

**Abstract Sex:
Philosophy, Bio-Technology
and the Mutations of Desire**

LUCIANA PARISI

Continuum

Abstract Sex

TRANSVERSALS

NEW DIRECTIONS IN PHILOSOPHY

SERIES EDITOR

Keith Ansell Pearson, University of Warwick

CONSULTANT EDITORS

Eric Alliez, Richard Beardsworth, Howard Caygill, Gary Genosko, Elisabeth Grosz, Michael Hardt, Diane Morgan, John Mullarkey, Paul Patton, Stanley Shostak, Isabelle Stengers, James Williams, David Wood.

Transversals explores the most exciting collisions within contemporary thought, as philosophy encounters nature, materiality, time, technology, science, culture, politics, art and everyday life. The series aims to present work which is both theoretically innovative and challenging, while retaining a commitment to rigour and clarity and to the power and precision of thought.

<i>Philosophy in the Age of Science and Capital</i>	Gregory Dale Adamson
<i>Intensive Science and Virtual Philosophy</i>	Manuel DeLanda
<i>Felix Guattari: An Aberrant Introduction</i>	Gary Genosko
<i>Political Physics: Deleuze, Derrida and the Body Politic</i>	John Protevi
<i>The Idea of Pure Critique</i>	Iain Mackenzie
<i>Abstract Sex: Philosophy, Bio-technology and the Mutations of Desire</i>	Luciana Parisi

ABSTRACT SEX
PHILOSOPHY,
BIO-TECHNOLOGY AND THE
MUTATIONS OF DESIRE

LUCIANA PARISI

Continuum

The Tower Building, 11 York Road, London SE1 7NX
15 East 26th Street, New York, NY 10010

www.continuumbooks.com

© Luciana Parisi 2004

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage or retrieval system, without prior permission in writing from the publishers.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available
from the British Library.

ISBN: 0-8264-6989-2 (HB) 0-8264-6990-6 (PB)

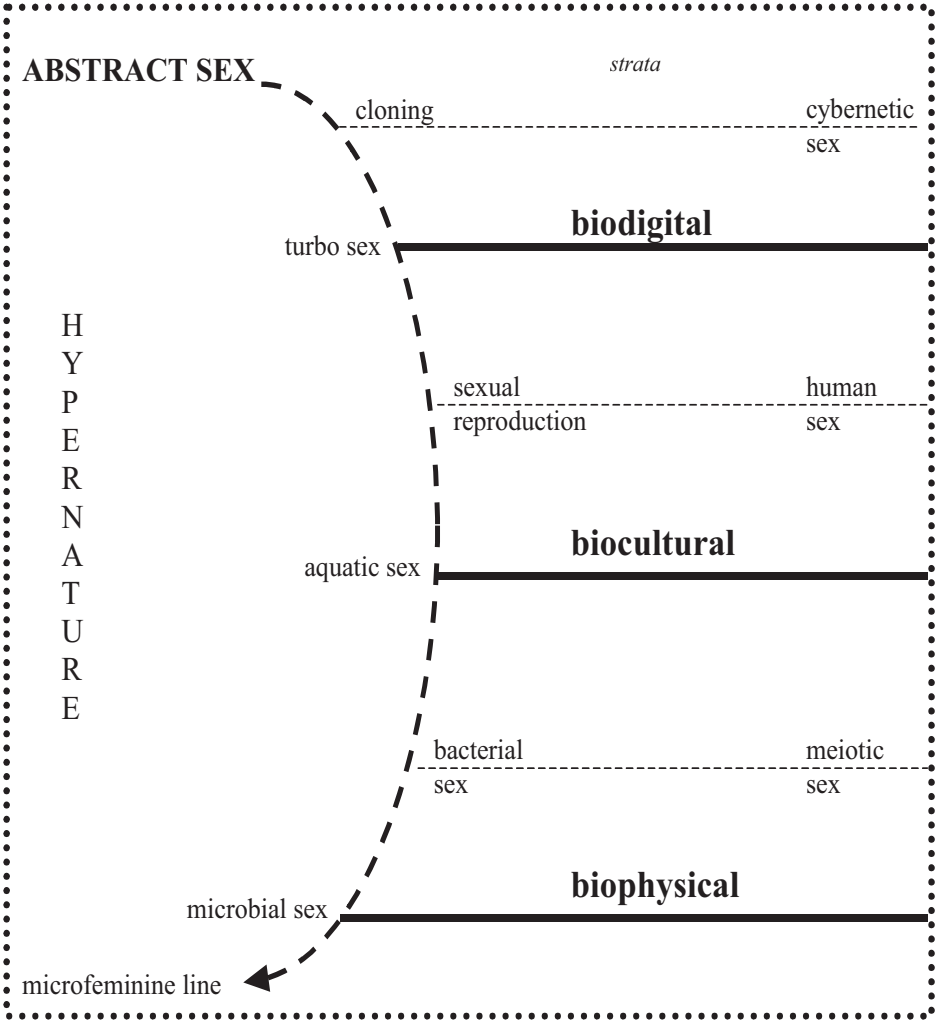
Typeset by Acorn Bookwork Ltd, Salisbury
Printed and bound in Great Britain by MPG Books Ltd, Bodmin, Cornwall

Contents

Diagram	vii
Acknowledgements	ix
Introduction: Abstract Sex	1
1 Virtual Sex	5
Introduction	5
The bio-technological impact	7
Abstract sex	13
Stratification	18
The essence of a body	27
Microfeminine particle-forces	32
2 Symbiotic Sex	45
Introduction	45
Genealogical difference	46
Cracks on the organic strata	57
Nucleic expression	65
Symbiosex	81
3 Parthenogenic Sex	88
Introduction	88
Disciplinary entropy	92
Organic capital	102
Sex and death: the media of fluid reproduction	110
Mutant sex	115
4 Biodigital Sex	127
Introduction	127

The threshold	130
Machinic capital	138
The schizophrenic egg	155
Incorporeal transformations	167
5 Hypernature: A diagram of molecular modifications	171
Introduction	171
Microbial sex	173
Aquatic sex	177
Turbo sex	185
Hypernature	189
Conclusion	194
Microfeminine warfare	194
Glossary	204
Bibliography	207
Index	222

THE STRATIFICATION OF ABSTRACT SEX					
LAYERS	INFORMATION TRANSFER MODE	RULES OF ORGANIZATION	MICRO- FEMININE LINE	DATES	SEX MACHINE
BIODIGITAL	CLONING	RECOMBINANT DESIRE	EGG	LATE 20 TH CENTURY	MOLECULAR SEX
BIOCULTURAL	SEXUAL REPRODUCTION	PLEASURE	FLUIDS	19 TH CENTURY	HUMAN SEX
BIOPHYSICAL	BACTERIAL SEX	TRADING	MITOCHONDRIA	3,900 MILLION YEARS AGO	MEIOTIC SEX



This page intentionally left blank

Acknowledgements

The concepts in this book are linked to an interdisciplinary research project involving many people sharing a method of analysis and perception of cultural mutations. This common method has been crucial to the engineering of this book.

I wish to thank Keith Ansell Pearson for his constant support and encouragement. His scrupulous comments and attention to earlier and final drafts have been essential for the completion of this work.

I am also very grateful to the Five College of Women's Studies Research Centre Award (Mount Holyoke College, Massachusetts) for giving me the opportunity to meet Lynn Margulis in 1997. Thanks to her generosity, I was able to access research material in the laboratory at Amherst College, and was involved in the various and exciting activities in her research study group.

My gratitude also goes to the Department of Cultural and Innovation Studies at University of East London for supporting my research and granting me a sabbatical to complete the book.

Finally, I wish to thank Nick Land for inspiring the diagrammatic conception of my work, and the Cybernetic Culture Research Unit (CCRU) where some of the key concepts in this book were generated collectively.

My special thanks go to Tiziana Terranova for her friendship and daily discussions. Her comments and advice enormously stimulated my writing. I am very grateful to my friend Steve Goodman for his precious contributions and immediate receptiveness that helped to convey concepts in my production. I also thank Stefania Arcara for her kind meticulousness and friendship. My love and gratitude go to all my friends everywhere.

I especially wish to thank Stephen Samuel Gordon for his indispensable loving presence, inspiring conversations and ability to listen.

I thank my family for their affectionate and practical support in all my adventures abroad. In particular, I thank my mother to whom this book is dedicated.

Introduction: Abstract Sex

In the age of cybernetics, sex is no longer a private act practised between the walls of the bedroom. In particular, human sex no longer seems to involve the set of social and cultural codes that used to characterize sexual identity and reproductive coupling. In the twentieth century, political movements, such as feminism, challenged the conventions that associate sex with sexual reproduction, freeing feminine desire from the biological function of procreation. At the turn of the twenty-first century, developments in information technologies have profoundly accelerated the separation of sex from natural reproduction. Human sex has now entered a cyberspace of information where everyday bodily contacts and sexual encounters have given way to long distance rendezvous. The emergence of cybersex defines a new prosthetic extension of human sex, the prolongation of sexual pleasures outside the limits of the body. In the last ten years, Internet-mediated communication and simulation of sex, cyberpractices such as gender swapping and cybererotics have been at the core of important debates about this transformation of human sex – as sexual reproduction involving two parents.

This increasing diffusion of mediated sex has been accompanied by contrasting views about the new blurring of the boundary between artificial and natural sex. Most commonly, for example, it has been argued that cybersex defines the cybernetic age as the age of the disappearance of the body and corporeal difference. With cybersex, male fantasies and mental projections have replaced physical appearances, material touch and fluid exchange. Artificial sex calls for the ultimate separation of the mind from biological limits, the simulated experience of being free from physical constraints in the immersive matrix of information celebrated by the cowboys of cyberspace. This triumph of artificial sex is said to crown the achievements of the male model of sex defined by the drive towards discharge, the channelling of all flows

towards a final climax, the pleasure of self-satisfaction. Finally detached from the biological body by transcending all fleshy ties, this dominant model of sex realizes the most classical of patriarchal dreams: independence from matter. Leaving behind the heavy meat of physical presence and floating free in cyberspace, the triumph of artificial sex is equated to the triumph of the economy of pleasure (the discharging model of patriarchy).

The transformation of human sex in relation to technology has reopened the question of gender and power in cybernetic capitalism. In particular, feminists and cyberfeminists have criticized cybersex and its erasure of corporeal presence because it reinforces male pleasure. The pursuit of male self-satisfaction is continuously perpetuated in the disembodied world of simulation far removed from physical and biological ties. The expansion of mediated projections ensures the constant exorcism of the physical world of dark matter incarnated in the woman's reproductive body. Cyberfeminism has pointed to the problematic implications of the newly blurred distinctions between natural and artificial sex for feminism and beyond. The acclaimed autonomy of cybersex from reproduction, of sexuality from sexual reproduction entails a double bind that on the one hand liberates female identity from biological destiny but, on the other, realizes the patriarchal dream of liberation from flesh. Cybersex remains caught up between these two poles creating an impasse between disembodiment and embodiment highlighting the ultimate triumph of male pleasure over feminine desire, the socio-cultural disappearance of natural or material difference in cybernetic capitalism.

Nevertheless, the question of cybersex goes even further if we consider that the disappearance of natural sex is also linked to the disappearance of the male and female functions of reproduction increasingly threatened by the success of human cloning. In February 1997, renowned scientific journals such as the *New Scientist* and *Nature* reported the final accomplishment of the first mammal cloning by the Roslin Institute of Biotechnology in Edinburgh, announcing an unprecedented modification of reproduction that would have profound impacts on human sex. Scientific articles and reports on adult mammal cloning explain that this procedure involves a new understanding of reproduction, no longer determined by sexual mating but entailing a duplication or copy of genetic material extracted from one single parent. Since 1997, new debates about the transformation of human sex have been stirred up by the real prospect of cloning humans. Articles on the redundancy of sexual reproduction, but in particular the

redundancy of the male and female sex for reproduction, are recurrent not only in scientific journals but also in magazines and newspapers.

In the February 2001 edition of *Wired* magazine, a report on human cloning entitled '(You)²' discussed the prospect of cloning humans as an imminent possibility already partially achieved in 1999 by a South Korean team that voluntarily cut short the experiment. This report discusses how the latest advances on mammal cloning technique, the reduction of laboratory costs and the emergence of pro-cloning groups – such as the Raelians, a Quebec-based New Age religious group and the Human Cloning Foundation, a New York- and Atlanta-based group – are facilitating the opportunities for cloning humans. The increasing demand for cloning people from parents who have lost their child, from terminally ill people and from infertile men and women will soon find adequate supply in this newly constituted market. Not only does this report discuss how cell biologists, animal cloning specialists and fertility doctors believe that human cloning is an inevitable substitute of in vitro fertilization – cloning cows, pigs and people will soon become more efficient than natural reproduction – but it also highlights the newly discovered plasticity of genes. The novelty of Dolly, the cloned sheep, was not that you could clone an adult mammal, but that our genes and organs can be designed and shaped. The point is not solely that it is now possible to reproduce artificially, but that human beings can be reproduced from scratch. Artificial wombs, sperms and eggs are under construction and not only fathers but also mothers are about to become redundant. Artificial sex and reproduction marks the apex of the Brave New World where humans overcome death through the proliferation of identical copies.

Nevertheless, as asserted in the *Scientific American* in January 2002, in the exclusive 'The First Human Cloned Embryo', the clone is not a mere copy, but a new type of biological entity never seen before in nature. Artificial sex and reproduction not only replaces human functions of procreation but also engenders diversity by accentuating the genetic and somatic differences commonly experienced by identical twins. These controversial implications of human cloning and human design bring into question the power of science, capitalism and gender relations. As demanded by feminism, the female body is now free from the biological destiny of procreation. Yet, at the same time, the patriarchal dream of independence from nature and from the female body is also completely reached. The liberation from anatomy, from the identification of women with sexual reproduction, contrasts strongly with

the liberation from the material body, the accomplishment of Cartesian disembodiment in the cyberspace of information.

The increasing investment in technologies of reproduction announces the new economic and cultural frontier of bio-informatic (or bio-digital) capitalism where artificial sex and reproduction define the new tendencies of power in the cybernetic age. The contrasting binarism between ultimate disembodiment on the one hand and the return to the fleshy body on the other coincides with the dichotomous boundary between technology and biology continuously scrambled into pieces by our biodigital capitalist culture. If it has become increasingly problematic to distinguish natural from artificial sex, then it may be superfluous to investigate the blurring of the biological and the technological from the perspective of a fundamental dualism between embodiment and disembodiment. The implications of cybersex point to a new direction for thought that requires the elaboration of an alternative understanding of sex.

We propose a third way out of the binarism between embodiment and disembodiment to engage with the biodigital mutations of human sex. This third way maps the emergence of a new (but ancient) kind of sex and reproduction, linking these mutations to microcellular processes of information transmission that involve the unnatural mixtures of bodies and sexes. The speeding up of information trading, not only across sexes, but also across species and between humans and machines, exposes the traits of a non-climactic (non-discharging) desire spreading through a matrix of connections that feed off each other without an ultimate apex of satisfaction. This new way points to the dissipation of the male model of pleasure by exploring the implications of a biodigital intensification of bacterial sex: the non-linear merging and copying of distinct information sources accelerating the emergence of unprecedented entities. As one scientist recently put it, it is increasingly evident that, since their appearance on Earth, humans have been living in the 'Age of Bacteria'. The mutual feedback between biology and technology marks an unpredictable proliferation of molecular mutations that poses radical questions not only about human sex but also about what we take a body, nature and matter to be. This new approach investigates the imminent pervasion of mutant species, bodies and sexes by the engineering of an altogether different conception of sex, femininity and desire – abstract sex.

CHAPTER 1

Virtual Sex

INTRODUCTION

Since 1997, when Professor Ian Wilmut of the Roslin Institute of Biotechnology in Edinburgh created the first mammal clone, Dolly the Sheep, animal cloning has been undergoing rapid bio-technological innovations. In June 1998, the American scientist Ryuzo Yanagimachi, from the University of Hawaii, announced the cloning of the first artificial mouse. In September 1999, Italian researchers accomplished the cloning of the first male mammal, a bull. Since then, several cloning experiments on cows, pigs and monkeys have been successfully carried out. The expansion of an artificial mammal world populated by replicant animals has seen the rise of debates about the limits that should be set for science in the manipulation of nature. When in July 2001 the Australian doctor Orly Lachman Kaplan declared open the experimentation on mammal fertilization without sperm, the debate quickly shifted towards the new implications for human sex, suggesting the superfluous activity of the male sex for human procreation. In the last five years, therefore, the impact of bio-technology on human sex and reproduction has more strongly influenced cultural and ethical debates about the power of science to engineer life.

Between 2001 and 2002, newspapers around the world reported several attempts at cloning adult humans on behalf of groups of scientists, despite the opposition of the Church, mainstream scientific communities, the government and public opinion. After helping a 62 year-old woman to become pregnant, the Italian fertility expert Severino Antinori declared that his plans to clone humans and assist the birth of the first human clone were about to become reality. The echoes of this news acquired more credibility once, together with with Dr Panos Michael Zavos he presented his plans to clone humans to the Academy of Science in Washington, during the International Conference on Cloning in 2001. The most debated gynaecologist in the last ten years, Antinori intends to carry out his project without the

consent of the European Community or the American administration, but with extreme confidence in the two hundred couples on his waiting list, in private sponsors, laboratories and clinics around the globe. Recently, the Italian scientist claimed that a secretive global network of scientists, sponsors and surrogate mothers collaborated to create the world's first cloned human embryos. Although there is no evidence of recent births of human clones, according to Antinori at least three secret pregnancies in different countries have resulted from human cloning techniques.

As a fertility expert, Antinori's project of cloning humans mainly aspires to enable infertile couples to procreate their own genetic offspring without turning to surrogate wombs or foreign genetic material from sperm and egg donors as required by the procedures for in vitro fertilization. On the other side of the spectrum, the acclaimed project of cloning humans has also seen, in recent years, the diffusion of companies, such as Southern Cross Genetics, an Australian start-up that offers the service of storing DNA for future cloning. These companies follow the example of now popular cloning companies such as Clonaid, founded in 1997 by the Raelians, a pro-science religious group – a mixture of religious scientists and surrogate mothers. These groups also hint, together with the Human Cloning Foundation, to the more sinister attempts to clone dead offspring and relatives. In the year 2001, newspapers around the world reported the story of an anonymous couple willing to finance the Raelians to clone their one month-old dead boy from his frozen cells.

Although the success of human cloning is still liable to high rates of improbability, in December 2002, the head of Clonaid, chemist Brigitte Boisselier, claimed the successful birth of the first baby girl, Eve, cloned from the DNA of a 31-year old American woman. The group also expected four more cloned babies to be born in North America, Europe and Asia from one lesbian couple and from two couples using preserved cells of their own children before their deaths. As several experts on cloning point out, in order to perform human cloning it is sufficient to have access to large numbers of eggs, expert cell biologists, chemists and scientists, and well-equipped laboratories. With more than 50 women members, scientists and private benefactors, the Raelians are considered among the most likely candidates to pioneer human cloning.

As anti-cloning scientists have recently declared, even though Antinori or the Raelians fail to pioneer the scientific achievement of cloning humans, radical changes in human sex and reproduction are

imminent. Although unaccepted by mainstream science, minor extravagant phenomena such as the Raelians' group or the Human Cloning Foundation together with Antinori's claims on cloning humans, incite profound anxieties about the mutation of the body and sex in our cybernetic age. In particular, rapid developments in bio-technologies, entailing the engineering of bodies from scratch through genetic design, are constantly blurring the traditional boundaries between life and death, natural and artificial. As often pointed out, far from ensuring the copying of the 'identical', genetic engineering accelerates the proliferation of molecular mixtures. The plasticity of genetic material enables the copying of genetic variations but it does not guarantee predictable results in the long run. The imminent expansion of cloned and designed bodies announces an increasing proliferation of mutant species and sexes that profoundly challenge our assumptions about what the body is and what it can do.

THE BIO-TECHNOLOGICAL IMPACT

Artifice is fully part of nature.

Deleuze (1988a: 124)

In 1985, Donna Haraway's *Cyborg Manifesto* highlighted the new mutations of the body-sex in bio-informatic capitalism. For Haraway, the convergence of bodies and technologies marked the emergence of the new metamorphic world of the cyborg, a hybrid blending of animal, human and machine parts. No longer embedded in the nuclear Oedipal family (the natural ties with the mother and the father), the cyborg was, for Haraway, the offspring of the post-gender world of genetic engineering where biological or natural sex no longer determines the cultural and social roles of gender. Cybernetic communication and reproduction enable the prosthetic manipulation of the physical bonds of gender stretching the limits of Mother Nature. Artificial sex permits the unprecedented transformation of our gender identity, the construction and reconstruction of sexual forms and functions of reproduction.

The post-gender world of the cyborg brings to the extreme post-modern claims about the end of certitudes where biological destiny is threatened by the saturating proliferation of technologies of communication and reproduction in our daily life. As opposed to the post-modern nostalgia for a lost world of stable boundaries between nature

and culture, the cyborg embraced the challenge of bio-informatic technologies affirming that our assumptions about nature are the results of intricate cultural constructions articulated by specific technoscientific discourses.¹ The equation between sexual identity and sexual reproduction at the core of our understanding of human sex is nothing natural. Quite the contrary, it is embedded in the historical and cultural roots of the Western metaphysical tradition of essentialism. Far from reflecting a given unquestionable truth, the cyborg revealed that the natural essence of a body rather derives from specific historical and cultural constructions (or representations) of nature establishing a natural association between feminine sex and sexual reproduction. Rather than being determined by sexual identity and sexual reproduction, the artificial world of the cyborg announces the new historical and cultural conditions of the posthuman body no longer able to find shelter in the natural world.² For the post-gender world of the cyborg, there is nothing natural about the human body, sex and reproduction.

Haraway's seminal text has strongly influenced debates about the impact of bio-technologies on the body, sex and femininity. In particular, in the last ten years, debates about the convergence between biology and technology have problematized the new tension between natural and artificial sex, the disappearance of biological difference and the celebration of artificial disembodiment.³ It has been argued that the post-gender world of the cyborg risks dissolving the biological differences of the body, the ties with the corporeal world of sex, celebrating the disembodied model of male pleasure (the independence from matter celebrated by the closed economy of charge and discharge). While liberating feminine desire from biological identity, the cyborg also deliberates the ultimate detachment of the mind from the body, the triumph of mental projections over material constraints.⁴

These controversial debates about the implications of information technologies for sexual reproduction tend to perpetuate a critical impasse between biological essentialism and discursive constructivism. Claims about the return to material embodiments (biological differences) are opposed to the emergence of a post-gender world of cybersex where variable meanings and shifting discourses enable us to perform our gender identity beyond biological anatomy. In this framework, gender no longer depends on sex – the form of sexual organs and the function of sexual reproduction – rather it is sex that depends on the constructions of gender, the signifying signs that constantly change the nature of sex.⁵ In recent years, the idea that you can

perform your own gender by changing your sexual identity has strongly clashed with the feminist argument of maintaining biological ties among women in order to resist the accelerating disembodiment of difference in cybernetic capitalism.

Yet this critical impasse is nothing new. The constitution of binary oppositions between what is given (the natural or biological realm) and what is constructed (the cultural or technological world) is entangled with the traditional Western model of representation. As often argued, the model of representation does not entail the exact reflection of reality or truth, but is more crucially used to refer to a system of organization of signs where structures of meaning arrange gestural, perceptual, cognitive, cultural and technological signs through the hierarchies of the signifier.⁶ The model of representation reduces all differences – biological, physical, social, economical, technical – to the universal order of linguistic signification constituted by binary oppositions where one term negates the existence of the other. The binary opposition between embodiment and disembodiment is caught up in the binary logic of representation that disseminates the dichotomy between materiality and immateriality, the separation of the inert body from the intelligent mind. Embedded in the Platonic and Cartesian metaphysics of essence, the logic of representation subjects the body, matter and nature to the transcendent order of the mind,⁷ suppressing the network of relations between nature and culture, sex and gender, biology and technology, rapidly transforming the way we conceive and perceive the body–sex.

Neither the politics of embodiment nor disembodiment provides alternative conceptual tools to analyse the recent bio-informatic mutations of posthuman sex. This critical impasse is embedded in a specific conception of the body where a set of pre-established possibilities determines what a body is and can do. These possibilities are defined by the analogy between biological forms (species, sex, skin colour and size) and functions (sexual reproduction, organic development and organic death) that shape our understanding of nature and matter through principles of identity (fixity and stability). This analogy creates a direct resemblance between body and mind, sex and gender, skin and race where biological destiny determines the hierarchical organization of social categories. Feminists and cyberfeminists have strongly criticized this biological sameness that constitutes the patriarchal model of representation whereby the body is mastered by the mind. Nevertheless, recent debates about cybersex or artificial sex have failed to provide an alternative understanding of the mind–body binarism reiter-

ating the opposition between biological presence and discursive absence of the body.

The liberation from the mind–body dualism through the displacement of signifiers from fixed meanings (the signifier sex from the signified gender) appears to re-entrap the body in a pre-established set of possibilities determined by linguistic signification. The post-gender feminist attempt at untangling feminine desire from nature, through the floating of free signifiers of sex in the new cyberspace of information, problematically reiterates the mind–body dualism by associating the body with a fixed and stable nature where matter is inert. In a sense, post-gender feminism risks confusing the biology of the body with the materiality of a body where the conception of nature and matter is determined by and reduced to biological discourses or universal systems of signification. The continuous displacement of the signifier ‘sex’ does not succeed in detaching feminine desire from fixed nature as it fails to challenge the fundamental problematic of the body, biological identity, the imperative of sexual procreation and ultimately the metaphysical conception of matter.

The bio-technological mutations of human sex and reproduction expose new implications for the separation of feminine desire from biological destiny requiring an altogether different conception of the body in order to challenge traditional assumptions (pre-established possibilities) about what we take a body to be and to do. Expanding upon the feminist politics of desire, abstract sex brings into question the pre-established biological possibilities of a body by highlighting the non-linear dynamics and the unpredictable potential of transformation of matter. Drawing on an alternative conception of nature, abstract sex embraces the Spinozist hypothesis about the indeterminate power (or abstract potential) of a body suggesting that ‘we do not yet know what a body can do’. This hypothesis challenges the analogy between biological forms and functions (the pre-established biological possibilities of a body) pointing to the capacities of variation of a body in relation to the continual mutations of nature. Moving beyond the critical blockage between biological essentialism (embodiment) and discursive constructivism (disembodiment), abstract sex proposes a third route to widen the critical spectrum of our conception of the body–sex.

By proposing to re-wind the processes of evolution of the body and sex, abstract sex starts from the molecular dynamics of the organization of matter to investigate the connection between genetic engineering and artificial nature, bacterial sex and feminine desire that define the notion of a virtual body–sex. This notion is not to be

confused with the immaterial body–sex as defined by the debates about the embodiment (materiality) and disembodiment (immateriality). The notion of the virtual body–sex primarily implies that a body is more than a biological or organic whole, more than a self-sufficient closed system delimited by predetermined possibilities. The virtual body–sex exposes the wider layers of organization of a body that include the non-linear relations between the micro level of bacterial cells and viruses and the macro levels of socio-cultural and economic systems. The collision of these layers defines the indeterminate potential of a body to mutate across different organizations of sex and reproduction producing a series of micro links between biology and culture, physics and economics, desire and technologies. The networked coexistence of these levels contributes to construct a new metaphysical conception of the body–sex that radically diverges from the binary logic of the economy of representation.

Abstract sex suggests that bio-technologies do not reiterate new or old dichotomies. Abstract sex displays the intensive connections between different levels of organization of a body–sex, where nature no longer functions as the source of culture, and sex of gender. The intensive concatenation between nature and culture entails a reversibility in the ways in which nature affects and is affected by culture. This mutual relation points to an alternative understanding of sex and gender that no longer depends upon the primacy of identity and its mind–body binarism, but lays out the reversal relations between parallel modes of being and becoming of a body. Sex is neither constructed as the pre-discursive or as the product of techno-scientific discourses. Primarily sex is an event: the actualization of modes of communication and reproduction of information that unleashes an indeterminate capacity to affect all levels of organization of a body – biological, cultural, economical and technological. Sex is a mode – a modification or intensive extension of matter – that is analogous neither with sexual reproduction nor with sexual organs. Sex expands on all levels of material order, from the inorganic to the organic, from the biological to the cultural, from the social to the technological, economic and political. Far from determining identity, sex is an envelope that folds and unfolds the most indifferent elements, substances, forms and functions of connection and transmission. In this sense, sex – biological sex – is not the physical mark of gender. Rather, gender is a parallel dimension of sex entailing a network of variations of bodies that challenge the dualism between the natural and the cultural. Adopting Spinoza's ethics or ethology of the body, it can

be argued that sex and gender are two attributes of the same substance, extension and thought, mutually composing the power – *conatus* – of a mutant body.⁸ This conception of sex diverges from the critical impasse in cyberculture between essentialism and constructivism and its negative principles of identity.

From this standpoint, the bio-technological disentanglement of sex from sexual reproduction does not imply the ultimate triumph of the patriarchal model of pleasure, a longing for disembodiment and self-satisfaction. This disentanglement suggests an intensification of desire in molecular relations such as those between a virus and a human, an animal cell and a micro-chip. As opposed to the dominant model of pleasure defined by auto-eroticism (the channelling of flows towards climax or the accumulation and release of energy), abstract sex points to a desire that is not animated or driven by predetermined goals. As explained later in this chapter, desire is autonomous from the subject and the object as it primarily entails a non-discharging distribution of energy, a ceaseless flowing that links together the most indifferent of bodies, particles, forces and signs. In this sense, the cybernetic mutations of sex expose a continuum between the cellular levels of sex (bacterial sex), the emergence of human sex (heterosexual mating) and the expansion of bio-technological sex (cloning) entailing a new conception of the body. This conception highlights an alternative metaphysics of matter–nature that enfolds the multiple layers of composition of a body and sex, defining their potential capacity to differentiate.

Abstract sex points to the non-linear coexistence of the biophysical (the cellular level of the body–sex defined by bacteria, viruses, mitochondrial organelles, eukaryotic cells); the biocultural (the anthropomorphic level of the human body–sex defined by psychoanalysis, thermodynamics, evolutionary biology and anatomy in industrial capitalism); and the biodigital (the engineering level of the body–sex defined by information science and technologies such as in vitro fertilization, mammal and embryo cloning, transgenic manipulation and the human genome in cybernetic capitalism) layers of the virtual body–sex. This complex composition of the body–sex exposes the continual and unpredictable mixtures of elements stemming from different layers that indicate the indeterminate potential of a body–sex to mutate. In particular, the bio-technological engineering of the body, the genetic design of life accelerates the recombination of different elements and the mutations of the body–sex by disclosing a new set of urgent questions about the relation between feminine desire and nature.

The rapid innovations of cloning techniques seem to announce the ultimate achievement of Man over Nature, the ultimate power of Man to design Man. Yet, what might seem the final act of mastering nature by patriarchal humanism exposes in fact much more controversial implications. As pro-cloning and anti-cloning groups often point out, the genetic designing of life, involving the non-linear transfer of information between different bodies (animal, humans and machines), implies an acceleration of evolutionary mutations whose results are not yet known. The acclaimed final control of man over nature rather suggests the loss of human control on the unpredictable mutations of the body. The recent proliferation of mutant bodies radically brings into question the conception of nature where the acceleration of cloning, in the form of bacterial sex, suggests that artifice has always been part of nature. This rapid unfolding of artificial nature opens up new problematic questions in relation to bio-technological mutations of human sex and reproduction.⁹ If cloning has always been part of nature, as bacterial sex demonstrates, then isn't it natural to clone humans? Are the new bio-technologies of the body already part of nature? What are the implications of this newly defined artificial or engineering nature in relation to feminine desire?

In order to investigate these questions, this book proposes to build up a new set of conceptual tools borrowing from the philosophical work of Gilles Deleuze and Felix Guattari, the metaphysics of nature of Baruch Spinoza and the scientific work of Lynn Margulis. By analysing the implications of the bio-technological mutations of a body, abstract sex maps a wider critical route to relate the (cyber)feminist politics of desire with the artificiality of nature.

ABSTRACT SEX

The logos is a huge Animal whose parts unite in a whole and are unified under a principle or a leading idea; but the pathos is a vegetal realm consisting of cellular elements that communicate only indirectly, only marginally, so that no totalization, no unification, can unite this world of ultimate fragments. It is the schizoid universe of closed vessels, of cellular regions, where contiguity itself is a distance: the world of sex.

Deleuze (1972: 174–5)

With machines the question is one of connection or non-connection, without conditions, without any need to render an account to a