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Thinking Like a Man? The Cultures of Science.

Lynne Segal

‘Reading too much to see, writing too much to think’, licensed intellectuals today are usually too cut off from wider audiences even to deserve the Wildean derision they once received. Yet the public domain has its well-known hazards. Academics rarely set its agenda, even when we do manage to address an audience beyond the barely-read journals stringent funding bodies force us into. Accordingly, I did not set the agenda when I agreed to present a session in Birkbeck's public lecture series: *Close Encounters: Culture Meets Science*. An odd situation, when I have tried to be the sternest critic of the dualism such ‘encounter’ excites - however intimate. The battle lines are familiar in Britain’s upmarket media: while well-known psychiatrist Raj Persaud can be heard arguing that science needs art, the equally recognizable biologist Lewis Wolpert insists that never the twain shall meet.

Beyond binary conflicts, however, not only does culture include science but, more significantly, science includes culture. To say this is to say, one might think, very little; yet it remains profoundly contentious – the ground for endless battles. It is to suggest, merely, that at any time we come to the sphere of science with all our everyday pre-conceptions in place. At least in the world of human and social affairs, the nature of the empirical research which gets done and, in particular, the way it is broadcast and popularised, whether by scientists or their promoters, always reflects the assumptions and goals of the culture around it, or certain pockets of it. And in the dazzling techno-world we now occupy the extraordinary degree of information available to us *itself* triggers ubiquitous debates over science, which is altogether a good thing if – and only if - it does not lead to instant polarizations.

Culture includes science; science includes culture; yet it is certain that, throughout modern times, it is a mutual stand-off between what is seen as the two separate traditions which has encouraged the most intensely sectarian forms of professional rivalry, animosity and conflict, both within and without the academy. The eternal return of wars supposedly between culture and science or, put more judiciously, within the “two cultures”, take us back at least to where most date the birth of Reason, to the 1780s. This was when the philosopher Immanuel Kant (troubled by David Hume’s empiricism) awakened from his ‘dogmatic

slumber’ to announce that ‘objects conform to concepts and not concepts to objects’: we can never simply know ‘things-in-themselves’. Philosophers have continued to argue the toss ever since. Predominantly concerned with scientific knowledge and the nature of things, what is loosely known as Anglo-American Philosophy would repeatedly repudiate the more speculative disposition of what is just as inexactly labelled European Philosophy, with its focus on the nature of *human* existence and its insistence that, as the appropriately French essayist, Montaigne, put it (back in the 16th century) we ‘need to interpret interpretations more than to interpret things’ (a mere 400 years before its cutting–edge repetition by reputed post-structuralists, citing Derrida). In the beginning was the Word, God said. (So we know whose side S/He’s on!). Those who most stridently like to declare themselves the spokesmen of Science today, we’ll see, offer a similar, unifying mantra: in the Beginning was the Gene, and in rhetorical mimicry, they do battle with God, Creationist myths or those whom, with peculiarly American antinomian perversity, fold antagonistic authorities into the one force, declaring themselves ‘Creation Scientists’.

The eternal repetition of clashes between the empiricist and interpretive worldviews was already troubling John Stuart Mill back in the 19th century, very much as it troubles some today: ‘the one doctrine is accused of making men beasts, the other lunatics’. With Darwin currently trouncing Freud in opinion polls, the Beasts are holding out against the Lunatics, for this is more than ever a time when, with whatever levels of misunderstanding and ignorance, an all-pervading ‘culture of science’ surrounds us. Yet the preconceptions and irrationalities kept hidden within ruling presumptions of the shared neutrality of scientific investigation, its widespread failure to interpret its own interpretations, suggest to me that the lunatics may yet have the last laugh or, perhaps, the ultimate self-reflexive weep. And just one way of seeing this, as those like feminists (forever the devilish harbingers of anti-scientism) have been arguing for at least a generation now, is by looking at the gendered symbolism, the gendered stories of science.

The Gender of Knowledge

It can hardly be news to learn that in Western thought the gender of science, indeed, the gender of knowledge, has always been seen as masculine. In the 18th century, women and knowledge were a type of oxymoron, an absurd conjunction, placing women in danger of ridicule or ostracism; at best, of banishment from her sex: ‘Never was a woman so learned as she’, as Voltaire praised the Marquise Emilie du Chatelet (for promoting Newtonian physics), adding ‘She was a great man whose only fault was in being a woman’. In Britain, when Elizabeth Montague wanted

to create and endow the first women's college in 1775, she was turned down by Anna Barbauld, the prominent London poet and literary critic she wanted to head it up, advised to abandon her plans at once. Women must keep their learning secret, she was told: 'in our sex knowledge must be only connived at while carefully concealed'; displayed it will be punished with disgrace. She was for the most part right. Mary Wollstonecraft would be dealt the fate Barbauld feared: seen as betraying her sex and of 'thinking like a man' when, inspired by the French Revolution, she formed the radical dissenting community of Stoke Newington and argued for women's education to permit their participation in the public sphere. It being the time of her time, Wollstonecraft herself would accept with pride the observation that she 'thought like a man'. Today she, like our closest foremother, Simone de Beauvoir, stands condemned by some contemporary feminist scholars for ever having aspired to embrace Enlightenment beliefs in the enticements of rationality. Though here, still, we remain trapped within the same dualistic scheme positioning women as either the degraded or the esoteric *outside* of masculine reasoning.

It is not only the physical and biological sciences that have been regarded as 'masculine', authoritative, distanced from women's natural inclination and interests - except when situating them as the objects of interrogation. The social or human sciences as well have themselves been seen as part of the scientific project to the extent that - and *only* to the extent that - they arrogated the quantitative methodology thought appropriate to the 'hard' sciences, despite the fact that human images, feelings and thoughts, do not arrive in quantitative mode. It is also clear that the attribute of '*hardness*' sought after here is strictly metonymic of the masculine when its antithesis is not the attribute of being '*easy*', but rather of being '*soft*'. The recent reworking of more Continental modes of interpretive, narrative or discourse analytic methods in the social sciences exemplify these newer 'soft' methodologies. They are, it is true, often favoured, though far from exclusively, by the feminist scholars and other dissidents who have scrambled into the academy, changing its nature over the last three decades. Although, one might think, few modes of reasoning could be conceptually more demanding than their origins, in hermeneutics and phenomenological philosophy.

This is why it is on the question mark that the weight of my title falls, *Thinking Like a Man?* We can all flesh out the cliché, knowing well enough what supposedly neutral, detached, confrontational approaches are thereby invoked. But whatever familiar routines constitute the performative aspect of this notion, it is always a context bound and slippery one: however easy it is to illustrate that men's privileged access to knowledge and naming in science, at least until recently, has been as

apparent in their chosen research as in their texts. Women are more than capable of just such 'masculine' performative pugnacity. Indeed, however inescapable its dimorphic insinuations, it is now quite as fashionable for Queer Feminists (after Eve Sedgwick; Judith Halberstam) - if not for last season's French Feminists (after Cixoux; Irigaray) or this season's Deleuzians (such as Rosi Braidotti) - to assert their *own* claims to 'female masculinity'. As I see it, any such gendered identification is always ambivalent and fugitive, however assiduously men (or women) work to embody it. Masculinity, I believe, exists primarily as symbolic self-authorisation and entrapment, rather than as any adjustable solution, to our continuing entanglements in gender hierarchy, entanglements that nonetheless materially still pervade the acquisition of knowledge and the cultures of science.

In the nineteenth century, it was again the formation of radical political movements, Owenites in its first half, suffrage campaigns at its close, which sought women's access to the wider world of education and knowledge. One way of trying to bypass men's resistance to women's participation in the public sphere was to justify women's learning not for its own sake, for women's self-emancipation, but for its public usefulness via the virtues women could spread in the community, exemplify for the poor, bring to the sick & elderly. (Hence the rise of women in Social Work, and its accompanying still disparaging connotations.) But it was the newly triumphant scientific establishment itself which would for a while continually throw its weight *against* the education of women when the rise of the scientific professionals, enhanced by the impact of Darwinian thought at the end of the 19th century, established them as the newly enshrined arbiters and authorities of human affairs.

They produced a crescendo of evidence entailing the necessary exclusion of women from science, with feminism, in its first wave, quickly synonymous with madness, sterility and the engendering of social decay. As Rita Felski, among others, notes in *The Gender of Modernity*, the irrational behaviour of the female hysteric, along with emergent conceptions of sexuality as the truth of the self, lay at the heart of the birth of both psychiatry and psychoanalysis. Narratives of cultural decline, symbolised by the 'feminine', the 'soft', the 'woolly' and superstitious, would prove the inescapable metaphor of the cultures of science. As most readers will know, in their feminist classic, *For Her Own Good*, in the 1970s, Ehrenreich and English argued that the paradigm 'allegory of science versus superstition' involved the deligitimation and displacement of midwives, as the initially exclusively male medical profession took over the sphere of gynaecology. It was this same scientific elite which well into

the 20th century could still confidently censure the stimulation of women's brains for inducing atrophy of the uterus.

Not until the 1970s, with its tidal wave of feminist thought and activism, would women manage seriously to question that earlier triumphalist march of science, challenging the presumptive neutrality of its experts. Subsequent battles of knowledge fought by the same branch of the medical profession in the closing decades of the twentieth century would thus once again bring the scientific establishment up against a new breed of angry, emotional young feminists. And it would culminate in the resurgence of midwifery, alongside a rejection of notions of pregnancy as a pathological condition and a new stress on the personal support systems available for women before, during and after pregnancy. Such wild and woolly demands from women a mere thirty years ago are little more than the substance of scientific knowledge today. There are now many new disputes, over artificial insemination, surrogate motherhood, induced births, episiotomies as those guarding this particular institutionalized branch of knowledge are drawn into other battles, for example, with women wanting to give birth outside heterosexual unions, to create 'designer' babies or with Third World critics protesting at the racism of using their populations for the testing or dumping of risky drugs. It was in this domain, as well, that scholars exploring the cultures of science provided more fine grained detail on the telling mischievous nature of the metaphors of science. Well known here is the work of the Princeton anthropologist Emily Martin, engaged in her own scientific observations of the habits of those working in research laboratories in the US, memorably illustrating the stereotypical, near pornographic imagery of passive 'femininity' and active 'masculinity' finding its way into apparently mechanistic accounts of the movements of sperm and ovum in scientific texts of reproductive biology.

Cultures of Criticism

For many this is all a well-known tale. The language of science cannot be accepted as the detached mirror of reality many hope, neither truth nor objectivity turn out to be the unproblematic concepts that scientists (and a world so dependent upon the fruits of their labour) once hoped them to be. Nonetheless, it would seem inanity to devalue, let alone deny, the awesome benefits of science (whether it's heating systems, heart surgery, space travel or virtual realities which dazzle or persuade us), however embattled we might also become over the existing and potential hazards accompanying its achievements (whether it's global warming, nuclear

warfare or genetic engineering which fill us with foreboding). Too true. Nonetheless, it is the case that applied knowledge, how we as humans manage to survive and thrive in the world, is never synonymous with scientific understanding. Harvard geneticist, Richard Lewontin, among others, illustrates this in *The Doctrine of DNA*, noting that major progress in applied science can be made without *any* understanding of the underlying scientific principles. Farmers were able to obtain steadily improved varieties of crop plants centuries ahead the scientific understanding of the principles of heredity and the birth of modern genetics. Conversely, we know something about the genetic origins of certain illnesses, like haemophilia, without the least idea how to cure them.

Feminist scholar and activist, Cindy Patton, similarly, points out that American gay communities began organizing around safer sex practices, and dramatically lowered the rates of HIV infection, before the HIV virus and the specific modes of its communication of the disease were isolated or understood. Indeed it has been the growing faith in a medical solution to AIDS which has seen a decline in safer sex practices in the West, while recent reports in the UK confirm that the arrival of antiretroviral drugs has accompanied a rise in HIV infection rates. Neither factually informative fear based appeals, nor knowledge of existing medical management, have ever been alone been successful in stopping the spread of sexually transmitted diseases. This is why Jonathan Silin, addressing the challenge of successful sex education for young people, concludes: 'From HIV/AIDS we learn about the limits of science and the importance of human vision, the frailty of the body and the strength of the spirit, the need to nurture the imagination even as we direct our attention to rational cognitive structure.' Far from being irrational, critical engagement with the role and application of scientific knowledge, noting which areas of enquiry receive funding, which people undertake research, and with what agenda, forms the necessary underpinning of a healthy culture of science.

The sudden loss of Britain's most enthusiastic historian of science, Roy Porter, with his gargantuan contributions to the dissemination of medical knowledge, should remind us of the absolute necessity for just such a critical engagement with the history and culture of science. As his research on mental illness unveils, yesterday's scientific data on the effectivity of insulin therapy, lobotomy, mosquito stings, lithium or whatever, speedily become today's horror stories, even as the side-effects of the latest round of psychotropic drugs seem certain to keep their manufacturers in the courtrooms, not so long after their products leave the laboratories. For it is the pharmaceutical corporations themselves, we now authoritatively learn, which increasingly fund and guide much of the research data we read. Just one of the dangers here was highlighted in

Toronto not long ago, when British psychiatrist David Healy lost his job offer at the Centre for Addiction and Mental Health after a speech was seen as conflicting with the Centre's pharmaceutical sponsors.

I do not myself doubt that there are significant benefits in the 'serotonin revolution', which have made anti-depressants like Prozac the most widely sought after of prescribed drugs. On the positive side, 'madness' loses some of its deadly stigma when the current escalating levels of acute depression are accepted as relatively 'normal' and when new medications, reducing all our psychological anguish, pain and delusions to biochemistry, seem to promise to eliminate even the severest states of suicidal anxiety or psychosis. Once madness condemned women, especially, to lifetimes of institutionalised silence. Today, more privileged, loquacious and media friendly women, such as Elizabeth Wurtzel, may find that surviving milder forms of mental suffering can foster a successful career move into publishing ventures, authorizing the blossoming genre of self-narration. 'Most people are sick, only few know this is something they can be proud of', as Karl Kraus once quipped of psychoanalysis. More now share his defensive joke. On the downside, however, the reduction of personal misery to biomedical agendas and corporate profit means that the cultural contexts, social stress and discrimination which render certain groups of people more vulnerable to particular forms of mental distress (as women have been, and though in a declining ratio, still remain) can be ignored, while the desperately needed public provision for the care of the more vulnerable can be sidelined. Thoroughly specious belief in the medical elimination or control of personal misery thus leaves the many who in actuality continue to suffer appallingly all the more destitute and outcaste.

This is not just a fault line in the scientific understanding and treatment of an area as conceptually troublesome and ambiguous as mental illness. Similar problems can arise in relation to the most uncontroversial identifications of physical illness. Medical science has long dreamed of eliminating every invasive infection, which manages to elude our body's immune system. Some saw the emblematic consummation of at that dream in the declaration of the global eradication of smallpox in 1980 (the first year no deaths from the disease was reported) following more than twenty years of unparalleled international co-operation supplying free vaccinations against it. Yet, given that it is more than 200 years since the relevant vaccine was developed, it was, of course, *not* any new scientific discovery but rather the eventual and international co-operation of hundred of thousands of people, unmatched ever before or since, at many different levels over a period of twenty years, which finally seemed to eliminate the disease.

Since then the dream should have become only ever more suspect. New deadly microbes manage to mutate and survive just as fast as scientists breed vaccines to eliminate them. The delusory scientific dream of total conquest of disease is popularly encouraged, with the pharmaceutical search for new 'magic bullets', when what is most needed is global cooperation to control the creation and spread of new infectious disease. This would mean providing the clean drinking water (unavailable to 20% of the world's population) and adequate resources for all people to maintain the healthy bodies which are less prone to incubate and spread disease, alongside world-wide vaccination programmes to treat existing preventable diseases. Although easily verifiable as the wisest strategy for world health, current funding for biomedical science does nothing to promote them. As New York biologist Robert Pollack notes, the medical elimination of disease is a battle that can never finally be won against a microbial army of viruses, bacteria and parasites, whose simple genome allows for their massively speedier mutation and survival than any amount of imagined human genetic intervention could produce in the vastly smaller numbers of immeasurably more genetically complex human species. Arguing for a drastic change of strategy in Western health priorities, Pollack concludes that current practices provide 'a sad example of scientific denial at work': 'There will be no magic bullets that do not selectively breed equally powerful microbes aimed right back at us'.

Wars of Science

With whatever false hopes, both governments and industry now pour more money than ever before into scientific research. In Britain, the tirelessly invoked 'new' of New Labour is all but synonymous with a belief in efficient market forces seen as the outcome of a 'knowledge-driven economy', with science and technology its blood pump. There has been massive state investment in scientific research councils, unprecedented expansion in research laboratories and funding for those seen as entrepreneurs of science across higher education, in line with the government's University Challenge scheme. In the USA money flows even faster into scientific research, with the National Institute of Health (NIH), responsible for biomedical research soaring to \$18 billion (an increase of over 400% in two decades) Tellingly, a few scientists have themselves at times questioned the direction of this massive funding, like many at the Harvard University Medical School questioning the phenomenal corporate and state funds now spent on the Human Genome Project. Officially, however, Western governments, industry and the media overall are in agreement that the fate and efficiency of humanity can be equated with the

celebration of science. Here, we have an endowed Chair at Oxford University, paralleling many more in the USA, exclusively dedicated to making science more accessible and more popular in culture generally. Indeed, culture itself is increasingly biologized, in the influential writing of Daniel Dennett, Richard Dawkins and other evolutionary psychologists, combining genetic determinism and cybernetic metaphors to present the human brain as pre-programmed for the replication of invariant cultural artefacts, or ‘memes’.

Surprisingly, one might think, just when we see such unprecedented public spending on and promotion of science, its leading advocates use their platforms to insist we live in a culture where science is not treated with respect. They condemn either its alleged ‘dumbing down’ in the mainstream media, or its reputed disparagement by a self-serving literary elite said to be dominating the academy. The old lament of the literary disdain for ‘the men with the future in their bones’ made by the physicist turned middle-brow novelist, C.P.Snow, in 1959, was sounded anew, ever more stridently, throughout the 1990s. Writing of the contemporary academy, Paul Gross and Norman Leavitt made their mark in both scholarly and popular arenas in the USA in 1994, with *Higher Superstition: The Academic Left and its Quarrels with Science*. They argued that the relativism of social constructionism and fashionable post-modernism, combined with the rise of cultural studies and the attacks of feminist, anti-racist and environmentalist critics, had undermined the authority of science in the universities. In agreement, the New York Academy of Sciences hosted a conference the following year, ‘The Flight from Science and Reason’. That same year, the illustrious North American space scientist, Carl Sagan, writing shortly before his death, saw the flame of science spluttering with the fragility of a Marilyn Monroe or Princess Diana, flickering like ‘a Candle in the Dark’ in a ‘Demon-Haunted World’ Another year on, and the Left-leaning American physicist, Alan Sokal, grasped his moment of fame in 1996, hoaxing the Cultural Studies journal *Social Text*, supposedly in support of embracing hard material truths over meretricious cultural relativities. He was ably assisted by two feminist scholars, Barbara Epstein and Ruth Rosen, embittered by the glamour of feminist cultural theorists inside the academy compared with the neglect accorded others concerned with women’s activism outside it.

In the UK, two of Britain’s best-known scientists, Lewis Wolpert and Richard Dawkins, have throughout taken up the baton in these resurgent Culture Wars: the former to protect the universal precepts of science from the follies of other discourses, ‘there being only one correct explanation for any observed phenomenon’; the latter (inverting the lament of Auden on finding himself in the company of scientists) declares that it is

the latter who are made to 'feel like shabby curates among literary dukes' Like other science popularisers, Dawkins denounces the 'condescending and patronising' tones of a cultural elite which eschews the rigours and sophistication of science: those who smile as Richard Rorty jests, 'we are all literary critics now'. So allow me, in my final section, to try to convince you of just how very muddle-headed these contests have become. For certain, we need to pay more, not less, attention to the complexities, possibilities and dangers attending all the new technologies of science. Many cultural theorists have only recently begun to do this, though some feminists and environmentalists kicked off, sometimes rather blindly, from this stance. But science, as I keep saying, exists inside culture, and the so-called Culture Wars, or Culture Vs Science Wars, are battles which are being fought most passionately, and crucially, within the strictest boundaries of science itself, however narrow our definitions, with gender and sexual difference a central concern.

Tellingly, the actual issue of *Cultural Text* targeted by Sokal and his supporters, was called *Science Wars*, with articles by three biologists, two anthropologists and seven other social scientists. In it, Emily Martin wrote of the predominantly mutually respectful relations between herself and the practising scientists she studied, with some reproductive biologists not only intrigued by her analysis of the cultural stereotyping in their own research but using it to trigger new questions. The sociologist, Hilary Rose, trenchantly put the case for building complex alliances to encourage the most open, critical, helpful exchanges around the nature and uses of scientific research, sensitive to the challenge which 'localized, responsible and embodied knowledges' pose for any single, unitary notion of scientific discourse. The supposed literary dukes of high theory (usually Derridian deconstructionists, with now a sprinkling of Deleuzian rhizomatics) were not in evidence, except as mimicked by the two feminists informing Sokal.

The other contributors, however, did have a common outlook: the impact of science is far too important to leave to professional scientists alone, least of all, to any over-simplifiers who anoint themselves its spokesmen. This is why Bruno Latour would later write of the Sokal affair, 'Let's be serious. The sciences are too fragile to deprive themselves of the rare allies that are to be found in the domain of the humanities and the social sciences.'

All of us, researchers in exact and less exact sciences, politicians and users, we would do well to possess the most realistic vision possible of what the sciences can and cannot do. We are all in the same boat, afloat in the same controversies.'

I like the sentiments, but they are somewhat misleading, even when restricted to empirical researchers. Some scientists captain multi-billion ocean liners. Others attempt to paddle their canoes up the muddiest creeks, aware of the complexity, the unpredictability, the disorder surrounding every aspect of human activity - from the triggering of DNA modules to the practice, avoidance or obstacles of following one's hearts desire.

Biological Tales and Predatory Males

The prominent captains are the men (and they are mainly men, with Lena Cosmides, one of the few equivalent contenders) who have the most ambitious dreams, and a very particular view of science, one rejected by many others. As John DuprÉ pointed out in *The Disorder of Things*, their vision returns us to the founding metaphors of Western science, over three centuries ago, with its fantasy that the explanation of all life, from the molecular to the social, could be explained in terms of a few single overarching laws. It is to sustain belief in this underpinning simplicity beneath the disarming complexity of life that we find again the flagrant misappropriations of Darwin's legacy, overturning much that one might have thought we woke up to long ago. So for Dawkins, the first axiom of science is that: 'Plants and animals alike are all - in their immensely complicated, enmeshed ways doing the same fundamental thing, which is propagating genes.'

This time around, however, Darwinian notions of descent through natural selection are used (most often) not, as before, to confirm racial hierarchy (racism usually arrives culturally freighted nowadays) but rather to shore up the ever more ambiguous blueprint for sexual difference. Whatever contingent identities may be dreamt up in feminist philosophies, we are told, scientific law and order comes from the sex cells: 'the "gametes" of males are smaller and more numerous than the gametes of females', Dawkins explains, 'it is possible to interpret all other differences between the sexes as stemming from this one basic difference... Female exploitation begins here', he declared in 1976. All human behaviour, his American counterpart, E.O.Wilson, echoes, 'faithfully' obeys this one biological principle: 'It pays males to be aggressive, hasty, fickle [and] indiscriminating . . . females to be coy, to hold back until they can identify the male with the best genes'. On The rest is now EP, evolutionary psychology, on the rise throughout the 1990s within my own discipline of psychology, and well beyond. EP is eager to stress that it recognises the role of culture, which result in individual and cultural differences, although such variations are not the objects of its concern. The respect for culture is

misleading, when that domain is itself biologized as well – now seen as flexible superstructure, not fundamental base. As John Tooby and Lena Cosmides spell out, evolutionary psychology can provide us with the fundamental ‘building blocks out of which cultures themselves are manufactured’ through ‘content-specific evolved psychologies’.

EP therefore sidelines all that is unique, culturally diverse and individually specific about human behaviour, that is, the richer detail any of us might supply about our lives. In seeking out only putative behavioural universals and consigning them to the operation of postulated invariant cognitive modules, depicted as genetic adaptations, it is to gender contrasts they repeatedly return (which unravel as precisely the normative behaviours which are today as spectacularly controversial as they are dramatically contested): sexually dimorphic mating strategies; men's preference for younger mates; women's desire for mates with resources; sex-linked shifts in mate selection across the life span; patterns of spousal and same-sex murder etc. *Sexy Science*, devoid of Romance, but overflowing with polemical intent, we could characterise the genre. Throughout the 1990s the best-selling science promoter, Robert Wright, ridiculed feminists seeking equality with men as doomed by ... foolish denial of the 'harsh Darwinian truths' about human nature: 'Feminists are right to dread some of the rhetorical [note] resistance Darwinism will abet'. Expressing specious concern that feminism may falter from its own 'doctrinal absurdities', he challenges us to face up to the evolutionary basis of 'the "natural" male impulse to control female sexuality', 'men's natural tendencies to greater promiscuity', 'natural selection' for men to make 'the Madonna-whore distinction', concluding: 'Human males are by nature oppressive, possessive, flesh-obsessed pigs'. Put more judiciously by David Buss, John Archer and others, assertions of the inevitability of men's predatory chase of attractive young females with large breasts and small waists is indeed one of the most frequent cited explanatory accounts in EP. 'Ask the American President!', or 'Look at the second wives of most academics!', as Charles Jencks reports E.O.Wilson concluding his lectures, with a grin and a wink, in 1998. Is this more than pseudo-scientific pornography? Let me join the fun!

I was recently reading some field research on family relationships written up by sociologist Judith Stacey, after interviewing American couples about their sex lives. And she does indeed have a 'Men are Pigs file'. Here's some of her data.:

'[Unlike me] Lance can't get turned on by someone he respects and loves; he can only have sex with someone he's not emotionally committed to ... I couldn't tolerate it, so I had to move out'

‘When I came home from work the other night, Jake ... was totally in heat. And we had sex. We didn’t make love ... and it’s like I woke up the next morning, and it’s like, I just felt so ... shitty. Why did I **do** that? I said it was great, I got off, but I feel rotten. I have felt rotten the last two days’

‘Let’s face it. When you reach a certain age, men are either already taken or they’re looking for someone younger & more beautiful. We all know how men are dogs. Absolute dogs’.

And so the less predatory lovers lament. Or sometimes, they get what they want, and celebrate

‘Rob and I just fell like I don’t know I’ve fallen before. He knocks my socks off and its damn near everything I want in a man; he’s kind, loving, compassionate, gives of himself to others and his community ...’.

The lovers? Well, as I suspect you won’t be surprised to learn, these all too familiar erotic griefs and desires, come with a twist? They may be the clichés of EP, evocative of patriarchal precedent and radical feminist or ‘feminazi’ slogans, but they are, of course, the voices of men: the experiences of some men with other men, both gay, and all with their chromosomes, primary and secondary biological apparatus, all male – no transsexuals.

Certainly, I could also cite evidence of straight men boasting of their many sexual conquests in the 35 countries David Buss visited, where in line with their expected behaviour, they reported three or four times the number of sexual couplings with 'young and attractive' partners compared to the women interviewed around them. For this actually to have occurred, as sceptics have noticed, we need only assume that a tiny minority of enormously hyperactive, young and beautiful women were weirdly fighting their nature to oblige this huge army of randy men. Another way of seeing things would be to suggest that such self-proclaimed virility scores suggest a type of shared cultural identity work performed by many men, rather than any evolved adaptations. For if we look beyond such gender cliché, at the broader scope of historical and sexological research, it is hard not admit that there could hardly be less fit between evolutionary predictions and shifting human sexual and reproductive practices. In the West gender polarised differences are fast diminishing, non-procreative, lesbian and gay sexual practices are flourishing, birth rates dropping, single motherhood increasing, same sex parenting on the rise, women cohabiting and marrying, if they do, later in life and more women and men

remaining childless. Mr Wright and fellow neo-Darwinians meet women freer to choose how we want to live, though regretfully, rarely in conditions of our own choosing. The only response of EP to gender shifts and diversities is simply to subsume it, to insist, like Tooby and Cosmides, that the similarities they can point to are more important than the differences: ‘the variable features of culture can be learned solely because of the existence of an encompassing universal human metaculture’.

That is not the view of many biologists, such as Steven Rose, Steve Jones and the late Stephen Gould, who see their own biological labours mocked by the pseudo-scientific posturing of evolutionary psychology, with their deceptive accounts of invariant cognitive structures specifically designed for Stone Age life on the African savannah. For Darwin, evolution was never narrowly, or even primarily, a biological affair, but a slow, heterogeneous, profoundly environmental process. Quite staggering changes in the nature of the world occur with few, if any, ties to genetic change. Human cultures, the product of individually and collectively constrained human choices, are passed on in speedy and direct Lamarckian fashion; while genetic evolution moves along the infinitely slower, indirect pathways of Darwinian random mutation, natural selection and contingency. This is why we learn so little of significance in resorting to evolutionary explanations of human behaviour. We cannot reverse the reel to explain why we are the way we are, when there is no unifying principle which drives either genetic or social change. We do all need to be more science friendly, to be more knowledgeable that inside any of its disciplines there is a complex multiplicity of explanatory levels. But some scientific voices are more likely to be heard than others, when scientists can succumb as easily as tabloid editors, clerics or fortune-tellers, to shared desires for simplicity. As chemist and elegiac writer Primo Levi cautioned scientists and poets alike: ‘The greater part of historical and natural phenomena are not simple, or are not simple in the way that we would like’. It is the unifiers of science who, in insisting upon their mono-causal narratives, mimic in both rhetoric and reductionism the religious foe they fear.

Science as Politics

Finally, let me all too briefly further politicize this quasi-religious, biogenetic turn. Never before have social problems - present and future - been so swiftly translated into illusive individual responsibilities, requiring individual solutions. Gene talk is metonymic of the doxa: ‘*Gene Police! You – Out of the Pool!*’, as Dorothy Nelkin mocks the return of this

genetically controlled brave new world. This is the spirit of DNA trailblazer, James Watson himself, faced with escalating pollutants (provoking disease and genetic mutations), rising poverty, violence, mental illness, whatever, he responds: 'locate [the] culprit chromosomes', adding, 'ignoring genes is like trying to solve a murder without finding the murderer.' Really? The antithesis is more compelling. Had funding, for example, been redirected from genetic research to reducing levels of radiation and environmental toxins, far fewer women would have died of breast cancer. The discovery of cancer triggering oncogenes, decades ago, has not yet provided any cures for cancer. Instead, it has revealed the complexity of the differing processes turning genetic tissue into oncogenes, via viral infections and other external chemical agents. Ironically, as Daniel Kevles has pointed out, this is why scientists exploring the many factors triggering oncogenesis, which are primarily environmental, have found that their research is less popular with both their peers and the media, even facing accusations that it is not 'respectable genetics'.

The rise of Darwinian medicine, with its genetic approach to the understanding, prevention and cure of disease has from the beginning highlighted primarily the ways in which science, biology, culture and politics are inextricably entangled. It creates new dilemmas, especially for pregnant women, held more responsible for bearing children who will be born, and remain, healthy. The effects of genetic profiling can also impact positively or negatively on people depending upon the political power and prosperity of the groups to which they belong. In the USA, for example, the compulsory screening of African-Americans in schools and jobs for the disease sickle cell anaemia (to which they are more genetically prone) begun in 1972 was opposed by many of its anticipated beneficiaries, knowing it would deepen already existing discrimination against them, causing loss of jobs and insurance provision. Rather differently, the race to attribute illness to genetic origins has made it easier to overlook the far higher incidence of poverty and inferior medical treatment in explaining the much greater vulnerability to death from heart diseases and cancer in African-Americans.

In contrast, as the historian of science Nancy Stepan notes, the predominantly more prosperous and powerful descendants of Ashkenazi Jews in the USA, at greater risk of the hereditary Tay-Sachs disease, have encouraged and welcomed genetic screening when they can, unlike more vulnerable groups targeted for genetic screening, 'control the process and meanings attached to the outcome of such medical and genetic interventions'. Indeed, those most at risk of Tay-Sachs disease in the USA today are those born of parents who are not knowingly of Jewish descent,

and therefore are less likely to have been tested. Illustrating quite how willing, indeed determined, a particular Jewish lobby is to insist upon their unique racial heritage, a scientific scandal occurred recently when a group of European scientists published a paper in the journal *Human Immunology* demonstrating that Jews and Palestinians in the Middle East are genetically indistinguishable. Issues of the journal were subsequently pulped and the article was deleted from the scientific literature made available by the journal due, it was later claimed by the editors of the journal, not to errors made in the scientific conclusions, but because some saw them as expressed in a way which was 'pro-Palestinian and anti-Israeli'. When social definitions of people's belongings do not map on to genetic definitions, and when diseases, and their causes and cures, are always entwined with specific social conditions and symbolic meanings, human genetics will always remain a highly contested area.

The higher the hopes we place in science, the greater the need for all of us to be ever more attentive to its interpreters, and how their interpretations are used. Despite much that we have heard from science promoters, it is when predictions about human affairs come in the name of science - however speculatively - that interpreters have most cultural clout. In contrast, when philosophers, social or literary theorists deploy scientific metaphor, when movement activists make political objections, they are far more likely to be derided and dismissed. Let me give the last word to that pioneer of science studies, and target of scientists derision, Bruno Latour, who writes: 'Contrary to the worries of "science warriors", it is precisely when the objects of study are interested, active, disobedient, fully involved in what is said about themselves by others, that it sometimes happens that a field of social science begins imitating for good the surprising novelties of some of the best of the natural sciences'. The manly beasts and febrile lunatics need to learn to communicate, at least some of the time, if we are to provide richer visions of our possible futures.

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