

The Problem of Communication on the Subject of Biotechnology ^(*)

Tiziana Pedrucci

Università di Genova, Dipartimento di Oncologia, Biologia e Genetica

The problem of the popularisation of science and of communicating information is coming to a head and is giving rise to much reflection within the scientific community, journalists and the public. As well as being a problem of language, since we are dealing with a highly specialised jargon, it is also an ethical problem. This is because in a world that is perceived and experienced increasingly in the form of images and slogans, communications and the way in which things are communicated become very powerful. In a scenario that is constantly changing from both a social and an economic point of view, due to the relentless and continuous achievements of science, the popular scientific press has the important and delicate role of decoding information coming from the scientific world for the public at large. Journalists themselves often lament that they do not have the necessary training to tackle this particular type of news item as well as the impossibility of developing specialised knowledge within their professional context. The problem is twofold: a) how to get hold of the news and b) how to put it to the public. The first aspect is aggravated by the lack of communications that definitely exists between the research community and newspapers for several reasons. These include reasons of a purely practical nature, such as the limited time at the disposal of both parties and the difficulty of establishing contacts between them, revealing the fact that they are simply not used to co-operating. The second aspect is compounded basically by a problem of training and professional ethics, that is to say of learning to commit oneself to overcoming the difficulties involved in accessing information and in understanding scientific language, so as to be able to translate it into clear and simple terms without distorting the truth.

Yet another obstacle consists of the conflict of interests between financial and deontological requirements. Journalists fight a daily battle against time, meaning the time between the acquisition of a new item and its release because, of course, 'old' news does not sell. Then, in order to sell it, as is the case with any other product, it is necessary to identify and evaluate the most suitable way of 'packaging' it, if I may put it this way, in an attractive wrapper, making it more interesting, giving it a sensational headline so as to catch the public's imagination. In extreme cases, never mind whether it is frightening or disconcerting, rather than reassuring. What matters is that

it focuses attention, so as to induce people to buy that newspaper. In a way, news is frequently not a statement of the truth but its translation into saleable terms. It is obvious that this does not constitute a correct information process enabling the public to form their own serene and objective opinion and turning them into conscious and responsible players when they are called upon to reach decisions concerning the country. We must also take into account that, generally speaking, the only source of information on science-related issues for the public at large are the media that can reach our homes so easily and handily. All this has enabled an emotional shift to take place in recent years in the way the public perceives the scientific community, from a feeling of unconditional confidence to one of equally uncritical diffidence. While the terms associated with people's expectations with regard to the advance of science were once conquest, progress, safety and rigour, now, as a result of often alarmist headlines and news, the talk is of risks, uncontrollability and monsters. On the one hand, then, it is felt that scientists are no longer working for the good of mankind but only in order to increase the profit of some company, even if this means placing the safety, well-being and the protection of mankind and nature at risk. On the other, not having a clue about something creates unease, discomfort, diffidence and fear, and often, therefore, a lack of interest.

Nowadays society is called upon to express opinions on burning issues concerning the technological applications made possible by scientific progress, on the basis not of emotional feelings but of convictions. This enables the State to pass legislation on these issues, identifying proper limits that must also be the expression of the will and values of the community it represents. Precisely because of this, society is both entitled to be adequately informed and bound to keep abreast so as to be able to weigh up responsibly what values should be defended.

Bioethical considerations must be part of this context, in which we unquestionably have the power to modify the environment and future generations. On the one hand this power gives rise to well-founded hopes of successful new treatments and consequent improvement of the quality of life and life expectancy, but on the other it cannot help raising troubling questions of a moral nature concerning precisely the discoveries associated with recombinant DNA, pre-natal diagnosis and genetic modification. While it is true that science, as such, is an essential asset, since knowledge helps man to improve his quality of life, problems arise with its possible applications, which may be either good or bad. It is these applications that have to undergo strict and critical ethical scrutiny, naturally after being carefully analysed from a technical point of view. Our country still has to legislate on some of these issues, drawing lines between what is permissible and what is not, that is to say identifying the limit between temptation and 'technological exasperation'. The practically infinite power of

the new technology burdens us with the insidious danger of it not being controllable and the inevitable responsibility of making choices that may also affect future generations, since we can now also intervene genetically, that is to say we can use genetic engineering techniques to alter the genetic heritage of living beings. The legislator has the arduous task of bringing the laws of the country into line with the rapid progress of science.

To allay suspicions and avoid extreme stands based on prejudice and ignorance, to restore confidence in science as a value and a commitment, scientists and journalists are called upon to join forces and create a correct dialogue based on mutual respect with society.

Undoubtedly, one of the research fields in which the urgent need for unbiased information is most widely felt today is that of biotechnology. During the last few years biotechnology has witnessed a surge that has triggered off important practical applications, also in medicine. Biotechnology is the practical application of the recombinant DNA technique, the most important tool of genetic engineering. Briefly, this technique makes it possible, in a laboratory, to extract the DNA from a cell of any organism, to isolate the gene or genes concerned and then to implant them in the cell of another organism, possibly after modifying one or more of them. Doing this enables 'natural' biological barriers to be overcome.

Biotechnology is therefore essential for improving our quality of life. Indeed, it has made it possible, for instance, to develop reagents for diagnosing congenital diseases, which are often extremely serious, so that they can be prevented and sometimes even treated. Another important achievement is that of the laboratory production of substances that were previously only found in the human body, for use as precious medicines. It is sufficient to mention hormones such as insulin obtained in this way, replacing those that were previously obtained from animals or, even worse, from corpses with a very high risk of transmitting terrible diseases. Then there is the development of vaccines, such as the one currently being worked on for AIDS; of new treatments, for instance gene therapy for correcting genetic defects responsible for malformations or for treating serious diseases such as tumours.

Advanced biotechnology, which raises problems brought about by changing the genetic heritage of living beings, intimately involves interests relating to different human, social and juridical disciplines, thus deeply affecting our society. Therefore the relevant achievements need to be carefully controlled by means of a series of regulations, that is to say by establishing clear standards. Reflection on its ethics is also urgently required, in order to examine the problems brought about by a) the creation

and use of transgenic animals; b) genome modification, with the danger of eugenic selection; c) the creation of laboratory animals for experimental purposes; d) the introduction of genetically modified organisms into the environment with the risk of unpredictable and possibly irreversible consequences and e) intervening on human beings, in view of the right of each and every person not to be discriminated because of his genetic characteristics, to be correctly informed and to have his dignity respected in case of the diagnosis or treatment of a disease. Furthermore, ethics committees should be set up at various levels. These should be independent and multidisciplinary committees capable of monitoring the ethical nature of research carried out in this field.

In this respect, it is essential to pursue the now indispensable goal of education and training in bioethics at all levels and both from the point of view of the research personnel and the social point of view. This includes intense and widespread circulation of information, promoted by and implemented jointly with the media, so that compliance with principles is recognised and duly applied. It is also necessary to focus attention on: the financial aspects, since growth in this sector is necessarily accompanied by the heavy investments envisaged for this type of industrial process; information to be circulated by the research community and the media on the results and on the applications of research also into biological systems; and, lastly, the continuous education of consumers regarding the innovations taking place, for example by accurate labelling of biotech products.

The Italian Government has set up a National Committee for Biosafety and Biotechnology care of the Office of the Council of Ministers. The tasks and aims of this committee are to evaluate the risks and the development of biotechnology. There is also a dedicated section for information and its circulation.

For UNESCO, the leading international cultural organisation, this issue is considered a priority, to be investigated in further depth.

The proposals concerning information have a multi-disciplinary nature. In addition to bioethicists, communications psychologists, teachers of journalism and training experts, the research community itself is involved as a third party, since they must draw inspiration for their activities not only from bioethical principles and those of their benefits, independence and justice, but also from the ethics of research and of scientific information. Increasingly close co-operation, perceived and experienced as a necessary requirement, is the only way to achieve concrete action and impetus for the process of renewal of scientific information targeting the public at large. It must be characterised by contributions originating from the various different

skills and experiences, and must grow, fuelling itself and developing gradually but significantly throughout the training path.

It is therefore necessary to provide suitable training courses, first and foremost for informers, since it is no longer possible to entrust the activity of informing to improvised and intuitive activities, however praiseworthy, but dependent only on the good will and conscience of the single research worker or journalist or teacher.

This activity should be split up along four lines: A) targeting students, by preparing academic training programmes for researchers and journalists in order to foster the possibility of interchange between these two specialised areas and placing a particular stress on language; B) targeting science journalists and researchers, by setting up refresher and specialised courses; C) targeting teachers, by setting up refresher and specialised courses; and, lastly D) targeting the public, by organising conferences and using IT and TV broadcasting tools.

To conclude, journalists and bioethicists must act as a bridge between the research work of scientists and society, since it is the latter which has to be responsible for choosing the direction of progress. These are difficult decisions but which cannot be side-stepped. In order to be able to choose, it is necessary to place everyone in a position of being able to form an opinion based on correct information and in line with the principle of self-determination. We must also learn to discuss matters, because discussion is necessary for the achievement of clarity and decision-making that will harmonise technological possibilities with ethical values, always respecting life and the dignity of man. The great challenge of our age is precisely that of finding a balance between the power man now has in that he is able to intervene drastically on living beings and the responsible use of this power.

Recommended Reading

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Note

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