

2. IAP activities:

- produce consensus policy-relevant short statements
- publish reports on critical issues of global concern to society

Examples relevant to scholarly integrity are:

- latest statement: *September 2016*
A call for action to improve the reproducibility of biomedical research
- Reports: *two published reports*
Responsible conduct in the global research enterprise (2012)
A guide to responsible conduct in the global research enterprise (2016)

The two Reports are intended to serve as a basic guide to foster scholarly integrity and basic values that govern the conduct and communication of research among individual researchers and students.

The first Report calls attention to a number of key issues to ensure responsible behavior in the conduct of scientific research by individuals, while the second Report develops educational material for individual scientists, educators and research managers, addressing issues related to academic integrity.

3. Individual Researchers

The two reports highlight four clusters of responsibilities to individual researchers, including members of national academies:

First: responsibilities to themselves that uphold standards of proper conduct in pursuing their own research activities, observe applicable rules, regulations and protocols, and take appropriate actions when they witness or suspect misconduct

A challenging question that might relate to research misconduct by individuals is the current methods we use to evaluate and award research. A new study has just been launched by IAP entitled: "*A global assessment of research evaluation*"

The study will examine the strength and weakness of current research evaluation practices around the world and across disciplines, including the over reliance on bibliometric indicators such as citations, impact factors and patents, and how these might lead some scientists to "cut corners" and engage in research misconduct.

The final product of the study will be a report to be published next year that provides specific recommendations to all those involved in the research enterprise

Second: responsibilities to young scientists that instill in them a culture of research integrity through mentoring, training and education.

Future science leaders need to clearly understand:

- the rules, regulations and protocols that govern the proper conduct of research
- The damage to their research carriers and the research enterprise and the ethos of science caused by research misconduct
- The severe punishment for those violating the research integrity rules

A number of world class universities, mainly in advanced countries, have established institutional framework and courses to promote research integrity among students and faculty.

In most developing countries, however, and especially in low and middle income countries similar university initiatives to promote research integrity hardly exist. Lack of awareness of the values of scholarly integrity and lack of knowledge on the consequences of research misconduct are among the causes of research integrity violations. This calls for urgent action to build capacities to promote research integrity among university research students and faculty members in those countries.

IAP plans to initiate a new project to encourage and support IAP member academies in LMIC to partner with leading national universities to establish mentorship and training program for researchers.

Third: responsibilities to policy and decision makers that the science advice they are requested to provide to influence policy is credible, unbiased and based on the best available scientific evidence that meet the research integrity standards,

Fourth: responsibilities to society that require researchers not to involve in unacceptable research that is harmful to society such as research on weapons of mass destruction outlawed by international treaties

Integrity, Efficiency and Productivity

Munkh-Erdene Lkhamsuren | National University of Mongolia

Scholarly integrity is something that I don't research, but as a member of academia, I do practice and witness it. Thus, by way of reflecting on my experience and observations, I hope to respond to the questions that the organizers of this forum raised. Hence, it is needless to say that my response is biased in favor of my personal observations and experience in my field, the humanities and the social sciences.

On the level of individual researchers, what does scholarly integrity entail in the culture of your academic discipline – beyond mere compliance with legal rules?

At the outset, I would like to genuinely acknowledge the great work that academic guilds, that is, departments, institutes or research groups, dedicated and committed to the advancement of knowledge do to cultivate and nurture good scholarly practice. I also highly appreciate the effort that universities, research institutions, professional associations, and funding bodies exert to define and redefine the boundaries within which research activities must be conducted. All the guidelines, codes of practice and ethics committees issued and established by these organizations are there to ensure and safeguard the integrity of researchers and the academia. In short, the academic world is doing its best to educate the entire research community in the best scholarly practice and to raise awareness about possible scholarly misconduct. As a member of academia, I have undoubtedly been brought up in this academic culture and my understanding and attitude towards scholarship must have been shaped by this culture.

Yet, I believe, it is the pursuit of scholarly excellence on the part of the individual researchers that leaves no room for scholarly misconduct. Thus, in my opinion, the linchpin of scholarly integrity resides in the pursuit of scholarly excellence, rather than in compliance with the legal rules. Scholarly excellence, in my opinion, is about being true to your research even if your search seems to be elusive. It is not about how to produce a publication. Instead it is about how to exhaust the question that you have raised. Certainly, there will be no scholarly excellence without scholarly integrity. Thus, the pursuit of scholarly excellence leaves no place for plagiarism, falsification, fabrication and the like.

What are the most relevant risks with regard to scholarly integrity for individual researchers in your disciplinary area?

I believe that the pursuit of scholarly excellence is only possible in an environment that promotes an unfettered pursuit of truth. The pursuit of truth is best served when the best of the inquisitive and tenacious minds populate the environment that safeguards and promotes them well. While both the best minds and the environment conducive to the pursuit of scholarly excellence are precious and priceless, the pursuit of truth can be both elusive and expensive. However, under the current regime which seems to prioritize efficiency and productivity, many young researchers are placed in a precarious situation in

which they are constantly pressured to meet deadlines and produce results with meager means. Indeed, the current “Publish or Perish!” regime, I am afraid, is not favorable to scholarly excellence and, consequently, scholarly integrity. One of the most common challenges that many researchers, especially non-tenured ones, face is to produce publications within limited time frames and with limited resources. In short, to meet performance expectations within the given deadline or to lose funding (and perhaps even one’s career prospect) is the regime that many young researchers are confronted with. Thus, researchers are forced to produce publications at the risk of excellence and integrity of their scholarship.

Furthermore, according to Jacob Foster and his colleagues the regime also seems to encourage what they call “productive tradition” at the expense of “risky innovation”. Moreover, Randy Schekman, a Nobel prize-winning scientist, has voiced his concern about “the distorting incentives” that the current “impact factor” metrics have on academia. Therefore, the current regime seems to incentivize behaviors that are not conducive to academia. In short, the current regime not only puts many young researchers in a precarious situation but also tends to favor quantity over quality, putting both scholarly excellence and integrity at risk.

What do I, personally, do in order to tackle those risks and to promote a culture of good scholarly practice?

I would like to respond to this question by way of sharing some of my personal experiences. I have been in academia for quite some time. However, my productivity has been rather disappointing in terms of numbers.

I graduated from the National University of Mongolia in 1990 as an undergraduate student, yet I graduated from the university with a paper at the country’s top academic journal in my field, the *Studia Historica* of the Mongolian Academy of Sciences. Moreover, to my delight and great admiration, the chair of the State Examination Committee, against whose major work I had squarely argued in my diploma work, not only praised my work as already meeting the requirements of *kandidat nauk* but also recommended the University to hire me as a faculty member. While lecturing at the university, I was captivated by the issue of ethnicity, nationalism, and collective identity in Mongolia. I was enrolled in *aspirantura* and pursued the topic for almost three years and had nearly completed drafting my dissertation. Theoretically, my dissertation was built on Soviet scholarship on ethnicity and nationalism. However, after reading Ernest Gellner’s *Nations and Nationalism* in Russian, I decided to discard what I was doing in Mongolia and to study abroad. I knew I could easily defend the dissertation and obtain the degree. Yet, as the discrediting of historical-materialism in the 1990s rendered the arguments that the Chair of the State Examination Committee advanced in his work untenable, I knew my dissertation would soon be discredited when Western scholarship on ethnicity and nationalism found their way into Mongolia. Or, in fact, I had just learned that my dissertation had been discredited a long time ago.

Later on, when I, as a doctoral student at a Japanese university, presented a paper at the Association for Asian Studies 2003 annual meeting, the chair of the panel, whose work I

criticized in my paper, graciously asked me if I was interested in publishing the paper in a journal of which he was the managing editor. I knew a paper in an American academic journal would greatly boost my competitiveness in my job applications, not to mention my chance to defend my dissertation successfully. Yet, I knew there were some sources that I needed to integrate into my research. So, I declined the offer. I returned to Mongolia in 2004 after two failed post-doctoral applications. Finally, I was able to finish the paper and publish it in a British peer reviewed journal in 2006.

I started my current project eight years ago when I received a Stanford Humanities Center fellowship, but I haven't been able to work on my project continuously. Whenever my fellowship ended my research was stalled and whenever I received a new fellowship I took up the project again. Yet, each time when I took up my project I had to start almost everything anew because in between I had been forced to do something else. Now, I hope to finish my project in the remaining period of my current Humboldt fellowship. Thus, in retrospect, I seem to have been resisting to and at the same time coping with the current regime.

Scholarly Integrity in Sociological Research

Nachman Ben-Yehuda | Hebrew University of Jerusalem, Israel

1. What does scholarly integrity entail on the level of individual researchers in different disciplinary areas?

Code of ethics: I am a member of both the Israeli and American Sociological and Criminological Associations. From these, the American Sociological Association's (ASA) code of ethics is perhaps the most elaborate and detailed.⁵ It presents about 30 pages long document which can be easily viewed via the Internet. Integrity in this document is characterized as:

Sociologists are honest, fair, and respectful of others in their professional activities—in research, teaching, practice, and service. Sociologists do not knowingly act in ways that jeopardize either their own or others' professional welfare. Sociologists conduct their affairs in ways that inspire trust and confidence; they do not knowingly make statements that are false, misleading, or deceptive.

Among other issues, ASA broad code of ethics focuses on: harassment, fair pay, non-exploitation and/or discrimination, confidentiality, anonymity of resources, informed consent, deception in research, informed consent, data sharing, publication, and more. This means that sociologists should operate openly, fairly and cause no harm. The research areas where the code of ethics is most relevant are: interviews, observations and focus groups. Naturally, while qualitative research methods can require close attention to ethics (e.g., with issues of informed consent), analyzing massive data sets may involve less ethical issues.

My current research effort, with Prof. Amalya Oliver, has focused on fraud in research.⁶ Consequently, I have obviously become much more sensitized to such issues as falsification and fabrication of data, plagiarism, misrepresentation of data, bullying criticisms, and the like. I thus suspect that the three highest relevant risks or threats in sociological research are falsification and falsification of data, plagiarism, and personal misrepresentation. Another risky issue may involve two almost opposing poles. One is of doing irrelevant, unimportant and boring research. The kind of research that may end up as a decent candidate for such prizes as the Ig Nobel or the older Golden Fleece Award. One potential consequence of such a situation is that it can potentially breed cynicism, contempt, and thus may help make some researchers prone to misconduct. The other has to do with the characterization of some sociological work as subversive. Such work may place some researchers at risks of harsh criticisms from politicians or even colleagues who are more conservative. An example is the criticism raised by some American social scientists that

⁵ See http://www.asanet.org/sites/default/files/code_of_ethics.pdf

⁶ Nachman Ben-Yehuda and Amalya Oliver-Lumerman, *Fraud and Misconduct in Research: Detection, Investigation, and Organizational Response*, Forthcoming, 2017.

doing research on deviance from a constructivist perspective (and not from an essentialist one) is endangering and corrupting American culture.

Relevant issues with fraud in research. We feel that invoking the issue of ethics in the context of fraud in research is in fact cloaking and camouflaging the very nature of fraud in research. Ethics is a relatively new framing of this type of fraud. In the past such characterizations as “research misconduct”, “wrongdoing”, and even “intentional bias” were applied to fraud in research. Nevertheless, the true nature of this behavior is fraud. The observed phenomenon is composed of researchers who falsify, cook, massage and fabricate data and take credit where credit is not due. Simply put, such researchers are deliberately and intentionally deceiving us. They waste precious and rare resources in a deviant and crooked fashion. In fact they fit quite well into a larger group of deviants: con artists. The history of con artists is indeed impressive. From such person as Victor Lustig who tried to sell the Eiffel Tower (twice...) to Bernard Lawrence "Bernie" Madoff who used a Ponzi scheme to steal something like 65 billion dollars. Did Lustig and Madoff have an ethical problem? Did they behave unethically? Yes. Of course they did, like other con artists. But are ethical issues the most appropriate way to describe their acts of cheating and swindling? No. They are fraudsters. We thus believe that packaging fraudulent researchers as having ethical issues is a rhetorical way to evade the central trait of this reckless, irresponsible and deceitful behavior – that is, its deliberate fraudulent nature and to help maintain a positive image of research and science.

I believe that ethical issues need to be addressed where the law does not apply. For example, I believe that ethical training could do wonders for academic administrators...

Three specific illustrations for practicing ethics. The first is administrative. A few years ago a team of sociologists from Hebrew U. and a team from the U. of Toronto focused on a study of Canadians who participated in a Birthright – Taglit project. This project enables Jews at certain age groups to have one free trip to Israel. These voyages are typically done in organized groups and we were curious to find out what was the experience of both Canadians and Israelis who took part in these trips. The research involved in-depth interviews and focus groups. Consequently, ethical confirmation/permissions were required. While Hebrew U. at that time had established bureaucratic mechanisms to deal with such issues, these mechanisms were not very clear and did confuse us. We ended up going through the ethics mechanisms of the U. of Toronto. There, these bureaucratic mechanisms were easily understandable, clear to follow and fast. This is an illustration how sometimes international cooperation requires some maneuvering. The second has to do with a graduate student who wanted to do a dissertation on how pedophiles experience their crimes. He wanted to interview pedophiles in processes of rehabilitation and mainstreaming. The ethical issue focused on what may happen if the student hears a confession about crimes that were not reported. After some discussions and consultations with the legal department, the student was instructed to inform his interviewees that the disclosure of such information cannot remain confidential. Third, I am consulted about textbooks on deviant behavior. Many such textbooks have a typically clear structure: theoretical reviews followed by chapters that focus on and illustrate specific forms of deviance. For example: shoplifting, murder, rape, fraud, sex offenses, pornography, etc. What constitutes deviance, obviously changes over time. For example, one textbook from

1971⁷ had chapters on premarital sex, militant women, the hippie movement and militant students. No textbook these days will have such chapters. However, one current chapter about homosexual behavior does cause ethical problems. Gay students approached me and asked that I use my contacts to persuade authors to take homosexuality out of textbooks on deviance. Their point was that placing chapters on homosexuality in textbooks on deviance frames this behavior as deviant and reinforces the stigma attached to homosexuality.

2. What can and should be done on the level of research performing institutions in order to foster a “culture of compliance”?

One step that can be taken is to require faculty to take courses in ethics (such digital courses are available these days), and on how to conduct fraud-free research and what not to do (using a large number of illustrations). Another step is to have ethics committees and ethics consultants to the level of academic departments. Hebrew U. has such committees and persons and their assistance is very successful. I also tend to consult with colleges using Skype and e-mails. I found it quite useful. However, this may not always work. Much of the academic ambiance is informal, gossipy, and in many respects fits what Diana Crane characterized in her 1972 work as the “Invisible College.”⁸ In 1973 Mark Granovetter specified in the AJS⁹ that this “College” is based on what he referred to as “the Strength of Weak Ties.” One may use this “College” and the “weak ties” to promote and encourage research on interesting, important and relevant issues. Then, whenever possible and appropriate (e.g., in conferences, meetings and e-mailings), diffuse illustrative and contemporary cases of fraud in research to fire up discussions about these cases and the lessons that need to be drawn. I emphasize that the issue is reduction of cases of fraud in research and it needs to be treated as such. Unfortunately, Vaidyanathan, Khalsa and Ecklund’s 2016 study¹⁰ of gossiping among 251 physicists pointed out that they: “are not primarily worried about occasional egregious ethical violations such as fabrication, falsification, and plagiarism, and/or the processes of formal sanctions in response to these types of serious transgressions of scientific norms” (p. 569). Meaning that network gossiping may not always be an effective social control mechanism.

3. What can funding organizations do in order to promote scholarly integrity

Clearly, funding organizations need to keep close contact with researchers they fund and have better monitoring. However, this needs to be done wisely, in good taste and with proportion. Creative work typically does not benefit from a too close or choking bureaucratic controlling, reporting or monitoring.

⁷ Robert R. Bell. 1971. *Social Deviance*, Homewood, Illinois, The Dorsey Press.

⁸ Crane, Diane. *Invisible Colleges: Diffusion of Knowledge in Scientific Communities*. Chicago, 1972. See also Wagner, Caroline S. 2008. *The New Invisible College: Science for Development*, Washington: Brookings Institution Press.

⁹ [Granovetter, Mark. *The Strength of Weak Ties*. *American Journal of Sociology* 78 \(May 1973\): 1360-1380](#)

¹⁰ Brandon Vaidyanathan, Simranjit Khalsa, Elaine Howard Ecklund. 2016. “Gossip as Social Control: Informal Sanctions on Ethical Violations in Scientific Workplaces,” *Social Problems*, 63(#4): 554-572.

Section II: Scholarly Integrity - Institutional Level

Panel II: What can and should be done on the level of research performing institutions in order to foster a "culture of compliance"?

Policy Approaches to Academic Integrity at Macquarie University

Sakkie Pretorius | Macquarie University, Australia

Scholarly integrity is intimately bound up with an education institution's reputation and the reputation of academia more broadly. Macquarie has policy approaches to both academic integrity and research integrity. Approaches to research integrity and to institutional responses to poor conduct vary across the academic sector. Over the past few years, Macquarie University has put a number of strategies in place to improve consistency of processes and understanding among staff and students. Most importantly, the *Macquarie University Code for the Responsible Conduct of Research*, based closely on the *Australian Code for the Responsible Conduct of Research*, and accompanying *Research Integrity Framework* now provides a transparent structure to guide the University's activities. Key innovations include the establishment of a well-publicised and central Research Integrity Office (RIO). This office provides a contact point for staff and research students to raise research integrity matters with privacy outside their departmental or faculty reporting lines. The RIO has carriage of investigations into research integrity matters, and education of staff and students with regard to institutional and societal expectations and processes around research integrity. The RIO also works closely with Human Resources staff to effectively manage complex matters where research integrity and staff conduct matters coincide. The work of the RIO is supported by a cohort of 11 Research Integrity Advisors (RIAs), with members in each faculty. The RIAs frequently provide a first contact point for staff and students seeking support and advice. Much has been learnt during the first two years since the Macquarie Code was implemented including the fact that every integrity matter is different and therefore requires a unique and tailored response and that sufficiently flexible systems are required to cater for the disparate suite of issues that arise. Ultimately, we are guided by the principle that an institution's reputation does not rest on *whether* research integrity matters arise, but rather with *how* these matters are dealt with.

Quality-emphasis Can Protect Scientific Research Against Devastating Fraud

Falin Chen | National Taiwan University

Since 2010, Retraction Watch has reported about cases of scientific papers retracted from the archive. Up to 2015, there have been 3040 cases reported. The number of cases increased from 89 in 2010 to 717 in 2015, an increase of 100 cases per year in the past six years. Each case is concerned with a group of authors and usually a number of papers. In other words, hundreds of researchers per year are involved in this kind of paper-retraction affairs, a kind of large scale academic tragedy.

The retractions were attributed to the following four reasons: (1) Faked data (391 cases), (2) plagiarism (291 cases), (3) Disputed data (131 cases), (4) Not reproducible (80 cases). The consequences for the authors of these retracted papers vary: some are rejected from promotion application, some see their degrees revoked, applications by these authors are turned down, and many others get into troubles in their academic career.

Of the 3040 cases reported, 866 occurred in the United States, 260 in China, 142 in Germany, 139 in Japan, 135 in India, etc. That most of the cases occurred in the United States is because the US published a highest number of papers worldwide. Note please that retractions are often requested by the authors in order to protect their names. Sometimes they have to fight with the editor and publisher to receive their approval for the retraction.

Not only has the number of retraction risen dramatically, but also the number of errata. In 2013, in total 9178 errata were published while in 2015 the number increased to 12,344. This high number of flawed papers published justifies speculation that the review system is failing to some extent. But what is wrong with the system?

For a long time, the achievement of an academic professional was judged mainly by the quality of his/her papers published while the quantity played an auxiliary role. This tradition, nevertheless, has changed dramatically in past decades because there are so many universities and institutions where tens of thousands of professionals need to publish papers to survive. To meet the market-needs, for example, Springer and Elsevier, the two largest publishers worldwide, have created more than 6,000 journals altogether. If a journal publishes 25 papers per month, there are 1.8 million papers published per year by them.

In addition to the number of papers, there is another number implied with an even more serious problem, which is the number of referees needed. Normally, a published paper needs at least two referees to review the manuscript twice. More than seven million reviews per year are required by these two publishers. Can these two publishers find enough referees to complete seven million reviews? On the other hand, nowadays the editors of so-called open-access journals keep sending emails to researchers worldwide to call for papers – on a daily basis. Do they have enough referees to write reviews? Consequently and accordingly, it is justified to speculate that a great many papers are

published without having been properly reviewed. This could be the major and most serious problem of the academic system today.

Why are so many people so highly enthusiastic about publishing papers? It is simply because publishing papers has become a profitable business. Open-access journals charge authors 100-500 USD to post a paper on their websites. Springer and Elsevier charge, for example, universities in Taiwan more than 20 million USD per year to download papers. Researchers outside the campus need to pay about 20 to 30 USD for each paper download. To maintain such a wonderful business, the publishers inevitably choose to push up the number of papers published as far as possible. This comes at the cost of the papers' quality.

Do we need this kind of commercial journals? If the answer is yes, these journals can be easily replaced by a so-called Self Publish System (SPS). Under such a new system, papers can be posted on an institution's website so that the paper can be searched openly and downloaded freely. Most importantly, it can be disseminated globally. The value of a paper is no longer guaranteed by journal's name, but by the names of the institution and the author(s). To enhance a paper's value, the author may append comments granted by honorable scholars. The legitimacy of SPS is maintained by researchers with a strong sense of academic integrity. Strong support shall be offered by academic societies which shall formally and constantly advise the referees of promotion and application that the applicant's contribution be examined from papers' quality instead of quantity.

At present, we still have high quality journals run mostly by universities and academic societies, which have upheld the legacy of academic integrity for centuries. These journals should continue to be used for high quality publications. Although scientific fraud seems to have become more common worldwide, researchers should continue to conduct their researches with a strong sense of honor and publish their papers in respectable journals or on websites belonging to research institutions.

Implementing a Compliance Management System at University Level

Bartosz Makowicz | Europa University Viadrina, Germany/Poland

Organizations that have their own functions, structures and procedures to achieve their objectives must act within the legal and moral environment (compliance). Therefore, it is necessary that members of the organizations not only are aware of their compliance obligations but also act in accordance with them (compliance culture). The practice, however, has revealed that this obvious postulate is broken again and again with devastating consequences for organizations and people like personal liability, sanctions or reputational harms. Organizations should, therefore, make any effort to promote a sustainable compliance culture within their structures.

In this context, so-called compliance management systems (CMS) are developed and implemented. It is irrelevant whether it is an organization in the form of corporations, authorities, charity, federations or universities: If a compliance risk materialises, it can have devastating consequences, regardless of the type of organization. Due to the diversity and complexity of organizations, it can hardly be generally elaborated what particular measures have to be undertaken. However, the standard ISO 19600 CMS, which incorporates the globally prevailing knowhow, provides a good guidance. According to the standard, it is the human being and the compliance culture that should be in the focus of a CMS. The organization's top management has a significant role to play and should enable the system and actively promote it.

The system starts with gathering information on compliance obligations and identifying compliance risks. On this basis, a compliance policy is being developed, taking into account the size, structure, nature and complexity of the organization. The roles for compliance should be assigned to all members of the organization. Usually, a dedicated person is responsible for the system, the so-called compliance officer. At the heart of the CMS are diverse operational measures, such as training, communication, whistle-blowing, codes of conduct and other awareness-building activities. All steps should be documented and evaluated. Finally, the system should constantly be improved by not only investigating all compliance issues but also re-assessing the compliance risks. If the CMS is implemented concerning the size, complexity and structure of the organization, it will fulfil its functions, including the promotion of a compliance culture, and ensure the sustainable integrity of the organizations.

Understanding Cultural Context of Research Misconduct Is Essential in Building an Institutional Culture of Integrity

Sandra L. Titus | Office of Research Integrity (retired), USA

Disclaimer: The views expressed are those of the author and do not reflect the official position of the Office of Research Integrity, Department of Health and Human Services.

It is clear that the incidence of research misconduct is increasing. Retractions, irreproducibility of data, and research on misconduct indicate a sizeable problem.^{1, 2} Thus, it is critical to examine what happens during the process of conducting research that may enable or promote dishonest behavior and questionable research practices.

There are three key factors that are often present in the U.S. Office of Research cases of research misconduct.^{3, 4} Examining these factors can be useful in planning integrity interventions.

First, scientists have high levels of role stress. Stress is inevitable for the researcher who is competing for funding, competing to publish in top tier journals, managing a lab, supervising a trainee, teaching, and many other responsibilities.

Post docs and graduate students are also stressed. A survey at a major US cancer center found that nearly one-third of 140 trainees felt pressure to “prove” a mentor’s hypothesis, even though results did not support it.⁵ Furthermore, in their apprenticeship role trainees may find themselves in a double bind. If they report an allegation on their mentor they will most likely lose the opportunity to continue working in that group.

Trainees (and support staff) often receive deficient supervision and oversight and are treated as cheap labor. An Office of Research Integrity (ORI) study of trainees who were found guilty of misconduct found that two thirds of mentors had not established adequate procedures, scheduled regular meetings, or reviewed trainees’ raw data.³

The second way misconduct occurs is when scientists work alone; we know everyone in science likes to have a degree of autonomy. Sometimes post docs or graduate students create reasons they need to work a different set of hours. Senior faculty may not appear to work alone, although they actually are, when they control their own data set. Working alone provides opportunities to commit research misconduct.⁶

The third factor that contributes to the increase in research misconduct occurs when the researcher observes that the institution’s compliance program is not respected or applied. The lack of honesty and integrity by the leadership becomes common institutional knowledge.

Dan Ariely, a behavioral economist who has spent his career examining why people cheat, underlines this point. He has found in numerous experiments that “when given the opportunity, many honest people will cheat.”⁷

How do you build a culture of integrity?

All organizations have problems related to integrity and a close parallel of course can be seen in the financial industry. Lori Richards, Director of Compliance at the U.S. Securities and Exchange Commission studied the differences between successful and unsuccessful institutional efforts to follow the compliance regulations. She found those institutions that failed had leaders who understood the need to bring about changes, however those who would implement the changes had not been included in any discussion, logistics, education, or problem solving.⁸ The inclusion and respect for others is critical in building a culture of integrity.

Intervention to enhance or change the focus in an institution must start with enhancing the skills and knowledge of the leadership team so they can lead the integrity efforts. They need to be champions of integrity and embrace the words of a wise sage who said, "The highest degree of wisdom is integrity." Leaders must communicate frequently that they expect all researchers to maintain integrity.

Second, educational efforts must be made to assure that everyone is educated and understands the details in the research misconduct compliance program. Scientists have a very deficient understanding about what constitutes research misconduct and how to make a credible report.⁹ RCR training on responsible conduct of research needs to help trainees and faculty develop an understanding on the existing and changing norms of conducting research.

Research Integrity Officers are also insufficiently prepared to manage the complexity of their cases. Funders and institutions need to support the requirement that research integrity officers (RIOs) receive training. Poorly handled cases and lack of regulation allow misconduct to grow.

Third, action needs to promote stronger whistleblower protection policies, procedures, and educational outreach. Protecting whistleblowers via a required policy statement is insufficient when it fails to convey some of the procedures that may be used to prevent and handle retaliation. Using hot lines and providing instruction on how to make a meaningful allegation anonymously could be tried. Building credibility as well as enforcement is essential.

Fourth, integrity efforts must focus on ways to reduce graduate students' and post docs' stress, and limit opportunities to cheat by strengthening mentoring efforts.^{3, 4, 9} For instance:

- Mentors need to be playing a significant role in educating mentees and reducing their trainee stress and opportunities to work alone.
- Universities and Funders need to define their requirements on the faculty's mentoring role. This could be similar to a job description in which roles and responsibilities are described in detail.
- Mentors need to be evaluated by their trainees in an anonymous way. Institutions and funders would benefit from this type of evaluation.

- Absentee mentors should be held accountable for research misconduct committed by their trainees.
- Funders and Universities need to consider capping the number of mentees any one researcher can realistically train
- Mentors need mentoring too. The outstanding mentors should be asked to mentor others on being a better mentor

Reducing stress and opportunities for faculty to cheat must also be addressed by encouraging discussions on how to reduce stress and promote transparency of research. Faculty members also need to become champions of institutional integrity by working on issues to:

- Develop a central repository so data is locked
- Create an institutional authorship standard before submission in which actual roles were described in detail
- Develop a process to critique papers before submission to journals
- Establish routine use of quality improvement audits throughout the research process

In addition, established scientists would be less likely to commit misconduct if they were more concerned about being detected and punished.¹⁰ Currently, they conclude that the risk is low: few cases are referred to their institution. They are accurate – 80% would not report an allegation for fear of adverse consequences to themselves.¹¹ It is common knowledge that colleagues do not want to be enmeshed in a conflict. The collective running away from involvement emboldens individuals.

In summary, building a culture of integrity and hence promoting compliance to regulations is more likely to occur when individuals feel their institution recognizes and encourages numerous means to be responsive to the stress of conducting research.

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Section III: Scholarly Integrity - Systemic Level (Funders' Perspective)

Panel III: What can funding organizations do in order to promote scholarly integrity - for the good of science and scholarship in a narrow sense as well as in a broader sense of appreciation by the general public?

The Role of Funding Agencies in Promoting Global Research Integrity

Indira Nath | Indian Academy of Sciences

Scientific research is one of the great adventures of our time. New knowledge is being produced at an unprecedented rate and is transforming society by new technologies and by changing how we think about ourselves and the world. Large international teams are working on problems that were impossible to solve in the past and new fields of research are emerging at the intersection of traditional disciplines. Our planet's future will depend on the products of such research. Doing science in a responsible manner and preventing misconduct has become even more important today where teams with multiple disciplines, different cultural background and ethical norms come together.

The role of funding agencies – whether public or private – is critical in this regard. Funding agencies have the power to insist on responsible research practices on the part of grantees. They therefore need to ensure the application of appropriate and transparent rules of research conduct. They need to define and communicate clearly what constitutes misconduct. In addition to the traditional issues of fabrication, falsification and plagiarism, funders need to also address additional issues of gender inequality, disadvantaged groups, cultural and language differences that may be considered inappropriate scholarly conduct. When funding global research, funders need to ensure that there is equality amongst the investigators and avoid using partners from less advantaged countries merely to collect data or samples. Where skills of the investigator need to be improved, appropriate training and technology transfer should be ensured as part of the international project. Where possible, funders should use a broad range of reviewers with experts from multiple disciplines. Where experts are lacking international experts may be invited for review. Germany, Ireland and Italy have used international reviewers in some situations.

As in other areas, the policies and approaches of funding agencies and other responsible government entities around the world can vary and change over time. They may also set standards and definitions for research integrity, oversee the investigations of research institutions or have the capability to perform their own. The diversity in national approaches raises the question of the requirement of greater international harmonization in policies and standards as well as their implementation. New technologies and the digitization of past work raise the possibility that irresponsible behavior from many years in the past may be uncovered. There is no consensus at present on the statute of limits for past practices which

may be considered misconduct by current values. Funders also need to be aware that different disciplines have varying values and codes of conduct which need harmonization while conducting multidisciplinary research.

Funding organizations should ensure that the institutions that are being considered for funding have the infrastructure to promote scholarly integrity and the ability to investigate cases of alleged misconduct. This may be done by assisting the institute to improve their skills by training of students and improving mentorship. Whenever possible the funders may ensure that the investigator/institution gives an undertaking to this effect before funds are released. Such a demand for an undertaking would help in spreading the message that scholarly integrity must become the culture of the nation. The imposition of regulations can slow down research productivity. Investigating misconduct is long and expensive. Moreover, funders also need to be sensitive to the administrative and other costs borne by institutions in complying with these requirements.

There is diversity in national approaches in checking misconduct. Some countries have nationally legislated agencies, whereas others have non-legislated but well defined policies and guidelines, in others no mechanisms exist for independent oversight. Some cultures have a strong feeling for 'saving face' of a hitherto well respected investigator and fear that the reputation of the institution or the country is at stake. Thus harmonization of systems should be ensured prior to funding global research. A spirit of 'oversight' but not 'over regulation' may be adopted by funders. In conclusion, promoting global research conduct has a larger dimension than monetary support.

Scholarly Integrity in Austria

Christine Mannhalter | Austrian Agency for Research Integrity

A high quality of independent basic research is an important asset for every society. It is well accepted that any advancement of science, the social progress and activities shaping our future are only imaginable with contributions of reliable scientific and scholarly knowledge. Scientists have to ensure the high quality of knowledge. In Austria, basic research is financed from public resources and therefore, research institutions are accountable to the public. The public expects that it can trust the scientists, their scientific results, and the institutions that conduct research.

Motivated by these expectations many research institutions established rules - codes of conduct - for scientifically correct and integer research. Some of them belong to the realm of "soft law" and only constitute recommendations, while others are of a binding nature. Quite often, already nationally no clear procedures how to deal with allegations of research misconduct or how to promote good research practices are in place. On an international level, it is even worse as many diverging regulations for scientific integrity exists.

It is well known, that self-governance will only be successful if it is codified and institutionalized. This insight led to the decision of the Austrian Science Fund FWF, the Austrian Academy of Science and some universities to initiate the foundation of a suitable institution and to harmonize rules and regulations already available at Austrian institutions. Following intensive negotiations the Austrian Agency of Scientific Integrity (OeAWI) was established in 2007 and since then makes important contributions to an efficient self-governance within the Austrian research system. As of today, almost all Austrian research funding (RFO) and research performing organizations (RPO) are members of OeAWI. This allows an effective self-governance in the Austrian science and research system and promotes trust in scholarly integrity.

OeAWI continuously raises the awareness for the Standards of Good Scientific Practice. The organization actively contributes to strengthen the ethos of research and the adherence to the code of conduct, and it ensures that negligence of the Standards of Good Scientific Practice is identified and remedied. Its activities focus on the prevention of scientific misconduct, and if misconduct is suspected OeAWI supports the investigation and elucidation of the cases in an objective way.

All members of OeAWI decided that criteria for Good Scientific Practice should be written down to provide researchers with guidelines along which they can perform their research ethically correct with honesty and sincerity, self-discipline, self-criticism and fairness.

The document lays down fundamental principles of scientific and scholarly integrity and the resulting fundamental obligations for researchers. In the document research integrity is clearly defined. It is stated that all persons involved in research are obliged to adhere to the principles of integrity. The organisations in which research is conducted have to ensure that

the Standards of Good Scientific Practice are communicated consistently, that persons in charge of management of the research organizations take suitable measures to ensure that the Standards are communicated in an unambiguous way in writing and during educational presentations. The document makes clear that persons who supervise research projects have to take care that the researchers are informed about the Standards of Good Scientific Practice. In doctoral programs the researchers are obliged to provide the necessary information to their students. The necessary infrastructure has to be provided by the organisations. The document states explicitly that other person's ideas, text and miscellaneous other aspects have to be handled transparently, and effective citation rules have to be observed when preparing a manuscript or a grant proposal.

Considerable effort was devoted to the definition of research misconduct. In the document it was laid-out that misconduct refers to wilful or grossly negligent violations of the Standards. Conscious violations are defined as intended by the researcher, e.g. the fabrication or falsification of data.

The methods and the persons investigating allegations of misconduct for OeAWI were defined and an external commission was established. This group of scientists, called "commission" is nominated for a term of 2 years and the members can be re-elected twice. The members of the commission cover the important research fields – humanities, biology, natural sciences, sociology and law. In case of a case of suspected scientific misconduct an independent investigation is initiated by these scientists. They study the case of suspected misconduct in detail, clarify all facts, discuss and hear both parties, and finally prepare a statement for OeAWI and the scientific institution requesting the investigation.

OeAWI's standards are high and they are in accordance with the current state of international discourse on research integrity. The agency is actively ensuring that violations of the "Standards of Good Scientific Practice" are identified and remedied. Prevention and education in a responsible conduct of research are considered of utmost importance. Thus, coworkers of OeAWI train and teach scientists in good research practice in a creative way. Furthermore, the organization is publically active and advocates adherence to the code of conduct derived from a strict ethos of science and research.

In conclusion, Austria is happy that OeAWI was established which is supporting and advising its members. However, the agency and its advising commission only make recommendations and do not impose sanctions.

Approaches of the German Pharmaceutical Industry Towards Promoting Quality and Integrity in Medical Research

Siegfried Throm | vfa - Association of Research-Based Pharmaceutical Companies, Germany

In order to fulfil its role – to develop and market new therapies for the prevention, treatment or healing of diseases – the pharmaceutical industry has to rely on the results of scientific publications which often form the starting point for the development of new therapies. Furthermore the pharmaceutical companies have to cooperate with scientific institutions and universities with the aim to generate scientific data necessary for their work.

In Germany 20 % of the total funding from industry for academic research is pledged for medical research. It goes without saying that the companies are expecting high quality data for their money. This is the reason why countries with a good reputation for delivering high-quality data such as Germany have attracted many industry-sponsored clinical trials in spite of other locations offering these less costly. Yet, since such studies are the basis for far reaching business decisions associated with substantial costs and economic risks their results must be absolutely trustworthy. Especially detrimental in this regard are cases where companies had based development programmes on academic publications about new targets where late in preclinical or clinical development they had to realise that the original findings were not sound. In these cases not only the company had misallocated a lot of financial and scientific resources into a badly founded project, but also the participants in these trials would have perhaps been better off in other trials.

What is pharma doing to secure high-quality research?

a) For clinical trials

- General and study-specific education
- Prequalification of the study site
- Monitoring: on site audits, for cause or unrelated
- Transparency rules (public registration of clinical trials and later-on of their results) are further adding to build trust in the results.

In addition there are regulatory body inspections and all clinical trials have to be assessed by ethical committees and regulatory bodies.

b) For basic research

- Education of researchers, e.g. regarding GLP and GMP requirements where relevant
- Exchange of researchers between academia and companies
- New cooperation forms, e.g. researchers from companies and academia working side-by side in the laboratory.