



Conclusions: From peer to peer communication to communicating with policy makers and the general public

A.D.M.E. Osterhaus^{a,*}, Chris Vanlangendonck^b

^a Chair of ESWI, RIZ, Hannover, Germany

^b Strategic communication advisor to ESWI, Semiotics, Communication and Advocacy, Belgium

Every academic curriculum has a section on 'how to write a scientific paper'. The purpose of such papers is clear: to inform other scientists, colleagues, peers. Sharing information enables scientists to elaborate on existing research, data and findings. Prior to publication, however, the paper needs to be "peer reviewed": other scientists are invited to evaluate the scientific merits of the work, based on their own expertise and knowledge.

Scientific papers have clearly established structures and formal requirements, with a fixed pattern of sections: title, authors, abstract, introduction, literature review, body text, acknowledgments and references. These rigid rules enable scientists to quickly find their way through a vast number of scientific articles and to judge whether a paper is interesting or not. They also allow sharing scientific information as clearly and as efficiently as possible. Scientists use a highly specialized, compact and impersonal language to that end, i.e. to limit the room for ambiguity and interpretation.

The same goes for scientific presentations at international conferences. Speakers present their data in a 15–20 min lecture, and engage in an expert debate with the audience. The faculty of the Fifth ESWI Influenza Conference, for instance, provided an excellent overview of the rapid evolutions in the influenza field. It also showed that much research still needs to be done. H5N1 avian influenza, for example, still has the potential to become a deadly human flu virus. As a matter of fact, H5N1 only needs a very limited number of mutations to become as efficiently transmitted as the seasonal influenza virus. The emergence of the H7N9 and H10N8 influenza viruses have further emphasized the unpredictable and global character of influenza outbreaks.

Obviously, the exchange of scientific information via conferences and in specialized journals is very necessary. But the narrow, formal requirements and rigid, impersonal style of most scientific articles make them inaccessible for those outside the scientific community. The general public does not read the articles, not just because the language is not very accessible, but also because the technical, scientific content is not appealing to them. Communicating with a non-scientific audience is hence very different from communicating with peers. Different standards, different context. And that is precisely what the Science Policy Interface is about. The

dissemination of tailored scientific knowledge and arguments to a wide range of different target groups, like public health officials and policy makers, is of particular importance in the influenza debate. Rather than merely sharing data and information, scientists need to "translate" their knowledge and tailor their messages to their audience of non-experts.

The Science Policy Interface debates at the Fifth ESWI Influenza Conference have also clearly demonstrated that academics and other experts have the responsibility to play an active part in the political arena. Their scientific knowledge and expertise puts them in a perfect position to provide advice to decision makers, to inspire healthcare workers and to correctly inform the general public. This is of critical importance in our modern era where information and disinformation are omnipresent. Unfortunately, however, disinformation about public health themes can cost patients' lives or cause unnecessary panic. The latter was clearly the case during the recent Ebola outbreak. Which leads to the conclusion that scientists can no longer stand idly by. They must speak up and tell the world what they know and what they do not know. Vaccines can be life saving for patients at risk and not giving antivirals at a crucial moment to some patients, will cause their death. Hence, scientists must explain to the lay public what the status of their work and findings is. Even if there are uncertainties.

And scientists have yet another responsibility: to seek as many supporters for their messages as possible. As said before, scientific publications in peer-reviewed journals and communication among scientists are very necessary. But sharing knowledge with the non-scientific world is equally important. And sending out timely warning signals is of even greater importance. This approach requires courageous scientists and opinion leaders in the international institutions and in the pharmaceutical industry. People who dare to step up and collaborate. Not only to reinforce their own position, but also to attract new supporters, to reach out to the right target groups and, ultimately, to achieve their final goal: improving public health. Indeed, improvements can only be made if all stakeholders are ready to cooperate in an open and transparent manner. Common grounds can always be found, every situation can be turned into a win–win situation provided that all stakeholders are ready to see and serve the higher cause. Scientists can make the difference here. Adopting the mind-set where they regard all stakeholders in the public health debate as if they were 'peers', will allow scientists to make the world an even safer and healthier place.

* Corresponding author at: Research Center for Emerging Infections and Zoonoses (RIZ), Hannover, Germany.

E-mail address: albert.osterhaus@tiho-hannover.de (A.D.M.E. Osterhaus).