

CRISES 2<sup>nd</sup> International Conference, Montreal, 8-9 November 2007  
**Social Innovation as Futures in the Making:**  
**Revealing Implicit Assumptions**  
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Innovation is a social activity that works on matter, operates in space and extends across time. Matter, space and time thus need to be given equal attention when social innovation is the subject matter of investigation.

Careful scrutiny of work on innovation reveals that matter and space –the physical and therefore empirically accessible aspects of the subject matter – tend to be the dominant focus of attention. In contrast, the temporal element of that triple relation features much less prominently, as demonstrated by the majority of presentations at the Crises conference. With rare exceptions it is either left implicit or is bracket from the frame of reference. Mostly, therefore, time is the silent partner in that interdependence.

Where time does become focus of attention the subject is immediately rendered more complex since time is not exhausted by the clock-time measure. Rather, it is multi-faceted, if not to say multi-dimensional. When we think and talk about time we never refer to just one ‘thing’. Instead there are several ‘elements’ involved. From this multiplicity nine basic irreducible structural features can be identified. Together they make up what I have theorized as a *timescape*<sup>1</sup> and it involves the following:

1. **time** as frame, that is, the seconds, days years, life times, seasons, periods and epochs within which innovative activities take place and which constitute beginnings and ends.
2. **temporality** – the process world of change, transience and impermanence.
3. **tempo** – the speed, pace, rate and intensity of activities and processes.
4. **point in time** – the particular moment, instant or conjunction of events.
5. **timing** – the right/wrong moment for interactions and synchronizations.
6. **sequence** – the order in which events occur, their causes and effects, or their simultaneity.
7. **duration** – the extension, duration and length of innovative activities and their effects, which could extend from an instant to eternity.
8. **time patterns** – the elements together expressed as cyclicity, periodicity and rhythmicity.
9. **past, present and future** – memory and history, anticipation and projection, the horizon of the present.

This last element of the temporal complexity is the focus of this presentation<sup>2</sup> in which want to show what is involved when innovation is understood as *future making*. In the process I seek to reveal implicit assumptions that underpin contemporary innovative actions. To render explicit what is largely implicit and taken for granted offers new perspectives on a familiar subject and helps to identify possible openings for change.

In my recent work<sup>3</sup> the past-present-future relation, approaches to it and their production and have been given special attention. During the course of my investigation I was particularly struck by the extraordinary contemporary capacity to create long-term futures coupled to poor knowledge of potential out comes and, intimately related to it, the inability to take responsibility for the time-space distantiated<sup>4</sup> futures of our making. Social innovation can be mapped onto this relation of action, knowledge and ethics.

### Overview of Implicit Assumptions

If we locate social innovation in the past-present-future continuum then we can immediately appreciate that it is heavily biased towards the future end of the spectrum: innovation is action in the present with its sights firmly fixed on the future. It is conducted in a frontier spirit and shares much with the pursuit of progress. It operates in the realm of the not yet and acts on the world beyond experience. From the standpoint of present futures innovators build jetties of envisaged continuities, stabilities and planned certainties into the turbulent sea of discontinuity, uncertainty and unknowns. At the same time, however, innovators also deliberately disrupt anticipated sameness and continuity with the past. Yet, this has not always been the way to engage with the future. To demonstrate let me briefly provide some

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<sup>1</sup> Adam (1998) *Timescapes of Modernity*, Routledge and Adam (2004) *Time*, Polity Press.

<sup>2</sup> Focusing on past, present and future I do not lose sight of the other features, I merely foreground these features and allow the others to move more into the background as constitutive backcloth to the analysis.

<sup>3</sup> See my project website of the ESRC funded Professorial Fellowship Project ‘*In Pursuit of the Future*’ where most of the papers arising from that work can be accessed at [www.cardiff.ac.uk/socsi/futures/](http://www.cardiff.ac.uk/socsi/futures/)

<sup>4</sup> I am using Giddens’ concept here as the most appropriate term to signify the open-ended stretching across space and time of action effects. Ideally, the term should be time-space-matter distantiation since effects of actions also permeate matter.

historical backcloth against which contemporary innovation can be brought into sharp relief and begin with some of the different ways that change can be stabilized.

*Stabilizing Change: of Living Cycles and Ritual Circles*<sup>5</sup>

All Life depends on the production of difference since without it life would cease. The opaqueness of the future therefore has an ineradicable foundation of the principle of life. Many of life's processes are cyclical, which means they repeat in overall similarity. This cyclical production of similarity provides a measure of predictability, but not certainty about individual expression.

Certainty, in contrast, has been achieved culturally by transforming cycles into circles. Circles ensure that the repetition is marked not by difference but by sameness. Repetition of exact copies always takes you back to the same beginning. The circle of unchanging repetition is not encoded in genes but in rituals and traditions which guarantee that reality continues to be (re)created in this and no other way. Ritualised words and actions are handed down through generations, their unchanging form deemed sacred and untouchable. By this cultural means change is stabilised and the future becomes knowable<sup>6</sup>.

*The Cultural Pursuit of Permanence and Certainty*

Like living processes, human actions occur in a web of relations, creating networked chain reactions of doing and receiving that are ultimately boundless, open and indeterminate. In addition, mind-based forays into the past and future enable us to conceive of alternatives, that is, a world that is different from the present: they allow us to think and plan ahead. Most importantly, this enhanced freedom affords us the luxury to change our minds, which in turn is inescapably tied to an increase in uncertainty. Uncertainty is therefore an inescapable foundational feature of human action.

Culture develops with the associated need to bound and delimit (by social, political and institutional means) what is potentially boundless and limitless. Rules, norms and laws, promise and contract, religious and moral activity all create social scaffolds of security around the uncertainty of the future, thus tames this inevitable by-product of human freedom. As long as rules are adhered to and promises are kept they offer stability, permanence and certainty, and thus provide knowledge that extends into the distant future.

For traditional societies, taming the realm beyond experience depends on connecting the ancient past to an equally distant future and culturally binding both into a coherent unity of cosmos, spirit world and moral human action. This process creates a living future that is always already set in motion and requires rituals to actualize and *enpresent* it by superimposing past futures on future presents. These cultural achievements of handling impermanence and uncertainty have been cast aside for the modern quest for progress.

*Progress and Innovation*

In his classical work *The Idea of Progress* John Bury (1955/1932) distinguished the pursuit of progress from earlier forms of engaging with the future. According to Bury it was not until the sixteenth century that a new attitude to the future began to emerge which encompassed a number of key transformations. The first involved a shift the location of the 'Golden Age'. While ancient and traditional societies positioned the golden age in the past and thought of history as a process of decline for the modern pursuit of progress the golden age was yet to be created. Its location was the future and human history was conceived as steady improvement rather than decline. Secondly, engagement with the future was no longer about discovering divine design and natural laws or the task to enpresent original moments but oriented instead towards the production of happiness through the control of nature. Thirdly, faith in providence and final causes was replaced by trust in reason and the scientific method. The change in temporal direction associated with the pursuit of progress constitutes also the temporal context of innovation.

When the cultural task moved from the creation of sameness by ritual means to the production of difference, novelty and progress the change was accompanied by a very different conception of the future. Instead of pre-set and providential, contextual and embodied the future of progress and innovation is open and empty since only the future emptied of content is amenable to human shaping and to being filled with our plans and desires. In addition, the transformation of temporal relations

<sup>5</sup> For work on these temporal relations see Adam, B 1990 *Time and Social Theory*. Cambridge: Polity Press and Philadelphia: Temple UP, chapters 3 and 7; Adam, B 2004 *Time*, Cambridge and Malden, MA: Polity chapter 4; Adam, B and Groves, C 2007 *Future Matters. Action, Knowledge, Ethics*, Leiden, NL Brill, chapter 3.

<sup>6</sup> See also Eliade, M. 1989/1959 *Cosmos and History. The Myth of Eternal Return*. London: Arcana.

entailed that natural cycles and ritual circles were opened up and flattened out to form a line with one direction only, that is, from the past to the future<sup>7</sup>.

An inescapable consequence of this change was a rise in uncertainty and indeterminacy to previously unknown heights. That is to say, when carefully honed strategies to render the natural and social world more predictable and manageable are abandoned for the adventure of innovation then certainty and predictability decline.

The underlying principle of the pervasive change therefore was to replace contextuality and embodied embeddedness with decontextualised, disembodied and disembedded temporal relations in order to produce and act upon a world of pure potential where anything is possible. This capacity to abstract and render static what is fundamentally ephemeral, moving and interacting has had tremendous advantages for knowledge and action and thus for progress and innovation. At the same time, however, the abstract mode of knowing has turned out to be of significant disadvantage for the quest to alter and *transform* an interactive, interdependent socio-environmental world towards a predictable outcome. Instead, unintended and unwanted consequences arose with the insertion of creations conceived in an abstract mode into a socio-ecological process context of give-and-take that extends from the beginning to the end of time.

During modernity, therefore, control of the future had to be achieved by alternative means. It has been accomplished by placing process and connectivity outside the scientific frame of reference, thus treating materials *as if* they were bounded, static, a-temporal, and insisting on the irrelevance of context. The pretence, however, could only be carried so far given that our technologies are imbued with social values; our knowledge practices are caught up in one-way systems of metabolic energy exchange with the environment; and both in turn are leaving legacies into an open future<sup>8</sup>.

To achieve desired futures of any kind – social, socio-technical or socio-environmental, for example – requires of innovators a thoroughly temporal and ecological mode of knowledge and operation<sup>9</sup>. Furthermore, embeddedness and interdependence, connectedness and social memory, processuality and futurity, which have been repressed and bracketed in the public domain of modern life, need to be redeemed to their appropriate places in the future making scheme of things. That mode of knowing, however, alters not just the way futures are transformed but also fundamentally shifts understanding of what is considered important, relevant and justifiable. A final element in the changing temporal relations concerns the ownership of the future. With the change in ownership of the future from gods to people came also a transfer of responsibility. Not just space and matter but now also time came to be part of the human domain of responsibility. As owners, authors and designers of the future, people rather than their gods now carry responsibility for the time-space-matter distantiated outcomes of their future creating actions.

It is here, however, that we encounter a major paradox of the pursuit of progress and the assumption of an open future: *we are responsible for that which we cannot know*. This issue of responsibility for futures of our making in contexts of uncertainty is of central importance for the subject matter of innovation and thus requires elaboration.

### **Responsibility**

The first thing to note is that both legally and morally we feel exonerated from responsibility when outcomes could not be foreseen at the time of action. The nuclear industry is a good example to illustrate this.

The people who counselled governments on whether or not to establish a nuclear capability, and who happened not to include in their considerations associated problems of safety, were and still are not being held legally responsible for either the resulting health hazards or the economic burden of the billions of dollars required for the decommissioning of power plants and the management of radioactive waste. We find, moreover, that installations are covered by limited liability only, which means that society is expected to foot any bill that might arise with accidents or leakages. This explicit recognition of the (non)knowledge-responsibility link is even enshrined in law. Thus, the Price-Anderson Act was introduced in the USA in 1957 specifically to limit the liability of nuclear power

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<sup>7</sup> This is the linear thinking that has been critically elaborated in the presentations of both Len Arthur and Paul Leduc Browne.

<sup>8</sup> Radioactive waste management is a case in point where control of outcomes has become synonymous with wishful thinking.

<sup>9</sup> Some of the papers on co-operatives have alluded to this need although it was not explained in the temporal language I am introducing here.

plant operators in the event of an accident.<sup>10</sup> It has been renewed several times since, and now limits the amount of liability for each site to \$300 million.

Whether formally or informally, non-knowledge as well as unintended and unforeseen consequences absolve us from personal and public responsibility. Yet, for some socio-technological unforeseen effects the tide is turning. Thalidomide, asbestosis, smoking-related diseases and similar technologically produced hazards are cases in point where companies are being held responsible for the unforeseen harm produced by their products. Thus far, however, such apportioning of responsibility for time-space-matter distantiated effects applies predominantly to cases where causal chains can be established over the life times of individuals. It is not legally and politically clarified (as yet) what happens to responsibility in situations where effects do not materialise as symptoms for hundreds and even thousand of years.

The contemporary problem is that we link responsibility to knowledge in contexts where increasingly *non*-knowledge is becoming the dominant feature of technology-based innovation. This is a situation in desperate need for change. However, the difficulties to achieve such change are substantial since the underpinning assumptions are deeply embedded in habits of mind that reach back to Greek antiquity. For my explanation I draw on Hans Jonas' (1984/1976) seminal work on '*The Imperative of Responsibility*'<sup>11</sup>.

Jonas suggests that the contemporary model of morality has its roots in Greek antiquity where responsibility was thought to apply between living individuals in the present and was guided by eternal principles related to goodness and beauty, truth and justice. Moral action and matters of ethics, therefore, were defined by close proximity, thus limited in time and space. The long-term future in contrast was associated with fate, providence and destiny. It was the realm of gods and thus not subject to human planning, debate and moral action. As such it was outside the sphere of human responsibility.

Today, however, we find ourselves in a new moral context of obligation towards a technologically produced, long-term future. This contemporary condition is tied first to the socio-scientific capacity to create futures that outlast their originators, secondly to the potential to threaten not just individual existences but the continuity of our species and life as we know it and thirdly to the pursuit of progress which destabilizes eternal values and renders them historical. This means that today the foundations for responsibility have shifted from an exclusively individual to a collective base, from a predominantly local to a global scale of effects and from primarily present impacts to actions that may not materialise as symptom for a very long time. The common-sense ethical assumptions, which we have inherited from the Greeks, therefore, no longer hold for the contemporary condition.

#### *Beyond Certainty and Control*

While the future has always been uncertain, humans were not called upon to take responsibility for what was considered the realm of gods or God. They were merely required to act responsibly in and towards the realm that did not belong to them. In a secular social world, which is understood to be (to a large extent at least) the outcome of human action, in contrast, the unknown and unknowable futures of our making do become our responsibility. That is to say, uncertainty of potential outcomes cannot absolve producers of long-term, open-ended impacts from responsibility to those affected in remote futures and places. The difficulty is that innovation increases the indeterminacy of unbounded effects. This in turn makes reliance on scientific prediction and economic risk calculation inappropriate since both are established on known pasts. Where past-based prediction and calculation fail we are confronted instead with questions about justice, rights and possible harm to future beings that require our urgent attention.

#### *Beyond Immediacy*

The effects of today's socio-technical, socio-economic and political processes, such as nuclear technology, for example, are no longer spatially or temporally bounded. Radiation (although most dangerous in the immediate vicinity of any leakage or accident) permeates outwards in space, spreads inwards in matter, organisms and bodies and extends temporally into the long-term future. Moral principles grounded in the immediacy of the here and now, therefore, need to be adjusted to the *timeprint*<sup>12</sup> of potential outcomes. Such expansion of responsibility to the potential reach of actions places us in a different position with respect to what can and can't be known, done and controlled. This

<sup>10</sup> See also Shrader-Frechette, K 1993 *Burying Uncertainty: Risk and the Case against Geological Disposal of Nuclear Waste*. Berkeley: University of California Press, chapter 2.

<sup>11</sup> Published by Chicago University Press.

<sup>12</sup> The term *timeprint* has been developed in my most recent work as a temporal equivalent to the ecological concept of *footprint* which focuses on space and matter thus brackets the temporal aspects of socio-environmental impacts of innovative future making. See Adam and Groves *ibid.* especially the entry in the Glossary of Key Terms p. 203.

means that responsibility can no longer be exclusively routed via knowledge. In contexts of extensive time-space distantiation (and the associated predominance of non-knowledge), therefore, a direct link has to be established between action and ethics, ethics and action.

#### *Beyond Individual Responsibility*

Through the ages responsibility had been associated with individuals and their deeds. While this still holds good today, especially in the application of our laws, technological innovations such as nuclear power, for example, have the potential to affect the living conditions of *all* people now and in the future. In recognition of the trans-boundary nature of this innovative technology (and others that share these features), the ethical project of modernity has to be expanded beyond individual responsibility to encompass collectives at the national and international level. Moreover, since liability for associated costs continues to be increasingly externalised to society at large, it is society who needs to come to decisions about the nuclear present and future. Not politicians whose mandate expires after their period of office, not scientists who build and maintain the installations, not insurance companies who cover limited liability but the society carries the responsibility and thus will have to debate trans-boundary policies that have the potential to effect others in space and time – somewhere, some time.

#### *Beyond Anthropocentrism*

The transformative power of humans has always been extensive. In the industrial age, however, this capacity has reached undreamt of heights and fundamentally changed our relationship to nature. Today, nature is no longer the mere backdrop to human action but is subject to scientific intervention and invention. As such, nature in all its facets has become ethically significant. In light of the mismatch between ethical assumptions and the reach of socio-technical effects we are charged to rethink our traditional anthropocentric responses and produce principles more appropriate our ecological footprint and *timeprint*. This requires opening up ethical concern to encompass, as our responsibility, the material, spatial and temporal sphere of impact, which extends beyond humanity to all of nature and the physical bases of our existence.

Thus, we can summarise that contemporary responsibility extends not just to our footprint but to our *timeprint*, that is, to the temporal reach of our actions and that this principle applies irrespective of whether or not the affected and afflicted are able to hold us to account. For a timescale of action where outcomes can no longer be tied reliably to their sources and where knowledge becomes inescapably fuzzy, therefore, it is not evidence-based knowledge but social debate on what is right and just which will need to arbitrate between competing plans, decisions and interests. This means, in contexts of uncertainty and non-knowledge action needs to be linked directly to ethics. To achieve this, however, requires an additional social innovation at the level of implicit assumptions which underpin contemporary knowledge practices. One such key assumption concerns the reality status of the future.

#### **Reality Status of the Future**

Open and empty the future is subject to conjecture, calculation, planning, expectation, anticipation, hope and fear. It is the ‘not yet’, the realm beyond experience, the non-factual world of the mind. Only when the plans, hopes and fears for the future are actualised, when future turns into present, does the reality status of the future change and fiction is transformed into empirically accessible fact.

In a classic work on future studies Bertrand de Jouvenel (1967: 3)<sup>13</sup> directs us to the Latin terms *facta* and *future*. The former, he explains, refers to past events, done, achieved and completed, the latter to that which has not yet come about, something that will become a *factum* only after it has occurred. While the one has already taken (unalterable) form the other is still open to influence and thus “capable of ending or being completed in various ways”. Another way of putting the distinction is to say ‘there are no past possibilities and there are no future facts’<sup>14</sup>. In both cases the past is closed to influence, thus open to factual knowledge while the future is open to choice and efforts to colonize and control, thus closed to factual inquiry.

The distinction is so deeply taken for granted that it has assumed the form of naturalised fact. This, however, is a problem because futures in the making are *latent future presents* and as such they are real even if they elude factual enquiry. We therefore need to avoid the conclusion, which arises with the distinction between *facta* and *future*, that there is no pre-figured future to be known, that there is nothing to be foretold beyond the factual patters and cycles of change that continue from the past and are thus amenable to study with the past-based tools of scientific investigation and extrapolation.

<sup>13</sup> See de Jouvenel, B. 1967 *The Art of Conjecture*. London: Weidenfeld and Nicolson.

<sup>14</sup> See Brumbaugh, R. S. 1966: 649 quoted in Bell, W and Mau, J eds. 1971 *The Sociology of the Future*. New York: Russell Sage Foundation, p. 9.

Instead I want to argue that knowledge of *latent future presents* is a precondition to engaging responsibly with futures of our making, that is, futures already set on the way, whose effects extend into the very long term future from hundreds and thousands of years to millennia. The long-term effects of radiation can once more serve to illustrate the point. They are processes already in progress that have not yet materialised into *facta* in the conventional sense. Clearly, such processes are neither mere aspects of our imagination nor territories fully open to our influence, power and desire. They may be knowable as partial past facts and projectable continuity from the past. Their existence may constitute, for those seeking to know, an assemblage of near certainties, contingencies, constraints, virtualities, uncertainties, indeterminacies and ‘unknowables’. Furthermore, they may be recognisable to our bodies at the cellular level, our cells having absorbed and incorporated some of these empirically inaccessible features of reality, setting in motion invisible processes that will emerge as cancers and evolutionary mutations somewhere, some time.

Furthermore, the distinction between *facta* and *futura* enhances the illusion of the future as an empty vessel to be filled or an open territory to be occupied and colonised. I want to argue instead that the contemporary future is always already occupied with the latent outcomes of choices, desires, decisions and actions of predecessors and contemporaries: it is a ‘territory’ in which each generation is both trespasser *and* temporary tenant. To embrace this understanding is a political act and has the potential to change politics at a deep structural level.

### Politics of Posterity

Politically, however, the future is an extremely difficult and troubling territory because our representatives in local and national government have no mandate to operate in this vast temporal domain. Their mandates extend to their periods of office. Since most political decisions have effects that outlast their creators, we the public give them an implicit mandate to affect us, our children and possibly even our children’s children. But here we are already pushing the boundaries of the legitimacy of *our* consent. Can we be sure that our children and their children after them would approve of our consent and agree with the rationale of our thinking and acting? Of course we cannot be sure. Governments certainly have no mandate since the people and species affected by decisions about time-space-matter distantiated actions have no voice and no vote.

We have no political structures in place that address this problem. We have no guardians of the long-term future, no political body with the task to represent the unborn. Once more, however, this is a problem not of science, not of economics, not even of politics. It is a problem *for* contemporary society which needs to be addressed *by* contemporary society. It is to be handled through debates concerned with what is *right* and what is *just*. As citizens we need to hold those debates in the full knowledge that our decisions and actions with their effects make us trespassers in the future of others, that we are inescapably illegal immigrants in their worlds and that they have not given their consent.

We can only achieve such a shift in perspective and concern if we reconnect the social spheres of action, knowledge and ethics. Moreover, given that certainty of knowledge is not available for the contemporary process world of futures in the making, we need to approach the ethical domain not as the last dependent element of this relation but as the first one. Where knowledge is patchy or not available, we need to establish a direct connection between action and ethics and stop making our ethics dependent on knowledge of outcomes of action. Knowledge needs to be utilized instead as helpful but subordinate (re)source to responsible action. To take our responsibility seriously, therefore, requires change at the deep structural level of implicit assumptions, scientific method, politics, law and organisational structure. As such the future is our most challenging domain of social innovation.

The task for social scientists is to establish socio-historical interdependencies and connections, offer relevant social critique, identify openings for change and, where appropriate, help to create aspired social innovation. Much of the book *Future Matters*, written with my research associate Chris Groves, is an attempt to come to terms with this new task which arises from the contemporary condition and for which we have no appropriate past or present models to guide our efforts.

### Acknowledgement

This research has been funded by the UK’s Economic and Science Research Council (ESRC) under their Professorial Fellowship Scheme.

### Biographical Note

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