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A Special Moral Code for Design?

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(English translation by Meike Asbach)

I would like to let language and action float on a subterranean river of ethics and watch over them lest one of them should drown, so that ethics does not explicitly get a chance to speak and language does not degenerate into sermon.

Heinz von Foerster 1993

Introduction

Ethics reflects the moral requirements, which human actions have to meet. The term is frequently used synonymously with that of *practical philosophy*. *Morality* refers to the ethically good, a historically and culturally dynamic system of moral concepts and commandments (norms), which classifies actions and attitudes into good or bad. The preconditions of moral actions are the *liberty* and *liability* of man in his prevailing situation. Ethics is experiencing a boom in scientific, political and public debate. This reflects the helplessness of action in the face of the lamentable state of nature, the potential risks of science (medical ethics, gene ethics, neuro ethics, nano

ethics), the escalating propensity to violence in society, the misery of the "Third World", etc.

Is there really a *lack* of morality or do we rather have a higher need for morality than earlier generations? The latter is possibly the case because even in the most basic spheres of action in daily life, it is becoming increasingly difficult to establish any set of binding or at least reasonably durable criteria.

Can ethics actually be a suitable category applicable to the problems of modern societies?

According to Luhmann, a society, which is divided into functional systems, must go without moral integration. He warns of the danger (1990: 697) of *"prescribing oneself a tranquilliser under the name of ethics"*, which only distracts from all serious attempts to understand modern society with all its different functional systems. On principal, he sees no room for ethics in the scientific system. Insofar as science accounts for autonomy and objectivity, one can agree with this.

However, due to the humanitarian aims which science has taken upon itself in modern times, it now incorporates into its understanding of itself the external link to politics, society and economy. By giving up being an end in itself, it qualifies its own autonomy. Scientific endeavours become more and more contextualised; science enters "the agora", as Nowotny et al. (2001) put it. Here, the main function of ethics consists in providing feasible potentialities for topics and areas where legal norms and political decisions do not suffice, or where they have got stuck and cannot correct themselves without external help.

Conclusion 1: Ethics is an adequate category of reflection. It has to be applied specifically to the problem at hand, otherwise it can be neither concrete nor of practical relevance, but remains empty talk. This has to be strictly distinguished from the notorious *moral* (pre-) judgements, i.e. unquestioned beliefs in how things should be. The latter are the main obstacles to complex thinking; they tend to destroy complexity before it can even be perceived. It remains a different question whether a *new* ethic is needed and particularly, whether a special ethic is needed specifically for design.

A New Ethic for Design?

Flusser (1993) pleads for some kind of ethical code for design. But what has design got to do with the current ethics debate? For the latter refers primarily to the serious problems encountered in science, politics and daily life, whereas design – so we are told – has always been a friendly discipline, permanently aiming at the improvement of our quality of life. Starting out with the generic concept of "ethics of technologically and scientifically advanced civilisation", it is however possible to establish the link between the two.

In the modern age, *science* has taken upon itself the aim of improving human wellbeing through the technical implementation of its findings. In his utopian paper "New-Atlantis", Francis Bacon

expresses this objective programmatically. This does away with the ancient ideal of *theoria*, which is the contemplative striving for knowledge for its own sake. On principle, this ideal was amoral. As soon as science touches upon the *practical*, because of its connection with *technology*, ethics becomes relevant, and science is *susceptible* to morality or amorality.

It is only later, when it comes into contact with the capitalist *economy* that the combination of science and technology takes on *a momentum of its own*. Höffe (1993: 161):

> It is only when those powers external to technology come into play, and when the powers thus unleashed mix with an unleashed demand for power that the overburdening of nature begins.

Technological development thus becomes a process, taking place within the economic context.

In his "Protestant Ethics" Max Weber impressively describes the birth of this strange *ethos of work* as a prerequisite for economic dynamism. Only when work was separated from immoral pleasures did the unbridled pursuit of profit become morally good. Adam Smith was still quite optimistic in his opinion that an "invisible hand", coupled with human reason, would make sure that individual pursuit of profit would automatically turn into public good.

The trinity of science, technology, and economy led to the dynamism of industrial production with its self-sustaining cycle of production and consumption. *Design* can only have a function within this system:

- This can consist in *correction* that is in the attempt to support the interests of the user within the momentum of industrial production. Quality of life through functional products, a view, which was predominant during the periods of Bauhaus and "Ulm". One may call this the condition/context of *need*. See 4.2 a).
- It can also consist in *driving* the faltering cycle, which necessitates a new definition of quality of life. The functionality of solutions is no longer at the centre; it is rather about producing meaningful added value which is more or less independent of the function. One may characterise this as the condition/context of *need for need*. See 4.2 b).
- The function of the driver bestows a special economic importance upon design, and yet it blocks our view of the potential risks of this dynamism. It seems that this is no longer a practicable solution. The promise of quality of life through meaning via products no longer holds. People perceive the deception and are increasingly disappointed. The unbridled production of rubbish without sustainable meaning is

> moreover ecologically unacceptable. I characterise this situation as the condition/context of *need for orientation* (which is transparency and clarity regarding options rather than guidance). See 4.2 c).

So what is *ethically* new about this situation? The wide-spread excitement suggests that there be something essentially new. Beck (1988: 194) still regards science as an autonomous power and puts it quite dramatic, yet casually:

> Applied to the model where the sciences have become independent, the importance of ethics is comparable to that of bicycle brakes on an intercontinental jet.

Hans Jonas (1979) sees the essentially new lying in the temporal and spatial *dimensions* of risk. The new ethic, which he outlines, sounds highly pathetic and hardly attainable for normal people, therefore rendering it more deterrent than motivating. Some critics suspect that his implication from being/Sein (as a value in itself) to imperative/Sollen (protecting existence) consists in a "naturalistic false conclusion". For Höffe (1993: 20–22) Jonas' "language game responsibility" bears some "accusatory elements". According to Höffe, the ethic of responsibility is not neutral, because it does not see the *positive creative chances* inherent in the responsibility for a task.

The following aspect seems important: When we say that we must first *search for* and conclusively formulate a new ethic before we can finally act according to it, then this has the primary effect that we are putting off solving the most obvious and most acute problems. Is it not possible that it is rather the *moral codes* of what is good or bad that are becoming problematic, whereas the existing *ethical concepts* are still sufficient and usable? There is Kant, for example. Höffe (1993) emphasises that his categorical imperative can indeed be understood to encompass more than just the individual or one generation. And then there is the example of Aristotle and his practical philosophy. More on that below.

Conclusion 2: Design is a functional subsystem in the system of industrial and cultural production. Within this system, no part bears sole responsibility, each part bears partial responsibility. This is relative to what the subsystem contributes to the process as a whole. New types of responsibility of this kind require new types of social and political *forums and practices of inter- and intra-systemic discourse.* They also require new types of *personal attitudes*. They do not require new types of ethic.

Ecology as a Starting Point?

Can ecology provide the framework for applied design ethic? Ecology is very popular in design these days: It is concrete and plausible in terms of products and processes; it seems to be

possible – albeit so far not quite satisfactorily – to put it into technological rules, which can be put to operational use. (e.g. ecological balances). Ecology is a tightly structured discipline, which can be narrowed down and integrated, just like ergonomics and material science. And it can even be exemplified in the form of homey normative scenarios like "green consumerism", which are very much en vogue in design (Manzini 1995).

If we understand ecology as an isolated discipline, it is nevertheless misleading to use it as a sole model. It would lead us to the illusion, that the *complexity* of reality is sufficiently palpable in order to develop from it workable codes of action. Things used to be a lot easier: wood was good, plastic was bad; wholegrain healthy and white flour unhealthy; cotton was natural and artificial fibres harmful. But what if cotton is grown in developing countries by big landowners, who destroy arable land with their pesticide-bathed monocultures? Looking at it this way, the good old nylon shirt seems to cast an almost angelic glow. In moral terms, there is no product or service, which is totally clean. The problem of ecology is therefore hardly understandable with reference to the concepts of good or bad materials, means of construction, patterns of consumer behaviour etc. This is due to the *complexity* behind the matter. The fact that many adverts for products nowadays are not based upon the additive "*contains* x, y and z", and focus instead on "does *not* contain a, b or c", expresses a state of perplexity. The decision *against* a product or service is the only way to be unambiguous nowadays. Faced with a complexity on which we have no longer a hold, deciding between alternatives often turns into ideology.

A more promising approach to grasping the problem seems to relate to the *intensity* of the flows of matter and energy (Schmidt-Bleek 1992). The cause of this *quantitative problem* is the shape that our economic life takes, and the structures of necessity and ways of life linked to it. The dynamic *duality of work and consumption* is a major problem. Both components have become ends in themselves, even values, which are hardly questioned anymore. They drive each other on, blowing themselves out of proportion. For example: the fact that an automobile company has to launch a new model every year has nothing to do with quality of life, but follows simply from the momentum of the global automobile industry. Associating this with quality of life, thus turning it into a need (more precisely: a need for a need), is not seen as irrational or frivolous, but sensible. And yet, the game doesn't go off so smoothly anymore. But not because of ecological insight. There are more profane reasons, such as potential customers lacking in funds or even getting annoyed with the game. Höffe (1993: 216):

> Up to now, the ecological ethic was looking for a new morality, from now on, it will be a case of assessing new facts using the tools of a familiar morality.

Conclusion 3: Ecology seems an inappropriate starting point for ethical reorientation, for it goes no further than curing some symptoms. Within the logic of the reigning system, ecology can never be more than a subdiscipline/marginal demand. In a new (and at the same time very old) understanding of action/practice ecology is taken care of in more than one sense. It is an imminent part of it and at the same time becomes irrelevant because it has always been an inherent component.

Means and Ends – Problems and Solutions

The outlined problem can be applied to the relation between means and ends (cause and effect, problems and solutions). In the course of the development of modernity, the ends became separated from the means needed to achieve them, because the former were decreasingly likely to find general consensus or be generally applicable. The *ends* undergo a process of *individualisation*, their aspects of value are blended out or turned into something operational (the product as an end; profit as an end). In order to attain targets as efficiently as possible, the *means* are *rationalised*: that is why *rationality of ends* is in fact *rationality of means* today. According to Luhmann (1973: 29) this differentiation between scheme of causality and order of values makes sense, because it carries out the separation between the schematic and the regulative interpretation of the world's complexity:

> it makes sense to simplify in the form of schemes possible experiences through the causal category, only because it enables us to systematise and thus interpret experiential and behavioural potentialities of our natural experience, so that they may be compared and therefore rationalised.

This is correct and it has been working successfully for a long time. But now it seems as if the kind of rationality at the heart of it is no longer appropriate, or has to be supplemented. The sharp separation of means from ends is to be put in question. This also concerns our concept of reason, which does not only exclude the so-called irrational (emotion, character, virtues), but also practical aspects of action. Reason still seems to be limited to the rationality of that which can be quantified economically.

For Example Aristotle: The Ethical Link between Means and Ends

The building blocks for an ethic suitable to civilisation at the beginning of the 21st century are all there; they have just been buried by a few hundred years of "progress".

In his Nicomachean Ethics (Book VI, 13:172), Aristotle says the following on the connection between reason and character:

> ... the task which is unique to mankind is fulfilled, through the development of moral insight and the assets of character. For the latter cause the objective to be right, and insight points to the right means to reach the objective.

His expositions can be illustrated as in figure 1. He introduces the term *planning* at this point (NE, Book VI, 13:175):

> … moral excellence is …not only that basic stance which is orientated by the correct planning, but also that with which it has grown into one unit. In such matters, however, the correct planning is moral insight. Now, Socrates thought that the forms of moral excellence are (rational) plans- for they are all "sciences" [knowledge of virtue, author's note] – but we say: they form a unit with (the correct) planning.
>
> From what we have said so far, we reach the conclusion that it is impossible to be a valuable person in the original (ethical) sense- without moral insight, and that one cannot have moral insight without excellence of character.

Aristotle concludes: moral insight *is* correct planning. It is linked to the qualities of character via the moral competence. Planning thus requires not only qualities of mind but also of character; it connects rational with irrational aspects.

There are few hints as to how this might look in the concrete process of problem solving. One remark on the reaching of targets according to plan is worthy of mention here:

> The process of reflection should start with the aim or the last step toward it, and the preceding and respectively following, enabling (causal) steps be determined from there.

In this way, one reaches the first cause, going backwards. The interesting thing about it is, that in his "Neuland des Denkens" (New Ground for Thinking) Vester (1985: 88f) describes precisely this method as being particularly promising because it is a "cybernetic method – i.e. determined by future events (comparable to network planning technique)". The usual approach on the other hand, only ever consists in reacting to problems that have occurred in the past, i.e. after they have happened, like a short-term treatment of symptoms, or action constrained by circumstances.

The Dynamic Link between Problems and Solutions

This is about linking the means-ends view with the problem-solution view of design practice.

a) The Linear Pattern: Problem → Solution
(The Context of Need)
This is short-term operational planning to align an actual status with a planned status (short-term adaptation). In the daily routine of design practice, this is the normal way of looking at and thinking about things. It presupposes a temporally fixed hierarchy of needs and a fixed formalised problem. Problems just "fall out of the blue" or they are provided by a client. Design is a "*means* of solution".

b) The Cyclical Pattern: Economic Planning for Continuance
(The Context of Need for Need)
This is about securing the continuance of an economic structure (economic autopoiesis). From the system point of view it is hardly about things as bearers of utility value and "meaning", but as *drivers* for the cycle of production-consumption. The most important function here lies in fast production and short-term satisfaction of the feeling "wanting to have". Subsequently actually having the thing is only a transitory stage on the way to "wanting to have" the next model. We produce "temporary Eigenvalues" in the communicative process. "Being a solution" safeguards the ability to connect. At the centre of it lies the permanent *problem of continuance* of the system of economics, the products themselves mostly qualify as contingent materialisations. In the Marxist sense, it seems plausible to speak of the *objectification* of social conditions in the *form of goods.* From there, it does not take much for things to take on a *fetish function*. Advertising has been working with this for a long time. This different way of looking at design does not change its function but renders its problems more obvious:

– the arbitrary and often extremely trivial nature of ends,
– the economically biased definition of ends,
– the dominance of means (end in itself and intrinsic dynamic of the cycle),
– the immense material expenditure of means needed for the realisation of ends,
– the unrelatedness of means and ends.

In general: the value indifference of ends and design's inability to exert any influence.

c) The Network Pattern: Ethics as Planning
(The Context of Need for Orientation)
This is about problem-solving as a *catalyser* of development and structural change (long-term socio-cultural evolution). Looked at in isolation, the "solutions" to the problems with which marketing supplies us at an ever-increasing rate are becoming more and more optimal. So how come then, that the state of the world isn't getting better all the time?

As early as 1965, Bruce Archer said:

> There are plenty of good designers who have no difficulty at all in producing the right answers, if only they are asked the right questions.

Asking the right questions? This requires the *interruption* of the cycle, reflecting on one's own position with the aim of *exerting influence* on the definition of the problem. I call this *problem-design* (Jonas 1993a, b, 1994).

Up to now, theory development has essentially promoted a *negative dynamism of adaptation* to the economy, in the sense of negative feedback. The self-reflexive learning cycle sketched out above (cf. Maser's "transclassical cycle", 1972) enables us to participate in inter-systemic discourse on the responsible shaping of the future, together with other social actors. This could produce a *positive dynamism* in the sense of an active exertion of influence (not control!). This is design ethics. It promotes a renewed convergence of means and ends, without any guarantee of "progress" yet.

Conclusion 4: There is no need for a new ethic: the existing one is quite sufficient! We cannot talk our way out of it by saying that the ethical foundations have as yet to be determined. It is however a matter of necessity that we *redefine rationality*, so that it becomes possible to ascertain all value aspects of practice, including non-quantitative ones. As a consequence, design has to consider planning concepts which allow an exertion of influence on the social definition of ends that is in association with other disciplines which have the ability to shape the future.

Ethics as Planning

The term ethics, just like ecology, is susceptible to being verbally outworn, and should therefore be used less inflationary. As illustrated above, ethics in design refers to *planning theory* and *planning practice*. Ethics manifests itself in the *appropriate* methodical treatment of practical problems that is in the adequacy of subject, insight, and conduct. In this respect, Aristotle is surprisingly relevant to the current situation. Höffe (1993: 34):

> Examining Aristotle's work opens up new horizons for new questions and thus pays positive tribute to science, something which the principle of responsibility [Hans Jonas, author's note] – since it is orientated to accountability and liability – fails to do.

His practical philosophy encompasses the fields of *ethics*, *politics* and *economics*. *Design action is political action,* because it plays a part in determining the direction of development of civilisation.

Extended Rationality and Planning

Aristotle differentiates between the *irrational* and the *rational* parts of the soul. The forms of *ethical* competence concern the *character*, i.e. the *irrational* parts of the soul: bravery (III, 9), serenity, sophrosyne (III, 13), generosity (IV, 1), greatness (IV, 4), craving for admiration (IV, 7) and justice (V). Nothing much can be done here, for these virtues cannot be taught or learned. They can however, as illustrated in fig. 1, be furthered through the rational qualities. The latter, these forms of *dianoetic* virtue, concern our reason, that is the *rational* parts of the soul. Aristotle names 5 basic forms of gaining rational insight of rightness:

– Practical ability (techne)

The production of things outside the agent (VI, 4: 158).

– Scientific insight (episteme)

This applies to the invariable, the general (VI, 3: 157).

– Moral insight (phronesis)

This applies to action in specific situations, specifically matters concerning the polity (economy, legislation, politics) (VI 5 p. 159).

– Philosophical wisdom (sophia) is the perfect form of insight, science in its most accomplished form (VI, 7 p. 162).

– Intuitive understanding (nous) provides those premises of scientific insight, which cannot be explained.

For Aristotle, the *subject* of rational activity is:

– *The unchangeable* (more precisely: that which cannot be changed by man), encompassing the general, the necessary, aiming at the judgement: true – false. This "disinterested" intellectual curiosity (it is free from social heteronomy) embodies the ancient, contemplative scientific ideal of *theoria*.

– *The changeable* (that which can be turned into something else), the special, the individual, aiming at the judgement: good – bad. The process of reflecting and weighing up, combined with effort lead to *action (practice)* and *making (poiesis)*. Practice (action) requires *phronesis (intelligence)*. Phronesis, in association with the virtues is responsible for moral action. Poiesis (making for a purpose) requires *techne (skill, competence)*. Poiesis and techne are separate from the field of morality. This ideal division of theory and practice (if ever they did exist in such forms) has today become a profound union.

Ever since Bacon, if not earlier, *science* has had to meet the explicitly social demand of working for the wellbeing of mankind. Science, especially experimental science, is not restricted to just observing natural processes anymore, but actually intervenes in them. Nuclear technology and genetic engineering do so on a global scale, under the pretext of "science rendering a service to humanity". Here is

an example: the experimental examination (numerical simulation) of the "MCA" of nuclear plants was carried out in 1993, more than thirty years after their economic use peaked. Despite the inherent outrageousness, this constitutes an almost forgotten *reversal of theory and practice*. *Practice, i.e.* change-bringing action and making can no longer go without scientific company. Simon (1996) coined the term "sciences of the artificial".

Techne and episteme dominate the non-private spheres of human action today. Practice is subject to the limited rationality of techne. This leads to the technocratic orientation towards means, to "instrumentalism". This results in the loss of the possibility dimension of action, i.e. a lack of perspectives. The inappropriate means of insight contributes to the hubris of unlimited feasibility. One side-effect: the pleonexis of unlimited wanting-to-have. What is missing is *phronesis* which would act as an instruction for action in the domain of value orientation. The digression from this view is quite recent:

– *Politics* as techne (state machine , man machine) in Hobbes, Descartes and La Mettrie.

– *Economy* as techne in Adam Smith.

What remains is *ethics*, as a discipline that is redundant and far removed from practice, and which is sometimes called upon in Sunday speeches but, at the end of the day, no longer has its proper place.

Any relationship between man and his natural environment is marked by technology. In terms of therapy, we therefore cannot start with the field of technology. One can only decide whether technology is meaningful with reference to a concrete aim or specific problem. An increasing uncertainty as to whether a specific solution actually serves the benefit of mankind stems from this difference between technological and anthropological purpose. Höffe (1993: 131–132) emphasises:

> It is for this reason and not because of the recent economic significance that technological matters are of central political concern, because with the immense gain in power the dangers of use, even if they are peaceful, also grow immensely. …
>
> What we can stress is …that structural amorality is offset neither by a new technology nor a new morality, but through the integration of technology into a moral practice.

Politics can work for the creation of the necessary *basic conditions* on both a global and regional level. Within such a framework, a *change in the patterns of action of technological development* can take place – see, for example, the approach of experimental technological policy (Meyer-Krahmer 1992). In turn, within this framework it can become relevant to design. It is about gradually

"enriching" the rational methods with value, in order to get to a planning *appropriate* to the subjects. That is ethics.

Digression: Future Scenarios

Technologies of appropriate planning require a specifically detailed analysis of the subject matter (see "problem-design", Jonas 1993b). It is then rather a question of designing processes than reaching set targets (products). Simon (1996) speaks of design as "virtual window-shopping. An option is to apply the *scenario method* (von Reibnitz 1987). This refers to the development of future spheres and the description of the path from the present situation to those future situations. The key to success is the embedding in *democratic communication structures*, in participatory models of planning.

Take "the good life" scenario, for example. A central objective based upon the moral principle of ancient ethics, that is *eudaimonia* (happiness, wellbeing), the fulfilment of the individual's self, the realisation of humaneness (see NE, Books I and X). In the transition from an eudemian ethic of individuals to a group ethic, structural problems are likely to arise, for individual self-interest is often the cause of trans-individual (global) self-damage. This is due to the peculiarity of public goods. The advantages of additional burdens are often harnessed on an individual and sometimes even regional level, the disadvantages are often felt collectively and globally. In other words, it would be inconsistent with self-interest *not* to use collective goods extensively and recklessly, as long as the individual's cost-benefit balance is positive. Such "copycat" behaviour starts with the use of private cars in city traffic. Only, when everyone behaves in this manner do the costs get passed on back and forth, and all that remains is pure self-damage. Catalysing the change in values depends on developing and building up plans of action, which are as concrete as possible to get close to the objective. The following steps are to be considered in reverse chronological order, i.e. we move backwards from our central objective:

1) Central objective (what is actually achieved) could be the "1/10 –approach" to the reduction in material intensity in the industrial nations of the "First World" (Schmidt-Bleek 1992). This is required to achieve a global reduction of 50% if standards of living are aligned.
2) Businesses change from being profit-oriented producers to quality-oriented fulfillers of people's needs. People change from insatiable consumers into responsible and thoughtful users. The countryside changes from industrial site into a space for living.
3) A society (a "national economy") has a certain share of material intensity which is dependent upon its total population and its current state of development. Global alignment happens over a longer period of time (about 50 years).

4) Each business and each citizen has their own personal "resources account": an annual account of traffic, material and energy expenditure for production (businesses) and consumption (citizens). It is a punishable offence to overdraw this account. Increased taxes for business, increased prices for "consumers". The account can be topped up by creating collective goods here or elsewhere (e.g. restoring areas to nature, planting trees, etc.).
5) Virtual reality serves as a temporary substitute (cf. methadone as a "weaning drug") to get through the "withdrawal phase" from material-intensive products.
6) International agreements are made, for example in the form of consumption taxes or economic sanctions.
7) Eudemian ethics is propagated as legal and governmental ethic on an international scale (we have basically got this far already these days).

Conclusion 5: What we need is not a special ethic for design but a more appropriate understanding of planning: *acting instead of making*, i.e. planning in terms of action and not planning of products. The duality of work and consumption as inseparable ends in themselves is to be broken up. This requires an *extended understanding of rationality*, at the centre of which stands intelligence (phronesis). The objective is the "good life" on a global scale.

Perspectives

Back to the initial question: Do we need something like a "Hippocratic oath" for design?

Flusser (1993) sees the danger that the discipline could let itself be roped in for "morally reprehensible produce", if we do not succeed in "agreeing on some form of ethical code for design." Höffe (1993: 86, 87) introduces a form of "Hippocratic oath (if need be for life)" for those disciplines involved in the development of technological civilisation. In view of what has been said so far, I think cause and effect are being mixed up here. Ethics cannot be articulated and even less prescribed; ethics manifests itself in action.

The proposal presented here undoubtedly is an attack on at least two of the central values of Western consumer societies: it is against the praise of work (producing, no matter what) as the actual meaning of life, and against the praise of consumption (consuming, no matter what) as adequate behaviour in a throwaway society. Even if this attack is just a partial success, it breaks up structures hitherto thought unchangeable. One can be curious about the consequences. It may lead to chaos. But it could also lead to a *renaissance of long superseded virtues*. A new ethic arises as a "side-effect" of enlightened planning. Individual and social qualities of character develop as emerging phenomena of a new practice.

Aristotle was among the first to emphasise that man acquires these wonderful *virtues* through practice and habit in the context of social experience, for example:

– *Serenity*
This is the old virtue of *sophrosyne*: moderation, measure, serenity have all diminished in public esteem. It used to be seen as a form of passion, vice or sin if one's drive had got out of hand. Since the 17th and 18th century, this is seen as rational interest and positive drive: envy becomes competitive thinking, greed becomes business acumen or competence.

– *Calmness/Composure*
This refers to the ability to accept one's own limitations and to let those we come into contact with keep their individuality. Calmness promotes the ability to find meaning even when there is a crisis in meaning. Ways of life hitherto thought exclusively valid lose their exclusiveness. If one then speaks of a loss in meaning, one has been taken in by a deception in perspectivity, for it is not the meaning itself that gets lost but the security in terms of which ways of life we can expect to be meaningful. Ecological calmness means: to find the right balance in our relationship with nature, between wanting to enforce and submissiveness, between hubris and fear, and to be open for correct self-assessment of the power conferred by technology.

– *Justice*
The ethic of law manifests itself in well-known principles: fair proceedings, impartiality, "do as you would be done by!", banning "copycat" behaviour, etc.

These are to be applied not just individually but also locally, regionally and globally. The problem with ecology is that it is a public good, the public nature of which far exceeds the borders of any individual state, no matter how big the latter is. Nevertheless: it is not about doing without one's own sovereignty, but respecting the sovereignty of other states.

– *Generosity*
The loss in generosity has to do with the demoralisation of the driving forces, i.e. the transformation of passions and vices into rational interests. Generosity manifests itself essentially in justness towards future generations. The notion of inter-generational fairness can be found as early as Kant: there is a duty to be just towards future generations, i.e. a categorical imperative of justice. Techno-scientific civilisation should invest its pride in leaving more to the generations to come than it started off with itself.

Conclusion 6: Inflationary talk of ethics is primarily symptomatic of helplessness in action. One cannot demand a new ethic in order

to then act accordingly; instead, one has to *act differently* first. The new ethic will then develop all by itself, as a "side effect". We do not need a *special* ethic, but instead a value-oriented practice of action, *specifically tailored* according to disciplines based on well-known principles: "practical philosophy of design", with all its limitations. The works of Simon (1996), or Churchman (1980), or Rittel (1992), or Vester (1984) can be considered as milestones here.

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