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Bioscientists as ethical decision-makers

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The questions

I will address in this paper three questions. These are:

- Why should bioscientists be ethical decision-makers?
- What are bioscientists as ethical decision-makers?
- How can bioscientists act as ethical decision-makers?

Answers to these questions should clarify the role of geneticists, molecular biologists and other bioscientists in both private and public research organizations, and especially in their ethics committees.

Why should bioscientists be ethical decision-makers?

I can think of three separate sets of reasons why bioscientists should, in addition to their more familiar roles as researchers, administrators and entrepreneurs, also be prepared to pass ethical judgments concerning their own work and the work of their colleagues.

Because they are moral agents

The internal, autonomous, 'genuinely ethical' raison d'être for bioscientists to consider their work from this viewpoint is the moral agent's spontaneous need, or urge, to do the right thing, or to do things in the correct manner. If we go down this path, bioscientists can assess the ethical acceptability of their work from many different theoretical angles.

They can try to find out what the inner logic, or natural goal, of their activities is, and to estimate, to the best of their ability, how well what they do, or propose to do, follows this inner logic, or is likely to achieve the natural goal. In historical and philosophical terms, this is the Aristotelian, or 'teleological' approach to ethics. In research-ethics committee work, which is the most natural setting for the moral assessment of scientific work, this aspect is usually covered by the scientific evaluation of the plan's robustness in terms of methodology and the competence of the research team.

Alternatively, they can start from moral rules and principles, and consider what they do in the light of them. Historically and philosophically, this is the Kantian, or 'deontological' approach. In institutional ethics committees, this route is taken when members make appeals to the dignity, equality, autonomy, rights and vulnerability of the research subjects, or question the rational acceptability of the proposed work.

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These are common themes in, for instance, stem-cell research and research into cloning humans.

Yet another 'internal' option is to assess proposals in terms of harms and benefits – to estimate how useful the performed or planned research can be in terms of human (or animal) welfare, and how harmful some of its consequences could be. The historico-philosophical roots of this approach are in eighteenth-century British utilitarianism, and it is commonly referred to as 'outcome-based ethics' or 'consequentialism'. This is partly covered in ethics-committee work by the scientific evaluation of the proposals, and partly by risk assessment and safety calculations.

Because they are professionals?

Another reason why bioscientists should be willing to judge their work ethically is a function of their role as experts in their field, and contenders to the useful label of being 'professionals'. Physicians and lawyers have traditionally benefited by claiming this label, and by formulating professional codes of conduct to back up this claim.

Professional codes should not be confused with the rules derived from autonomous ethics based on the moral instincts of individual moral agents. They exist for an external reason – namely, the need of the professionals to prove to the wider community that what they do is acceptable. Doctors stick needles into other people, they cut off body parts and expose others to near-lethal radiation, and they must have good grounds for doing these things and clear guidelines according to which they do them. Professional codes define, also to the professionals, but primarily to outsiders, the grounds for the privileged interventions and the limits within which they are acceptable.

Insofar as bioscientific research involves such interventions or deception or comparable atrocities, those conducting the research also need to prove their benevolence, trustworthiness and accountability to the wider community. This, in fact, is one of the original reasons for the establishment of ethics committees in hospitals, research institutes and universities. Externally they are, if you like, the window-dressing of research – the first thing you see when you look through the shop window. Internally, of course, they can be, or fail to be, the effective safety police they promise in their advert.

It is not self-evident that bioscientists can claim the status of being a unified professional group. I will return to this question in considering what bioscientists actually are as ethical decision-makers.

Because they are law-abiding citizens

Research-ethics committees, and other forms of institutional moral evaluation, increasingly owe their existence to national or regional legislation. This is the research-governance rationale for the establishment of such committees, and it is based on the political need to do things 'by the book', at least in publicly funded institutions.

The deeper justification for bioscientists evaluating each other's work is, in this line of thinking, essentially the nation's, or the international community's, commitment to democracy, transparency and accountability also in matters related to research. The idea is that individuals as moral agents cannot always be trusted to check dangerous activities if considerable personal gain is involved. The same applies to professional codes – if there are no public controls, how can the public be sure that researchers do not occasionally turn a blind eye to the activities of their peers?

Another way to formulate this reason for ethicality is to say that in jurisdictions where moral considerations are legally required it is prudential for bioscientists to engage in them. This interpretation would make their ethics entirely ‘heteronomous’, or externally initiated, as opposed to the ‘autonomous’ decision-making of Kantian moral agents.

What are bioscientists as ethical decision-makers?

Let me now turn to my second question. The three different reasons why bioscientists should become ethical decision-makers sketch three different pictures of them in this role.

Bioscientists as moral agents

It is unproblematic in any ethical theory that all competent human beings are moral agents. As such, they should make decisions based on the inner logic of things (the Aristotelian way), rationality (the Kantian alternative) or the consequences of actions (the utilitarian option).

It is not, however, easy to define what individuals should do when the different theories yield conflicting normative conclusions. Bioscientific activities have for the most part been criticized by (roughly) Aristotelian and Kantian ethicists, which indicates that prudential researchers would do well to assume the outcome-based model. But the advocates of the other approaches argue that this would be an immoral choice, and would leave many immaterial yet significant ethical issues unaddressed.

Furthermore, the choice of any moral theory exposes agents, at least potentially, to situations where their autonomous decisions go against the attitudes and ideals of legislators, ethicists or the general public. This does not necessarily show a flaw in the individual’s thinking or actions, but it can make life difficult. The more idiosyncratic the chosen morality, the more problematic it can be to anchor one’s ethics to one’s individual moral agency.

Is bioscience a profession?

Bioscientists could avoid the problems of individual morality by assuming the role of professionals. But is bioscience a profession? I do not think that this question has been satisfactorily answered in the current discussion.

True professionals should, according to prevailing academic views, fulfil the following set of criteria legitimately to claim the status. They should have

- specialized knowledge;
- long and intensive academic studies;
- permanent careers;
- organization and self-rule within the group;
- as a group, a decisive role in the arrangement of the relevant studies and in the recruitment of new members to the group;
- a distinctive professional ethos or morality within the work; and
- positions of considerable responsibility in communities and societies.

When all these conditions are met, members of a group can confidently call themselves professionals. But when some of them are not met, the situation is more complicated.

Bioscientists fulfil many of the criteria, but some focal questions remain. Do they have organization and self-rule within themselves? Do they have a decisive role in the arrangement of studies and recruitment? And do they have a distinctive ethos?

The ethos of a profession is, in the case of physicians and lawyers, expressed in a code of conduct which is accepted and endorsed by the members of the group. I have not seen good ethical codes formulated by bioscientists, and I am not even convinced that ‘bioscientists’ as a group for itself exists. Medical researchers often argue that the codes of physicians should be used as a model for bioscientific codes. But not all geneticists and molecular biologists want to be identified with this existing profession.

Bioscientists as legal positivists

The problems inherent in the application of individual and professional ethics have led some bioscientists to believe that laws are the only possible source of norms in their field. This line of thinking is quite natural in societies where people do not tend to question the legitimacy of prevailing regulations. The idea, sometimes identified with the doctrine of legal positivism, is that the laws of the country are justified because they are the laws of the country.

The growing impact of international regulation has, however, changed the situation, at least in Europe. Citizens of the member states of the European Union do not always find the ethical, and often religious, ideologies of other states acceptable. As a corollary, even bioscientists who have ungrudgingly acceded to national restrictions in their own field have begun to have doubts concerning imported rules. And when choices have to be made between competing ideas about regulation, ethics in the other two senses can once again be seen as the answer.

How can bioscientists act as ethical decision-makers?

Although it is, in theory, hard to define bioscientists as ethical decision makers, it can still be possible to outline what they could do to ensure the moral acceptability of their work.

Sensitivity and competence

A standard line in the terms of reference of research-ethics committees is that they should safeguard the health and welfare of persons and the environment, and to see to it that unnecessary harm is avoided, the autonomy and dignity of those involved protected, and the requirements of justice promoted in the process. How should all this be done in the assessment of research plans or ongoing projects? One way would be to employ the following generic formula:

$$e = mc^2.$$

In this formula, as I use it here, the symbols stand for the following things:

e = ethical acceptability of proposed research
m = moral non-sensitivity of proposed research
c = competence of research plan and research team.

(I am fully aware that the symbol ‘c’ cannot rightly be used in two meanings in this equation, and that the correct formulation would be $e = mc_{rp}c_{rt}$, where c_{rp} and c_{rt} represent the two types of competence. I could not, however, resist the temptation of using the shape of the better known law)

How is this play with symbols useful in our present context? Well, it identifies the three main criteria for assessing research, or at least research proposals – the sensitivity of the topic, the quality of the plan and the professionalism of the team. It also tells us, because only straightforward multiplication is involved, that total failure in any area of assessment lowers the acceptability considerably and should probably lead to the rejection of the proposal. If any one element in the multiplication is given the value zero, then this value is transferred to its ethical acceptability as well. And it tells us that partial failure in any one area can, to a certain extent, be compensated by excellence in other areas. (Due to this quality, the formula could be called the 'general law of ethical relativity')

An important question in any attempt to isolate and then recombine the aspects of complex phenomena is, 'Can the model be quantified?' In this case, tentatively, perhaps. We could say, for instance, that:

- if the proposed research is totally non-sensitive, its value is 1;
- if it is highly, but not impossibly, sensitive, its value can be 0.5; and
- if it is too sensitive to be conducted, its value approaches 0.

And we could say that:

- if the proposal or the research team is extremely competent, the value of 'c' is 2;
- if these are adequately competent, the value could be 1; and
- if they are totally incompetent, the value would be 0.

These figures are, of course, totally arbitrary, but they produce some interesting equations.

The value of 'e', or the ethical acceptability of the research in question, would with these figures range from 0 to 4. If we then stipulate that 1 is the minimum needed for ethical approval, we can reach this result in several ways:

$e = 1 = 1 \times 1 \times 1.$

This says that with a non-sensitive topic, a merely 'adequate' level of competence both in the plan and the team would be acceptable.

$e = 1 = 0.5 \times 2 \times 1 = 0.5 \times 1 \times 2.$

This indicates that a relatively high sensitivity of the topic can be compensated either by good planning or a good team history in this type of research.

$e = 1 = 0.25 \times 2 \times 2.$

This expresses two important ideas. The first is that extreme competence goes a long way in dealing with extremely sensitive topics. The second is that there are levels of sensitivity beyond which compensation is simply impossible.

If all this can be agreed upon in one way or another, all we would need in order to complete the model would be an operationalization of the key concepts – 'sensitivity', 'plan competence' and 'team competence'. Ideally, this task could be performed in co-operation between ethicists, who should find out how health, welfare, dignity, autonomy and justice are to be balanced in the measurement of sensitivity; and scientists, who should define the costs and benefits of the proposed work, and the technical competence of the plan and the researcher.

Since all these definitions and weighings are complicated, and partly controversial, I would not hold my breath waiting for a general theory of ethical acceptability to emerge from this model. But perhaps it is possible to go one step further in this direction by focusing on the professional-code aspect of ethics.

Principles and values

Professional codes often include a set of background principles, or values. Judging by contemporary ethical debates, bioscientists, if they can unite as a profession, can choose from two main approaches as regards such principles or values. It has been argued that the norms presented by philosophers and theologians in these debates are too far removed from practical concerns to be of any real use to scientists. I do not necessarily disagree. But let me briefly present two models of bioethics which seem to be popular in public discussions, and say a few words about their implications on bioscience.

The first is the 'four-principles approach', mainly advocated by American bioethicists. It states that an ethically good choice, or course of action, fulfils the following criteria:

- It respects the autonomy of individuals.
- It does not inflict unnecessary harm on anybody.
- It does some good to somebody.
- It does not violate any precepts of justice.

Some critics have argued that this American approach reduces morality to consumer choices by overemphasizing the autonomy and material well-being of independent and affluent individuals. Depending on the interpretation of the principles this concern is partly valid. At least in the context of biosciences, it is true that *if* autonomy means market freedom, *if* harms and benefits are balanced in expert risk assessments, and *if* justice means giving the researchers their dues, *then* this model can give scientists a licence to do almost anything, provided that they do not harm any identifiable individuals by doing so. But this is not the only feasible interpretation of the central concepts.

Many European ethicists have tried to find fundamental moral principles in other directions. Their favourite criteria for a sound ethical decision seem to include:

- It does not violate the dignity of human (or other living) beings.
- It is precautionary, that is, it takes into account all conceivable consequences, including those which are presently unforeseeable.
- It respects solidarity, that is, it does not benefit one group of people at the expense of others.

The most prominent objection to the use of these principles in public debates is that they are vague, and can therefore be employed to support bans on anything the ethicists employing them do not understand or like. Certainly many voices against the development of biosciences have been heard from the advocates of this set of rules. Again, however, the values of dignity, precaution, and solidarity can also be interpreted in other ways.

Although these two groups of principles can be given different meanings, knowledge of them could be useful to bioscientists, if and when they set out to formulate a unified professional code for themselves. The picture I have given here can be given more colour and content by bioethical studies, and the reflection of contemporary principles and values would probably serve the emerging professionals better than attempts to invent rules from scratch.

Law or morality?

Laws regulating bioscientific research have, to a certain extent, been arrived at by examining the nature of the work professionals in this field do, and by addressing concerns encapsulated in the principles of 'autonomy', 'non-maleficence', ‘beneficence’, ‘justice’, dignity’, ‘precaution’ and ‘solidarity’.

But if the role of bioscientists as ethical decision-makers is to be taken seriously, they should, as individuals or as groups, scrutinize their own work and values, and present to others a code, or a model, by which they themselves would like their practices to be assessed. This would serve two ends: they would give legislators and the general public a better ‘expert’ view of what their activities are all about, and they would have the opportunity to define their own values as a group.

References

Some of the ideas discussed in this paper have been further examined in:

Häyry, M., 2003a. Do bioscientists need professional ethics? *In:* Häyry, M. and Takala, T. eds. *Scratching the surface of bioethics*. Rodopi, Amsterdam, 91-97.

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