

The nightmares of a middle-aged editor

Richard Horton

It was an inspirational moment for me when I first came to Croatia, building friendships with the editors of the *Croatian Medical Journal*, friendship and relationships which are even stronger today than they were a decade ago. And it is a particular pleasure to be able to be back to see my friends here and to have the opportunity to reflect a little bit on the world of knowledge, research, education, and how editors and the scientific community fit in to this emerging culture. As I say, it was a decade ago since I first visited Croatia, and that was a remarkable moment, not just an opportunity to watch personally a country emerging and growing out of an extraordinary difficult time, but it was also a moment to see a people reborn out of a moment of struggle towards an astonishing period of liberty and the impact that that liberty had on all aspects of your society. The 1990s were a moment of hope and optimism, but it is too easy to forget the human and the historical scars that run deep, even in a country that is as safe in its democracy as Croatia. But sometimes the wounds are still fresh – like a newspaper article that appeared in a daily paper in the UK – the *Guardian* – only in March of this year, where somebody who had taken part in an atrocity

inflicted against your country had astonishingly escaped and taken up residence in the United Kingdom, and was discovered. So, these wounds which we had hoped could be healed will from time to time be inflicted again. And that is very painful, because it forces us to ask what have been the sacrifices that you have made, what those sacrifices have been for. What was it that you fought for in the 1990s – for your independence? What was and what remains the objective of your society and how will your children, our children, judge our behaviour today. How will they write a report card on our actions as we are living them right now?

2008 is a very important year in the world of science and medicine and it is important for two specific anniversaries. It is the 60th anniversary of the founding of the World Health Organization, a moment in history when the world came together to build a better place for health and well-being, and it is also the 60th anniversary of the writing of the Universal Declaration of Human Rights. And both, the constitution of the World Health Organization and the Universal Declaration of Human Rights, enshrine the notion of the right to health, a very important right that we hold dear to us in democratic

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nations. What is that right about? In Europe the notion of human rights has a long and distinguished, although occasionally bloody, history. There have been three critical turning points in the European history and the story of the progressive realization of human rights. If I may be momentarily immodest and say that perhaps the first of those was in the 13th century in Britain with the writing of the Magna Charta and the enshrining of the right to *habeas corpus*, that is to say, a fair trial, legalizing for the first time in European culture, modern European culture, the notion of justice, protecting the individual from arbitrary judgement, the principle that we still hold dear, I hope, to this day. In the 18th century came the French revolution, characterized by terrible violence but also symbolizing again a moment of extraordinary European enlightenment. The French encyclopaedists, perhaps some of the first editors of our modern time, gathered and ordered human knowledge, not just for the sake of knowledge, but with the expressed purpose of applying knowledge for society's improvement, the social reform. And that triggered a generation of writers, such as Mary Wollstonecraft in England, who defended and advanced the rights of women and men, the idea that liberty is a crucial human value that we should protect in our society. And the third turning point was a global phenomenon in the 20th century after the Second World War when we created mechanisms through the United Nations, World Health Organization, and the Universal Declaration of Human Rights, that symbolized the contribution of human knowledge, the importance of human rights and liberty, and the ways those ideas could again contribute to social progress.

Now I am truly middle-aged. I am 46 years old, as my daughter repeatedly tells me, and I am the editor of just one of many thousands of journals. But I sit at the intersection between two worlds – the public world and

the professional world, and my job, as is the case for all editors, is to mediate a conversation, although largely within a professional world. It is a world in which the public is increasingly not only a spectator, but also a participant. But, at the same time as we are reflecting on the place of knowledge in a society and the role of an editor as a student of knowledge, we might also ask ourselves why our governments should invest in science, research, and knowledge.

Why should the minister care about the future of Croatian education and science? And my answers to that question go to the heart of what it is to believe in a good society. At some deep level, our society believes that research and knowledge contribute positively to social progress. We believe in the liberty of ideas as the best means to foster and strengthen social justice, from Magna Charta to the enlightenment, to modern advanced democracies and the way we think about human knowledge. And we believe in protecting and advancing human life and human values, guarded as they are by health system that protects life and, equally important, by university and education system that protects the values we hold most dear, the values we fight for, that we sacrifice, sometimes, our lives for. These are our secular temples in our scholarly culture. The task of an editor of a scientific journal is, let me be very frank and modest, it is to respect the history of human inquiry, to respect the values of liberty and dissent, integrity and independence. It is to strengthen the culture of scholarly fluency, the perpetual tacking that takes place between competing visions of the truth until we arrive at an agreement that represents the best that we can say about the nature of the world and the best that we can say of one another as fellow human beings. Editors have a role in mediating this dialectics, this public reasoning in a spirit of robust, rigorous, and honest exchange.

My proposition today is that we face a moral and intellectual crisis in our scholarly world. It is the crisis that threatens to undermine two thousand years of gradual human improvement towards a just society. It is a set of realizable rights that we have been striving for, which includes the right to health, and it is these rights that are in jeopardy. The task of intellectuals, the task of every one of you in this room today is to diagnose accurately this crisis. It is to dissect it, to anatomize it, to characterize its pathology, to define the causal pathways of its disease processes, and to design remedies not only to palliate it but also to defeat the agent that threatens the integrity of our scholarly body. Because, if our intellectual communities become infected with diseases of corruption, fear, oppression, and psychological violence, the moral compass, the progress of our entire society, will be fatally corroded – to the point where human atrocities will be allowed to flourish again.

I want to show you a title of an article in the *JAMA*, edited by our colleague Catherine DeAngelis, which talks about impugning the integrity of medical science. That is the subject of today's concern. And the nature of this crisis runs deep and affects many of us. All countries are affected by this; all scholarly communities are affected by this. The responsibility to defeat this crisis rests with all of us, between nations, among nations.

In this particular case we have an example of a paper, and this was the draft planned for submission to *JAMA*, where there is an authorship list with a query for an external author. In other words, this paper was drafted by a ghost-writer and that paper was then put out to tender and the highest bidder, the person who could be the most influential, in a sense the person who could represent the article from the perspective that the sponsor wanted it to be represented, could be then put in the first author position. The authorship as it finally appeared in the paper as

published included such a person at the first author position. Here is an example of corrupt authorship practice that affected one of the most significant journals in the medical domain. And it also affected loads of us in the UK, when a very well known media psychiatrist was accused of plagiarism, the dean dismissed from a University in the UK – a very senior member of academic community, because of his breach of scientific integrity and research misconduct.

It affects *The Lancet* as well, we are not immune from this and I do not pretend we are. We published a comment piece in December last year, entitled Ten Myths and One Truth about Generalised HIV Epidemics. The first sentence runs: “Despite substantial progress against AIDS worldwide we are still losing ground,” and the article is signed by James Shelton. That article then appeared again, under a different authorship: “Despite substantial progress against AIDS worldwide we are still losing ground.” And if you compare word for word, the article is identical, and what this website did and what this individual did was simply take the piece published in *The Lancet*, change the authorship and republish it on a website. We did not notice it; it was noticed by a third party who drew it to our attention.

Only this week, I am afraid to say, we had to issue an expression of concern about a research paper from a hitherto respected research group in Austria, because there were questions about the nature of informed consent and ethics approval of a work we published last year. This is ever present with us, almost on a weekly basis.

At *The Lancet*, we have been informed of another alleged breach of research integrity. I want to spend a moment talking about one particular case that has had a huge impact on us and is casting uncertainty and doubt about some of the most fundamental processes that we do at *The Lancet*, and they have affected all journals, not just us. We

published a paper a couple of years ago, by a leading Norwegian researcher called Jon Sudbø. It was a case control study, looking at patients with oral cancer, comparing them with controls and looking at the risk of cancer when you took a history of previous non-steroidal anti-inflammatory drug use (NSAID). What it showed was a remarkable result that the hazard ratio for NSAID use was halved, in other words, perhaps this drug was having a hugely beneficial effect on the risk of oral cancer.

In the process of peer review, our statistician recommended acceptance after a revision, concluding that this was a well-conducted study, a thorough statistical analysis. The first expert reviewer recommended only a minor revision and said it succeeded by a large amount – “a well conceived case-control study” – this reviewer said – “strong, well written, worthy of considering for publication in a journal such as *The Lancet*, they should be commended on writing a very sound piece of work.” A second expert was a little more cautious and recommended major revision – “provocative, raises important issues but does not present them very well,” and a third expert recommended rejection for failing by moderate amount; the reviewer also raised many questions, including the nature of one of the databases. This paper was submitted in September 2005. It was put through peer review, fast track, because the result was dramatic; revised, accepted, and published in October 2005. We had no reason at the time to suspect anything was wrong, but – there was something very badly wrong.

The wife of the prime-minister of Norway, Camilla Stoltenberg, is a public health researcher and over the 2005 Christmas holidays she read a whole series of papers for a review she was writing about this particular issue. And on top of her pile of papers was the first-authored paper by Jon Sudbø. As she sat down over Christmas vacation to

read it, she was horrified, because she knew instantly as she read the paper that it could not be true.

In January 2006 she broke the story, she revealed her concerns about the integrity of the work and she asked this question: “How many people have truly read this paper, how could it appear in a supposedly high-quality medical journal when it was so obviously flawed?”

For a start, a lot of money was involved: Jon Sudbø has just got a 13 million dollar grant from the National Institutes of Health to continue his work, partly based upon the paper published in *The Lancet*. A lot of cash was at stake and then the story broke. And, of course, who was the subject of criticism? Was it the researcher? No, it was the editor. How could the editor be so stupid? How could the editor of a respected scientific journal make such a fundamental error of judgment to publish a piece of worthless research that the wife of the prime minister could spot in an instant when she sat down and read it? “Is *The Lancet* more interested in great headlines than good science?” – I was asked. “How often have you been warned about flawed research? Why didn’t you listen to your peer reviewers? Don’t you as an editor have a responsibility to protect the scientific record? Don’t you as an editor have a responsibility to blow the whistle on bad scientific practice? Don’t you as an editor have a duty to the wide public that funds the medical research to act responsibly?” These were the questions that have been put to me, quite fairly, quite rightly. And I struggled to provide good answers to those questions.

This scandal took in many institutions across Norway, not just the research institute of the hospital in Oslo; it affected databases of a multitude of other institutions. It affected the *New England Journal of Medicine* because Jon Sudbø has published some of his early papers there. Two papers had to eventually be retracted because Jeff Dra-

zen, the editor of the *New England Journal of Medicine*, also did spot the imperfections that lead him to question the decisions of his colleagues back in 2001 and 2004. The US connection spread the stain of research misconduct: it was not just *The Lancet*, it was not just the Norwegian institutions, it was not just the *New England Journal of Medicine*, and it was not just some of the institutions in the US which have collaborated with Jon Sudbø.

What were the Norwegians to do? Should they shut this up? Should they bury this case? Should they somehow sweep it under the carpet and hope it would go away? Should they try and protect their national pride by ignoring this problem? Which was in many ways for them an easy thing to do? Norway is a small country, five million people, intensely proud of its research tradition, a relatively young country, only gaining its independence in the early part of the 20th century. It had a lot to lose by letting this scandal envelope it. But what they did was the right thing. They set up an independent commission chaired by a Swede, and if you are a Norwegian you know how controversial that is to allow a Swede to chair an investigation about Norway – that is tantamount to revolution! But they asked Anders Ekbohm, professor of epidemiology at the Karolinska Institute to come in and investigate what had gone wrong in Norway. He wrote to me very quickly after he was appointed, to say sourly that the paper we have published was indeed fraudulent and he recommended that we retract it. The worst thing an editor could do is to be forced into a situation where they have to admit their mistake and retract a paper. But it is the right thing to do sometimes. And on this occasion it was what we had to do.

Anders Ekbohm gave a press conference, announcing the results of this investigation. Sixteen of 38 papers had to be retracted across 11 journals. He cited which those

papers were, he named the journals, and he named the individual papers. It was a stain that spread far and wide. But this was the only way to clean up the stain that has affected Norwegian science. It was a tough thing to do but it was the right thing to do. And there is a set of lessons that have to be learned – that the line between error and incompetence and fraud is sometimes hard to draw; that when fraud is discovered it does throw doubt on an entire body of work, which places a terrible responsibility on the scientific community to investigate that body of work; that the risk is greater when one person controls the flow of information, as was the case of Jon Sudbø; and that fraud investigations are not easy, they are difficult – sometimes the documents disappear and sometimes we go back in time when it is hard to trace motivations and responsibilities.

Why was this fraud not detected earlier? Because Sudbø's work was so elegant, it was bewitching, we all wanted to believe it, including the editors and reviewers, because nobody suspects an individual, a colleague whom one works with every day, could truly be guilty of fraud. Jon Sudbø enjoyed what was called a boundless trust of his colleagues. The co-authors, because they trusted him, were disabled; they were not able to answer the tough questions. This was sensational research and – who is going to challenge sensational research? But, many of us should have acted earlier, and that includes me. Bad cases, unfortunately, do make bad law, but we all had a responsibility, particularly the supervisor of Jon Sudbø. Supervisors are there to inspire, to support, to advise, to assist, to guide, comment, and discuss, but also to act as accountability mechanisms, to monitor the quality of the work that has taken place.

When this investigation was finished and Prof Ekbohm left Norway, it was clear that we all had a lot to learn. The institutions needed to do a better job in Norway at implement-

ing their existing rules, they needed to strengthen the mechanisms of supervision and internal audit and they needed to improve the procedures for noting errors, for example by pointing at independent audit. *The Lancet* had problems too. We had to do better. We needed to improve the rules by which we judge the authors and we needed to reconsider some of our peer-review processes. Should we really be fast tracking papers, even if those papers seem to be reporting an important finding?

Of course, these issues do not just affect *The Lancet*, as I said. One of the most famous scandals that hit basic science was around cloning, the Hwang case, and this hit one of the most respected scientific journals of all – *Science*. And real credit goes to *Science* here, because in situation where some of their papers were threatened with retraction what did the editor do? Did the editor try and bury this case, to move around it, to ignore it? No! Don Kennedy did not. Don Kennedy incredibly bravely again set up an independent commission outside the journal to investigate the journal's practices. And the conclusion of the independent commission was that Hwang's laboratories did not possess the patients' specific stem cell lines nor had any other scientific basis for claiming what he did claim for his cell clones. The result was that Don Kennedy had to retract those papers.

The role of an editor does not just extend to scientific journals. It is also important that the editor takes part in the public debate. This is the public role of an editor. Because we are responsible for the scientific record and because the money spent on research is tax payers' money so often, we have a duty, uncomfortable as it is, to sometimes step into the public realm and explain ourselves, to justify our decisions, to explain to the public why and how something is going wrong. That is an uncomfortable place to be, but occasionally one has to do it. I think

that the lesson that came from the cloning fraud – this is what I wrote in the *Guardian* in 2006 – was that actually this was not a terrible defeat for science. This was a success for science! Not a failure! Why? Because science – and this is the great, wonderful thing about our scholarly community – science has quickly rooted out a fabrication of staggering proportions and was able to correct instantly the scientific record. That is to science's credit, not to its shame. Can you think of many other areas in society that when a fraud is discovered, or misconduct is discovered, the community instantly reassembles around the truth? That is an incredible strength of the community that we are in.

Science inquiry that Don Kennedy launched pointed out some of the perverse incentives that, unfortunately, we have to live by. *Science* and *Nature* have reached a special status, they concluded. Publication has a significance that goes beyond that of normal publication. The values such as and publishing in *Science* including enhanced reputation, visibility, position, or even cash reward, is sufficiently high that some may not adhere to the usual scientific standards in order to achieve publication.

So, we have set up a system that works well in competitive science but there is also a downside where perverse incentives can encourage some people to breach the incredible trust that our community puts in them. So what should editors do? A newspaper headline from the *International Herald Tribune* after the stem cell scandal urged tighter rules for science publications. We need to be vigilant, we must not throw the system of trust out, but we must be vigilant and re-stratify things. We have to clarify the roles that all authors play in the research and we should make data available for independent scrutiny, and we need to work together. We are a global scientific community, not just a national scientific community. You might think of your national journals as

being purely national journals, but actually your journals, your community, the editors of your journals are part of an international community. The great strength of that community is that we must find the ways to work together more closely. But there are some difficult lessons. Perhaps we should slow the peer review process down, take time to think more carefully about the work we publish, identify high risk papers, raise the bar for publication, and increase our level of suspicion. Maybe we should follow the example of clinical trials for all research and insist on data and safety monitoring boards that independently assess all research studies, creating checks and balances in research, with a greater oversight of research, one that does not exist today. Maybe we need to change the culture of our research institutions, but – not more rules! I do not want to see bureaucracy around research, but values – what we value about our research community – honesty, integrity, independence. Those are the values that need to be inculcated in everybody – from school students to the most senior emeritus professor. A research career implies duties as well as freedoms and it stands to all aspects of education training and mentorship. We need to reward the total life of a scientist, the way they live their life, not just their publications.

Perhaps we should reject the current process of peer review. If there is discord between reviewers maybe we should stop and pause and think again. Maybe we should demand agreement amongst reviewers; maybe we should not take at face value some responses from authors. If authors do not like what the reviewers say we should not ignore those reviewers. We should promote a dialogue between the author and a reviewer, respecting both but holding the author accountable for his or her statements. A less sympathetic approach to authors would reduce the risk of future retraction. Do not let authors bully you is one lesson from the Sudbø affair that I

could take home. And also, take authorship more seriously: we should only give credit to authors when they have made a genuine, serious, and substantial contribution to science because every single author has the responsibility to check the integrity of his or her colleagues.

If we had done these things at *The Lancet*, we would not have had to retract the Sudbø paper because we would never have published it. So I take these lessons to heart. These are the errors that I am guilty of. My proposition to you is that the lessons that *The Lancet* has gone through apply beyond *The Lancet*. They apply, I think, to many other journals.

But we do need to think about these perverse incentives. In the case of Eric Poehlman in the US, when he was caught out of the fraud, he said: “I believe that it was okay to misrepresent minor pieces of data to increase the odds that my grant would be awarded.” That is the culture we are promoting in science! “The structure of the University of Vermont” – he said, “created pressures which I should have but was not able to stand up to.” Why? Because the values in that institution were not strong enough. He was allowed to get away with subverting the integrity of science in that institution. Poehlman went to prison for his breach of research integrity.

In the UK we tried to create light-touch mechanisms – the Committee of Publication Ethics and the Panel for Health and Biomedical Research Integrity – to offer support to institutions and journals when they face episodes of alleged scientific misconduct, because misconduct occurs in many different ways.

In a study of 500 randomized trials from 2000, different elements of what makes a good clinical trial were assessed, such as allocation concealment, randomization, doing the power calculation. And in many of these trials these data were simply not reported

– 82% not reporting allocation concealment, 79% how randomization took place. What they concluded in this paper was that “poor reporting of methodological characteristics will prevent reliable quality assessment of many published trials, so research misconduct is not just inventing data, it is doing bad science.” And that is where we have such an important role in supporting good science. Three quarters of papers were not reporting fully efficacy outcomes, two thirds not reporting harms, and so on. The medical literature, therefore, represents a selective, biased subset of studied outcomes. It is as much a concern for research integrity as outright fraud. When over 3000 NIH-funded scientists, some of the best scientists in the world were polled, 16% said that they have seen or been involved in changing results or design after pressure from a sponsor, more than one in ten reported fraudulent or questionable interpretation of data and 6% failed to present data that contradicted one’s past work. In this paper in *Nature* they concluded: “Our evidence suggests that mundane regular misbehaviours present a greater threat to the scientific enterprise than those caused by high-profile misconduct cases, such as fraud.” And some journals have reacted. To the great credit of the *New England Journal of Medicine*, they expressed concern about inaccuracies in data in a clinical trial they published. The authors came back immediately in this terrible row between editors and the scientists and said “we stand by our original data.” The editors responded again, bravely in my view, and said that the authors were not accurate in their presentation and that they (editors) continued to issue their expressions of concern around this very significant clinical trial.

What is the solution? In the world of clinical trials, one solution is to try and register those trials, to set up a mechanism whereby people say what they are going to do before they do it and then you hold them account-

able after they have done it. International Committee of Medical Journal Editors has issued guidance on sponsorship, authorship, and accountability and clinical trial registration to try to strengthen this culture, these values that are so important to research integrity. We can do research into the way journals and science operates: peer review, authorship, fraud, bias, communication, and quality control. All of these areas are subject to research and the editors of your own journals could make important contributions to our knowledge about the way journals work. We need to come out with an open debate, open the culture of debate about research integrity and not be frightened of discussing this.

We need to think more about defining what we can do to prevent fraud, how we implement guidelines, how institutions should work at promoting research integrity, how we do investigations of fraud and protect whistle-blowers, and how we reform the academic reward system so that we try and get rid of some of these perverse incentives.

Think about codes, such as Hippocratic Oath. Do we need Hippocratic Oath for science? In the UK, the Council for Science and Technology has promoted a code for scientists – rigor, respect, and responsibility – a universal ethical code for scientists where rigor, honesty, and integrity are fundamental values for every scientist – the respect for life, the law, and the public word, responsible communication, listening, and informing. These are the values that we have to uphold. What can we do to uphold those values?

Now I come to a difficult issue. When I opened my copy of *Science* a few weeks ago I was confronted by this article: Croatian Editors Fight with the Medical School over Journal’s Fate. It is difficult for me to talk about this because it makes me incredibly distressed to read reports in respected international scientific journals about one particular dispute in Croatian science, which

has dominated discussions in European and now North-American publications. Not just discussion about two editors and a journal but also, unfortunately, reflecting on the culture, the values that I have been talking about so far.

Let me be very clear about where I stand on this, because I do not want to be misunderstood. Professor Ana Marušić and Professor Matko Marušić are my respected colleagues and friends. They are to me international symbols of not only Croatia's scientific and medical success, but also Croatia's national success during and since your country's independence. Their stories, their lives mirror, to my mind, Croatia's rebirth as a nation. Their values, which I know very well, personally and professionally, are Croatia's great strengths of integrity and excellence. They are some of the most fabulous ambassadors to your nation whom I have known, and their journal, the *Croatian Medical Journal*, amplifies the reputation of Croatian medicine and medical research well beyond Croatia's borders.

All of which is to say, the reading of what has taken place in the past few years in an article in *Science* to the journal and to Professors Marušić is a story that I do not think I could have made up, and nobody would believe me if I had made up. Accusations that go to the heart of their personal integrity sprung first in the media, the refusal to fully share alleged evidence against them, the refusal to follow the international standards of fairness and procedural justice to allow them to reply to their critics, lack of institutional legal support, and, most astonishingly and chillingly of all, the recruitment, according to this article, of three psychiatrists to question the state of mind of one of these editors.

Now, I am not a historian of psychiatry, but the use of psychiatry as a tool against dissent, the attempts to pervert psychiatric practice, enforce psychiatric evaluation and treatment recalls the abuses of some very re-

cent totalitarian regimes. The use of psychiatry to label political opponents as paranoid, or schizophrenic or suffering from personality disorders or unexplainable suspicious behaviours. Psychiatry is a means to control people, pressure people, eliminating critics from the public sphere.

To those of us watching outside Croatia, who love your country, who are committed in what they publish to the values of your country, this turn of events is unbelievable, is extraordinary. It is actually tragic for Croatian society and scholarly community, because, let me be very clear about this, in your editors of the *Croatian Medical Journal* you have real intellectual leaders. Clinical trial registration was first born in an International Committee of Medical Journal Editors meeting that took place here in Croatia. This is a foundation stone for unbiased knowledge and research integrity. One of the authors there – it is Prof Ana Marušić. A sequence of publications has followed on clinical trial registration, where Prof Marušić, one of the editors of the *Croatian Medical Journal*, is one of the intellectual leaders of this movement in science for research integrity. And a third editorial was again co-signed by Prof Marušić. Prof Marušić has been a Past President of the World Association of Medical Editors, the only truly global organization of medical editors that exists. She is currently president of the Council of Science Editors, the most distinguished editorial organization in the world today. She is the president of that organization, she is a leader of editors in the world, and yet what has she gone through? Her leadership illustrates the pride that Croatia can and should feel about the reputation of your journal and its editors and I must tell you the incredible damage to that reputation that has taken place in the way this present dispute has been conducted.

I have followed the debate around the *Croatian Medical Journal* carefully from abroad and this debate seems to me to be

emblematic of a larger struggle that has taken place on Croatia, across the nation, the political struggle for a great and respected European nation in transition. The country that under the current government has committed itself bravely and, in my view admirably, astonishingly actually, to a society dedicated to knowledge and education and research as a means towards stable and sustainable economic and democratic growth. That is a lesson that I have been free to invite your minister to write about in *The Lancet*, because it is a lesson that I want everybody in the world to hear because it is truly remarkable. But what is challenging, and understandably so, is that a commitment to knowledge and scholarship demands a parallel commitment, and this is tough, even not just a commitment but encouraging – dissent. Tolerance of dissent is a hallmark of a strong democracy because dissent provides the kinetic energy behind social transformation through scholarly inquiry. Editors, let's face it, are minor players in the theatre of democracy. We are just curators of the scientific record. Ninety nine percent of the time we are invisible and we are silent and we should allow the scientists to rightly occupy the public stage, but one percent of the time,

just one percent of the time, editors have to speak. They have to act quickly; they have to act decisively when something goes wrong. They have to step forward and have to defend their community when a transgression takes place. And that is an uncomfortable place to be, but it is a necessary place for editors to occupy. The place of science in society has not always been guaranteed. John Ruskin wrote “The use of word *scientia* (science) as if it differed from knowledge is a modern barbarism, enhanced usually by the assumption that the knowledge of the difference between acids and alkalis is a more respectable one than that of the difference between vice and virtue.” – he wrote. Science is not entirely about acids and alkalis; it is not only about interesting experiments and reliable facts. Science is also about vice and virtue and the way that the academy responds to vice and virtue reflects the moral state of our wider community. Croatia has many friends across Europe and North America and I count myself as a friend to your country. Please, I beg you; let us work harder to strengthen those ties of friendship, through respect, through integrity, and through a shared European vision of what we can achieve together. Thank you very much.