

# Molitor's Techno-discourse: Rhetoric Unconvincing

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Graham Molitor's essay *Genetic Engineering and Life Sciences: Controlling Evolution* aims to persuade us of the desirability of a bio-utopian future. Yet, cast in the style of rhetoric there is little originality in Molitor's portrayal, but a lot that is questionable, typical of the narrow techno-deterministic discourse of biotech pundits. Though a rather stagnant rendition of bio-mania, it is however an illustrative one for the density of themes presented.

Yet those themes are unconvincing as they do not engage with the profound and complex issues presented by the biotechnology problematic, the growing critique of the crisis of modernity, and the associated need to adapt new forms of science and technology based on new scientific insights, 'other knowledge's', the intrinsic value of nature, environmental ethics, representational public participation, social justice, and localized contexts. Molitor concludes that the 'brave new world' of genetic engineering is conditional for human advances, but until a new narrative is found that can situate biotechnology within nature and society as integrated whole such claims will remain unconvincing and rhetorical.

Yet another attempt to paint a glossy bio-utopian future is found in Graham Molitor's essay *Genetic Engineering and Life Sciences: Controlling Evolution*. There is little originality in Molitor's forecast, but a lot that is questionable, typical of the narrow techno-deterministic discourse of biotech pundits. In short, it represents a now tiresome and also rather stagnant rendition of the rhetoric of bio-mania, yet an illustrative one for

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the density of themes presented. The term rhetoric here represents the use of discourse to persuade us that biotech is inevitable and highly desirable. Demonstrative of what Stephen Hill refers to as the 'technology text', biotechnological systems and patterns of change are shaped as a frame of inevitability (Hill, 1988). This inevitability, as well as the 'imperial' tradition of representing nature as mechanical contrivance (Worster, 1994), and where the genetic level is now the key to control that mechanism for human design and utility, defines genetic determinism. Little space exists here for broader social, cultural, ethical and ecological frames of technological experience.

Yet, those broader frames are more the significant because of today's pervasive and inherently interdependent global environmental and social dislocations. Both moderate and radical discourses of sustainability posit the centrality of the social and cultural to achieve more favourable environmental and social outcomes. Here, Molitor is out of touch, similar to Michio Kaku's flawed vision that we can choreograph nature through genetic engineering (Kaku, 1998). Moreso, because the social context of science and technology (S&T) has become increasingly visible under the rubric of globalisation, where S&T are implicitly involved in the expansion of western economic hegemony (but which is increasingly contested in second modernity (Beck, 1992)). Here, science and technology are largely shaped to the values of the global treadmill of production, corporate opportunism, the international capitalist class, third world debt slavery, food commodity trading, resource security, the military-industrial complex, technological reductionism, the economics of high finance and investment, or the need to construct 'necessary illusions' through mass persuasion. These distort radically, and seek to peripheralise, 'other' values - embedded in nature, community, social justice, and basic human needs - of the broader publics affected by the technology text.

Typical of technophilia-rhetoric, such complexities of political economy are omitted from Molitor's prognosis for the future. Such omission agrees with what Hart refers to as the five main moves of rhetoric (Hart, 1997), (1) the use of language to exert change - here, to induce enthusiasm and acceptance of, or perhaps resignation to, the bio-utopian narrative; (2) the author has to be regarded as helper rather than exploiter; (3) the author must convince the listener that new choices must be made; (4) the author narrows the range of choices; and (5) details of policies are often not defined. Another example of the fourth move in Molitor's case is where no mention is given of the sharp contestation of a biofuture by

way of organics, despite the growing appeal of organic agri-food production and agro-ecology to present viable avenues to address ecosocial problems at the populous community level, and which are of much appeal also to the growing environmentally-aware consumer movement.

Moreover, any depiction by Molitor of biotech problematique, already highly contested domains, are restricted to a random and sparse injection of phrases like: 'divisive moral and ethical debates', 'the big question is whether humans can be responsible stewards...', 'problems arise', and so on. Little attempt is made to expand upon or to address well known issues like the risks of release into the environment of transgenic organisms, such as horizontal gene transfer (Traavik, 1999); the safety of GM foods; consumer choice and right to know; the private ownership of genetic material through intellectual property rights; the subsequent convergence of public and private research (Hindmarsh, 1999); increasing control of agri-food production and seed ownership by agribusiness and biotech conglomerates (Hindmarsh, 1999); the proposed alignment of nature to the dominant techno-industrial milieu; genetic discrimination; bioprospecting of indigenous knowledge (Wills, 2001); or the mature paradigmatic contestation of S&T where, for example, contrary to Molitor's view that genetic engineering is the pathway to controlling evolution, instead, evolution will be so disrupted that dire outcomes are forecasted (Hindmarsh and Lawrence, 2001). Any reference by Molitor to these debates thus appears as only tokenism of any semblance of balance or social and environmental responsibility that the author might deem to portray. In short, to paint a winning picture of biotech, alternatives, contested issues, and 'negative' references are avoided, downplayed, or are mentioned only in passing.

Central in this rhetorical attempt to convince are not only ideologically-loaded words and phrases, but also metaphors that convey images and values, and narratives that touch deep-seated cultural values, aspirations and fears. In deploying such devices, and creating popular representations of meaning, portrayal of the life sciences moves beyond science to embrace the cultural realm of biotech popularisation. As Van Dijck posits (Van Dijck, 1998), science here can be seen as a form of theatre, a theatre of representation: 'science as theatre' - a public performance with characters, narratives, plots and metaphors. And Molitor is no exception to the portrayal of 'genetics as theatre'.

What then are Molitor's 'stage' devices? How does he cast the 'actors' of genes, scientists, the human genome project, the double helix, genomic

codes, corporations, and opponents? The casting of both nonhuman and human entities as actors is relevant here because it reminds us that biotechnology is not just human endeavour but is embedded in nature, indeed is dependent upon nature. Secondly, this confers with what Callon refers to as the sociology of translation (Callon, 1986), which involves the production of knowledge as the construction of a network of relationships of social and natural entities; in this case how their simultaneous cultural interaction and representation forms a translation of knowledge to convince, and which can thus be seen as a strategy of agency power (Clegg, 1989).

Immediate in Molitor's script is that life sciences 'will become America's "economic mainspring"' by 2100. There is no questioning of this, the scenario is painted, there is no doubt: this represents science as the inevitable step-wise, linear development of progress—an oft-repeated grand narrative of science and of biotechnology. Molitor refers to the 'fourth wave' of advances in healthcare. Genetic engineering thus bears down upon us inevitably, there is no other choice, so put up or shut up. Moreover, it enjoys that dominant purchasable characteristic unique to material society of being inherently economic, and is also successfully mechanistic and progressivist. It will become the 'mainspring' - the principle spring in the mechanism. Both biotechnology and economy are thus aligned to the dominant image of world as machine, as production site, and thus of worthwhile endeavour. Molitor reinforces this image with that of 'tapping "bio-factories"', which the author is quick to stress 'will prove too important to ignore'.

Factory metaphors are used consistently in biotech popularist narratives. The role of the gene as 'factory foreman', Van Dijck argues, is to make the productivist workings of the gene sound obvious, and to also represent genetics as a model for class capitalism where the gene, as 'master molecule', is held higher than the cell (Van Dijck, 1998). The latter discourse likewise reinforces the representation of nature as hierarchical and fractured, where genes are like bits and pieces of machines that can be rearranged to the design of humans, who, in interrelated Christian and modern scientific tradition (Noble, 1999), are at the apex of creation, with nature as their dominion. This latter view of being *a part from*, or alienated from, nature, whereby humans can 'objectively' manage, dominate, control and improve nature, is, of course, contested by ecological discourse where humans are a cooperative and reverential or respectful *part of* the 'web of life' or 'interconnected' nature (Capra, 1997).

Another immediate device employed by the script, also central to the biotech grand narrative, is the biblical or mythical plotting of genetics as the 'blueprint of life'. Here, the metaphorical meaning of the Bible - the 'Book of Life' or 'Book of Nature' as the material record of God's creation, is replaced with that of the genomic 'Book of Life' written in the alphabet of DNA (Van Dijck, 1998). It is science's holy grail to 'unlock the secrets of DNA' (Boston Globe, 2000), and undertake the scriptural mission to regain paradise, lost Eden. The Enlightenment idea of progress through S&T is rooted in the recovery of the garden lost in the Fall (Noble, 1999). Molitor makes good use of this recurring theme: 'The "holy grail" of life sciences involves decoding the human genome', he relays. To Van Dijck, this plotting reinforces the high moral ground that the new genetics claims in its quest for the 'essence of life'.

To genetically order nature to human utility, Molitor refers to 'decoding' the human genome. The image of 'DNA as code' has gone hand in glove in the popularisation of genetics post World War II (Van Dijck, 1998). It paints a winning picture of genetics as information 'code-breaker' which nurtures public acceptance. The breaking of the German 'Enigma' code was central to the Allies winning the war and empowering a new global social order. A new socio-natural order that controls evolution is thus available through decoding DNA because if it can be 'decoded', then it can also be 'recoded'. This linguistic and visual metaphor also helps to sanitise genetics of its rather shady past of US and Nazi eugenics; to mask its current eugenics underpinnings of genetic enhancement, perhaps well portrayed through SciFi movies like *GATTACA*; to further legitimise commercial DNA sleuthing (there is even a commercial genetics research company called 'Decode Genetics'); and to educate the scientific 'illiterate' through simplistic representations of gene manipulation which further popularise it because the public can imagine a meaningful understanding of just what is going on.

Public participation, though only cast in the roles of observer and legitimiser, is central to popularising genetic engineering. Beefed up as a 'race of suspense and discovery', science is redefined from the arcane and arguably the boring to an entertaining adventure game inviting participation (Van Dijck, 1998). Molitor accommodates this imaging: 'Up to 90% of genetic discoveries occurred within the past 30 years. The pace is increasing.' The race is on. The race against death, hunger, defect, disability, imperfection; conversely, the race to perfection, the race to regain Eden. Molitor enthusiastically depicts genetically engineered Eden

as eradicated disease, extended life expectancy, increased food production, resurrected endangered species, and enhanced resource recovery. 'Obstinate nature' is further cast as the new enemy to overcome with its devilish structural arrangement of DNA. With DNA as both 'demon' and 'liberator', the trick again is to unleash the latter through a 'recode' that can yield control over evolution and human destiny - the technological imperative laid down by Francis Bacon [1561-1626] so long ago.

In this endeavour, as Bacon and other popularisers of science and technology since have depicted (Wells, 1909), a winning role of heroism, discoverer, inventor and sainthood is cast for scientists. In the popularist biotech narrative this is made clear where in the defining sciences of molecular biology - physics and chemistry, the helical model and the gene metaphor redefines the role of the geneticist to discoverer of the grand scheme of universalistic rules by which molecules are 'arranged', the understanding of which thus offers the conduit to the golden bio-utopia.

Yet another necessary condition of this bio-utopia, Molitor posits, is for 'Far-reaching changes ... of every living thing on planet Earth'. In casting every living thing so mechanistically (as bio-machines) one is reminded of Turner's suggestion to ecologically create future landscapes, including new species through the recombinant-DNA techniques (Turner, 1993). Yet, in reflecting upon Hart's characterisation of rhetoric we note Molitor's easy dismissal of the intense and profound controversy about the dangers and risks of gene splicing. Molitor's recourse to this debate, like many of his persuasion, is to paint a metaphorical picture that combines moral and scientific discourses to portray genetic engineering as 'saviour' to feed the hungry of the world, however this narrative is one heavily contested by grass-roots NGOs globally (PANAP, 2001), amongst others, as a 'red herring' to both popularise biotech and to divert attention from the real reasons for hunger (George, 1976), such as neo-colonialism and the creation and transfer of inappropriate technologies.

In summary, Molitor's narrative is unconvincing because as rhetoric it does not engage with the profound and complex issues presented by the biotechnology problematique, the growing critique of the crisis of modernity, and the associated need to adopt new forms of science and technology based on new scientific insights, 'other knowledge's', the intrinsic value of nature, environmental ethics, representational public participation, social justice, and localised contexts. Postcolonial science, post-normal science, postmodern science, planetary science, deep ecology science, spiritual science, indigenous science, 'living' technologies,

eco-technologies, ecologically intelligent technologies, are some representations. Molitor concludes that the 'brave new world' of genetic engineering is conditional for human advances, but until a new narrative is found that can situate biotechnology *within* nature and society as integrated whole then such claims will remain unconvincing.

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