# Change and Commitment

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> *[...] I think that any discussion of the new technologies of life must begin not with an attempt to evaluate their ethical, economic, and political implications for our future, but with a critique of the ways in which these technologies are already implicated in global patterns of inequality and injustice (Jackson 2002, p.148)*

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**Beyond Risk and Responsibility**

The ultimate questions of science and engineering ethics, or indeed any ethics, are: What is good? What is right? What should we do? Such questions can be difficult enough, giving rise to hard ethical dilemmas or deep value conflicts already in cases where the nature and consequences of the action are known and well-understood. However, when facing the many challenges involving science and technology and its effects on and interactions with man, society and the natural environment, one is often confronted with deep uncertainties regarding both the essential nature and the future consequences of action. This is true of the development of novel technologies, such as bio-, nano- and convergent technologies; it is also true of the governance of counter-acting, remediating or adapting to the problems created by our civilisation and its technologies, including environmental pollution, degradation and other large-scale change, such as the apparent ongoing changes in the climate of the Earth.

The concept of responsibility has a number of aspects, such as that of accountability. However, we think it is fair to say that the aspect of *control of consequences* has been and still is the dominant one when science and technology are involved. To provide responsible storage of nuclear weapons would typically not mean that one is willing to open the books to the public and be held fully accountable when the missiles are stolen and launched. It would rather mean that the continued storage is under control and that the missiles are safe (unless a really extraordinary event takes place).

Control and reliable knowledge about the consequences facilitates the emergence of *trust*, enabling the modern person to feel safe under the umbrella of the expert systems created by science and science-based technology. It also applies to the contemporary citizen going to an airport to take an aeroplane or going to a hospital to face a chirurgical intervention. Giddens (1990) argues that trust entails a commitment to something, rather than just a cognitive understanding. In either case, the main point for our discussion is the ideal of control and safety that is maintained in this understanding of responsibility.

In the absence of certainty about the consequences of the application of a technology or the intervention into the environment, the "taming of chance" (Hacking 1990) into the estimation and calculus of probabilities and risks was the particular solution that the European (and later global) civilisation provided as a devise to maintain modern rationality and re-establish responsibility under uncertainty. Such a conception of responsibility appears to break down if

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there is no reliable prediction of the future; if the extraordinary (accidental or ill-willed) event occurs, or if the complexity of the systems involved falls beyond the scope of the technical and scientific tools that can be applied in risk assessment.

Since Alvin Weinberg (1972) coined the term trans-science to describe risk problems which can not be resolved by sound science or evidence-based risk assessment, a whole literature and practice has been developed the latter 20 years to show the pervasive presence of values, uncertainty and complexity in many if not all major technological and environmental challenges (Funtowicz & Ravetz 1985 and 1991, Wynne 1992). Hence, the question emerges: Is it responsible to govern, say, the storage of nuclear weapons, the release of genetically modified organisms, or the development of commercial nanometre-sized particles by state-of-the-art risk assessment and risk management procedures, when suspecting that the results of these procedures will be invalidated in a few years by the discovery of novel, unforeseen and surprising consequences of action?

Furthermore, does the responsibility of this type of governance hinge upon the objectivity (value neutrality or independence of vested interests) of the risk assessment – in the sense that risk assessments are able to predict the full range of undesirable consequences and not just the ones falling within a certain cultural frame, societal outlook and moral perspective? If so, the cultural studies of risk provided by Douglas and Wildavsky (1982) and others appear to have dealt a decisive blow to such an idea (see also Schwarz and Thompson 1990). The question of how resilient will be the trust necessary for the legitimacy of this governance paradigm requires urgent reflection.

Critics have compared the centrality of risk assessment and management approaches in governance to the anecdote of the drunken man under the lamp post: He had lost his keys and kept on looking for them under the lamppost, not because he had a reason to expect that they were there, but because this was the only place that was lit. More philosophically one might argue that this centrality amounts to the attempt of reducing politico-practical issues (*sensu* Ravetz (1971) and more fundamentally, Aristotle) to technical issues – the so-called "technical fix". The defence against such criticism would typically fall within one of two categories: the metaphysical type, arguing that the universe is a rational and not too complex place where the methods of science eventually will provide adequate answers, or the pragmatic, desperate type, asking back: What else can we possibly do? Absurd as it might be

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to stay under the lamp post, no rational alternative appears to be in sight. Both answers ignore that the light of the lamppost is not eternal, that it is becoming weaker as the underlying trust that makes it credible.

The purpose of this draft is to discuss possible alternatives to the centrality of the risk discourse. We shall argue that such alternatives call for a revision also in the concept of responsibility, decoupling it from the desire for control over the future and re-coupling it to its relational dimension: that of how humans ask and respond to each other, and more fundamentally live together. Rather than believing that contemporary global challenges will be sufficiently met by being responsible under risk, we will ask how to stay committed in times of change.

An example will serve to illustrate our point. Climate science has informed politicians and citizens about the threat of climate change for approximately two decades now (2009). Still, greenhouse emissions and rates of energy consumption are decreasing only very slowly or even increasing in many parts of the world. For some, the solution is to strengthen the influence of the scientific advice given by IPCC and others, for instance by arguing that political debates over climate change uncertainty now ought to be a past and finished stage (Brundtland 2007). Although we agree that uncertainty is sometimes used strategically by economic and other interests in the climate issue as in other health and environmental issues (Michaels 2008), the problem remains that there appear to be valid claims about non-trivial uncertainty of climate model predictions. These models belong to a category of technical tools which some authoritative commentators have already labelled as trans-scientific (Brooks 1972).

Given the vastness of the perceived cost associated with dramatic emission reductions, we fear that the legitimate doubt about the predictions may remain until they have been empirically verified, that is, when it is too late. In other words, when extremely much is at stake, the inevitability of uncertainty destroys the grounding of legitimacy of action in a prediction of future states. If the underlying principle of action in a modern state with its focus on risk and responsibility is that *prediction of the future is needed to act in the present,* another principle of legitimating public action is needed.

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Funtowicz and Ravetz, introducing the concept of post-normal science, argued that stakes and uncertainty cannot be analysed separately (1992). High stakes imply that a larger effort will be made to identify uncertainties, for good reasons. High stakes also mean that it is problematic to conceive of parties as disinterested. Indeed, it would take an extraterrestrial to be materially disinterested in global problems. Uncertainty therefore relates in the public sphere not only to internal questions of validity of scientific knowledge, but also to external questions, including those of the roles of expertise. When competent citizens in the knowledge-based society understand that neither expertise nor knowledge can be entirely value-neutral in the old positivist sense, not only the technocratic principle for action fails. They are also aware of the equivalent flaw in the sound science-informed concept of precautionary action, in which risk management may be democratised, but risk assessment is maintained as a technical task (European Commission 2000, Funtowicz and Strand 2007). The result is once again a loss of trust and consequently a loss of legitimacy of action.

Still, of course, responsible risk assessment and management may be of high value, for instance as a way of organising prevention and contingency measures (Strand 2001) or as a background for later, post-hoc distribution of blame, guilt and liability. This can work well also under uncertainty when little is at stake. Global issues, however, not only tend to involve high stakes, but also multiple causes that are connected in partially unknown way. Hence, everybody might be to blame, which means that nobody is to blame. And even if guilt or responsibility can be placed, there is little to do with that after the catastrophe.

All of the above is known. There is a need, though, to recognise the depth of the problem. Two well-known attempts at solving the problem may serve as an illustration. The first originates from philosophy: Hans Jonas' (1979) principle of responsibility. Jonas specifically addressed the environmental global problems and proposed as a principle of action that one's acts should be compatible with (dignified) human life in the (distant) future. It is interesting to note that the English translation of Jonas' book has the title *The Imperative of Responsibility* (1985). The principle might appear to evade the problem of the limitations of risk-cost-benefit-analysis by being cast in a deontological form. Nevertheless, it is easy to see that it depends upon prediction: How can I know that my actions now might have this or that effect in the distant future? In this way his principle provides little or no guidance under uncertainty (see also Dupuy 2004), and in this sense it is equivalent to risk analysis. Indeed, all principles of sustainability appear to be susceptible to the same criticism.

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The second example is that of reducing uncertainty into quantitative probabilities within a Bayesian framework. In that case there will be no more talk about the impossibility of "taming chance", as probabilities always can be estimated as degrees of belief. Without entering the long and heated debate between orthodox and Bayesian decision theory, there is no doubt that this happens at the expense of the idea of control and accordingly, for some, of responsibility. The heated debates were not about that; they rather were for or against the in-principle possibility of acquiring objective probabilities and hence control.

At the end of the day, then, the problem of the principle of action remains unsolved. An indication that this is being recognised are the many attempts at experimenting with principles of precaution; with public participation; with more or less clear ideas of "broad" governance; and with "ethics" institutions such as committees, dealing with guidelines, checklists and ethical clearance of projects. It is beyond the scope of this paper to review such developments; however, it remains to be seen empirically how they might help solving or resolving actual global issues. We believe in the value of such experiments, but if they are not the result of a deep self-conscious analysis, they might actually be a way of reinforcing existing technocratic structures. "Ethics" is then taken away from the democratic political process and normalised as another objectified expert discipline (Strand and Nydal 2008; Tallacchini 2009).

**Intermezzo: Grounding Action in the Construction of the Future**
In their scholarly work on what they called "ongoing normative assessment", Dupuy and Grinbaum (2005) addressed the need for *commitment*. If the future cannot be *predicted*, a thinkable alternative is to *decide* how it will be. Accordingly, their solution to the problem of uncertainty is to exchange morally uncommitted forecasting and multiple scenario building with the building of the one desired future scenario. "Building" is meant both metaphorically and literally: First, the desired future must be conceived and placed in "projected" future time. Then, by the ongoing normative assessment of how things are developing, the goal will be reached by steering towards it, by continuous corrections of the course along the way. In other words, the idea is to construct the future rather than predicting it.

The idea of ongoing normative assessment is almost unique in the sense that it actually addresses and solves the problem of uncertainty at a conceptual level. It does so at the

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expense of realism, since it requires a unanimous and immensely powerful historical subject willing to commit itself to a specified positive goal.

Already in Karl Popper's (1945) philosophy one may find grounds for dismissal of the reliance upon Utopias and other uniquely defined positive goals, suggesting as a wiser social and political strategy to learn by mistakes and advance by accumulating our knowledge of mistaken goals.

With Hannah Arendt (1951), the criticism of Dupuy and Grinbaum's solution could be made even more acute: The problem of letting go of realism is not that it will fail. Since the future does not yet exist, our theories of it cannot be falsified. On the contrary, the history of Nazi Germany and the Soviet Union during Stalin shows that almost any future can be constructed as man is malleable beyond imagination. To lock society in on one particular goal and then eliminate plurality is accordingly a recipe for unlimited atrocities. The fact that there is such a structural similarity between ongoing normative assessment and totalitarian politics does not imply that the former is always morally wrong, dangerous or defect. We think it implies, however, that it is dangerous with respect to global issues with extremely high stakes, such as the climate change issue.

**Grounding Action in the Present: From the Abstract Good to the Concrete Bad**
The futility of predicting the future and the perils of constructing the future lead us to conclude that a new principle to justify action under uncertainty should be grounded in what exists, namely the present. Let us therefore say something that is surprisingly rare in the academic ethics literature, namely that there is an immense amount of harms being done in the world today. People are being killed and molested in war and in exploitation, natural habitats and non-renewable natural resources are being depleted and destroyed at an increasing pace, the natural environment is being polluted by ever new chemicals, and the extinction rate of other species may be higher than ever before because of human activity. In other words, the uncertainty is not actually necessarily connected to the presence of wrongdoing. The uncertainty is connected to the exact prediction of their future consequences -- which we do not necessarily need to act now. It is often actually possible to know the right thing to do, such as reducing pollution and consumption of non-renewable resources. The problem is rather that nobody, no state, no organisation appears able to mobilise for collective

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sense for the unemployed, the ones found unfit for work in the knowledge economy, the refugees, the stateless, the victims of war. At other times it is true in the more indirect sense, perhaps as loneliness, unhappiness and distress in industrial and post-industrial societies. Indeed, Arendt shows how industrialised work not only affects those who are excluded from it, but also its workers whose recognised worth is measured in their labour, their initiative and agency in their community becoming "leisure".

The analysis may easily be extended beyond the context of industrialised labour to that of the differentiated expertise of modern societies. As the banal counter-arguments to public participation rightly go, the brain surgeon should not plan his operations according to democratic procedures. Expertise in this sense leads to an isolated form of agency: the knowledge and the truth must be isolated from the noise of the many unqualified opinions, the community.

We are now ready to state a deep connection between the lack of agency and the global crises as defined by catastrophic predictions, such as in the climate issue: The expert catastrophic prediction, being the outcome of expertise, that is, people in isolation, is fundamentally apolitical in its nature. It is of the kind of knowledge the pragmatic implication of which is another type of agency in isolation, namely that of technical intervention. The prediction is *for* the operator in the execution of the technical intervention. It is not for much else. Conversely, there is no collective agency grounded by the prediction.

The problem of lack of collective agency appears to be aggravated by an emphasis on the pending catastrophe, rather than being solved by it. For humanity – in the sense of all the people – to be able to act, it seems that the action should be grounded not only in the present rather than the future, but also in that part of the present called our *praxis*, our political life, our community life, as opposed to in technical discourse (be it scientific or that of the political elite). Indeed, it seems that underlying the global environmental issues, in the problem of how to deal with them, there is a more fundamental problem which is that of the marginalisation of *praxis* as opposed to isolated, productive work.

What questions can be asked about social, "unproductive", political community life? Perhaps the first question is: Are we willing to sacrifice it? Arendt's interpretation of the Nazi and Stalinist totalitarian regimes is that our preconceptions about what defines humanity and

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human life cannot be taken for granted. What Hitler and Stalin invented in the concentration camps, was not only a new way of suffering. It was a new way of being: the human being deprived of all agency and eventually of personhood and identity. Barring and bracketing the environmentalist talk – which also has been our own talk – of how the planet is at danger, we would like to propose that the planet is indeed not the object at risk. It is we as a collective (present and future) subjectivity and agency which is that object: the human right behind the human rights: that of personhood and hope.

**Conclusion**

Inclusiveness and participation have been proposed and experimented as means to deal with the governance of risks in times where trust (in particular, trust in expertise) can not be taken for granted. Those experiments, in many cases, have produced frustration and fatigue and an emergent discourse of the "new tyranny of participation" (Cooke and Kothari 2001)

We should ask ourselves today, as Arenstein did before, what is being done in the name of participation (Arnstein 1969) and how far do they go in redefining existing constitutional and institutional structures which were designed to solve political issues and to be applied to a political body quite different of those of today.

The transition to new forms of participation has to include a change in the purpose and process of knowledge creation. In this paper we argued that commitment in times of change is a better standpoint than that of risk-based responsibility. Commitment to the collective creation of knowledge on how to do good to preserve and extend humanity as a context to the prevention of evil.

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