

This paper presents the philosopher Hans Jonas's idea of an environmental ethics. Through an outline of the development of man's relation to nature from Greek antiquity to the present it is argued that science and technology in modernity favour a relation of exploitation which is partly the cause of fatal climate changes. Through Jonas's philosophical notion of an ontology of man as an alternative to classical dualism and by means of a turn to an ontological interpretation of Kant's categorical imperative, it is argued that mankind has a responsibility to both coming generations and to the biosphere as a whole. Not only does this ontological shift from philosophy of mind to an ontology of man transcend dualism in philosophy, it throws a new critical light on the technological development and suggests a new way of considering man's place in the cosmos.

The experience of the increasing climate changes on the earth has given rise to gloomy predictions about the development of the entire biosphere in general and to questions about the continuing existence of biological species, in particular mankind, on earth. Since the advanced technology of western civilisation is undoubtedly – at least to some extent – the cause of the substantial changes that seem to threaten the ecological balance, man's carelessness with nature has not only become a significant matter on the world political agenda, it has also stimulated research in the development of sustainable technological solutions. Not least, it has caused a variety of philosophical reflections on man's fundamental relation to nature, man's place in the cosmos. From a religious Christian perspective it has been questioned whether man's unique position in creation implied a relation of dominion over nature or whether god has assigned to man the role of an administer of the created world. However, secularization has displaced the church from the administration of societal affairs, and this has led to the view that there is no ethical aspect of man's use of nature but only more or less favourable consequences.

A typically pragmatic reaction to the problem of how to avoid or limit such man-made climate changes would be to opt for technical solutions. No new worldview is required, or even possible, since scientific and technological research provides us with the true concept of nature as consisting of material objects which man can use to satisfy his material needs. But within the past forty years increasingly high technological development has made industrial production accelerate significantly and, together with the globalisation of the world economy, the negative consequences of this development such as pollution and shortage of natural resources have made man's relation to nature the subject of ethical consideration. In this paper I intend to give an example of a theory that deals with this ethical aspect in the sense that it regards nature as an object of moral responsibility and as a partner in a common life totality^[1].

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Considerations about man's relation to nature go back to ancient times, but whereas the ancient Greeks considered man an integral part of nature or cosmos, the scientific image of early modernity implied a change of this relation. The human world – society – came to regard itself as being in opposition to a foreign nature, which it had to acquire knowledge of in order to use it for its own purposes. Man became an active subject of knowledge and intervention, and

correspondingly nature was made the object of investigation and technical intervention[2]. Man regarded himself 'outside' and even opposed to nature in a power struggle to survive. This shift in the character of relation, where man's view of himself changes from regarding himself as an integral part of a whole (cosmos) to an autonomous being was especially reflected in the thinking of Francis Bacon and René Descartes about the new modern age. In accordance with the new science, they both prepared the way for a new image of the world whose success was not least due to the fact that it made possible a control over the powers of nature which was of benefit to mankind. Bacon announced a new project[3] whose central idea it was to unmask the 'idols', the delusions that impede scientific and technological progress. The method he proposed encompassed a systematic criticism of all kinds of prejudices, not least those that appear in the obscure vocabulary of magic, alchemy and scholastic thought.

The rejection of these pseudo-scientific activities, which still occupied scientists in Bacon's century, was later supported by Descartes' attempt to form a constructive alternative in the form of a new notion of natural cognition, namely a method based on self-evident principle that originated in reason. He demonstrated that only a mathematical description of nature satisfied the demands of reason. The mechanistic materialism that this method also favoured went hand in hand with the intentions of Bacon's project since it makes the basis of a scientific discovery of truths that benefits man. The scientific search for truth and for utility for mankind go hand in hand since the knowledge of causal explanations of objects are also rules for the production of these objects. This applies both to laboratory experiments, which confirm hypotheses, and to technical production in the industry. Both are kinds of interventions that aim at knowledge and utility. It was Descartes's view that a fruitful connection between theory and practice is established when the knowledge of the mechanisms of nature will make man the master of nature[4].

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In order to promote technological and economical progress, the scientific image of the world became a fundamental part of the Enlightenment of the eighteenth century. The Enlightenment project expressed the self-understanding of early modernity through the idea that scientific knowledge provides mankind with the true image of the world and that it benefits the individual and the societal progress. Though this optimism was soon met with reservation by the early Romantic Movement it was not until the experience of growing problems in the natural environment in late twentieth century that it became clear to scientists and politicians that the predominantly positive view of technological and economic development was based on an assessment by measures that concern the good for human society and not for the diversity of natural species. Society had delimited itself from nature. Regarded as an inexhaustible material resource available to mankind, nature had been excluded from society. Though society is in fact dependent on nature and interacts with the natural environment, nature is not respected as a partner of this living interaction.

How has this new critical perspective on civilisation's relation to nature come about? Part of the explanation is probably that nature has begun to react against man's abuses. The exploitation made possible by advanced technology has reached a degree where it has begun to have a substantial effect on the biosphere. Shortage of natural resources and pollution are phenomena that testify to the limitations and fragility of life on earth; increase in temperature and extreme

weather phenomena change our life conditions in a negative way. A new experience manifests itself: nature is not just a passive resource, a material object for an intervening rational subject, but it is an active organic 'subject' itself, which reacts to the disturbance of its ecological balance in a way that also affects the life of mankind and threatens its well-being. We are made aware that we are not 'outside' and opposed to nature. The self-conscious optimistic proponents of the Enlightenment who considered the relation of man to nature as a power struggle in which mankind will eventually prevail and who envisaged endless prosperity for mankind in the future, is being superseded by worry, reservations and even humility. The turn of the century brought with it a sense of increasing powerlessness and insecurity about the future destiny of the biosphere. Mankind is no longer entirely in control of nature but is also the object of the non-intended negative consequences of its actions towards nature.

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As already mentioned, the scenario sketched above has given rise to many thoughts, among them epistemological considerations about what kinds of knowledge there are. The fact that a growing understanding of how nature works has not led to predictions about the state of the biosphere technological exploitation of nature will lead to reminds us that the kind of knowledge which modern science dispose of is far from being the kind of knowledge that the ancient Greek philosophers called wisdom. Wisdom (gr. *sophia*) denotes a kind of knowledge that makes the knowing subject understand himself as a part of a comprehensive whole, of a natural order or 'cosmos'. According to the Greeks, the aim of wisdom does not just consist in an endless accumulation of empirical knowledge about man or the world, neither is it merely knowledge about mechanical natural laws. On the contrary, empirical knowledge aims at providing the knower with a basis for contemplation, i.e. a deeper understanding of himself as a human being and his place in the world. It has an ethical aspect. To the ancient Greek, the search for knowledge aspires to *sophia* insofar as the knowledge makes him capable of living well and understanding himself as an integral part of – and agent in – a higher kind of order, firstly the *polis* (the city state) and secondly the *cosmos*. Not control but contemplation and enhancement of the natural and social life are the practical aims that should follow upon theoretical knowledge. This means that the scientific search for knowledge is an integral part of a higher ranking wisdom. An ethical implication of this wisdom is expressed in the virtue *sophrosyne*, moderation, which is the result of the limitations that the wise man willingly puts on his desires and consequently also on the technical use of nature. The wise man is aware that there are measures for the conduct of life beyond which he should not go. Otherwise he would sin against divine laws (*cosmos*).

There seems to be signs of a renewed interest in the ancient Greek world view^[5]. At least the idea that the understanding of nature should encompass more than mere knowledge of facts and mechanisms of nature and should also direct itself towards the cognition of the whole, of which the knowing subject is an integral part. Expressions like 'ecological balance', 'sustainability' in industrial production, and talk of alternative energy sources and the like indicate a growing awareness that the world we live in is a fragile individual being, a totality to which every living individual owes its existence and whose organic integrity is a condition for the well-being of mankind. Seen from that perspective, man and nature are interdependent parts of this organic totality. The diversity of biological species depends on man's moderate treatment of nature, and conversely man's well-being depends on the changed conditions of the

biosphere as regards his nutrition and health.

But despite the effort to develop sustainable technology and other attempts to moderate pollution and consumption, the traditional scientific image of man versus nature as a relation of control still prevails in the attitude adopted by existing research and technology, since these enterprises are predominantly financed by industry and supported by the citizens' and politicians' interest in economic growth. Therefore an obvious task for philosophy could be to reflect on the possibility of new ways to think about the relation between man and nature in theory and practice in order to promote a new awareness, which could influence our life in the biosphere in a positive direction. Philosophy could take up and reflect on at least two aspects of this issue. *Firstly* the metaphysical aspect of man's place in nature. Are man and nature substantially separate or is it possible to conceive of man and nature within a monistic metaphysics? *Secondly* there is the ethical aspect. Is it possible to provide *moral* arguments for an attitude of caring for or protecting nature in order to safeguard the continuing life and prosperity of man and nature in a biosphere with a high degree of diversity of species? And what would these moral actions address? Future generations or the biosphere as a whole? In short this means: Can nature be the object of moral responsibility?

A philosopher who has dedicated his work to research into the question of how in the twentieth century mankind must conceive of its place in nature is the German philosopher Hans Jonas. Characterizing himself as a philosopher who thinks 'against the current' ('gegen den Strom'),^[6] he has mainly been occupied with philosophical biology. He attempted to argue for a non-reductive notion of organic nature that is compatible with Darwinism. Critical of the neo-Darwinian reduction of the phenomenon of life to chemistry and genetics, Jonas holds the view that the organic world is basically characterized by life and a sort of freedom ('striving'), and that a science that insists on a reductive explanation of natural phenomena in terms of physics is wrong. Jonas argues that the relation of man to nature is one of belonging. But whereas traditional natural philosophy – Darwinism – regards man as a species among other species and more or less tacitly accepts the neo-Darwinian materialist interpretation of life and homo sapiens, Jonas rejects this reduction. Instead of regarding man as just a piece of complex nature, he insists that nature possesses dignity; he 'raises' the living nature, in that he conceives of it *with a view to* man who has developed from nature. This makes Jonas insist on the irreducibility of the specifically organic feature of organic beings. Not only man but also organic nature, plants and animals, are characterized by 'striving', i.e. by a degree of freedom.

Jonas's overall intention is twofold: *firstly* to develop a monistic philosophy that resists reductionism in both natural philosophy and in philosophical anthropology, and *secondly* to develop an ethics of responsibility in relation to nature. The degree to which and how the latter presupposes the former remains to be seen, since an ethical relation, according to Jonas, implies an affinity between the related parts. Jonas developed his monistic metaphysics through a criticism of a long dualistic tradition in European thought which stressed the difference between man and nature. He began with a historical and critical study of the philosophy of late antiquity and showed how in this period philosophy was inspired by a gnostic thinking, which turned out to influence the whole tradition of western thinking. For, according to Jonas, both modern philosophy from Descartes to the philosophy of mind in continental philosophy (phenomenology) and Heidegger's existentialism fail to escape the dualistic feature which

originates in Gnosticism. Though in his *Sein und Zeit* Heidegger – whose lectures Jonas attended – explicitly intends to make a new beginning for philosophy by taking his point of departure in the question of being in the form of human existence as a being-in-the-world, he does not, says Jonas, succeed in escaping the gnostic heritage. Indeed Heidegger's project transcends the philosophy of *mind*, which presupposes the concept of a self-contained and independent subject, but still he conceives of the world from the perspective of the existing man (*Dasein*), i.e. as the surrounding world whose meaning is constituted through *Dasein*'s overall 'accomplishment of its own being'[7]. Jonas is critical of all *anthropocentric* philosophical positions that consider man a being independent of nature and whose self-sufficiency therefore means alienation from nature. He thinks that Heidegger's philosophy, too, represents such a position.

Trying to avoid these dualistic positions – Gnosticism, philosophy of mind ('*Bewusstseinsphilosophie*') and existentialism – Jonas develops an *ontology of man*, i.e. a notion of man as a being that in the deepest sense of the word belongs to the life world, since it lives and realizes itself in natural, social and cultural conditions[8]. Jonas argues that all ethical relations derive from the fundamental fact about man's existence that he is embedded in natural and social relations. The ethical feature of these relations is not established by human subjectivity, whose moral reason confronts him with obligations. On the contrary, obligations present themselves, i.e. as *care* which originates spontaneously from the basic relation of parents to its progeny. Every living being from the simplest animals to the human being have experienced care as the fundamental condition of their survival and their ability for self-realisation. Consequently every person must understand that he, too, has an obligation to take care of other beings to which he stands in the similar relation of dependence as he himself did to his parents and teachers. Care is a relation of inequality, which is based on knowledge and power on the one part (parents, teacher etc.) and which corresponds to weakness and dependence on the other part. And thus it is characterized by responsibility. The moral actions which fulfil the obligations that originate in this kind of relation include taking care for continuing existence, wellbeing and all-round self-realisation ('*Bildung*') of the other weaker part.

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There are features of antique Greek ethics in Jonas's theory, but he is aware of the historical distance to antiquity, too. Whereas the Greek city state constituted the outer horizon for the idea of self-realisation, the late modern age experiences globalisation, which extends that horizon and demands a certain change in the agenda even if we want to be true to the ancient Greek notion. In the modern world the ethics of responsibility are not seen solely as a relation of the individual to a particular state or nation that it originates in. On the contrary, the scene for the actions of mankind in modernity is the world, and moral responsibility addresses mankind and its global control over technological and material development in so far as this development also has a bearing on the possibilities for the life and self-realisation of coming generations. So the ethical orientation now involves the future. Just as parents' care for their children is oriented towards their future existence, wellbeing and self-realisation, so mankind is responsible for the life conditions of future generations. And since the development of technological capacity certainly affects the substance of the entire biosphere, this biosphere is now the object of mankind's responsibility, too. In short, the moral obligations towards life on earth concern the continued existence and prosperity of all biological species.

It is a part of Jonas' project to make a diagnosis of the world situation for mankind in relation to its future life and well-being in the biosphere and to develop a suggestion for a cure, a philosophy with practical impact. Treating the concept of technology in the perspective of the history of ideas, Jonas traces a change in the function of technology from the pre-modern to the present age. Whereas techniques were originally developed to solve limited problems within various crafts, i.e. were a means to achieve certain given ends, the value or function of technological innovation in late modernity takes on a different character. It has become a good in itself because the instruments produced offer options that are not a response to certain needs. For example, there was no need for iPads before they were invented. The invention produces the need that it satisfies. A large proportion of technological production today shares this kind of value; it does not consist in instruments that satisfy existing needs but it produces new needs in the consumer and then satisfies these needs. Technical devices are simply not valuable as instruments to given ends but represent a value, i.e. an end in itself to the consumer, and this value is constituted by industrial production, which serves interests such as employment and economical growth.

Jonas suggest that the cure to securing an ecological balance could start by asking the fundamental question *Why this technology?* Considering the fact that unrestrained industrial production does not only have positive effects on society but also affects the natural environment, it would be wise to reflect critically on the notion of value as regards technological development. On the large scale it is not difficult to see that concerns about the future and well-being of humanity and of the biosphere deliver the values which we need as measures for an assessment between good and bad or superfluous technology. In *Das Prinzip Verantwortung*^[9] Jonas proposes his notion of an ethical responsibility to nature by transforming Kant's ethics. He addresses Kant's notion of a categorical imperative in order to give his own principle an ontological form. Firstly he changes the context of moral obligations in Kant's ethics from the intersubjective relation to mankind's relation to the future generations and to the entire biosphere. As is well-known, the obligations of moral imperatives in Kant's ethics are based on pure practical reason^[10]. This means that every individual being which is distinguished by reason can realize that he must accede to the demand to universalize the principle which an action follows. From this *a priori* knowledge, moral actions necessarily follow. Thus, for example, to lie or to break a promise are impossible for a rational being to will since the universal form of the principle that these actions express would logically exclude the concept of truthfulness and thereby annul the very concepts of lie or of promise, concepts which are defined as oppositions to truth and truthfulness. So for logical reasons a rational being can only will truth and truthfulness. A second version of Kant's categorical imperative addresses the issue of what kind of persons the subject (agent) and the object of a moral act are. Since moral acts only address human beings and these – both agent and object (the other person) – are characterized by their ability to be rational, objects of a moral act are capable of *self-determination* on the basis of reason. Therefore they are qualified to have the right to not only be a means to somebody else's action but also to be treated as *ends in themselves*, i.e. as persons who have the right to determine and shape their own lives.

Jonas takes over the form of Kant's categorical imperative and he also keeps the idea of the object that the moral act addresses, namely individuals with the ability and right to self-determination. But he is critical towards the formalistic character of Kant's imperative. For Kant's imperative is not capable of prescribing concrete moral actions suited to build up a

particular ethical life. Kant concentrates on a few morally significant acts (i.e. lie and promise), because they can be tested logically and thereby support his attempt to construe an ethical theory on the basis of the principles of pure reason. And it is precisely this one-sided rationalistic character of Kant's ethics that Jonas rejects. The demand that the moral agent be truly himself as a rational being in the sense that his will is *logically* consistent, together with the lack of advice for a *particular* moral life are both signs that Kant does not escape Cartesian rationalism and dualism and that therefore he belongs to the philosophical tradition of anthropocentrism.

According to Jonas's ontological ethics, man belongs to the world in every respect. He is both rational, i.e. capable of thinking and deliberating actions on the basis of principles, but these theoretical capacities are empty if they are not filled with the interests that characterize man as a being belonging to a life world. These interests include preservation and enrichment of life and self-realisation. Furthermore, since man is organically connected with the life of others and his conscious and cultural (spiritual) life is also socially constituted, the well-being of his own life depends both on the care and recognition from others and on his own fulfilment of the moral obligations to others. Thus the subject and the object of actions are interdependent parts of the life totality that comprises and sustains both. Moral obligations thus originate in the life that we conduct together with others. As far as the obligation of responsibility is concerned, it is given in the intersubjective relation characterized by inequality between the two parts as regards knowledge and power. The stronger part in this respect has a responsibility to the weaker part. Jonas' idea goes somewhat like this: 'Because I know and can, and because I am embedded in a relation to another, I ought to attempt to realise what I think best for the other'. Interestingly enough, Jonas claims that this obligation both concerns another person, future generations and the entire biosphere. Jonas's new version of the categorical imperative thus goes as follows: 'Act so that the effects of your action are consistent with a continuing genuine life on earth'[11]. This means: Act not destructively for future generations and the totality of their life conditions.

How does Jonas justify his version of the moral imperative, especially the part of it that prescribes moral responsibility to nature? The justification is not based on pure reason in a Kantian sense. There is no logical contradiction involved in the will to sacrifice the existence of future generations and the integrity of the biosphere for advantages of present mankind. Still, we do not have the right to deny the life and prosperity of future generations, since we ourselves have benefitted from our parents' generation to whom we owe our survival and well-being. As proposed, since we are joined in the universal life, we are all both objects and subjects of the care that secures this life. As soon as we realize that generations are organically connected in the unity of one continuing universal life process on earth, we also realize that care for others and for ourselves is intimately connected as two different sides of the same coin. Consequently an egoistic and short-sighted self-preservation at the expense of others or of the entire biosphere would involve some kind of contradiction, since securing the universal life process is a precondition for the possibility of the individual self-preservation. Thus a rational agent who understands his own life in the context of the life totality cannot will to act from principles of egoism because this would involve a contradiction on quasi-logical grounds. If Jonas's principle is similar to the first version of Kant's categorical imperative, it is also sustained by the second version on Kant's categorical imperative: If we extend the space of the moral action from its present to the future context, the right to self-determination – or in Kant's

word: the right to be respected as an 'end in itself' – should be ascribed to future generations as well as to the present other person – and maybe also to the entire biosphere.

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It remains here to discuss whether the claim of a moral responsibility to nature is justified. Can Kant's categorical imperative be transformed from the intersubjective relation to a relation of mankind to the biosphere as a whole with the aim of preserving its diversity of species and respecting its 'self-determination', i.e. its self-sustained balance? It could be objected that moral actions are intrinsically intersubjective and that they presuppose a symmetrical relations of the parts. My respect for the other person's autonomy involves the other's respect for my autonomy. The rights and duties of rational agents are two sides of the same coin. Furthermore it could be argued that the future generations of mankind are not yet existing people and the biosphere cannot be regarded as a person at all. So neither deserve the right to count as objects of moral responsibility.

We have already suggested Jonas's answer to these objections, and they explicitly go as follows: an ethics of responsibility presupposes asymmetry due to the related parts' inequality as regards knowledge and power. Thus some moral relations are not symmetrical, e.g. responsibility whose original image is the relation of parents to their progeny. If we conceive of morality on the basis of the notion of *life* and not just as principles of pure practical reason, we are allowed to say that the aim of moral endeavour in general and of responsibility in particular is to promote the life of individuals and of life as a whole, because life intrinsically aims at its own preservation and self-realisation. Thus 'ought' can derived from 'is', since what lives in the moral act that promotes life is life's own inherent striving. Therefore the moral obligation to future generations is founded in the universal life process of which we all form a part, and a responsible attitude, a duty of care, is fundamental to beings like us who must understand ourselves as striving for existence, well-being and self-realisation.

The answer to the question of whether also the preservation of the life of the biosphere, including its diversity of species, can be considered an object of moral responsibility, follows from this argument. As also already suggested, nature is a condition not only of the survival of mankind but also of its existential completion. Nature forms the basis of its life; it provides the potential for the fulfilment of the needs of mankind. In addition, it plays a role in his cultural life as an aesthetic value. The care for the diversity of natural species expresses a fundamental affirmation of life and of the interdependent self-realisation of its parts. Through caring for natural life we also affirm human life, both in a basic sense of securing the fulfilment of our needs and in an aesthetic sense. Thus at least we have an indirect responsibility to nature.

But do we also have a direct responsibility to nature? Apart from the ethical justification, which I have presented above, it is also possible to provide a metaphysical argument. A repeated theme in Jonas is the question of *man's place in nature*. Man is a species among other species, but he is more than that. The existence of man on earth is the testimony that one kind of being both belongs to and transcends nature. For it is a fact that man is a species that has developed a knowledge and a technological power to affect the condition of the entire biosphere in negative and positive directions. The impact of science and technology on human history show this. But man's cognition is also connected to his will and behaviour. Being capable of

deliberate choice, he is also a being to whom responsibility can be assigned. This moral feature of his existence stems from some facts: *firstly* that he has knowledge (science) and sufficient technical power to secure his self-preservation and to affect the biosphere; *secondly* that he can know the positive and negative consequences of his actions. It can be asserted from these two facts that man's relation to nature must be intrinsically moral, i.e. the biosphere – which he knows about and acts within – must be considered to be what Jonas calls 'trusted' ('ein menschliches Treugut'), i.e. an object of responsibility. *Thirdly*, as a natural being, man must be interested in establishing a moral relation to nature; he is intrinsically interested in the sustainment of his own life and must be able to realize that he has an interest in the life totality as a condition of his existence and well-being. Man is both a part of nature and outside it, because it is objectively given into his charge. Here Jonas touches upon certain religious aspects, which we will not follow up here.

An aspect of the metaphysical implications of Jonas' argument concerns his notion of the biosphere. To some extent he follows Kant in preserving the idea that an object of a moral action must be a person. Arguing that nature is an object of responsibility and care, he concludes that therefore the biosphere is not just an instrument for our arbitrary human purposes but *an end in itself*. The biosphere is not just a material, 'dead' universe, which functions according to mechanical laws. It is an organic, partly self-sustaining being built up of a hierarchies of different but interdependent species and forms of life, including intelligent and moral beings. Thus values can be derived from living beings according to their specific character: All living individuals display an inherent interest in life, both in the preservation of their own existence and in the self-realisation of its specific character. For the human species moral responsibility must necessarily be involved in its conscious common life as a concern that is necessary for the realisation of a true human life and this true life is only possible in a biosphere that is not threatened, i.e. affected substantially, by the human species itself.

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[1] I have been much inspired by von Wright's diagnosis of the modern civilisation in Von Wright, G.H.: *Vetenskapen och förnuftet*. Helsinki. 1986. Danish transl. *Videnskab og fornuft*. Systime. 1995.

[2] See Von Wright op.cit. Chapter 5.

[3] Bacon, Francis: *Novum Organum*. 1620.

[4] Descartes, R.: *Discours de la méthode*. 1637.

[5] Cf. Von Wright, op.cit.

[6] See Böhler, Dietrich: "Hans Jonas – Werk, Einsichten, Aktualität" in Jonas, Hans: *Leben, Wissenschaft, Verantwortung*. Reclam. Stuttgart 2004, p. 235.

[7] Heidegger, M. *Sein und Zeit*. Tübingen. 1986. Esp. §§12-18.

[8] The following presentation draws predominantly on Jonas (2004). P. 87 ff.

[\[9\]](#) Jonas (2004).

[\[10\]](#) Kant: *Groundwork for the Metaphysics of Morals*. (Engl. transl. Ellington 1993)

[\[11\]](#) Extracts from "Das Prinzip Verantwortung" in: Jonas (2004) p. 109. [my translation, pw]