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Preface
Scientific communication

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Abstract

The article tackles the problem of models of communication in science. The formal division of communication processes into oral and written does not resolve the problem of attitude. The author defines successful communication as a win-win game, based on the respect and equality of the partners, regardless of their position in the world of science. The core characteristics of the process of scientific communication are indicated, such as openness, fairness, support, and creation. The task of creating the right atmosphere for science communication belongs to moderators, who should not allow privilege and differentiation of position to affect scientific communication processes.

Key words: communication, science, barriers of communication, scientific cooperation, scientobrity, thesis presentation, scientific feudalism

Scientists are focused either on research or on teaching, because these activities are the core functions of the university. For them, therefore, communication is not a priority. For many scientists, communication is only the inevitable and unpleasant necessity of being an unrecognised researcher. I think that in many cases if the scientists were paid only for their research, they would have no need to publish and present their results in public. There is a kind of inevitable contradiction between being a scientist and a conference celebrity. Research requires a calm environment and introversion, whereas being a good speaker requires extraversion, intellectual seduction and sometimes even showing off. It is easier when you are a scientific celebrity and famous researcher, but for almost all "ordinary" scientists it is usually connected with stress, and even after a huge effort the presentation seems to be far from perfect.

Communication in the world of science could be divided in two types: oral or written presentation. The typical oral form of communication in science is the conference presentation, but it could be also a lecture, a talk or a reading for a non-specialist audience for the dissemination of results of scientific research. Written communication depends on articles for colleagues and professionals, as well as for the non-specialist. This clear division has one essential disadvan-

tage - the approach is too formal and the core of the communication process between scientists needs to be analyzed in a totally different way.

First of all, the forms of communication mentioned above have no meaning, either as to the quality of the message or the understanding of its content. If we have to make any division, it would be better to indicate the difference between a strictly scientific form of a message, addressed to scientists and researchers, and popular articles or lectures for non-specialists. In the latter, although the structure of the content is the same, language, arguments and conclusions should not be so sophisticated. Perfect understanding needs interlocutors acting in the common a symbolic community - it means the necessity of a common language, grammar, meanings and presuppositions.

We can suppose that within of the scientific community language, meanings and core concepts are agreed and intersubjective. There is no need to simplify any concept or language of conversation, except for the definition of new ideas or terms. In such situations, the psychological dimension of communication processes between scientists would seem to be more important.

The perfect communication between scientists should be open, fair, patient/calm, helpful/supportive, constructive/creative. These variables are strictly connected to the attitudes of people, not to the formal values of the texts or any kind of message.

The main reason for scientific communication is to define the truth. The process of discussion should be neither emotional nor offensive. Nobody should feel either privileged or underestimated. The equal standing of the participants is the basic requirement for success. All distortions are the result of a lack of good will or any other reasons which exclude the truth.

Open communication means that all participants should feel part of the discussion. The presence of scientobrities and specialists should not form any kind of obstacle. Even in the Oxford debates, the audience is allowed to ask questions on the topic under discussion. Separation of the audience from the theatre space appears to be a symbolic fracture of the scientific community - an exclusion of people who have the right to speak but who are not insiders. In many cases, debates are enriched by invited speakers but they should be seen as a sources of truth - translators not legislators, colleagues who are only few steps in front of us in the long road to knowledge. Open communication should insist in creating a common space for discussion, where everybody has the same opportunity to present their own ideas, concepts and arguments.

Open communication must be fair, without any eristic nor rhetorical tricks.

The treatment of partners in discussion as other self leads to so-called "deep hearing" after presentation of the thesis. Between the partners of a scientific talk there must be a kind of deep trust and confidence that the others are saying what they really believe in. Trust and confidence are the basis for building fair and more effective bonds between social partners in the scientific community, as well as reinforcing social capital. This is very hard to achieve, especially in the individualistic scientific cultures, in which each partner in the discussion could be treated as an enemy, who would like to steal ideas or diminish merits.

It leads to the conclusion that the process of building social capital must be longstanding and dynamic. The experience of scientists will define their attitudes to language cooperation during the process of scientific communication. This also concerns the specific scientific community. We have many open-minded communities in the world of science, as well as many closed, paranoid and exclusive societies, which are not interested in developing new members. They very often use a specific, hermetic language and they continually elaborated the same ideas. Proselytes are treated as a kind of danger for the pure original thinking of the scientific school, and there is always the conviction that every neophyte must be taught to be able to understand the core concept of the scientific school. Closed scientific communities and schools are not open for searching for the truth, but they want to organize a kind of scientific crusade. Their aim is to convert the rest of the world, not to find the truth, because such scientists believe in only one truth, and meanwhile the rest of the scientific world is full of doubt.

Discussion between scientists in seeking the truth is calm, because there is no need for haste. Every meeting, lecture or research brings the truth closer. Many scientific disputes require years (or even centuries) to find the right solution to the problem. Sometimes, success depends on asking the right questions. For such kind of processes there is a need to stay calm, patient and to lower emotion. Fair play in a communication game must impair or even deny the first hypothesis. The rationality of attitudes is defined by the many perspectives which are used to analyse the problem, including contradiction and negation.

From the biological perspective, emotional human reactions and quick judgement are contradictory to reason and wisdom. The world of science, based on longstanding deep thinking, has more in common with considered proposals of the mind than with transitory responses of the brain.

Wise scientific communication is always supportive, a kind of win-win game. The main reason for communication - seeking for the truth - is always defined by the fact that the main goal is beyond the interlocutors. Reaching the truth is always a victory for all members of the scientific community. And that victory cannot belong to any individual in the team or from outside. This means that there is no reason to fight and to prove personal superiority to anybody. Of course, there are many measures to show the scientific strength of a scientist, such as research conducted, the amount of written articles or books, and citations, but in fact the winner is the whole world of science and humanity. Goal-orientated communication needs supportive communication, which is not a fight but a co-operation of minds. Without the support of other interlocutors, the speaker could talk to himself/herself in private with the same result. Private or individual research is only the first step to knowledge, because without any support from our colleagues and other specialists we could fall into the trap of subjectivity.

Correct scientific communication should also be effective. Even if the effects seem to be elusive or unachieved, well-conducted process of communication will prepare the basis for further research in the future.

Unfortunately, many communication situations are far from perfect. The main problem is of course the human ego. During the discussion, interlocutors are not always open to criticism, and sometimes the questions are interpreted as offensive. It is very difficult to find any solution to the scientific discussion when one of the debaters feels attacked. The lack of good will and growing suspicion create an unpleasant situation. We could say it is a destructive psychological background.

The positive psychological dimension of the scientific discourse should be defined as a basis for discussion and understanding, just as in normal life. Without a positive psychological background, any kind of scientific communication will be an argument or a monologue.

What can we do to build the right climate for scientific discussion? Should the professor or specialists resign from the position of expert? In my opinion, the resolution of the problem depends on the mutual respect of the interlocutors.

Respect is the fundamental presupposition of communication processes. Humans are not able to achieve any kind of language co-operation and understanding without attributing any positive value to others. The higher value of the interlocutor means the higher evaluation of the communication. In the field of science, the sine qua non condition should be respect. Losing patience, personal arguments, anger, tendency to predomination - all these phenomena stem from a lack of respect.

Scientific communication should be organized and moderated in a specific way. The main role of moderators is to create a space for equal communication. In written communication, this means moderation of unfair reviews and unjust comments. In oral communication, fair discussion means fair time management and equal opportunity for presenting the theses of everyone, regardless of title and position.