1. Bird’s-eye View – Purpose, Functions and Limits of Ethics

a. Why Ethics?

Human beings ask questions like “what is the right thing to do?” Ethics is the search for answers to questions of that kind. Therefore, ethics reflects on reasons and consequences of human actions.

Moral rules seek to sum up succinctly the result of both individual and collective experience in balancing ethically relevant goods as well as the thought on that matter.

Theoretical considerations and reflections are only one step towards developing moral guidelines, it is by no means the whole way. Moral knowledge is for a large part a “sedimentary deposit” of these experiences and deliberations, found in the form of (socially acceptable) habits and emotions, as well as in the form of culturally evolved structures of society, both in laws and in organizations or institutions.

In order to be relevant to today’s moral questions, ethic reflection needs to consider both individual motivation and the stabilization of morals.

b. Functions of Ethics

A basic analysis of the functions of ethics in our post-modern society lets us identify three core tasks, namely critique, motivation, and integration.

(1) Critique

Ethics has to scrutinize reality and criticize in light of the pertinent moral guidelines what happens in society and what individuals do in fact. In a way, this function is that of a referee: ethics has to tell when factual behaviour does not conform to the universally agreed rules. Perhaps this is not comfortable, it is crucial nevertheless. Unlike a referee, ethics also pays close attention to the rules-set, which is not above its criticism.

The political debate on green issues in Germany may serve as an example for the critical function of ethics. The environmentalist movement has become a political factor mainly as a movement of social criticism. The German green movement condemned the use of nuclear energy and the NATO Double-Track Decision. This history may have led to a tendency to put forth scenarios of catastrophe, which in turn tend to contribute to paralyze rather than to motivate behavioural changes.

(2) Motivation

People need motivation in order to change their actual behaviour. For that reason ethics needs to consider carefully and systematically the problem of motivation.

In short, compliance with ethical norms needs to be worth its while. There should be incentives for socially and ecologically desirable behaviour. One needs to put in place structural conditions, which ensure that ethically compliant behaviour is at the same time an advantageous investment. For example, motivation for changes in the field of technology
assessment and of environmental ethics could be an economic advantage. Indeed, economic analysis has shown that a culture of trust is a critical factor of success for management.

Desirable changes on an individual scale need stabilization on a social scale. Therefore, one needs to create structural conditions in both law and institution rewarding that behaviour. Socially and ecologically desirable behaviour has to be a rewarding investment in the future and people need to see it that way.

(3) Integration
Cooperative behaviour requires integration of different interest, convictions and perceptions. The environmental issue can again serve as an example. Particularly the set of problems in this field and developmental issues require the integration of diverse fields of sciences, social groups, and political issues as well as of international and intercontinental interests. The need for integration is a characteristic of the concept of sustainability.

However, without precise operationalization the integrative concept of sustainability becomes a door opener to arbitrariness. For this reason, today’s ethical discussion tends to treat on the means rather than the goal itself. In that way, sustainability is a process of optimization and of carefully balancing competing claims and demands to achieve as well balanced a state as possible.

Integration proves itself by facilitating the dialogue of the different scientific disciplines and social communities. Ethics is an integrative theory; it is in that sense Integrationswissenschaft (Schöllgen). Ethics denies the claim to the absolute of any single perspective by examining the basic assumptions of any model put forward. By doing this, ethics serves to put part-truths into perspective. Its analysis is founded on the philosophy of science. This is the methodologically crucial starting point to build and ethics of science.

C. Limits of Ethics: The Pitfall of Being a Moralizer
The need for ethical reflection arises mainly in times of radical change. The task of securing sustainable development poses substantial ecological and social challenges is big enough to constitute such an upheaval phase. This has far-reaching consequences for the social and regulatory framework for and feasible goals of scientific research.

At the same time, ethics has to avoid certain pitfalls. In today’s differentiated societal structures, ethics all too often finds itself on the verge of social irrelevance. Whenever moral postulates ignore the material constraints of the actions they aim to govern, decision makers faced with such advice will discount it as “moralizing”. What is more, the “moralizer” will probably be ignored in the future. Consequently, the answers of ethical reflection must take into account the ever-increasing complexity of our situation.

2. The Four Elements of Responsibility
The term responsibility has become firmly established as a key term in the field of ethical reflection on social, ecological, and technological problems of development of modern civilization. The “ethics of responsibility” approach (Max Weber) does not primarily judge an action by disposition, attitude, or intent of its author, but rather by its consequences. This approach takes into account even side effects of an action which are only partially intended or foreseeable.
Responsibility is a relational term. The relation called responsibility is comprised of four elements: (1) someone has to account (subject) (2) for something (object), (3) to somebody (authority answered to) (4) in accordance with certain standards (criteria).

(1) Subject
The capability of being the subject of moral imputation of one’s acts is an integral part of being a person. Personality presupposes freedom, the existence of which cannot be objectively proven by methods of natural science. Freedom in turn arises through the exercising of responsibility. The increase of choice is the main problem of responsibility in a (post-) modern society. The “crisis of responsibility” does not primarily stem from a decline of moral standards. The price for the openness and dynamics of modern society and for the increasing possibilities to act, which we have thanks to the progress in natural sciences, is an increased demand of morals (Höffle).

(2) Object
Possible objects of responsibility can be organized into three categories: (1) responsibility for oneself, (2) responsibility for fellow humans, and (3) responsibility for the natural resources and basis for life on the whole. Article 20a of the German Constitution (the “Grundgesetz”) speaks of “responsibility toward future generations”, and leaves open the question whether responsibility for nature is an end of itself or just an end for the sake of mankind. Christianity maintains that nature has an intrinsic value, which has consequences in the making of laws regarding the protection of species or the patenting of living subject matter.

(3) Authority Answered To
The authority man has to answer to is in the first place his own conscience. The central role of the conscience has lead to the “turn to the subject” in modern ethics. Modern ethics is ethics of freedom. Governments in turn have to answer to public opinion. The media (newspapers, television, and the internet), the scientific community, and Nongovernmental Organisations (NGOs) and their communication constitute a forum that has to be answered to. Especially the NGOs often see themselves as the world’s conscience; some of them quite often voice their concern with chemical industries.

(4) Criteria
The criteria by which conflicts at hand are to be decided are the “toolbox” of ethics. Three basic categories of criteria can be made out, namely compatibility or reconcilability with (1) the individual, (2) social welfare, and (3) environmental issues. The criterion of environmental compatibility demands, among other things, long-term provisions for avoidance of environmental damage and the acceptance of the “polluter pays principle”. Ecologic risks are to be measured by their expectation, the product of the expected extent of damage and the probability of its occurrence (actuarial principle). The ever-increasing complexity of technology assessment calls for a systemic view if one wants to be able to act in a responsible way.

3. Ethics of Responsibility and Green Genetic Engineering
In recent years, green genetic engineering has become the focus of public perception of ethical problems of biochemical research and its application. The controversy surrounding the use of genetically modified plants in agriculture and food production is one of the key conflicts of technology assessment today.
a. Being of Age: Risk-Taking
I propose as a lead criterion “Risikomündigkeit” – being of age with respect to taking risks and bear the consequences. The concept of “being of age for risk-taking” avoids the main faults of the two concepts of “zero risk” and of “segmented responsibility”: “Zero risk” is illusory and simply not attainable. On the other hand, there is the linear approach of segmenting responsibility in a way that results in ignorance of systemic risks in the field of ecology and masks interdependencies of agricultural policy.

b. Enhancing Risk Assessment
The assessment of green genetic engineering requires an integrated approach that analyzes the different reference scales per se and then relates the findings systematically. To achieve this I propose an enhanced model of impact assessment combining natural-scientific and social-scientific aspects.

A guiding concept for responsibility ethics today is the principle of sustainability. It meets the requirements of measurability (through indicators of sustainable development) and operationability, as is evidenced by the Sustainability Reporting Guidelines proposed by the Global Reporting Initiative (GRI).

c. Fighting Hunger
Green genetic engineering often is justified by the argument, that it is necessary for successfully fighting hunger. However, one needs to put that argument into perspective, because hunger is not primarily a problem of a lack of available food on the world market. Rather it is a problem of distribution of available food, as well as of the protection of water, and of soil, and of subsistence agricultural employment. The overcoming of hunger is primarily a question of justice, not of technological progress. On the other hand, technological innovations can contribute a great deal to the quest of fighting hunger, but without justice in agriculture and social structures technological progress will probably fail to succeed.

d. Research Challenge: Sustainable Genetic Engineering
Only now — within the framework of sustainable development, just and equitable agricultural policy, and Corporate Social Responsibility (CSR) of both research facilities and business organizations — reasonable fields of application for green genetic engineering can be identified. The applications are presumably manifold, e. g., the improvement of drought resistance of crops or stem firmness of certain crop plant species, which may lead to faster adaptation of these plants to climate change which will otherwise (and perhaps even so) create enormous problems to secure worldwide supply of food.

Bibliography