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LIFE STORY

The Gene as Fetish Object on TV

SARAH BROOKS FRANKLIN

There is a suggestive relationship between biology and biography in the recent TV docu-drama *Life Story* – an account of the renowned discovery of the double helix by James Watson and Francis Crick. Indeed, biology and biography are as closely linked as the two other strands in question during this *Horizon* special, aired last year on BBC2. Here we witness the intertwining of ‘the discovery of life’ and the ‘life story’ of its adamant unravellers.

The ‘story’ of the double helix is a made-for-TV science detective story, announced as no less than ‘one of the greatest true detective stories of the twentieth century’ in the introduction to the programme. There is even a Dr Watson already provided, and this version does not, need not, depart significantly from the staple discovery narrative. The story is told through the eyes of its discoverers and culminates in the climactic ‘aha’ moment of nature unveiled before admiring scientists. But the story also traverses a minefield of contradictions which provide more than merely narrative tension. *Life Story* is skillfully scripted to make the most of these tensions in the plot.

■ DRAMATIC TENSIONS

For example, there is the juxtaposition of ‘traditional’ and ‘new’ science, characterized by the older and younger scientists. Sir Lawrence Bragg (the director at King’s College, Cambridge), and the outmanoeuvred Maurice Wilkins, put forward a ‘brotherhood’ model for the professional pursuit of scientific discovery. According to this ethos, one does not ‘poach in another man’s pond’ or ‘steal another man’s wife’. Science is like a sport: you ‘play by the rules’ and ‘with a



Watson and Crick with their DNA model

straight bat’. Everything should be ‘kept above board’; ‘winning and losing the race is not what science is about’.

This gentlemanly ethos is dramatically contrasted with the competitive, ambitious younger generation. For various reasons – ranging from Oedipal (Peter Pauling, son of Linus) to cultural (‘ambitious American’ Watson) to individual (Crick, the arrogant non-conformist) – they are more cynical and less reverent about the pursuit of scientific discovery. Francis Crick is portrayed as believing that ‘science is like [romantic] love’ and that it should be ‘fun and exciting’. He dismissively refers to the behaviour of his elders as an ‘I’ll show you mine if you show me yours’ old-boy network. Like the unabashedly glory-seeking young Watson, Crick makes no apology for acting on the principle that winning is much more important than how you play the game. The means by which these two devious cowboy-scientists proudly lie, cheat and steal their way to a Nobel Prize forms the bulk of the pro-

gramme, to the tune of a suspenseful and emotive musical score.

An equally significant dramatic tension in the plot of *Life Story* concerns not generational but gender difference. For this purpose, the narrative of Rosalind Franklin is provocatively foregrounded. Here, cultural differences are also put to good effect: sophisticated European masculinity is contrasted with the crass English schoolboy mentality.

At ease, attractive and self-assured in the all-male company of her Parisian colleagues, Rosalind Franklin is both horrified and transformed by her experience in London. Obsessively sexualized and perceived as a threat by her blundering, boyish British colleagues, her one solace is her work, which, of course, is what they take away from her in the end. She too has a vision of scientific discovery at odds with the men who eventually both outwit and outlive her. She is portrayed as a dedicated and hard-working radiographer, faulted only by her diligence in the pursuit of scientific truth. She is both in awe of the beauty of life and driven by the desire to understand it. 'Satisfaction,' she chides her assistant, Raymond, 'is not in the discovery of the solution, but in understanding *why* it is the solution.' To a hysterical Watson who bursts into her laboratory desperate to see her (unfinished) results, she turns in a rage, exclaiming 'You are all just . . . little boys! You think this is the playground and I've got the ball! Well this isn't a playground, this is science, and I won't play your silly games!'

There are other tensions, such as the political tension surrounding the construction of the atomic bomb, from which research both Linus Pauling and Maurice Wilkins had defected to pursue 'the science of life' rather than the 'science of death'. 'Look,' says Crick to Wilkins in the gym, pointing to a newspaper headline proclaiming *BOMB SCIENTIST GETS KNIGHTHOOD*, 'you would be called Sir Maurice now if you had stayed on the bomb.' Watson exclaims 'God Bless America' upon learning that Linus Pauling, invited to attend the Royal Academy of Science meetings in London,

will not be able to attend because his passport has been withheld by the US State Department in retaliation against his 'un-American activities'. On top of all this is Crick's observation that 'we know how to blow ourselves up but we still don't know how we reproduce ourselves'.

In short, *Life Story* has all the elements of good drama. It is about, as Crick describes it, the 'big' questions – life, sex, and immortality, not to mention fame and fortune. It is comic, tragic and filled with ironies. It is a classic tale of conquest and discovery, of triumph and human flaws.

■ DNA AS ICON

But it is much more than dramatic appeal which has made of this story a kind of twentieth-century myth. The iconography of the double helix is etched upon the modern Western consciousness. It has even become a commodity in the form of a DIY version of the DNA model built at the Cavendish, now available for sale in bookshops. What tremendous fascination does this story hold for its audiences and consumers? To understand its meaning and popularity, it is necessary to locate the appeal of *Life Story* more broadly.

Fortunately, both the question and answer the film sets out to dramatize are conveniently framed for us in its opening and closing shots, respectively. In the beginning, in the silence and the darkness that just precede the morning light, we are told that:

By the early 1950s the greatest unsolved mystery in science was the secret of life itself – the processes by which all living things have reproduced themselves generation by generation since the very beginning of life on earth. Although the mystery had a name – the gene – no one knew what it was or how it worked.

The double helix is the answer, to which we return in the lyrical, reverent, moonlit closing scene of the film – a cinematic hymn to the shimmering model, floating, rotating in space, like a giant gene satellite. The double helix is born, and

becomes the fetish object *par excellence* of contemporary scientific scrutiny.

It is no coincidence that this film was released for mass TV viewing in 1987, a year in which we also witness a global project to map the human genome, the release of some of the first genetically engineered organisms into the environment, the deployment of 'DNA fingerprinting' by police in the West Midlands, the contracting of \$135 million in Star Wars money to Gencorp (a genetic engineering firm), Medical Research Council advocacy of 'pre-implantation biopsies' of human embryos in order to detect genetic 'defects' *in vitro* . . . In short, this film coincides with the advent of major social and political changes in manufacturing, medicine, food consumption, energy production, police surveillance and military operations—changes which are the results of genetic engineering, often referred to as biotechnology. They have had an impact on cultural representations of genetic science, even though many people may well be completely unaware of these important developments in the political economy of science.

If it sounds alarmist to refer to these events as harbingers of a new genetic essentialism, it may be worthwhile adding that this is not an unprecedented occurrence, and in fact has a long history. The fascination with genetic determinism in Western culture has deep roots. The word 'gene', after all, comes from the same root as 'genesis'. Genetics are the primary idiom of our kinship system, and thus of fundamental assumptions about who we are and how we came to be. A common-sense ideology of genetic determinism has long been the guarantor of difference and of individuality in Western culture. An ideology of genetic personhood is equally implicit in this culture's beliefs about conception, procreation and human origins. Our origin myth is an enthusiastically eugenic one, about genetic selection of 'the fittest' in the rise of *homo sapiens* above all other mammals and the subsequent conquest of 'nature' as our (bio-genetic) manifest destiny.

Of course, the links between social Darwinism and the legitimization of industrial capitalism are not news. Neither is

genetic essentialism, which has gained both popularity and respectability in the Eugenics movements of the past and more recently in the form of sociobiology. What is new is the amount of resources and interest being focused on the gene, and the new goal of corporate enterprise and techno-scientific discovery which is gene power.

■ GENETIC 'PROGRESS'

It is also no coincidence that this film about the discovery of DNA has been produced at a time when beliefs about evolution are being challenged by both religious fundamentalists and scientists alike. In his book *Algeny*, environmental activist Jeremy Rifkin attributes the current crisis in evolutionary theory to changing cultural assumptions about nature which result from the increasing influence of genetic science. Rifkin pinpoints beliefs about evolution as critical indices of profound cultural change because, he argues, beliefs about 'the natural' are pivotal to any culture's definition of itself. Darwinism, he claims, was the cosmology of the industrial era, in which nature was constructed to reflect the demands of industrial capitalist culture. Now, he argues, that view of nature is in crisis because industrial capitalism has to find new means of production, fuelled by renewable rather than non-renewable resources. Thus, as we move from the era of 'hard' manufacturing into 'soft' manufacturing, from control over the means of production to control over the means of reproduction, from 'pyro-technology' (fossil fuel industry) to 'biotechnology' (bio-process industry), we will change our views of nature, and, presumably, of almost everything else.

It would appear that Wall Street would agree with this assessment if high-risk, venture capital investment strategies are any indication. The two new investment frontiers, outer space and inner space, vie for the futures market. *In vitro* fertilization and satellite technology have been ranked by one Australian financial firm as the technologies of choice for high-yield future earnings from the market.

Other than financially, no one seems to be preparing for

the impact of the social, economic and political changes which will result from new techno-scientific means of reproductive and genetic engineering. The general public exists in a kind of naïve limbo, encouraged to welcome technological and scientific 'progress' while simultaneously being given very little detail about what it involves, much less its long-term social consequences. A case in point is reproductive technologies such as *in vitro* fertilization, which are usually equated with 'treatment for infertility' in newspaper idylls about happy Mums. Yet IVF has a success rate of approximately 5 to 10 per cent, often causes multiple or ectopic pregnancies, involves experimental synthetic hormone treatment, and does not 'treat' infertility but simply bypasses it; and these facts are little known.

Governments are also paralytically perplexed, and often ignorant, about their role in the face of rapid techno-scientific developments in reproductive biology and genetics. On what basis will the legal guidelines for patenting and marketing living organisms be established? Who will set the safety standards for the release of genetically engineered organisms into the environment, and who will pay for monitoring their long-term effects? Who will protect the consumers of genetically engineered foods, fuels and pharmaceuticals produced by Gencorp, Celltech, Biogen, Cetus or Genex? What will be the price of policing these new technologies, or of failing to do so?

Meanwhile, in sharp contrast to the profound lack of public information about the impact these changes may have in the near future, we can watch on evening TV a docu-drama special on the discovery of DNA which does little to contextualize it even historically. We do not learn, for example, that Watson was funded by the Atomic Energy Commission, and that the 'sciences of life' and the 'sciences of death' were not then, as they are not now, so far apart. And we can watch *Making Sex Pay*, another *Horizon* special, in which fact, fiction and fantasy are merged in the attempt to produce a serious piece on evolution and the 'selfish gene'.

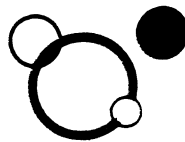
At the cinema, the 'alien' genre has had a very successful

spanning season. In a recent *Star Cops* episode, three frozen embryos are stolen by a clone who is tracked by police using state-of-the-art information and genetic surveillance technologies. The sci-fi horror genre has fastened on to the body, reproduction and bio-genetics with a vengeance, no doubt appealing to audiences' fascination with and nascent awareness of broader social changes taking place. It is a sign of the times that Jeff Goldblum, star of *Life Story* as the young James Watson, also plays the part of a young geneticist in the popular re-make of *The Fly*, a prototypical bio-horror film about a man who hybridizes himself by mistake into a half-man, half-insect with a voracious sexual appetite.

■ REPRESENTING DISCOVERY

Strategies addressing the politics of representation have played an increasingly important role alongside more conventional strategies of resistance within feminism, the left, environmentalist and peace groups. For those resisting new forms of reproductive and genetic control, and for those concerned about the social implications of corporate-sponsored techno-science let loose upon a new genetic resource base, the politics of representation will be an increasingly important focus. *Life Story* clearly demonstrates the powerful hold a belief in scientific progress and discovery exercises over the popular imagination. In order to increase awareness of what is at stake in the harnessing of corporate capital to molecular biology, it will be necessary to challenge the retelling of the helix myth as merely a great detective story.

Life Story might initially be read as a TV version of what happens behind the scenes of scientific discovery. 'Science is terrestrial, it's territorial as well,' says Rosalind Franklin's director. The film's argument is that biology and biography are inextricably intertwined, to both the tragedy and triumph of science. As an attempt to be realistic about the human dimension of science, the film is limited by its dramatic focus on characters to the exclusion of context. Its realism only obscures the extent to which it is a reconstruction of events



according to very specific conventions, in precisely the same way as fiction. Ultimately, it is the history of scientific discovery rewritten as a detective story, whose superficiality is exemplified by its attempt to establish a historical context by means of passing shots of newspaper headlines chronicling the death of George VI and the crowning of Elizabeth II.

Without belittling what the film *does* achieve within the terms it sets for itself, in particular exposing the taken-for-granted male chauvinism within the 'brotherhood' of science, it is far from the kind of docu-drama we need from producers of science programmes. Rather than dramatic reconstructions of the 'discovery of DNA', we need programmes which explore the cultural and historical origins of the genetic commodity fetishism evident in contemporary society. What is obscured by both biology and biography, and thus from *Life Story*, is science as culture.

NON-WESTERN SCIENCE, PAST AND PRESENT

LES LEVIDOW

What makes our science scientific? Modern Western science sees itself simply as 'science', as culturally universal, by virtue of timeless truths discovered through the scientific method. That is, the method supposedly guarantees an objectivity that keeps the resulting knowledge safely devoid of value judgements.

Even in the West, many critics have disputed that claim to impartiality. Some have gone so far as to argue that our science embodies values appropriate to capitalism, as science relentlessly reduces quality to quantity and standardizes human behaviour in order to manage it. Outside the West, many critics have unfavourably contrasted its values with those of Oriental knowledge systems. Some have gone so far as to counterpose a benign tradition of Islamic science to an anti-human Western science that robbed the Islamic world of its scientific heritage.

At first sight, such cross-cultural issues may seem far removed from our present concerns about the negative aspects of science and technology, such as the chemicals that are slowly poisoning us, or the automation that is undermining skills and worker camaraderie, or the nuclear technology that is terrifying us. Yet the destruction of natural and human resources, as well as the further reduction of human relations to sheer buying and selling, extends back to the origins of Western science, especially to the way that it usurped its non-Western antecedents. This article will suggest that those antecedents have much of relevance to teach us, and that our current predicament gives us much in common with Third World resistance to Western models of 'progress'. By considering a range of Oriental perspectives



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