

---

Exposing Queer Biotechnology via Queer Archaeology: The Quest to (Re)construct the Human Body from the Inside Out

Author(s): Stefanie S. Rixecker

Source: *World Archaeology*, Vol. 32, No. 2, Queer Archaeologies (Oct., 2000), pp. 263-274

Published by: Taylor & Francis, Ltd.

Stable URL: <http://www.jstor.org/stable/827870>

Accessed: 14/11/2009 13:30

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=taylorfrancis>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).



Taylor & Francis, Ltd. is collaborating with JSTOR to digitize, preserve and extend access to *World Archaeology*.

# Exposing queer biotechnology via queer archaeology: the quest to (re)construct the human body from the inside out

Stefanie S. Rixecker

## Abstract

Relatively new endeavours in the biological and micro-sciences attempt to construct and reconstruct the often diseased, disabled, or otherwise imperfect human body. As such, all bodies, due to their imperfections, may be labelled 'Queer'. Queer archaeology becomes the perspective from which these new sites and their related artefacts may be exposed, assessed, and reconstructed. In this way, the metaphorical use of archaeology yields potential rhetorical and discursive fields by which contemporary – not just 'ancient' – bodies and sites may be 'unearthed'. The simultaneously virtual and real (non)corporeal contexts of biotechnology and genetic engineering enable the development of queer archaeology. This paper is an attempt to open this field of inquiry further, thereby rendering this a substantive, political, and biocultural topic for future excavation.

## Keywords

Biotechnology; genetic engineering; biological archaeology; queer archaeology; homosexuality.

## Introduction

Contemporary popular and academic publications continue to focus upon the twenty-first century's potential as the 'Biotech Century' (Rifkin 1998). Where physics ruled in previous eras, it is now biology's turn to enjoy hegemony. More specifically, it is molecular biology's turn to play with human endeavour and re-create humankind's dreams for progress, truth, and everlasting life. In so many ways, current attempts to clone, genetically engineer, or alter human life on the biomolecular level are premised upon the idealistic human desire for eternal life. Molecular biology offers the holy grail from which one must only drink once to see 'the way, the truth and the life'; the institutions of biotechnology production are the new religious temples by and through which we can (re)create our image as Maker. At the same time, popular culture echoes and challenges these activities through films such



as *Blade Runner* and *Gattaca* which illustrate these desires in an often eerie and visionary way. They are celluloid representations of the queer bodies and souls we currently and futuristically inhabit.

Ultimately, the 'biotech century' is code for humankind's ongoing quest to make itself immortal; no longer do we need religion, film, or literature to do so. Instead, by using the building blocks of life itself to alter life itself and create 'better things for better living through (bio)chemistry',<sup>1</sup> humankind reveals the century's, if not the millennium's, ultimate fear of organic reality – death and decay. For those espousing secular humanism or conspicuous consumption as lifestyles (or unnamed realities), the third stage of 'rebirth', often associated with religious belief, has been dropped. This loss means other means of preservation and perfection must be found. So, why not find it in the vessel of the human body? Why not use the body as the penultimate site for ensuring species' beauty, intelligence, and longevity? After all, do we not all wish for healthy, long lives in which to fulfil our individual dreams, aspirations, and goals? What could be so problematic with re(con)figuring the body in order to ensure such desires? Should we not use technology for such ends if we can?

Contemporary biomolecular practices in the life sciences are premised upon humankind's desire to answer the previous questions in the affirmative. The praxis of genetic (re)engineering requires rendering humans from the inside out. As such, we are but a nucleic holographic image defined by ever smaller units mirroring the whole. No longer can we truly know ourselves through meditation and introspection to elevate and energize our soul (the domain of philosophy and religion, perhaps?) or by looking in the mirror to see the object of our mind's affections (secular humanism married to consumerism, perhaps?); rather, we must now know ourselves from inside out to understand the genetic code which determines who we (really) are. Have we, then, entered the era of the body – the microbiologically embodied individual defined through amino acids, DNA, and genotypes – so often theorized and analysed in contemporary postmodern theory (for examples, see Braidotti 1996; Butler 1993; Gatens 1992, 1996; Grosz 1994; Haraway 1991, 1996)? No matter what one's philosophical predilection, the new forum for playing out humankind's innermost desires has virtual and real consequences for all systems – (non)human, (in)organic, ecological, and planetary. As such, it requires greater attention to detail; discourse and method become highly relevant. Indeed, the institutions and the sites of biomolecular research require deconstruction and critique in order to determine the extent to which human bodies – and other organic organisms – are and continually become future sites for archaeological investigation.

Although sociology, psychology, and philosophy all provide disciplinary vantage points from which to view and respond to the biotech century's potential contributions and challenges (for examples, see Nelkin and Lindee 1995; Rabinow 1996; Rifkin 1998), this article uses archaeology as a rhetorical and metaphorical device – alongside theoretical insights from the interdisciplinary potpourri of 'studies' identified as queer, postcolonial, technological, cultural, and gender – to expose the extent to which biotechnology has become a queer practice generating queer bodies and necessitating queer archaeology. In doing so, I acknowledge that the discipline of archaeology, particularly through this journal in 1993, has theorized and proffered uses for 'biomolecular archaeology' (for example, see Evershed 1993; Loy 1993; Richards et al. 1993; Thomas 1993). Nevertheless, the discipline's view

of biomolecular archaeology primarily focused upon the scientific techniques and uses of organic material in relation to excavating old (ancient) sites. It did not investigate the possibility of using the human body while still alive, or even in stages of (pre)conception and embryonic development, as possible archaeological sites. In this sense, the discipline failed to see the collapsing sense of time and space imminent in the second millennium.

Clearly, such a perspective is unorthodox, queer even, and as such it is fitting to apply it to the ongoing (re)construction and (re)production of queer bodies. I offer it from the perspective of a cultural critic, as Ross (1991: 8) might support, namely as a 'cultural critic examining not only the power and authority of the claims made for science and technology . . . but also the various responses to these claims in the popular, lay, or public culture at large'. As such, I do not use archaeology here in a specialized, disciplinary manner. Instead, the 'idea' or 'concept' of archaeology empowers the argument and the deconstruction and reconstruction of biotechnology offered here; it is method without being dogma. Ultimately, this is an interdisciplinary interpretation of contemporary archaeological sites which requires interdisciplinary teams of investigators in its application. I leave it to persons trained in archaeology to determine the full extent to which the discipline itself can and will address the human body as site and artefact. Here, I offer some thoughts on the mesmerizingly intricate and ever-changing realm of molecular biology and its various human sites, its construction of and effects on queer bodies, and what this means for contemporary and futuristic inquiry across and between the sciences, social sciences and humanities.

### **Understanding our genes/our selves: isn't it perfectly queer?**

Over time, humans have used a variety of philosophical and practical means of understanding the human condition, e.g. religion, cultural rituals, and scientific inquiry. A number of authors have provided historical and sociological sketches of the cyclical patterns of scientifically deterministic to culturally deterministic interpretative explanations of *H. Sapiens* and their world order (for examples, see Capra 1982; Merchant 1980). At the beginnings of the new century and millennium, the pendulum is swinging further towards the biologically deterministic model, albeit nuanced with semi-mystical New Age anecdotes and 'cutting edge' scientific inquiry regarding complexity, fuzzy logic, chaos theory, cybernetics, and molecular computing.

Amid this pendular swing of human inquiry and explanation resides humankind's desire to define and articulate its sociocultural assumptions and perspectives. In doing so, humans have generated a collective obsession with identity: who am I? who are you? how are we different? how are we the same? Almost as dramatically, and often because of, the contemporary changes in scientific inquiry and predilection, certain human characteristics have received attention to such an extent that they inherently became known by socially imbued labels such as unnatural, immoral, inferior, contemptible, and savage – just to name a few. Well-documented and popularized accounts of events such as the 'witch trials' of the 1600s and the genocide of Jews, Gypsies and homosexuals during National Socialism of the 1930s and 1940s are but two examples of how cultural proclivities and the 'science of the times' merge to construct identity in a complex biopolitics.

In contemporary academic parlance, adjectives such as those listed previously quickly flash up images of colonial, dominating discourses and power systems whereby the adjectives become the interrogative and archaeological site for such identity politics as race, sexual orientation/preference, gender, and class – they enable an archaeology of knowledge à la Foucault (1972). In addition to their meaning in the philosophical arena, they are the adjectives which describe the socioculturally inscribed markers and boundaries of who ‘I’ am. Previously, and in many current postmodern analyses, these markers remain affixed to phenotypic, i.e. physically expressed, characteristics such as skin or eye colour and biological sex. Depending upon the cultural context, such (seemingly) obvious phenotypic expressions have attendant cultural mores, taboos, and prejudices established as a means to police and regulate them.

However, other characteristics are more difficult to witness upon first meeting, e.g. homosexuality, so such ambiguous characteristics require some form of definable outward expression. Since witnessing explicit displays of homosexual intimacy is not possible in all cultures and times, homosexuality’s lack of phenotypic expression often becomes intermingled with other culturally inscribed activities. For example, the effeminate male in Anglo-Saxon cultures is often labelled gay, irrespective of his sexual activities. Alternatively, cultures have the ability to cast gender and sexuality in a wider continuum whereby no single ‘type’ of body or activity pre-determines or exposes the person’s sexuality (for examples, see Bolin 1996; Lang 1996; Poole 1996; Roscoe 1991). No matter how sexuality and gender are expressed in any given cultural setting, the point here is that they are rendered meaningful through social and cultural practices.

As such, technocultural politics – from the subtly personal to the institutionally coercive – generate a biopolitics of race, class, gender, and sexual orientation/preference. Today, the current acceleration of molecular biology, often coupled with information technology, generates difference on the genotypic level. No longer does science require the ‘superficial’ or less true exterior expression of genetic markers; rather, the world of molecular biology now renders this expression inside out. One defines a person’s identity according to DNA sequencing – the body’s ‘internal’ genetic combination of amino acids – irrespective of their physical expression, and in doing so this helps categorize one’s potential for homosexuality, Alzheimer’s, and manic depression. Despite the complexity of both ordering and interpreting amino acids’ functions within and outside DNA and the apparent interaction of environmental and genetic/biological factors, current scientists continue to promulgate organic life as mechanical, or at least sufficiently comprehensible to be manipulable. For example, as the physicist Freeman Dyson wrote in his 1985 book, *The Origins of Life*, ‘Hardware processes information; software embodies information. These two components have their exact analogues in the living cell; protein is hardware and nucleic acid is software’ (Rifkin 1998: 188).

Thus, with the advent of molecular biology and genetic mapping, scientists often advocate that it is now becoming possible to use the ‘inside’ of the body as a more ‘accurate’ site for knowing who one is; culturally defined norms and meanings no longer need dominate. Thus, it is assumed that the molecular level, through the genotype, will be able to reveal who one is – be it heterosexual, bisexual, homosexual, or some other hybrid. Since sexuality is often policed by institutions such as government, insurance companies, biomedical labs, courts, and churches, the combination of the scientific/mechanical viewpoint

alongside the genotypic ‘truth’ of the body can be seen as an invaluable means of justifying one’s existence and right to equality. In this sense, archaeology of the human body becomes a necessary means by which one can ‘test’ or determine a person’s real self and thereby imbue cultural meaning which sanctions the attribute, whether phenotypic or genotypic. And, in the case of homosexuality – or ‘alternative’ sexualities more broadly defined – this opens the possibility of queer archaeology.

### **Queer genes, queer brains: the science of life and the life of science**

Perhaps the most notorious recent examples in attempting to justify one’s sexual identity can be related to Dean Hamer’s ‘gay gene’ (Hamer et al. 1993) and Simon LeVay’s ‘gay brain’ (1991) studies. The ‘gay brain’ became a frequently used term in 1991 after Simon LeVay, a neuroscientist, published a study which showed a physical difference between heterosexual and homosexual brains (LeVay 1991). Specifically, he cited a difference in the nucleus of the hypothalamus<sup>2</sup> which appeared larger in straight (i.e. heterosexual) men than in gay men. Although a variety of problems can be associated with the study (for discussions and critiques, see Allen 1991; Burr 1996; Byne and Parsons 1993), the media’s desire to create a readable (i.e. saleable) story meant that the tightly defined scientific interpretations of the data had to be reinterpreted, resulting in the idea that gay men’s brains are fundamentally different from straight men’s brains, and this difference means that homosexuality, or at least gay male homosexuality, could no longer be discriminated against because it was innate, i.e. genetic rather than by choice or ‘lifestyle’.

LeVay himself does not see such a distinction between the ‘culture versus nature’ arguments attributed to the ‘origins’ of homosexuality. He regards homosexuality, particularly gay male homosexuality, as an inherently biophysical issue, albeit one which has some cultural determinants. Nevertheless, even when LeVay gives credence to the relevance of the culturally determined aspects of human behaviour, he ultimately returns to the fundamental relevance of the biological level, and in this sense seems biologically reductionistic and deterministic. This can be seen when LeVay argues that:

Biology and psychology are merely different ways of looking at the same thing. . . . People are trying to get at the difference between what is innately determined and what’s culturally determined, but they screw up and say that’s the difference between biology versus psychology. It isn’t. Biologists just look at the mind from the bottom up, at the level of molecules and synapses, and psychologists look at it from the top down at the level of behavior, trying to get to the bottom of it. When I say it’s biological, I don’t mean to say that it’s immutable. It’s still maybe totally culturally determined. But even if something is totally culturally determined, like which music you like, it has a representation in the brain – and of course it does – it has to have some biological substrate in terms of synapses, synaptic function, chemistry, something like that, and therefore is open to neurobiologists to get in and unravel it.

(Burr 1996: 315)

From this, it seems as though what can be ‘unravelling’, e.g. the biochemical processes or genetic encryption, ultimately offers the answer to such questions as ‘what makes us gay?’

It is this inference or connection which further enables the metaphor of biological archaeology and, in this case, queer archaeology. If scientists regard themselves as able to discover truths of the human body via biomolecular excavation, then the human body becomes an archaeological site. The biomolecular components are merely artefacts, and the scientist has the power of generating and promulgating the story which makes sense of the artefacts. Clearly, this 'story' is mediated by the scientific community and its protocol (e.g. scientific method and publication standards), but it is also mediated by other cultural institutions, such as the media and the market. Such institutions contribute considerably to the construction and reconstruction of the human body by placing different, and often contentious, values upon the artefacts. As such, biological archaeology, and queer archaeology more specifically, are not neutral activities. They are fast becoming the arbiters of identity and meaning across cultural contexts. A more obvious example of these interconnections can be found in Dean Hamer's 'gay gene' studies.

The 'gay gene' was popularized when Dean Hamer's research study (Hamer et al. 1993) regarding genetic linkages on the X chromosome of forty gay brothers was published. Hamer and his team spent considerable time ensuring their methodologies were followed with painstaking precision. The specific method used by Hamer's team, linkage analysis, is premised upon the assumption that 'two genes near to each other in a parent's chromosome are more likely to be passed on to offspring together than two genes far apart' (Burr 1996: 474). As such, the researchers must look for a marker, parts of DNA which are always similar and can be tracked, which fits with the phenotype they are investigating, in this case gay males. Although this technique is painstaking and eats time, it does work and led to Hamer's team concluding that a particular location on the X chromosome, Xq28, could be identified as a statistically significant 'marker' for homosexuality, i.e. it is an archaeological artefact representing gay male homosexuality. However, this does *not* mean that it is the only possible location for a gene which influences homosexuality, nor does it mean that other variables, e.g. hormonal influences during embryonic development, do not affect the expression of homosexuality. Indeed, a later study by Hamer et al. (1995) confirmed that the linkage between Xq28 and homosexuality was evident in males, but it could not be linked with females. Despite following the scientific community's established protocol when generating these findings, Dean Hamer and his team still had to contend with the realities of cultural (re)interpretation of these particular queer archaeological artefacts.

Even more so than LeVay's findings, Hamer's research catapulted him into the media spotlight with interviews on key American news programmes such as *NBC Nightly News*, *Nightline*, *World News Tonight*, and the *MacNeil/Lehrer News Hour* (Burr 1996). All of the programmes ultimately confused the concept of the gene as a biological unit with one of metaphor, whereby the gene represented cultural and political preferences and issues. Hamer's reflections of his encounter with the media offer some insight into the differing worldviews and frames of reference which are evident between society and scientific practice. Burr comments on Hamer's reflections in this manner:

Hamer views his experience with the media with good-humored amazement. He recalls the CNN reporter who intoned solemnly before the camera that Hamer's possible finding of a gene 'indicates homosexuality might not be a choice.' Hamer sighs and then

laughs. 'It's the exact reverse. The phenotypic fact that homosexuality is *not* chosen was one of the mandatory biological preconditions to concluding there was a gene for this trait.' . . . He pauses, incredulous. 'Can you imagine any sane, reputable biologist spending years of their life and their resources looking through chromosomes for a gene for something that's *chosen*? I suppose you could do it, but you'd have to be a complete idiot, because it would be the genetic equivalent of staking your entire scientific career and reputation on finding the gene for . . . being a Methodist.' He sits in his office, trying to imagine it.

(Burr 1996: 282)

Such misunderstandings between the scientific world and the public occur every day. The life sciences are not just scientific method and pure objectivity; the life of science also depends upon information dissemination via the media and financial support through sales and the market. However, these three cultural systems of knowledge and meaning making operate under different assumptions, so what drives one may yield problems, e.g. misinterpretation, in another cultural knowledge system. Although the consequences of such misinterpretation are often benign, they can also yield serious consequences. For example, for those whose DNA registers the Xq28 marker, possible consequences could be housing or employment discrimination based upon homophobia despite the individual not actually displaying 'homosexual tendencies'. As such, the case for inter-disciplinary (archaeological) teams with an explicit ethical framework is ever stronger as biological archaeology becomes a greater reality and affects more people.

### **The micro-medicalization of bodies: queering everything**

Although queer archaeology has thus far been associated with sexuality, specifically homosexuality, the concept can be extended beyond this boundary. The industry of biological technology and biological engineering covers humans and non-humans alike, and it often focuses upon finding and re-inserting particular genetic traits with a view to increasing financial revenue. For example, in the case of sheep breeding, scientists discovered a plant which contained an enzyme that increased a sheep's resistance to blowfly larva. Taking the gene which generates the antibody, scientists inserted it in the sheep, thereby creating a transgenic animal which could create a 'natural' resistance to blowfly (Ward 1994). In turn, this yields healthier sheep and presumably greater profit for the farmer. Alternatively, scientists seek to find the genetic markers for particular diseases, such as Alzheimer's, so they can increase diagnostic specificity and (one day) find a 'cure' for debilitating and fatal illnesses. Clearly, the reality of living with such diseases is often incredibly painful, and so few, if any, people would challenge scientists on such a 'noble' quest. Nevertheless, in order to detect the markers, one needs to 'decode' the genetic framework wherein such diseases are listed and labelled. It is this process, known as the Human Genome Project, which is often deemed problematic because it is an attempt to map the entire genetic make-up of the human species. At this historical moment, the Human Genome Project represents the penultimate bioarchaeological site.

The National Human Genome Research Institute (NHGRI), originally established in



1989 as the National Center for Human Genome Research (NCHGR), was constructed in order to map the human genome through its construction of and dedication to the Human Genome Project (HGP). The NHGRI and Human Genome Project are funded through the National Institutes of Health (NIH), a unit within the US Department of Health and Human Services, which 'make up the largest biomedical research facility in the world' (NHGRI 1999a). The size and networking of the NHGRI has helped the Human Genome Project accelerate its completion timetable. Initially, the HGP was to construct a draft of the complete '3 Gb human DNA sequence' by 2005, but recently Dr Francis Collins, Director of NHGRI, announced that the project was well in advance of this deadline and would complete the draft sequence by (the northern hemisphere) spring 2000 (Collins 1999).

Although the HGP depends on five of the largest genetic sequencing research centres<sup>3</sup> for its information, it is also linked with smaller American and international research organizations as well as individual researchers dedicated to mapping human DNA. Ultimately, all the researchers combine to create the full map of the human genome, thereby ensuring that all people, queer or otherwise, can and will be affected by the HGP. How the information will be used and by whom remain contentious issues, and the NHGRI dedicated a unit called the Ethical, Legal, and Social Implications Research Program (ELSI) within the Division of Extramural Research (DER) to such questions. Even though the recently updated ELSI research goals cover generic questions such as, 'What are the clinical and societal implications of identifying common polymorphisms that predict disease susceptibility or resistance?' (NHGRI 1999b), which can be applied to queer bodies and politics, the ethical issues specifically related to the connections between sexuality and queer bodies remain marginal, if not entirely invisible. For example, in searching the online NHGRI research database, few entries regarding 'sexual orientation' surfaced.<sup>4</sup> However, more arose when the keyword 'AIDS' was used. The lack of such information within the ELSI unit illustrates the propensity of the current biopolitical discourse to use queer bodies as archaeological sites of disease rather than a source of disease (or unease) regarding the ethical implications of using queer bodies as sites of biomedical investigation and bioarchaeological excavation.

The life sciences' fascination with the genetic, epidemiological, and microbiological aspects of disease, combined with their relative lack of understanding and investigation into the sociocultural, political, economic, and bioethical issues of genetic engineering, means that science's power to legitimate research for research sake (or for profit sake) takes precedence over the day-to-day issues related to queer bodies and lives. And, when *all* human bodies are rendered different and potentially aberrant simply through the processes of microbiology and micro-medicalization, then all bodies become 'queer' bodies. In this sense, the Human Genome Project is not only the penultimate bioarchaeological site, but it is the ultimate queer archaeological site because in our differences via genetic mutation we are all rendered perfectly queer.

### **The future of queer archaeology: biopolitics and bio-cultural hybridity**

The genetic differences under investigation and excavation throughout the world, including those mentioned here, ultimately focus upon difference. Some differences can be

commodified and create earnings, e.g. genetically engineered cows to produce human-equivalent breast milk, while others are culturally commodified, e.g. through insurance riders which exclude individuals with particular genetic markers for serious (and expensive) diseases. Such a fixation on difference seems bizarre in some respects since:

one of the insights of contemporary genomics research is the profound similarity, at the level of DNA, among human beings and, indeed, between humans and other species. We differ from the chimpanzee by only one base pair out of a hundred – 1 percent – and from each other by less than 0.1 percent.

(Nelkin and Lindee 1996: 126)

Nevertheless, the increasing power of computing and biotechnology means that science can measure difference in ever smaller increments, thereby further highlighting difference rather than sameness. Although this is partly generated by the pre-existing discursive and ideological settings predisposed towards difference, such processes and methods also perpetuate and exacerbate scientific and societal proclivities to distinguish rather than unite. As genetic research moves further towards creating biological hybrids, through such processes as gene mapping and splicing, transgenic transplantation, and cloning, further cultural hybrids will also result.

The previous discussions focused on research which has received considerable media attention. The research was primarily based upon gay males and upon public assumptions that one is either straight or gay. Very rarely did the intricacies of sexuality come to light, e.g. heterosexuality, male homosexuality, female homosexuality, bisexuality, and transsexuality. The submersion of differences in this case to everything gay male speaks more to the public's and media's predisposition to see homosexuality as a singular type. For anyone who has a different understanding of sexuality, often those who regard themselves as queers, such monocultural or narrow definitions and images are not useful or appropriate. For this reason, many social scientists, be they in queer studies, feminist studies, cultural studies, or post-colonial studies, regard difference as a fundamentally significant issue, theoretically and practically. I do not take issue with this and regard it as relevant aspect of being involved in queer studies.

Nevertheless, the current biopolitics of queer bodies means that anyone embarking upon queer studies, especially related to the cultural and biological excavation or reproduction of queer bodies (i.e. queer archaeology), must consider the ramifications of difference and sameness to a much more sophisticated extent than most current research offers. To do so, it is necessary to expand the definition of queer to all people who do not fit the medicalized version of 'normal'. Instead, it is time to analyse and assess exactly how bodies are defined as different and queer, whether these are related to sexuality, and how sexuality is defined. This is necessary because the queer community, as it is currently defined using sexual proclivities, must come to terms with themselves as a site for real and virtual bioarchaeological investigations. In order to express their needs and desires, and to retain humanity and dignity within their cultural contexts, queer communities must begin to consider how they feel about genetic research and its implications. It is time to reinvest in social formations and ethics in order to create a flourishing postmodern biopolitical future.

This is not an easy recommendation to fulfil because the promise of genetic engineering is great and can potentially benefit everyone. However, as queers, we are also being

defined by powerful institutions and processes in the media, science, and government. These mechanisms have not been particularly generous or equitable in dealing with queers before, so trusting in them now is not an option. Queers must begin to raise issues related to biological and cultural reproduction in arenas which highlight sameness and difference, so that a reductionist understanding of the queer body does not produce the demise of queer bodies and their attendant biological and cultural heritage. Queer archaeology is one tool by which to expose queer biotechnology and to challenge science's quest to (re)construct the human body from the inside out.

*Environmental Management & Design Division, Lincoln University,  
Canterbury, New Zealand*

## Notes

- 1 This phrase is a slight alteration of Dupont's sales slogan, 'Better things for better living through chemistry'.
- 2 The hypothalamus is located in the brain under the thalamus which is a mechanism which relays information from the external world, i.e., information outside the body. The hypothalamus is a counter to the thalamus in that it acts as a mechanism which relays information regarding the inside of the body, e.g. hunger, thirst, body temperature, and sex drive. Additionally, the hypothalamus has the job of 'switching on' the pituitary gland which regulates the hormones related to ovulation.
- 3 The five largest human genome sequencing centres are: Baylor College of Medicine: Human Genome Sequencing Center; the Sanger Center (UK); the Joint Genome Institute; Washington University: School of Medicine (St. Louis, Missouri); Whitehead Institute/MIT Genome Sequencing Center (Collins 1999).
- 4 Although some citations surfaced under the keywords 'homosexuality' and 'sexual orientation', the references did not necessarily directly address the issues highlighted in this article. For example, the final report of the Task Force on Genetic Testing (Holtzman and Watson 1997) entitled 'Promoting safe and effective genetic testing in the United States,' used homosexuality in this context: 'There are aspects of genetic testing with which we have not dealt. Several respondents asked the Task Force to comment on genetic testing for non-medical conditions, such as homosexuality or other behavioural traits, or for gene enhancement. Although the Task Force has drawn upon examples of past and current testing, it has not made pronouncements about specific types of testing. As already stated, its intent is to develop generic policies that cover predictive testing for a wide range of medical conditions.' This example illustrates the often hidden and marginalized approaches to homosexuality as a cultural and bioarchaeological artefact.

## References

- Allen, L. 1991. Sex differences in the corpus collosum of the living human being. *Journal of Neuroscience*, 11(4): 933–42.

- Bolin, A. 1996. Traversing gender: cultural context and gender practices. In *Gender Reversals & Gender Cultures: Anthropological and Historical Perspectives* (ed. S. P. Ramet). London: Routledge, pp. 22–51.
- Braidotti, R. 1996. Cyberfeminism with a difference. *New Formations*, 29: 9–25.
- Burr, C. 1996. *A Separate Creation: How Biology Makes Us Gay*. New York: Bantam.
- Butler, J. 1993. *Bodies That Matter: On the Discursive Limits of 'Sex'*. New York: Routledge.
- Byne, W. and Parsons, B. 1993. Human sexual orientation: the biologic theories reappraised. *Archives of General Psychiatry*, 50: 228–39.
- Capra, F. 1982. *The Turning Point: Science, Society and the Rising Culture*. London: Harper-Collins.
- Collins, F. 1999. The sequence of the human genome: coming a lot sooner than you thought. Presentation at the 49th annual meeting of the American Society of Human Genetics. San Francisco, California. <http://www.nhgri.nih.gov/NEWS/ASHG/>
- Evershed, R. P. 1993. Biomolecular archaeology and lipids. *World Archaeology*, 25(1): 74–93.
- Foucault, M. 1972. *The Archaeology of Knowledge & The Discourse on Language*. New York: Pantheon.
- Gatens, M. 1992. Power, bodies, and difference. In *Destabilizing Theory: Contemporary Feminist Debates* (eds M. Barret and A. Phillips). Cambridge: Polity Press, pp. 120–37.
- Gatens, M. 1996. *Imaginary Bodies: Ethics, Power and Corporeality*. New York: Routledge.
- Grosz, E. 1994. *Volatile Bodies: Toward A Corporeal Feminism*. Bloomington: Indiana University Press.
- Hamer, D. H., Hu, S., Magnuson, V., Hu, N. and Pattatucci, A. M. L. 1993. A linkage between DNA markers on the X chromosome and male sexual orientation. *Science*, 261(16 July): 321–7.
- Hamer, D. H., Pattatuci, A., Hu, S., Patterson, C., Li, L., Fulker, D. W., Cherny, S. S. and Kruglyak, L. 1995. Linkage between sexual orientation and chromosome Xq28 in males but not in females. *Nature Genetics*, 11(3): 248–56.
- Haraway, D. 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Haraway, D. 1996. *Modest-Witness@Second-Millennium.Femaleman-Meets-Oncomouse: Feminism and Technoscience*. New York: Routledge.
- Holtzman, N. A. and Watson, M. S. 1997. *Promoting Safe and Effective Genetic Testing in the United States: Final Report of the Task Force on Genetic Testing*. Washington, DC: NHGRI Report.
- Lang, S. 1996. There is more than just women and men: gender variance in North American Indian cultures. In *Gender Reversals & Gender Cultures: Anthropological and Historical Perspectives* (ed. S. P. Ramet). London: Routledge, pp. 183–96.
- LeVay, S. 1991. A difference in hypothalamic structure between heterosexual and homosexual men. *Science*, 253(30 August): 1034–7.
- Loy, T. H. 1993. The artefact as site: an example of the biomolecular analysis of organic residues on prehistoric tools. *World Archaeology*, 25(1): 44–63.
- Merchant, C. 1980. *The Death of Nature: Women, Ecology and the Scientific Revolution*. New York: Harper & Row.
- National Human Genome Research Institute (NHGRI). 1999a. NHGRI Home Page. [http://www.nhgri.nih.gov/About\\_NHGRI](http://www.nhgri.nih.gov/About_NHGRI).
- National Human Genome Research Institute (NHGRI). 1999b. NHGRI: Ethical, Legal and Social Implications (ELSI) Research. Goals and related research questions and education activities for the next five years of the U. S. human genome project. <http://www.nhgri.nih.gov:80/98plan/elsi/>

- Nelkin, D. and Lindee, M. S. 1996. *The DNA Mystique: The Gene as a Cultural Icon*. New York: W. H. Freeman.
- Poole, F. J. P. 1996. The procreative and ritual constitution of female, male and other: androgynous beings in the cultural imagination of the Bimin-Kuskusmin of Papua New Guinea. In *Gender Reversals & Gender Cultures: Anthropological and Historical Perspectives* (ed. S. P. Ramet). London: Routledge, pp. 197–218.
- Rabinow, P. 1996. *Making PCR: A Story of Biotechnology*. Chicago: University of Chicago Press.
- Richards, M., Smalley, K., Sykes, B. and Hedges, R. 1993. Archaeology and genetics: analysing DNA from skeletal remains. *World Archaeology*, 25(1): 18–28.
- Rifkin, J. 1998. *The Biotech Century: Harnessing the Gene and Remaking the World*. New York: Putnam.
- Roscoe, W. 1991. *The Zuni Man-Woman*. Albuquerque: University of New Mexico Press.
- Ross, A. 1991. *Strange Weather: Culture, Science, and Technology in the Age of Limits*. London: Verso.
- Thomas, K. D. 1993. Molecular biology and archaeology: a prospectus for inter-disciplinary research. *World Archaeology*, 25(1): 1–17.
- Ward, K. 1994. Genetic engineering of animals. In *Genes at Work: Biotechnology* (ed. P. Larkin). Australia: CSIRO, pp. 49–56.