

**RECONSTRUCTING BODY CONTOURS:
the woman on the pill**

**Thesis submitted for the degree of
Doctor of Philosophy in the University of London
by
Julia Cream**

**University College London
December 1994**



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Abstract

The pill has a history, and a geography, and so too do the women who swallowed it. By highlighting one specific moment in the making of the sexed body I have begun to outline the ways in which the historically and geographically located body emerges in concordance with a newly emerging society. Drawing on feminist theory (in particular Judith Butler and Donna Haraway) and recent work in the sociology of science and technology I argue that it is only through a specific anatomical narrative that we are able to delineate the changing nature of the body and the changing social ideas about what it means to be human and to be sexed as male or as female.

The pill was not designed for universal consumption, but for specific purposes and for particular women. Using archival, interviews, and published sources I focus on the women on the pill in Britain, United States of America and Puerto Rico in the 1950s/1960s. The woman taking the pill swallowed a potent combination of synthetic hormonal steroids, and I am interested in exploring the extent to which she also ingested the values and visions of society. The story of the body of the woman on the pill is embedded in a complex network of doctors, governments, instruction booklets, women, Mexican yams, ovaries and atomic bombs. It is to these chains of inter-relationships, between humans and nonhumans, that I turn as I begin to unpack the 'black boxes' that neatly bound 'the woman' on 'the pill'.

Acknowledgements

I would like to thank Carl Djerassi, David Moreau and Herbert Horne for providing me with their first-hand recollections. Claire Dwyer, Gillian Rose, Jeremy Stein and Jon Turney have all read sections of the thesis during its various stages and I am grateful for their encouragement and advice.

The support of the Economic and Social Research Council (ESRC) is gratefully acknowledged as is the assistance of all the librarians and archivists who have helped me.

My contemporaries at UCL - in particular Ben, James, Jon, Jonathon, Nina and Neil - together with Gill, Jan, Tracey and David, have always provided the support of good friends.

Charlotte, Virginie, Muffin, Douglas, Claire, Kath and all those at 4/2 - Dave, Clare, Phil, and especially Katie - encouraged me from the beginning and have seen me through to the end! My sisters, Laura and Penelope, and my parents, Naomi and Jeff, have supported me throughout and laughed at my mistakes.

Peter Jackson and Nuala Johnson have both been wonderful supervisors; forever generous with their knowledge, advice and criticism, I have enjoyed working with them both.

Table of Contents

Title page	1
Abstract	2
Acknowledgements	3
Table of Contents	4
Table of Figures	5
Chapter 1: Introduction	6
Chapter 2: Making bodies	17
Chapter 3: Conceiving the contracepted body	62
Chapter 4: Swallowing science whole	85
Chapter 5: The body on trial	112
Chapter 6: Planned bodies	159
Chapter 7: Controlling bodies	192
Chapter 8: The natural body	223
Chapter 9: The end of the body?	246
References	256

Table of Figures

Figure 2.1:	
The relationship between an artefact and the relevant social groups	33
Figure 2.2:	
The relationship between social group and the perceived problems	35
Figure 2.3:	
The relationship between one problem and its possible solutions	35
Figure 3.1:	
The female reproductive organs according to the one sex model	65
Figure 3.2:	
The female skeleton 1759	69

CHAPTER ONE

INTRODUCTION

'The discovery of contraception may prove to be the most revolutionary thing that has ever happened to human society. We are just at the beginning of it. The day will come when contraception, in contrast with the clumsy methods in use at the present, will amount to no more than the swallowing of a pill. And when that day comes, as it will very soon, what then?'

Lindsay and Evans 1928

What then indeed? The day has come, the pill arrived, and I am still asking, what then? Lindsay and Evans' prophetic vision of a pill as revolutionary agent thirty years prior to its ingestion indicates that its mythical stature is not new. The pill has a history, and a geography, and so too do the women who have swallowed it. This story of orally contracepted bodies offers a unique entry into the conceptualisation of sex, gender, race, class, sexuality, and the body.

Who helped draw the contours of the body of the woman on the pill during the 1950s? The contracepted body of the woman popping the pill offers us a new opportunity. An opportunity to intervene in an accepted and conventionally ascribed meaning of the body. The oral contraceptive pill can be interpreted as a marker, popularly highlighting not only fertile women but also those who are heterosexually active¹.

The pill was not designed for unmediated or universal consumption, but for specific purposes and for particular women. When I talk of the body of the woman on the pill, it is important that I do not mean that there was one pill, nor, more obviously, that there was one woman or one body. Rather, what I am referring to is the articulation of the subject position of a woman on the pill. This is the possibility of a woman understood to be contracepted, inviolable, unimpregnable, by virtue of swallowing a pill. This particular construction of

1. Note that this is a popular conception - not all women taking the pill are (hetero)sexually active, nor are they all fertile.

female subjectivity, and I shall be examining whether it has always been a *female* subjectivity, requires an understanding of an embodied positionality that is geographically and historically specific.

The development of the pill enabled a new way of viewing a woman's body. Or did it? Did the pill enable women to shed that age-old assumption that childbearing was their natural role in life? Did it precipitate the sexual revolution, transforming 'the fabric of society, radically restructuring social and economic roles' (Grant L. 1993: 59)? Or did the pill merely confirm women's roles, rendering them (hetero)sexually available at all times as well as allowing them to plan their families? Did it legitimate a new era of eugenics disguised as population control?

Perhaps it might have been easier to document the impact of the pill on changing social relations or to qualify the assertion that the pill did in fact change gender relations and initiate the sexual revolution. But it would not tell us why the pill was initially developed. It would tell us nothing about the changing nature of the body and the mutability of the natural, including motherhood itself. Why was it felt, for example, that women were in need of this aesthetically pleasing pill? Who desired it and for what reasons? Why did it emerge when it did? Who was it aimed at and for what purposes?

I provide few answers. In fact, when people ask me if I have found any interesting conclusions, I hesitate. How do I say that I have not been searching for conclusions? Rather, as I outline later, I have been looking for ways of telling different stories and asking new questions.

Embodying Geography

When I began the research for this thesis in 1991, it was relatively easy to cover the literature on 'the body'. I read Turner's (1984) *The Body in Society*, the essays in *Theory, Culture and Society* (1990), Armstrong (1983), Feher (1989), Foucault (1977), and a collection of feminist writings such as those by Jacobus et al (1990), Bordo (1989) and Suleiman (1986). If I were to 'begin again' in 1994 I would hardly know where to start so rapidly, are the disciplines becoming embodied. Turner's (1984: 30) assertion of the existence of a 'theoretical prudery with respect to human corporeality' now appears outdated and tenuous. Indeed, I cannot help but empathise with Morgan and Scott (1993: 1) when they state:

'When we first planned this essay we began in the conventional manner, namely noting the relative absence of work on the body within sociology. In the short period of time between this very early draft and the present version, matters have changed dramatically. The body is very much on the sociological agenda, and references to it are increasingly appearing in a variety of areas'.

I, too, began the first draft of the thesis in a similar way; noting: the virtual absence of corporeality in geographical thought. Documenting and detailing the contingencies of the 'making of the human body' seemed a legitimate project in itself. What I wrote then now appears to be redundant, overtaken by the upsurge, and increasingly sophisticated, interest in bodily matters.

The inclusion of the body has, in the past, been deemed to be an unacceptable topic for academic study. In the same way that gender, race and sexuality have made important and significant inroads into geographical enquiry (for reviews see McDowell 1993a, 1993b, Jackson and Penrose 1993, Bell and Valentine in press), I expect the body to make a similar impact, and not only in feminist geography. Geography is, after all, at its most basic, the relationship between bodies and spaces.

Geographers, then, have been rather late in catching up on this latest trend of incorporating the body into social and cultural studies (see Synnott 1993, Shilling 1993). There are, however, some significant exceptions. The spatial specificity of corporeality and its socially constructed nature runs through the work of Driver (1985) and Kobayahsi and Peake (1994). Other geographers have focussed on particular bodies; such as disabled bodies (Hahn 1989), black bodies (Jackson 1994) and pregnant bodies (Longhust 1994). The notion of 'the body' being sexed has been taken up by Johnson (1989) and Rose (G. 1993a, 1993b). In addition, they have called attention to the disembodied nature of geographical knowledge and suggest that an embodied perspective would transform the nature of the discipline, as well as affect what counts as 'geography'.

The legacy of feminist scholarship in geography provides an important foundation on which the body can be introduced. Paradoxically, however, it is this legacy that may also impede the acceptance of the corporeal. As I outline in later chapters, gender was a useful category for white Anglophone, Western feminists in the 1970s, and work on the body which destabilizes and even undermines the notion of a sex/gender distinction may prove to be threatening. To assess the

development of the body within geography we need to ask how and why 'the body' has attained a particular currency. We need a contextualised and historically specific understanding of why the sex/gender distinction held a particular theoretical resonance for some people and why it is currently being challenged.

Even subjects that lie at the heart of the geographical discipline, such as demography, are remarkably silent on the topic of the body (as well as on sex and contraception): much of the geographical concern over demography somehow skates over these issues, which are hidden underneath the layers of quantitative statistical data on birth rates and fertility quotients. Private and public struggles over the control of fertility, of sexuality and of gender tend to get edited out of the geographical discourse (see Findlay and Graham 1991). As Seccombe (1992: 66) has been moved to write about the state of population studies:

'Great advances have been made in the study of gender relations in the 1970s and 1980s, but very few of them are reflected in demographic theories of the fertility decline. Sexual desire and conjugal power are absent from the mainstream paradigms of fertility regulation: it is as if demographers believed in the Immaculate Conception for everyone'.

Only recently have medical geographers begun to recognise the importance of the body. Dorn and Laws' paper in the *Professional Geographer* (1994: 107) argues that 'a reformed medical geography must acknowledge and critically assess its intellectual heritage which understands the body as a site invaded by a disease with a specific etiology'. Bodies need to be included in ways that count more than the number of bodies affected by a particular disease. Gould (1993) is one of the few geographers who has attempted, however inadvertently, to incorporate contraception. In his work on AIDS he provides a 'geography of the condom'. Gould maps the intensity or rate of use of condoms and offers a conventional geography of bodies rather than exploring the constitution of the body with AIDS in a broader context (see Brown in press). Once the novelty of including the body within geographical theory wears off, a more sophisticated discourse will emerge, one that takes the integration, and not merely the addition, of the body seriously. The integration and inclusion of the body is slowly transforming geographical knowledge.

Importantly, at the same time that I am advocating the necessity of becoming embodied, I am acutely aware of the need to be more critical about the ways in which we incorporate the corporeal within geographical discourse. The body is in

vogue and while I find it exciting that everyone now wants to talk about the body, to include it in their work, and/or to be embodied, I am slightly alarmed at the ease with which the body, both male and female, is being incorporated. Just as one cannot simply 'add women' to gender geography (as if it was not always already gendered), the body cannot be 'added'.

The sexed body is not simply there, ready and waiting, for us to examine and include. It is not something that can be broken down to its constituent parts. We do not simply add 'sex' to the body and we definitely do not add 'the body' to something called 'sex'. The sexed body is an outcome; an outcome, I argue, of both society and nature, of mind and of matter. Care must be taken to avoid the pitfalls of including the body as 'just' another category that can simply be added to that ever-lengthening list of race, class, gender, sexuality, disability and age.

The body is not a foundation. It is not a biological bedrock upon which we can construct theories of gender, sexuality, race and disability. The body is not a beginning. It is not a starting point. It does not merely exist. There is no woman ready and waiting to take the pill. This thesis is about the articulation of a possibility: the making of an infertile female subject by virtue of swallowing a pill.

Geographers, then, have begun to notice that there is, and that they have, a body. It has, however, largely been non-geographers who have taken up the issues surrounding corporeality and spatiality. In what Grosz (1992: 242) calls 'the constitutive and mutually defining relation between bodies and cities' lies a potentially new radical base for rethinking geography. In each of the following chapters I outline the ways in which the inclusion of the body, moreover the inclusion of a sexed, sexualised, racialized and geographically located body, provides a new base from which to begin: a geography that includes the body, but does not necessarily use it as a starting point.

The woman on the pill - outline of chapters

The making of the body of the woman on the pill is about the possible creation of new bodies and new spaces. Our bodies have never been free of place, and our places never free of our embodied presence. In the context of the making of the woman on the pill, notions of public and private, embodied and disembodied space are pivotal: 'the physical body is our most intimate experience and our most inescapable public form' (Outram 1989: 1). The production of space that is disembodied is ultimately dependent on the embodiment of other spaces and by

other bodies. Interestingly, Connell (1983: 19) argues that 'to be an adult male is distinctly to occupy space, to have a physical presence in the world'. Such a claim must not ignore the fact that what it has meant to be a (white, straight, able-bodied) adult male has been dependent upon the over-embodiedness of others (see Rutherford 1988).

In **chapter two** I set out the theoretical and conceptual frameworks that I have used in trying to understand the body of the woman on the pill. What did it mean for a woman to go on the pill? I needed to know what the categories 'woman' and 'pill' meant. How they defined and transformed each other. Recent approaches within the sociology and increasingly, anthropology of science and technology offer a useful place to start. I treat the pill as technology. Its design, its production and knowledge of how to consume it all fall under the technological banner. By defining the woman on the pill as a user of technology I wish to engage with theories of both gender and science. It is at the interface of sociology of science and technology *and* feminism that I locate my understanding of the woman on the pill. The theoretical approaches that I outline in this chapter provide the frameworks within which the woman on the pill emerges as well as a context and a method with which I undertook the research, reading and writing.

In **chapter three** I continue to explore the theme of the body that cannot conceive. I use the 'contracepted' body as an illustration of the ways in which the body is 'done' and undermine any lingering naturalness of the body. I argue that it is only through a historically specific anatomical narrative that we are able to delineate the changing nature of the body and changing social ideas about what it means to be human and to be sexed as male or as female. By highlighting specific moments in the history of the sexed body we can begin to identify the manner in which the body has been, and continues to be, shaped and defined in concordance with a newly emerging society.

The contracepted body of the woman on the pill is not an 'artificial' body, beneath which a natural female body can be exposed. Instead, it can be understood as another moment in which gender, sex, sexuality and race are 'fixed' in the naturalised body. From the 1960s onwards the bodies of both sexes were potentially available for sex but not for reproduction. This may not have been anything radically new, but for many women it offered opportunities hitherto

unavailable². It offered women control over their bodies in new (if contradictory) ways.

Building on the social/scientific approaches detailed in chapter two, I argue in **chapter four** that the development of the pill cannot be divorced from the making of the body of the woman on the pill. There is no technological determinism fueling the development of the pill. It should be clear that I am not advocating a heroic discovery-tale of the oral contraceptive pill. I do not provide a trajectory of technological development through to unmediated consumption. Rather, I document the links between the social and the scientific worlds. The woman taking the pill swallowed a potent combination of synthetic hormonal steroids, and I am interested in exploring the extent to which she also ingested the values and visions of society.

I could have started at the point of ingestion. I could have swallowed the pill 'whole'. But, in order to see how the body of the woman on the pill was 'made' it is necessary to understand why the pill was developed, who it was developed for, and in which contexts. The pill did not suddenly appear on the prescription list at the family planning centre one day in 1960. The pill has become embedded in a complex actor-network of doctors, governments, scientists, instruction booklets, women, the church and ovaries and it is to these chains of interrelationships, between humans and nonhumans, that we must turn. I had to begin to unpack the 'black boxes' that neatly bounded 'the woman' who went on 'the pill'.

The pill was not simply accepted because it 'worked'. In **chapter five** I examine what 'worked' meant to different men, women, and children in different places. I focus on the testing of the pill, and conclude that it was the woman rather than the pill itself who was put on trial. By tracing the trials of the pill in the 1950s, I also trace the evolving contours of the body of a woman on the pill. She is far from static, and shifts across countries, races, classes and fertilities. I leave this chapter with the idea of a pill that was believed to 'work' as a contraceptive through the inhibition of ovulation in a woman. This was not an easy or uncontested event and the concluding chapters assess the ways in which the pill was endorsed and promoted as well as the attempts to prevent its distribution.

2. Safe and effective methods of contraception were not new, but as I outline in later chapters, the pill and the woman who swallowed it were invested with new hopes and meanings.

I illustrate in **chapter five** that men were also given the pill for contraceptive purposes. Despite the limited material available, several authors have suggested that a 'crisis of masculinity' was pivotal to shaping postwar culture in the USA. Shilling (1993: 45) notes that there are 'clear links between women's attempts to gain civil and political and social rights on the one hand, and a renewed interest in theories that confirm women's embodiment as biologically inferior on the other'. With these issues in mind, and clear parallels to earlier developments in sexualised corporeality, I hope to explore whether the pill provided a means for women to abdicate from and/or override their biological destiny, and how the reconstructions of the female body were interrelated to what was happening to their social and political status in the 1950s/60s.

Were new sexual landscapes and sexual spaces being articulated and negotiated as new roles for men and women emerged? The 1950s were a time when public and private spaces were being renegotiated. The bodies of men and women had appropriate and inappropriate locations and I show how the woman on the pill occupied positions that were contested. Hers was a body that was planned and strictly controlled. She, (together with her husband), was planning her family. Family planning became respectable and aspirational in ways that contraception and birth control had never previously been. The endorsement of family planning was not an isolated event, but fitted easily into a wider context of support for planning. Planned parenthood was one of a number of ideologies that gained swift acceptance in the postwar era. The political and cultural climate was saturated with the language of planning: population planning, family planning, planned parenthood.

Planning contained that which threatened, or appeared to threaten, the social and moral fabric of western development. The planned body of the woman on the pill was tightly restricted and carefully controlled. Ideas of containment are prevalent in the postwar era and as I indicate in **chapter six** it was not only politics and bombs that needed to be contained, but ideas, bodies and places. In the new sexual norms that were both consolidated and resisted in the postwar era, it soon became clear that it was not only the white married middle classes that were having sex. Their bodies were not the only ones who could use the pill. Soon, new bodies emerged that 'needed' to be given the pill. It is to these women that I turn in **chapter seven**. The reasons why it was now deemed appropriate for these 'inappropriately' fertile women to swallow the pill tells a different story; a story that touches on eugenics, fear, maternal health and ethics.

Not all women made appropriate pill candidates. I show that there is no simple mapping of 'good' and 'bad' women on to 'good' and 'bad' bodies suitable for the pill. It is here that we find examples of the contradictions and contrariness of dominant ideologies that structured social and sexual mores in the 1950s. The changing role of the medical profession in disseminating contraceptive information and technologies not only redefines doctors vis-à-vis the pill, but simultaneously redefines the pill. The single mother, the unwanted child, the black and the working class woman all feature heavily in this chapter as the pill threads its way through renegotiations of who exactly the woman on the pill was, or more importantly here, who she was supposed to be.

The negotiation of these new spaces, new roles and new bodies is a recurring theme in chapters six, seven and eight. The pill helped to facilitate the shift from the private to the public arena for contraceptive advice, supplies and practice. Nicole Grant's (1992) work on the Dalkon Shield indicates that for the woman wanting and using contraception, the sphere of greatest importance was not the home or the bedroom, 'but the gynaecologist's office, the family planning clinic, the examining table' (page 160). She continues to assert that even 'the relationships of women to health care professionals overshadowed their relationship to their sexual partners in their narratives'. What is more difficult to assess is whether the development of the pill aided the movement of the contracepted technically infertile woman into the public sphere, her body blurring the distinction between men and women, or whether the pill merely reinforced sexual and reproductive difference. Different spaces thus evolve in which new technological choices are negotiated and evaluated.

Feminists such as Palmer (1989), Stansell (1986), Walkovitz (1992) and Wilson (1991) have all explored ideas about what were the proper environments for the sexually chaste woman. Public women were both presumed to be endangered and a source of danger (Russo 1986). The woman on the pill made heterosexual sex public. Invisible sex can be neither monitored nor controlled (Nathanson 1991: 62) and consequently the public nature of the woman on the pill helped to transform sexual relations, both public and private. She was more than a bearer of meaning, she made meaning. Her ability to transform herself and others was in part a product of how acceptable she became. I argue in **chapter eight** that the ease, and speed, with which the woman swallowing a synthetic pill was legitimised is due to its associations with the natural.

The woman on the pill was naturalised through a series of rhetorical tropes including those around the redefinition of issues such as 'natural' sexual relationships, motherhood, menstruation, the family and the 'unnatural' act of abortion. I unravel a fascinating tale of how the body of the woman on the pill was naturalised. In a highly contradictory manner, the planned woman on the pill required the language and legitimisation of the natural in order to be accepted. The contracepted body was unnatural. Contraception, had for decades, been regarded as not only an act of sin but one that was detrimental to one's health. Now the pill could preserve and maintain both physical and mental health. Opponents of the pill, particularly Roman Catholics, continued to use (un)naturalising discourses to denounce the pill as Natural Family Planning emerged to counter the gradual acceptance of oral contraception.

Female subjectivity is a site of action and negotiation. This thesis explores the body of the woman on the pill as one such location. Did a person have to be a 'woman' to be given the pill? Did a person have to be 'female' to be given the pill? Carol Smart (1992: 7) asserts:

'Woman is not a singular unity that has existed unchanging throughout history as certain feminists, religious and biological discourses might proclaim. Rather, each discourse brings its own Woman into being and proclaims her to be natural Woman'.

I argue that the woman on the pill is the beginning of a redefinition of the natural woman. The woman on the pill was endorsed with credibility and accorded a degree of acceptability hitherto unknown for a woman practising birth control. We need to know why 'certain constructions of female agency are accorded social legitimacy while others are consigned to the realm of the monstrous' (Benjamin 1993: 16). Naturalising discourses expose the constructed nature of the body and of the woman on the pill and illustrate the inseparability of nature and culture. To be marked as woman and as female is, to amend Riley (1987) an ontological, a historical *and* a geographical question.

Summary

In 1960, Marion Hilliard, in *A Woman Doctor Looks at Love and Life*, warned that:

'Woman is equipped with a reproductive system which, even if she never uses it, dominates her fibre. It has vicious power that can leap out of control without the slightest warning, while a man and a woman share a companionable chuckle or happen to touch hands. In the time it takes to blink, they have reached the point of no return (page 71)'.

The point of no return for Hilliard was sexual intercourse. Woman appeared to have little control over her own desires, desires that can erupt, flare out of control, and of which there is no going back. While cultural beliefs about female sexuality and female reproductive processes continue to be dominated by a lack of control, there appears to be another point of no return, from which there is no going back, and which also has its origins in 1960. Modern, scientific, coitally-independent forms of contraception³, in particular the birth control pill, seem to be here to stay, a milestone from which we cannot turn back (and indeed have appeared remarkably resilient, for example, in the era of AIDS).

I use the above extract from Hilliard not only because it reflects a piece of sexual advice that now appears outdated and naive, but because her warnings and premonitions are central to the task that I have undertaken over the following pages. Hilliard has constructed a woman who is 'equipped' with a reproductive system: a system that needs to be controlled, planned *and* natural. The following chapters suggest an alternative reading, a series of different stories that explore the making of the body of the woman on the pill.

I have attempted to provide a contextualised account that begins to answer some of these questions. My story recalls the 'making of the woman on the pill'. In the concluding chapter I argue that this tale provides opportunities for the 'remaking' of the woman on the pill, it allows for the possibility of doing the body differently, in ways that do not necessarily, nor inevitably, endorse racism, sexism, heterosexism and colonialism.

3. Or, as Djerassi (personal communication) pointed out, the pill allows for contraceptionally-independent coitus.

CHAPTER TWO

MAKING BODIES: methodological rationale

I am interested in exploring whether a study of the woman on the pill offers a new way of understanding the female body. Hers is a body that is sexed, gendered and racialized. The making of this body can only be understood within the context of the 1950s-1960s and in specific places.

There were certain things that I needed to know about the woman on the pill in order to begin. Who was she? When was she? Where was she? And, why was I interested in her? I decided from an early stage that I was not interested in doing a 'social impact study'. I did not want to analyse the material and psychological implications of the pill for women and their bodies (note that this construction is odd). I was interested instead in why the pill was developed, who it was developed for, and why for these women, in these specific places and not others. Importantly, this is not to say that their bodies were only a representation. As I outline in chapter three there are fundamental differences between corporeal representations and other kinds of understandings of the body.

My work on the making of the body of the woman on the pill is deeply imbued with two broad approaches:

- (1) the sociology of science and technology
- (2) feminist scholarship on the body (particularly the work of Judith Butler and Donna Haraway)

Although each framework stands on its own and each could be applied to an understanding of the woman on the pill, the synthesis of these theories and approaches, together with an exploration of the tensions, contradictions and alliances, provided me with a new opportunity for understanding the woman on the pill in complex *and* contingent ways. Before I indicate how, and in what ways, these frameworks impact upon my understanding of the woman on the pill, I want to dwell a little longer on what is conventionally known as 'methodology'.

This chapter is about *methodology* - it is about methods and concepts, practices adopted, principles and reasonings. It is about the theory behind the questions asked, and about the frameworks that I use. Writing is not an innocent process of discovery. Nor is reading (Hennessy 1993: 103). This is not simply an account

of *how* I did what I did, but *why* I did it in this particular way. By naming the texts and the ideas that stimulated my research, and structured the questions that I asked, it is possible to isolate and identify key concepts that structured, filtered and directed both my reading and my writing.

Part of the problem and my sentiments towards methodology are that I do not have one 'solid' methodology to adopt, to translate my material, to follow slavishly or to refute and discard. This is not to say that I have no methodology, but what I do have is slippery and is difficult to name. I do not provide a coherent and watertight theoretical framework that I can simply 'feed' the data into and produce a neatly bounded new body. My theory leaks and overlaps, and even contradicts itself, but it emerges alongside the content and context of the making of the woman on the pill. This, however, should not be seen as a problem. As Harding (1986: 649) has suggested we may indeed not want a totalizing theory. Feminist analytical categories should instead be unstable and open to question. Angela McRobbie (1994) has argued that postmodernism is about taking risks with our ideas and opening up new areas of study. It is not an abandonment of theory *per se*, but of theory with a capital 'T'. I may, therefore, not provide a complete, whole understanding of the woman on the pill, but I offer new 'foundations' on which to construct understanding of the corporeal. The body of the woman on the pill is not determined, nor driven, by the theory. Rather, as I go on to detail, the theory and the body emerge side by side.

In 1979, Diczfalusy, a scientist who had devoted time and energy to contraceptive research in the postwar era, declared that 'the time is ripe now to review, with as much objectivity as a contemporary can mobilize, the birth of the birth control pill and its present status' (page 3). It makes sense that Diczfalusy, who had worked in a field of science that was tinged with ridicule, shame and disgust should welcome the period when contraception could be regarded with scientific and objective authority. I, however, have not attempted to 'mobilize objectivity'. I will not pretend that I have because it is not objectivity that I strive for. I would rather side with Donna Haraway (1991: 124) when she asserts that 'all readings are also mis-readings, re-readings, partial readings, imposed readings, and imagined readings of a text that is originally and finally never simply there'. We can, as Catherine Hall (1992: 1) suggests in her introduction to *White, Male and Middle Class*, no longer be naive about reading and writing. At the same time, I am not suggesting that all readings are as valid as each other. What I am interested in emphasising is that I tell only one story of the making of the woman

on the pill, and even this is not a simple linear narrative, but a privileging of selected themes. There are, of course, others stories, but they are not necessarily as valid as each other.

I narrate one tale of the making of the woman on the pill. And whilst it may be tempting to read this as 'just stories' or 'just fictions' this is to ignore Haraway's assertions 'that the production of these accounts is rule-governed' (Young 1992: 174). McNeil and Franklin (1993: 482), in their work on reproductive technologies, also insist on the story-line, but add that 'most of the articles are not just "other stories" or other ways of telling the story of technological developments. They are also posing questions about the format of existing, established and accepted versions of the NRT [new reproductive technologies] story, and asking why these have had such purchase'. In a similar vein the story that I detail here is not simply another version, but a means of analysing what factors were involved in the emergence and realisation of the woman on the pill, where she fitted in and what she changed through her acceptance. It is also about what contraception means (see the following chapter), about the world that evolved around the pill and the specificity of corporeality.

Finding the woman on the pill

I stated in the introduction that this is not a social impact study. I was not investigating the impact of the pill on women (and men). Instead, I wanted to focus on the point of becoming a woman on the pill. I needed to find the 'woman' before she swallowed the pill, to locate the family planners and the religious leaders pronouncing on the pill, or the women and men demanding the pill, before it had become a viable option for millions of women around the world. I needed to find out which bodies were considered appropriate for contraception of this kind. By looking for the action behind the scenes of the performance of the woman on the pill, I used a range of sources which often included those that did not mention the pill. In agreement with Linda Gordon (1986: 29) I too 'consider as evidence material once thought of as outside history': I would add 'outside geography' and incorporate corporeality, menstruation, sex and desire.

I have used a wide range of 'texts'. They range from advertisements in medical journals and cultural histories of the 1950s, to hormonal research findings. These texts created meanings which were shaped and contested. The major sources include:

1. Archives of the British Family Planning Association held at the Contemporary Medical Archives Centre at the Wellcome Institute, London. It is a comprehensive collection and includes memos and minutes, advertisements, financial accounts and press cuttings. It is well catalogued.
2. Heathrington Papers also held at Contemporary Medical Archives Centre at the Wellcome Institute, London. This is a collection of a retired doctor and largely included advertisements and reports - mostly from a later date of 1960s and 1970s.
3. Papers of Sir Alan Parkes, a British biologist, who founded the Journal of Biosocial Science and was on the Eugenics Review Board held at the Wellcome Institute.
4. The British Family Planning Association in Mortimer Street, London, also holds a smaller collection of media and press cuttings. It has a small library and a useful transcript of the television programme on the early history of family planning produced by TV History Workshop.
5. The pharmaceutical companies, in particular G. D. Searle & Co., provided me with copies of their early literature.
6. Personal correspondence with some of the key actors in the development of the pill.
7. The library collections of Senate House, the Institute of Education, University College London, and the British Library all hold a range of books on population, sex, sexuality and feminist and sociology of science theory. The London School of Hygiene and Tropical Medicine holds a comprehensive collection of population literature from the 1950s.
8. The British Library at Colindale was used for contemporary newspaper and periodical material.
9. The London School of Economics Library contains a good collection of family planning and birth control periodicals as well as all the International Planned Parenthood Federation Reports.

10. The British Medical Association library holds a comprehensive collection of medical journals and books as well as an extensive film and video archive.
11. The film archive of the British Film Institute provided a detailed annotated list of films made on the topic during the 1960s and 1970s.

According to convention, I should be documenting my 'sources' and my 'methods'. These could include, for example, textual practices, content analysis, discourse analysis, selective sampling of texts, or in depth interviews. Although this section is about methods I want to stress that the reasons why I found some texts 'useful', and others I deemed 'irrelevant', had more to do with the questions that I was trying to articulate than the content of the texts: the 'whys' rather than the 'hows' of the research seemed to be my overriding concern. Nevertheless, I am inclined to agree with Platt (1981: 32) when she remarks (with reference to documentary research) that:

'the participant observation/fieldwork tradition has now produced some very valuable systematic accounts of method to set beside those on survey method, and there is no reason why the same should not be done for other areas'.

There is a method to using documentary sources, whether they be photographs, diaries, survey data, advertisements or letters (Plummer 1983). There is a reluctance within the social sciences generally to regard this type of research as worthy of attention: surely we all know how to read a document? Platt (1981: 31), noting the paucity of material devoted to the subject, adds that 'to say that one will use documents is to say nothing about *how* one will use them'. Over a decade later, May (1993: 133) also notes that 'despite their importance for research purposes and in permitting a range of research designs, this is one of the least explained research techniques in the literature'. The way in which I *used* the texts is an important point. I have drawn upon both primary and secondary sources, and yet the distinction between a primary and secondary source is always arbitrary. It is the way that a text or film is treated and used that determines its status.

I have been fortunate in having a range of sources available to me. The archive collections, while not comprehensive, are detailed and material often overlaps. Access was not restricted, with the exception of several boxes of the Family

Planning Association archive. The question of authenticity, and hence, what inferences can be drawn from documents is an important issue. The citation of extracts from medical and scientific papers does not offer a body of evidence from which truth can be drawn. It does not provide a bedrock of truth, nor a tale of what really happened, but merely offers one version of events.

The scientific tale provides a heavily coded version, laden with cultural legitimacy and authority. The testing of the woman /on the pill provided 'test results' which I use (in chapter five) to identify one way in which the new body of the woman on the pill was constructed. The trial reports are infused with the clinical language of science and need to be interpreted within such a framework. But, since the social and the scientific are never separate, the social context in which the testing emerges needs to be 'added' in such a way that the two are inseparable. We need to bind the social, the scientific, and the technical in order to get a clearer picture of what was being tested, and what was at stake. The approaches that I used are outlined in the following sections.

Before I move on to explain how the frameworks (sociology of science and technology (STS) and feminist) that I outlined at the beginning of this chapter can help tease out the interweavings of science, culture and medicine, and explain the making of the woman on the pill, I want to touch on the area of women's experience. As I have been emphasising, 'the body of the woman on the pill' was not one woman, located in one place at a specific time. I am interested in the articulation of her subjectivity and the emergence of this as a site of action and negotiation. Her singular body stands in for a myth: an embodied fiction. This is an important point, since when I say that I am not interested in particular experiences' of individual women, but rather, that I am interested in the way in which a woman could become and conceive of herself as a body that was infertile by virtue of swallowing a pill, I am not discounting what women (and others) felt about themselves or their bodies.

Importantly, I have not interviewed women about their own subjective experiences of 'going on the pill'. This would, undoubtedly, have provided a rich source of valid information, and opens up a new area that awaits exploration. The way in which the pill body was, and continues to be, experienced, also offers opportunities to contribute to the ongoing debate amongst body theorists over the body-as-representation and body-as-experience (see Laqueur 1993, Duden 1991). Had I chosen to interview women I would have validated my research in a way

that I have now only have mediated access to. It may, for example, sound simple to 'add' women's experience, to incorporate their tales into my own. But, there is no direct and easy access to an authenticated version of events. What counts as experience is neither self-evident nor straightforward; it is always contested, always political. Individual women's experiences of the pill in the early 1950s/1960s would tell another (complementary, and possibly contradictory) tale.

Joan Scott's (1992) essay on experience emphasises the importance of historicizing and contextualizing experiential knowledge. Using the work on Samuel Delaney, Scott focuses on the discursive nature of 'experience' and on the politics of its construction. Women on the pill in the 1950s/1960s could enunciate their experiences only within a specified context, so that narratives of personal experience are therefore 'inescapably historical'. What I am interested in finding is the world in which these women emerged and made sense of their consumption. Women's experiences of going on the pill requires validation, but experience, like the texts that I use, is not a foundation on which to build, it is an outcome, a production of which its processes require interrogation, not reproduction and acceptance (Scott 1992: 37-38).

Contraceptive technology

The woman on the pill is also an outcome: an outcome of both society and nature. Her body is open to contestation and negotiation. Women swallowed the pill, but it was largely designed, controlled and promoted, by men. Linking technology and women together remains anathema. Moreover, the inclusion of contraception under the rubric of technology almost demands a redefinition of what technology is: technology as something done by men (Stanley 1992). Indeed, in a recent bibliography (Technology and Culture 1992) I could not find one mention of contraception amongst the 2500 citations. Traditionally, contraception is not only created by men but created to suit their needs. Contraceptive technology is not merely the device, or the finished on-the-shelf product. Technology is both 'things' and 'knowledge'. It is as Westrum (1991: 8) points out 'both concrete and abstract. It is both the pair of scissors I hold in my hand and the knowledge of how to make [and use] them'. With the pill, the technology is both the steroid compound, as well as the knowledge of how to take it, in what way and by whom. This knowledge, just like the finished artefact, does not arise from nowhere. It is not a logical outcome of the development of the technological product, but is fashioned and produced in ways that reveal tensions and alliances

and underlying assumptions and presuppositions about men and women in different roles and different places. Sofia (1984: 57) goes even further and broadly redefines reproductive technologies. To 'the list of technologies we commonly think of as reproductive, like abortion, birth control and other more exotic techniques like gene splicing and editing, cloning etc., we add artefacts like radioactive wastes and toxic poisons which also directly intervene in life chemistry and embryology'.

Technology, its contents and demarcations, do not float freely in society, it is not simply 'there' for anyone to take up when and as they require. While it may sound banal to state that the contraceptive pill was shaped and influenced by social factors, it would not have existed outside of them. Technology is embedded in the social fabric and in turn exerts a shaping influence on the society. Technology is 'a product of the existing structure of opportunities and constraints, it extends, shapes, reworks, or reproduces the structures in ways that are more or less unpredictable. And, in so doing, it distributes, or redistributes, opportunities and constraints, equally or unequally, fairly or unfairly' (Bijker and Law 1992: 11). Both Haraway (1993a: 365) and Rapp (1993: 63) talk of 'lumpy' scientific discourses. The idea that science and technology are not discrete from a social context, but are saturated with overlapping and contesting discourses, including those of gender, race, economics and politics, is pivotal to my understanding of the pill. Science, technology and society can be investigated in ways that try to retain the holistic nature of a lumpy world of women swallowing pills. Some of these approaches are set out below.

Sorting Out Science, Technology and Society

The making of the woman on the pill provides a rich source of material, largely unexplored, for the sociology of science and technology (STS). STS has recently provided geographers with a new approach, particularly those working in the rural and agricultural geography (see Mitchell 1994, Murdoch 1994). Whilst my account is sympathetic to many of the founding principles of STS, and is indeed inspired by them, ultimately it deviates from them. I use it as a springboard from which to move on, to say other things, but its premises have helped structure many of my ideas.

STS is not a singular, monolithic approach and in order to understand the contemporary debates raging in STS I have found it helpful to place them in their

historical context. But, tracing the historical development of socio-technical thought, is problematic; it is almost sacrilegious. It is not just that STS denies the validity of a single authentic voice, but any attempt to produce a linear narrative would be anathema to an approach that welcomes and demands *situated knowledges* (see Haraway 1991). Instead, networks of thought and production are created which embrace multivocality, interdependency and heterogeneity. I have, however, compromised for the purposes of brevity and coherence, and have tried to provide an overview of how the sociology of science and technology has 'advanced'. Nevertheless, I am mindful of John Law's (1990: 3) cautionary note 'when we look back we tend to see what we want to see. Accordingly, others will see otherwise'. What this means is that my story of the making of the woman on the pill is just that: one story. There have been others and there will continue to be more. What I stress, what I choose to 'expose' is informed by my privileges and biases.

Each subsection, detailing a different approach (the Strong Programme, the social construction approach, and network analysis), encompasses both historical and epistemological differences. At the end of each sub-section I highlight the possibilities implicated for the woman on the pill. Throughout the following chapters I pick up on these themes in greater depth, but it should be remembered that I pick and choose, and ultimately adopt an eclectic position. As Fuller (1993: xii) has pointed out, STS is not simply one approach, but an 'emerging interdisciplinary complex'. Whilst this may sound a grand epistemological claim, I would argue that STS allows us to redefine the nature of our worlds, and to begin to ask new questions. Fuller (1993: 222) also notes with some dismay that 'STS researchers have already found their way into virtually every inch of knowledge-producing sites. Unfortunately they have remained as non-obtrusive in their participant-observation status as possible, packaging their insights in ways that could make sense only to other STS practitioners'. The application of STS approaches in geography are few and far between, and I am therefore hoping to engage with its limitations and potential.

The Strong Programme

In the 1970s an alliance of historians and sociologists of science began promoting a 'strong programme' which insisted that there was nothing special about

scientific knowledge. The Strong Programme⁴ set about undermining the 'truth' claims of science. Its advocates, particularly members of the 'Edinburgh School', such as David Bloor (1976), Barry Barnes (1974, 1977) and David Edge (see Collins 1994), ventured into the privileged sites of scientific knowledge and challenged strongly held beliefs about the nature of scientific enquiry.

This 'attack' on the status of scientific knowledge, which asserted that all knowledge claims are socially constructed, was allied to an attack on the norms of the scientific endeavour and its institutions. The Strong Programme undermined Merton's (1957) norms of functional science, such as disinterestedness, organized scepticism, universalism, and rationality (Barnes and Dolby 1970, Rothman 1972). Science, conventionally held to be correspondent with nature, and consequently endowed with privilege in declaring and arbitrating the truth, was still understood to be a source of knowledge, but one that was underdetermined by social factors. Social interests were no longer considered 'distorting or biasing forces', but, rather, fundamental to the constitution of scientific knowledge. Knowledge, no longer 'given', was found to be selected and circulated (Barnes 1990).

The Strong Programme was accompanied by a wave of detailed case studies and historiographies (eg. Barnes and Shapin 1979, Collins 1982, Farley and Geison 1974, Harwood 1977, Shapin 1979). These studies highlighted the way in which scientific controversy was allied to political and professional allegiances. Scientific claims were found to be underdetermined, and knowledge claims were shown to be contingent, not universal. The sociology of science became a sociology of scientific knowledge as the focus shifted from the relationships between scientists and institutional systems to the social character of the objects, facts and discoveries of science (Latour and Woolgar 1986: 275).

The Strong Programme was, for many scientists, close to suggesting the sacrilegious. Science is, for many, untouched by social interests (Shapin 1979: 64). What the Strong Programme did was to question its purity, and interrogate the links between nature and society rather than the links between science and its correspondence with reality. Advocates of the Strong Programme argued that the

4. It is entitled a 'strong' programme because it acts as a strong tool 'for deconstructing the truth claims of hostile science by showing the radical historical specificity, and so contestability, of *every* layer of the onion of scientific and technological constructions' (Haraway 1991: 186). It represents the strongest possible constructionist argument and accounts for both internal and external explanations of science.

same categories and tools used to study social practice should also be applied to study science (Fuller 1993). David Bloor (1976) argued, in what has become known as the first principle of symmetry, that it was not only 'false' scientific knowledge that could be explained with recourse to beliefs and social interests, but 'true' science as well. Truth and error were to be treated in the same way. Both required an explanation, neither was self-explanatory. The acceptance of a claim considered 'true' could now no longer be explained by its truth content any more than a 'false' claim could (Bijker 1993). Bloor's uncompromising stance highlighted the extent to which scientific disputes are social struggles in symbolic disguise. Shapin's (1979) influential (if controversial) work on phrenology highlights the vulnerability of the notion of 'pure' science, as 'culture untouched' and 'untainted' by expedient social interests.

Science that appeared to be true, no longer simply succeeded because it worked. We now needed to know why, how, and in what ways it worked. What did it mean to say that something worked? We now needed to know who it worked for, and for how long, and why it stopped working. A scientific theory, or belief, required contextualisation. The acceptance or rejection of any 'scientific theory is always a social act, by a specific social group in particular cultural circumstances' (Livingstone 1992: 2). Truth needed explaining as much as falsehood. Knowledge claims were no longer self explanatory: flying saucers needed as much explanation as black holes (Lagrange in Latour 1993a: 93).

Such claims for the nature of knowledge, and scientific knowledge in particular, provoked a vigorous debate. If all theories are underdetermined by their social context then it was argued, so too was the Strong Programme itself. Bloor, however, rejected that this undermined his position, insisting that causation does not imply error (Brown 1989). Rejecting relativism, the proponents of the Strong Programme maintained a coherent stance in the face of outrage and horror from those who defended the special nature of scientific knowledge. Accusations of relativism did, however, encourage a move towards local, situated knowledge and the integration of class, gender and race as well as reflexivity. A belief in the context-dependent production of scientific knowledge does not demand that we believe everything. The denial of absolute truth does not imply that all truths are the same. Law (1991: 6) asserts that to be a relativist is to recognise multivocality. It does not (necessarily) lead to immorality or indifference, but rather, may prompt caution through the acknowledgement that 'all knowledges are

shaped, contingent, and in some other world could be otherwise'. Latour also rejects accusations of relativism. He suggests (1991: 128) that the:

'point is not relativist: all statements are not equal. It is relationist: showing the relationships between the points of view held by mobilized and mobilizing actors gives judgements as fine a degree of precision as one could wish for'.

Latour argues that it is not judgement per se that is rejected, but rather judgments that transcend the situation, that are outside the network.

Latour (1993a: 94) does, however, criticise Bloor's law of symmetry on the grounds that it, too, is asymmetrical: 'not because it separates ideology and science, as epistemologists do, but because it brackets off Nature and makes the 'society' pole carry the full weight of explanation. Constructivist where Nature is concerned, it is realistic about Society'. Latour is, as I try to show later in this chapter, arguing for a truly uniform treatment of both society and nature.

The Strong Programme and the Woman on the Pill

The pill is not a natural, linear progression of scientific development in endocrinology: it would not inevitably 'have been found one day'. It was not merely, as Finch and Green (1963: 113) suggest, a result of a 'mass of information, of money expended, [and] of man hours spent in laboratory research'. The body of the woman on the pill under the Strong Programme is explicable in terms of the social interests involved in its sustenance and maintenance. For the pill to succeed, for it to have been adopted, and for the woman on the pill to be sustainable, the support invested in her would have to have been substantial. The Strong Programme thus contextualises scientific and technological development and counters any hint of technological determinism.

The Strong Programme also insists on including the success stories as well as the failures. Scientific and technological 'facts' are not simply taken up because they work or abandoned because they fail. As Ruth Schwartz Cowan (1983: 103) notes with regard to domestic technology:

'we tend to make assumptions about pieces of machinery: if there is only one basic kind of refrigerator, or automobile, or television set then that kind must be "best"; and if other kinds did not survive ... then they were not equipped to fulfil our needs'.

Contraceptive practices relegated to the realms of quackery and old wives tales, such as douching, having sex while standing up, or hot baths, would not be explained by their 'false' correspondence to nature. Their rejection under the Strong Programme tells us about the social interests involved, about the nature of society and sex and the role of science. These 'old-fashioned' contraceptive technologies are often deemed to be 'unscientific'. The oral contraceptive pill was hailed as a thoroughly modern and scientific contraceptive. The accepted belief that the pill inhibited ovulation, and note no one knew quite how it did this, needs to be explained: its success is not, in itself, self-explanatory.

Under a Strong Programme the emergence of the pill would be heavily linked to the social interests of the medical and pharmaceutical professions, or alternatively to feminists. But, the pill did not evolve as a result of social pressures and needs, succeeding only when its aims were concordant with an emerging or dominant social order. In the same way, the woman on the pill is not a 'logical' outcome of the successful testing of the pill, nor is she a result of interested parties using her as a vehicle with which to legitimate their demands and causes. While an explanation involving interested groups in society, such as pharmaceutical companies, medical professionals and feminists are important to the story, it is not enough. We need more than that. Women were not duped into taking the pill, they wanted it, often desperately, and were prepared to risk death for it. Women's choices were, and are, sophisticated and complex. Interestingly, recent feminist analysis on the new reproductive technologies is skewed towards a 'strong' explanation. The experimentation of new technologies such as egg harvesting and in vitro fertilization (IVF) on women's bodies represents for many the patriarchal, and often racist and heterosexist ideologies of the 'technodocs' that control decisions of fertility (see Corea 1985, Raymond 1987).

Although it is inadequate for my purposes, the Strong Programme provided the opportunity for understanding scientific knowledge claims as contingent upon a specific time and place. The Strong Programme does not 'explain' sufficiently the making of the woman on the pill and the approach described in the next section was developed as an antidote to the sociological reductionism of the Strong Programme.

STS

The Strong Programme asserts that knowledge claims are nothing but social constructions. In what almost sounds like a rallying cry, Schmaus, Segerstrale and Jesseph (1992: 245) call 'bring back the scientists'. They are demanding an actor-sensitive approach. The reduction of explanation to social interests appears naive and requires the reintroduction of technology and science, but not one that is separated from society. Hence the move onwards, towards what is fast becoming an embracing term for a number of approaches, collectively termed STS (science, technology studies/science, technology and society/ sociology of science and technology). There are several different ways of categorising and grouping these approaches (Westrum 1992, Mackay and Gillispie 1992, Law 1990, Bijker 1993, Pinch and Bijker 1990) but, as Westrum (1992: 73) notes, 'the similarities between [them] clearly exceed their differences'.

While the earlier work in the sociology of science offered a welcome antidote to technological determinism, some theorists feel that the sociological explanation may have gone too far. The understanding of scientific knowledge requires more than the detection of social groups and ideological attachments. We need more than a simple reflection of social interests. Technological determinism is not countered by offering sociological reductionism whereby social factors are especially privileged. One alternative lies in the social constructivist/cognitive approaches whereby nature and society are co-produced and both nature and society are used to explain entities. This represents an attempt at finding a 'way of talking about the social and the technical all in one breath' (Law 1991: 8).

Advancing the earlier work on historiographical studies of science and technology in which social forces determine the direction of scientific knowledge, the recent STS work focuses on the dynamic and heterogeneous nature of socio-technic thought. The use of the 'seamless web' metaphor (Hughes 1986) is often deployed to illustrate the notion of 'heterogeneity'. Technology and society constitute a seamless web, in which context and content co-evolve and in which technology, the social world, and the course of history are all treated as messy contingencies, understood to be interdependent and fallible. It is therefore no longer possible, let alone plausible, to attempt to seek explanations in any one of these entities. Nor is it possible to derive explanations from any one entity, no longer bounded from, nor opposed to, any other. The social and the technological do not play different roles in the analysis. Instead, the social and the technical are

treated in the same way, and the actors involved and incorporated in them, indistinguishable by their location (Mackay and Gillispie 1992).

Law and Bijker (1992: 21) note that 'few tools currently available are useful' in the task of talking about relations that are always both social and technical. Moreover, we need to find a way of talking about the web in ways that avoid traditional categories such as 'society' and 'technology' altogether (page 97). Finding our way through the maze of linguistic and conceptual traps caught in the demarcations of the rhetorical spheres of nature/culture, social/technological, ensures that any attempts at doing STS are not easy. STS appears theoretically astute but remains confusing and convoluted on application. This is, in part, a result of our inadequately conceptualised language for discussing concepts that cross boundaries, transgress divisions, and overlap spheres. We are almost unable to communicate networks of thought and production which embrace multivocality, interdependency and heterogeneity.

The Social Construction of Technology (SCOT)

As the content of science has been increasingly demoted from a privileged position, its explanation has become more of an epistemological task than a sociological one (Pinch and Bijker 1990). The social construction of technology attempts to provide a multidirectional analysis of the success, as well as the failure, of artefacts or, more recently, of socio-technical ensembles (Bijker 1993).

A key concept in SCOT is that of 'interpretative flexibility'. Bijker (1993: 118), one of the chief advocates of this position, defines this concept as follows:

'demonstrating the interpretative flexibility of an artefact amounts to showing that one seemingly unambiguous "thing" is better understood as several different artefacts'.

By focussing on the interpretative flexibility of an artefact, whether this is a process, a drug or an idea, multiple interpretations evolve. It provides a means of viewing the world differently. The concept of interpretative flexibility is also crucial in countering technological determinism. Evaluations of technology are not objective, but are always made from a standpoint of a particular group. SCOT offers a way of getting inside the 'black box', understanding why one artefact succeeds, and is stabilised, while another one fails and is lost. It is a way of opening up the contents of scientific knowledge and looking at their construction.

The interpretative flexibility is determined through the identification of 'relevant groups' which have a configured relationship to the artefact. The artefact is, in turn, bound up with an understanding of the interested party. All artefacts are thus surrounded by an 'interested' network (Pinch and Bijker 1990), which together create a technological frame (Hughes 1990). A technological frame is built up when interaction around an artefact begins. A frame structures interaction between actors, but as Hughes is keen to emphasise, it never does so completely. Actors are members of more than one technological frame, and have different degrees of inclusion and investment in the *stabilization* of an artefact.

SCOT and the Woman on the Pill

As I have indicated, the practical application of STS is not easy. We do not have a language to use. How do we begin to talk about the body of the woman on the pill without isolating the social, the technical and the natural? We need to try to talk about the woman, the pill and society as though they were not separate spheres, merely influencing one another. Perhaps something much finer and more intimate is occurring so that they symbiotically sustain each other. We need to find a dialogue between pharmaceutical companies and menstrual periods, between eugenicists, feminists and pills. The application of STS to the study of the woman on the pill forces us to ask new questions: it makes us take one step back. It is about asking the questions about is the pill safe? Does the pill work? But it is also about what makes it safe and what we mean by work.

An artefact simultaneously affects the definition and distribution of roles of the social group as well as being differentially defined by the group concerned. The selection and mobilisation of interested groups are articulated as actors are identified. To confuse things further, it is important to recognise that the notion of interpretative flexibility can be applied to the pill, the woman, as well as the woman on the pill. I have tried to articulate in a multidirectional, and multi-layered network the interpretative flexibility of the body of the woman on the pill as she would appear positioned at the centre of a socio-technic ensemble in the 1950s. The pill is defined by a range of interested groups, as illustrated in figure 2.1.

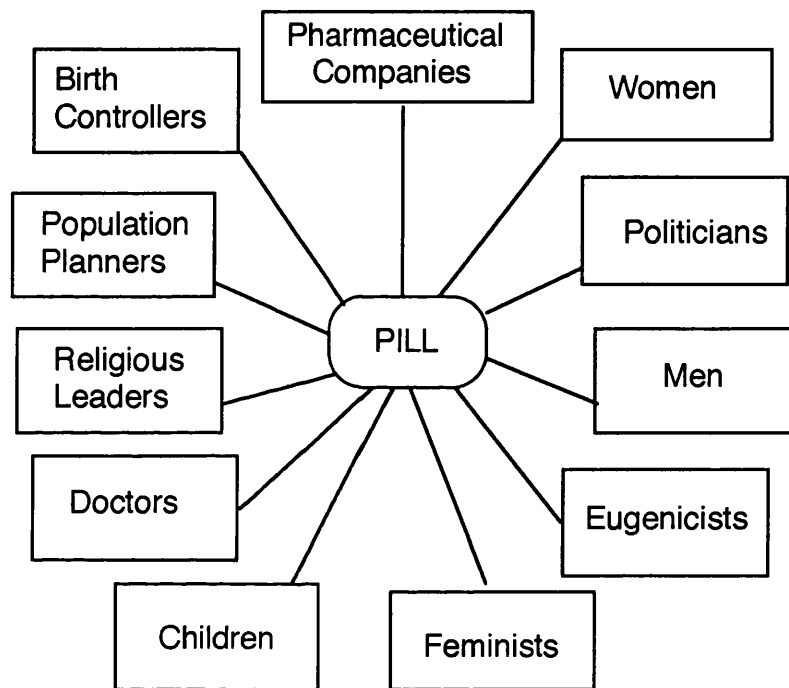


Figure 2.1 The relationship between an artefact and the relevant social groups (after Pinch & Bijker 1990)

The all-white, all-American nuclear family complete with their newly acquired white technologies⁵ epitomises postwar suburbanites characterized in contemporary popular culture. They became one of the idealised couples to which birth control was aimed. But what really was going on? Who and what were defining the needs of contraception, or as it was increasingly becoming known, family planning? How were they in turn defined by the pill? Who was the pill aimed at and for what reasons? Did the development of the pill involve a new conceptualisation of the female body, or merely the family? It must be understood that the definition of an object is never finished nor complete. Overlaps and intersections are commonplace: Dr Mears, for example, was a member of three quite distinct groups: doctor, woman, secretary of FPA (Family Planning Association) in the UK, all of which defined the pill in different ways, and which in turn, were themselves positioned differently in relation to the pill.

A range of 'problems' which the artefact is purported to 'solve' can be identified with respect to each relevant group (figure 2.2). The solutions proffered to solve each problem can also be identified. This enables alternative pathways to be detected and the paths that were followed and enroled, as well as those which failed, to be identified.

Conflicts arise, and it is possible to draw out a tale in which the success and failure of various routes to a solution are followed. It is with such a method that one begins to see how 'things could be different'. This undermines any attempts to rely on technological determinism. This approach exposes the specific links and emphasises the multidirectional analysis. As shown in figure 2.3.

The success of an artefact is directly related to the success of a social group in getting the meaning which it attributes to the artefact accepted. This involves a (re)definition of the 'problem' that the artefact is held to solve. If the problem changes, or a better solution is found, then not only does the meaning of the artefact change, but so does the social group. The family planners, unmarried mothers and economists were all groups that would have defined the pill differently. The success of the pill, as exhibited by its swift uptake across the world, reflects the range of problems that it lent itself to. Encoded within the chemicals of the pill were a range of meanings that ensured that it was able to

5. Cockburn and Ommrod (1993: 64 and 100) note that white goods (such as hair dryers, washing machines and fridges) are traditionally coded as female, and brown goods (such as video recorders, music systems and cameras) are coded as male.

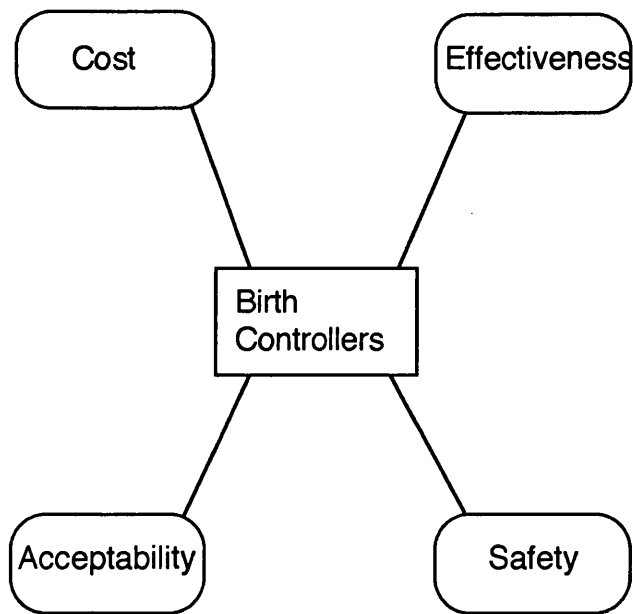


Figure 2.2 The relationship between social group and the perceived problems.



Figure 2.3 The relationship between one problem and its possible solutions.

solve some of the problems that it was purported to ameliorate. The success of the pill was dependent on the success, and failure, of alternative methods of birth control such as the condom, diaphragm and abortion. It was also dependent on the failure of its opponents to mount an effective counterattack. The degree to which the Roman Catholic lobby was able to mobilize was mediated by the power of the pill to shift the terms of debate. Opponents of the pill were now tarred with labels that had previously marred the birth control campaigners: reactionaries, irrational and dangerous.

When an artefact appears to solve the problem, or when the problem 'disappears', such as overpopulation or deaths in pregnancy, it becomes stabilized. Schwartz Cowan (1990: 261) reminds us that 'today's "mistake" may have been yesterday's "rational choice"' and that any group or 'individuals acting within the context of their group identity or (worse) combinations of those groups or (even worse yet) some other group not yet enumerated, may be responsible for the success or failure of any given artefact'. Alternatively, a new problem might be created, which the existing technology cannot solve. Hughes (1990) also adds that the problem to be solved 'may postdate the emergence of the system as a solution'. In such a scenario, new technologies must be found, or the problem redefined (Pinch and Bijker 1990). The more homogeneous the meanings attributed to the artefact the higher the degree of stabilization (Bijker 1993). Misa (1992: 109) also adds that 'if everything were endlessly negotiated' change would be impossible. The SCOT analysis begins to explore how controversies are resolved and consensus engineered. How, in other words, a situated reality is constructed.

What then were the social groups that had an interest in the woman on the pill? Did they all perceive of her in the same way? Did she mean the same thing? What happened to the woman with a diaphragm, or the man with a condom? What happened to the children born during this time? What happened to family size and motherhood and their symbolic meanings?

The SCOT approach involves a new layer of analysis, and involves a new way of conceptualising science, technology and society. But for an even more integrated analysis I have turned to network theory. Latour (1993a: 3) insists that a network is 'more supple than the notion of system, more historical than the notion of structure, more empirical than the notion of complexity'. Here, the multidirectional network is made up of heterogeneous elements which include

technological as well as human actors (Westrum 1991: 73). The focus is also on negotiation and stabilization rather than conflict.

Network Theory

The actor-network theory is the most ambitious and controversial of the three approaches assessed here. Its building blocks are sets of integrated socio-technical systems which are developed out of heterogeneous elements. Theories, devices, and people are all engaged in a process of heterogeneous engineering in which technological struggles and conflicts are seen as part of a process in which knowledge and artefacts are mutually constructed. Actions and products are understood to be outcomes of embedded and complex chains of events involving social/ technical/ scientific/ human/ nonhuman actors.

How scientists create, control, enrol and enlist entities or artefacts into their environments, how they build their versions of the world, becomes the focus of network theory. It is qualitatively different from SCOT in that the 'network' that is produced is not a simultaneous production of a 'text' and a 'context'. As Latour (1991) points out 'we are never faced with object or social relations, we are faced with chains which are associations of human and nonhuman actors'. Culture is not a 'backdrop'; it does not merely provide the historical and geographical setting (Crowe 1990: 27). Network analysis is used to describe and explain the co-evolution of what are usually distinguished as sociotechnical context and socio-technical content (Law and Callon 1992). It aims to transgress cherished disciplinary dichotomies (Singleton and Michael 1993: 227).

The distinction between scientific content and the social context becomes invalid, pushed to the point of meaninglessness. Callon (1991: 137) has argued that the definition of an object is also the definition of its sociotechnical context: '*together* they add up to a possible network configuration'. Within such an analysis, there is no 'inside' or 'outside' from which to describe the pill. To ask what its functions are is at the same time to describe its social uses and definitions: the one cannot co-exist without the other. 'Science' and 'society' become as indistinguishable as 'context' and 'content'. Controversies and technological struggles are redefined as efforts by proponents of different systems force their own constructions on others (Westrum 1991).

Just as the Strong Programme advocated the use of the same categories and tools for the study of social and scientific practice, so the network analyst takes things one step further. Not only should the same categories be deployed, but as Callon (1986: 199) explains 'the moment one accepts that both social and natural sciences are equally uncertain, ambiguous, and disputable, it is no longer possible to have them playing different roles in the analysis'. It becomes no longer possible to have recourse to a bounded body of knowledge of either the social or the natural. Callon (1986: 200) even urges us not to 'change registers in narrative when we move from the technological to the sociological'. Instead, the social and the technical are treated in the same way, and the actors involved and incorporated in them become indistinguishable by their location. Technical artefacts, or human actors, can no longer be regarded in isolation. They are integral components of a multidirectional network and the definition and meaning of an object is inseparable from, and reflexively tied to, its socio-technical context.

Arguing that 'no one has ever seen a social relation by itself ... nor a technological relation', Latour (1991) exposes the contingency of networks, and converts the 'why' questions into the 'how' questions (Latour in Law and Bijker 1992: 290). He proposes that power is not a property of objects or social relations, but of a chain: chains which are associations of human and nonhuman actors. Power, therefore, becomes an effect, something which is continuously transformed and translated (and not simply transmitted). Power is treated as a consequence, not a cause, of collective action (Latour 1986). Truth also becomes the result and not the cause of stabilization controversies (Latour 1993b: 374):

'the stability, robustness, beauty and originality of scientific facts are still there, but so are their artisans, factories, humans and non-human allies, accusations, and instruments who make these facts hold'.

The story of the making of the woman on the pill is still about the hormonal discoveries and the legacy of testing, but so too, is it a story about guinea pigs, population rhetoric and communism.

In Shapin and Schaffer's (1985: 12-14) path breaking book, *Leviathan and The Air Pump*, they note that although their treatment of 'truth' and 'objectivity' is different from most history and much philosophy of science they reject adamantly that they are avoiding the issues:

"Truth", "adequacy" and "objectivity" will be dealt with as accomplishments, as historical products, as

actors' judgements and categories. They will be topics for our inquiry, not resources unreflectively to be used in that inquiry'.

In a similar manner, the facts of the pill will be treated as products of a specific time and place. Their content and acceptance become a focus of inquiry, not a starting point.

Latour's *nonmodern* project is set up as a way of overcoming the 'Great Divide' between the dualisms of nature and culture, human and nonhuman. He urges us to abandon the dualist programme and adopt a new research ethic:

'the dualist program *starts from* a list of factors taken from nature, matter, ecology, and society and then goes to a specific setting to weigh the relative influence of these factors in shaping artefacts. The other research program *starts from* the distribution and allocation of categories, labels, and entities in a specific setting and obtains as a provisional and local *achievement* resulting categories, some of which *may* resemble natures, matters, ecologies and societies of old, while others may not look at all like any of the labels we use to order *our* worlds' (emphasis in original) (Latour 1993b: 376).

Latour is interested in tracing the production of hybrids. Within his worlds, there are no objective substrata or artefacts to which social meaning can be assigned or ascribed. Actors (both human and nonhuman) cannot be simply 'taken off the shelf' (Latour 1993b: 381) and inserted into the process. The woman on the pill cannot be understood without reference to the formation of the pill; thus the starting point of inquiry cannot be the swallowing of the prescribed pill.

Latour's thesis of nonmodernism (1993a) examines the ways in which we have conceptualised nature, society, the global and the local. He states that 'the natural and the social are not composed of the same ingredients; the global and the local are intrinsically distinct. Yet we know nothing about the social that is not defined by what we think we know about the natural, and vice versa. Similarly, we define the local only by contrast with what we think we have to attribute to the global and vice versa' (page 122). Latour's work has implications not only for the reconceptualisation of debates around world population and local, national fears over dysgenic trends, but also about what is natural and what is cultural (or synthetic) for the woman on the pill.

Network Theory and the Woman on the Pill

Opening his book on nonmodernism Latour (1993a) uses an example that was familiar to me. He argues that whenever we read the newspaper 'all of culture and all of nature get churned up again every day. Yet no one seems to find this troubling'. We find for example, 'the Pope, French bishops, Monsanto, the Fallopian tubes and Texas fundamentalists gather[ing] in a strange cohort around a single contraceptive'. Latour is referring here to the abortion pill, but the same social groups and objects are involved in a discussion of the woman on the pill. The woman on the pill within network theory offers an example of someone whose maintenance and stability is rooted in an understanding that nothing is purely social nor purely technical. She becomes an object, as well as a subject, an actor of 'heterogeneous engineering' in which boundaries are disrupted and rendered meaningless. In such an arena the body of the woman on the pill is both legitimised by and legitimates a socio-technical context. We need to assess what that is, and how it is in turn constructed and constructing.

The woman on the pill is an example of the interdependence of human and nonhuman actors: an outcome of interrelated networks and chains of interactions. She is associated with, and mediated by, drug companies, hospitals, men, children, contraceptive devices, industry, education, religion, the state and other women. In a network approach the pill is also a major actor, but is not endowed with intentionality. To indicate its importance 'simply imagine what other humans or nonhumans would have to do were this character not present' (Latour 1988: 299). Latour (1993a: 82) is also interested in how the 'subject' is constituted by the 'object' :

'we possess hundreds of myths describing the way subjects construct the object ... Yet we have nothing that recounts the other aspect of the story: how objects construct the subject'.

How, then did the pill constitute the woman who swallowed it, the women that did not and the men that surrounded her.

Latour defends the inclusion and incorporation of nonhuman actors and deflects any accusation of anthropomorphism. Arguing that technological actors are already 'anthropomorphic through and through', he (1988: 303) offers three reasons why nonhumans should be included in an analysis. Adapting Latour's (1988) thesis, the pill is anthropomorphic in three senses. Firstly, it has been made by humans: it is a construction. Secondly, it substitutes for actions of

people and thirdly, it shapes human action by prescribing back what sort of people should take the pill. Latour (1988: 298) notes, however, the unease with which sociologists include, or rather discriminate against, nonhumans:

'the most liberal sociologist often discriminates against nonhumans. Ready to study the most bizarre, exotic or convoluted social behaviour, he or she balks at studying molecules, plants, robots or *pills* (emphasis added)'.

Latour simply asserts that he sees only actors 'some human, some nonhuman, some skilled, some unskilled'. Within such an analysis, unexpected alliances are made, with unexpected outcomes.

Callon (1991: 136) states provocatively that 'technical objects are not as dumb as we think', and that we should not conceive of them as enigmatic and remote objects. He purports that technical objects link entities together into networks in ways that may be decoded. In its design stage, the character of an object is endlessly debated: what will it look like? what will it do? what will it be used for? what skills will its users need? Callon regards the answers to these questions, questions about the definition and distribution of roles between the object and its environment, as fundamental to any understanding of the actors involved and their enrolment in the stabilization of an object. Callon urges us not to demarcate an 'inside' or an 'outside' since 'the definition of an object is also the definition of its socio-technical context: together they add up to a possible network configuration'.

Woolgar (1991), however, argues that user-configuration involves boundary work. The inside/outside division is illustrative of the human/nonhuman relationship as the 'user's character and capacity [and] her possible future actions are structured and defined in relation to the machine'. Insiders know the machine (eg. doctors prescribing the pill), whereas users (eg. women on the pill) have a configured relationship to it, such that only certain forms of access/use are encouraged (eg. pill taken for 20 days a month). Although Woolgar notes that this never guarantees that some users will not find unexpected and uninvited uses for the machine, he prefaces this by adding that such behaviour would be categorized as bizarre, perhaps typical of mere users (see for example literature on patient failure). He adds that it is in this light that we might best understand the occurrence of 'atrocious stories', tales about the nasty things that users have done to machines (or even in this case the other way round: what the pill does to

women). Such tales portray inappropriate action in terms of the users' disregard for instructions (violations of the configured relationships users are encouraged to enter into) and their disregard for the case (violation of the machine's boundary).

As subsequent chapters show it is not possible to talk about the woman on the pill without always already incorporating ideas about the role she should play, who she is, and who if anyone has 'access' to her. This reflects Woolgar's (1990) assertion that attempts to determine the characters of machines (and here read pills) are simultaneously claims about the characters and moral entitlements of non-machines. The 'machine' can only be understood in terms of its relationship with other entities of its phenomenal world (Woolgar 1991). In other words, the production of the artefact as well as the context are inseparable and intimately related. The evolution of the woman on the pill and her accepted state as temporarily infertile, can only be understood in the context of the social and natural relations that were going on around her.

The inseparability of the context and content is central to Latour's (1993a) latest work. He sets about writing a new constitution: one of the nonmodern. The task is set out as being one which modifies the fabric of our society, a change as revolutionary to our thinking as those required to 'absorb the citizen of the eighteenth century and the worker of the nineteenth' (page 136). He takes the division between science and politics as fundamentally flawed and attempts to retrace the networks that transgress boundaries and divisions of the modern. Using the analogy of the ethnologist, Latour (1993a: 14) argues that she would not 'write three separate books: one dealing with knowledge, another with power, yet another with practices'. In the same way I have not written a chapter on the scientific development of the pill, another on the patriarchy, technoscience and racism, or a chapter on the deployment and impact of the pill. There is no straightforward narrative that brackets off each section from each other. Instead, the discovery of norethynodrel, or the acceptance of the side effects of the pill touch on axes of power, gender, race and class. Science is not in one chapter and the social context in the other. The debates surrounding the making of the woman on the pill extend further than the laboratory, further than the testing grounds of the oral contraceptive, and further than the individual women who swallowed it. The woman on the pill is woven in to science and society, politics and nature.

Latour persistently refuses to locate networks in any one epistemological camp. Instead, he states clearly that networks may be elusive, but are 'neither objective

nor social, nor are they effects of discourse, even though they are real, and collective, and discursive. Networks are simultaneously real, like nature, narrated, like discourse, and collective, like society' (Latour 1993a: 6-7). It is not enough, however, to show that networks exist. The ways in which actors, human and nonhuman, are mobilised and enroled have to be elucidated. It is about finding a place where the mediation of hybrids occurs. It is about finding the place where hybrids do not have to be cast in either the domain of the objects nor that of society. Latour (1993a: 117) notes that:

'the sewer system may be comprehensive, but nothing guarantees that the tissue I drop on my bedroom floor will end up there. Electromagnetic waves may be everywhere, but I still have to have an antenna, a subscription and a decoder if I am to get C.N.N. Thus, in the case of technological networks, we have no difficulty reconciling their local aspect and their global dimension. They are composed of particular places, aligned by a series of branchings that cross other places'.

The existence of the pill, or women wanting it, is not enough on its own to explain the emerging body of the woman on the pill. Rather, the way in which a woman on the pill is stabilized and enroled in to a sophisticated and complex network highlights how the actors are enroled differently at different times and places.

Neither the pill nor the woman on the pill presents itself to the researcher/user already packaged and ready to be employed (i.e. meaning fixed and closed), but, rather, the meaning is constructed through the activities of social groups (Crowe 1990). The woman on the pill can therefore be understood in terms of her relationship with other entities. The way that we think about contraception in general, and the pill in particular, is socially structured. It should not even be assumed that we all mean the same thing when we talk about contraception. Nor do we mean the same thing when we talk about the woman on the pill. We may assume that we know that the birth control pill is a contraceptive (see Bodewitz et al's (1990) detailing of Spanish Pharmacopia which lists one of the side effects of the pill as contraception), but how often is abortion⁶ or infanticide included in the category of contraception? How often is hysterectomy included⁷? There is a politics to the *naming* of contraception. There must also be a politics to the naming of contracepted bodies (as I outline in the chapter 3).

6. See McLaren's (1990) work on the strategic separation of abortion from contraception in the early twentieth century in the US, Canada and UK.

7. See Williams (1991) on hysterectomy of Navajo women.

Luker's (1984) work on pro-life activists reveals that contraception is not simply the prevention of conception. For this group, contraception and abortion downgrade the traditional roles of men and women. The desired form of contraception is not one that is 100% foolproof. Luker argues that this belief should not be reduced to church dogma but represents a much more subtle expression of difference. Natural Family Planning offered women an enhanced status within the marriage and an endorsement of separate spheres.

The woman on the pill is located. Her subject position is an outcome of interlinking actor worlds. She is situated in a network of politics and science and embedded within a context that is always contestable. The network approach thus bridges the divide between politics and culture and science and technology. Button (1993: 10) however has argued that the focus on the translation of the narratives of politics by technological artefacts into scientific and medical narratives induces a loss of the content of technology it wishes to address. He goes on to suggest that because of the ever-widening net of social relations that the network seeks to embrace 'the artefact is then merely used as a means for viewing the clash or conflict of elements in that network. If the technology is seen as the function of the interaction of elements it becomes a way of addressing those elements ... technology merely assumes the role of a platform from which to watch the associative and disassociative forces at work' (page 24). Button has a point, and I am unsure how to resolve it. Technological artefacts are outcomes of a network within which they are also embedded. It is not possible to remove, or isolate, the pill, for example, from the social relations. The pill cannot be 'added' to a preformed social and cultural world. We produce both the objects and the subjects of our discourse, and therefore it must be us who define the limits to the network.

One of the sustained criticisms lodged against science studies is that of a disregard for gender (and increasingly race). Despite pioneering (but ultimately limited) work on gender and technology (e.g. Mackenzie and Wajcman 1985, Wajcman 1991, Martin 1991) Cockburn (1992) is forced to insist that 'social relations of technology are gendered relations, that technology enters into gender identity and that technology cannot be fully understood without reference to gender'. She adds the caveat that the actor-network approach is incapable of engaging sufficiently with gender and labels it as apolitical (Cockburn 1993: 8). The concepts and language of STS are, she argues, inadequate for a gendered analysis

with its lack of attention to subjectivity and power. Latour (1991: 128-129) defends his position by stating that:

'there is never any need to leave our networks ... There is no need to go searching for mysterious or global causes outside networks. If something is missing it is because the description is not complete. Period.'

Cockburn and Ormrod (1993: 9-10) continue to denounce the lack of attention paid to gender relations. They note that 'women are invisible in the mainstream technology studies partly because of their actual absence from the network as there defined. There is a relatively simple corrective: extend the scope of the technology world'. Such a criticism does not appear to refute Latour's approach, merely refine it.

But the problem runs deeper. Women cannot be 'added' by enlarging the scope of the network. Rather, neither gender, race, the body, nor sexuality can be added as though they already existed. They are also outcomes, again, of both society and nature, science and politics (Haraway 1993b). An enriched study of technoscience and society is currently being undertaken and offers exciting opportunities to refigure both science and society (see, e.g., the journal *Science as Culture*). It is creating new subjects of knowledge and new locations to occupy.

When Susan Leigh Star (1991: 30) says that 'we walk in a very interesting landscape these days in science and technology studies' she is referring to a landscape that many of us may not recognise. Concerned with humans, cyborgs and nonhumans, this new terrain is dependent on the recognition of humans as well as nonhumans as actors. Nonhumans, whether they be doors, cars, multinational corporations, or pills, are attributed (narrative) rights. The boundary set up between nonhumans and humans is understood to be constructed, a 'consequence of interaction rather than something that determines it' (Akrich 1992: 206). It should be understood as part of a broader refusal to accept divisions between nature/culture, science/nature, human/nonhuman as well as mind/body, male/female (Leigh Star 1988). Such a refusal is at ease with a larger feminist project to which I now turn.

Science and Gender

As I stated earlier, my understandings of the making of the woman on the pill are indebted to the theoretical approaches found under the rubric of STS.

Nevertheless, and somewhat surprisingly given the nature of STS, its practitioners remain largely unheeded of the category of gender. Indeed, Evelyn Fox Keller (1989) notes with sadness, 'the failure simultaneously so perplexing and also frustrating - of historians and sociologists of science - to grasp the fundamentally social character of the force of gender'.

Keller (1992) suggests that the way forward is to assess the way that we address questions of science. She is keen to examine the way in which questions get foreclosed. She wants to know *how* it is made so difficult to ask different questions, and identify alternatives. How might the questions we ask about the pill already commit us to a set of assumptions and allied beliefs? How, for example can we talk about contraception in a non-racist/non-eugenicist way given the legacy of contraceptive practice and the allocation of reproductive rights?

Feminist writers have consistently provided us with a sustained critique of the masculine construction of science and technology. Writers such as Birke (1986), Bleier (1984), Fee (1979), Hubbard (1990) Ussher (1989) and Vines (1993) have all demonstrated how our social views infuse our scientific beliefs from everything ranging from women's brains, to sport and hysteria, hormones and aggression. Fausto-Sterling (1989: 326) argues that unconscious assumptions about gender continue to 'create implausible theories of sexual development'. She cites the example of the recent 'discovery' of the sex-determining gene on the human Y chromosome and asserts that its current conceptualisation reinforces popular notions of 'sex' as something clear-cut and unambiguous. They have also shown that the infusion of the social into the scientific is not a one way process. The social informs the scientific and the scientific affects the social. Emily Martin's (1987, 1990a, 1990b 1992a) work successfully and skilfully exposes how our scientific facts are culturally constructed.

Feminist analyses of science have clearly demonstrated that science is far from the objective/neutral knowledge that it is set up to be. Nor is it separated from its social context. One feminist whose work has illuminated the symbiotic connections between science, nature and culture is Donna Haraway. She offers us a synergistic approach, breathtaking in its scope. She remains able to develop an intimate and intricate narrative as well as providing a broader, comprehensive picture. She has adopted a novel and compelling approach that has close links with both feminism and STS. Her work demands a thorough critique of the way that we think about nature, about sex, and about ourselves.

Longino and Hammond (1990: 170) point out that Haraway is not 'telling us how to do science or how to create new knowledge. She is telling us how to read science and telling us, if anything, how *not* to create knowledge of human society and human justice'. Haraway is in the business of building complex narratives. She treats scientific texts as stories, 'her readings are complex, intertextual and socially and politically situated' (Longino and Hammond 1990: 169). Within such an analysis, the pill, its producers, its users and its opponents, are located within institutional contexts, allied and affiliated with each other in ways that cannot be predicted.

Haraway's (1992a) essay on *The Promises of Monsters* draws on Latour's work on nonmodernism and his attempts to theorise new ways of documenting science in society and of creating a way of mapping hybrids' of the nonmodern. Accepting his refusal to differentiate between humans and nonhumans, as well as between the social and the technical, Haraway (1992a: 297) endorses two turns which encapsulate Latour's agenda for change. She urges us to unblind 'ourselves from the sun-worshipping about the history of science and technology as paradigms of rationalism'; and secondly, to refigure 'the actors in the construction of the ethno-specific categories of nature *and* culture'. This reconfiguration of how nature and culture are mediated, and of how the links between them are established, involves the consideration of both human and nonhuman actants. Both Haraway and Latour insist that both the social and the natural are collective artefacts, 'not because of some transcendental Social that explains science or vice versa, but because of its heterogeneous actants/actors'⁸ (Haraway 1992a: 332 footnote 10). This point is worth emphasising; neither the social nor the natural can be deployed as explanations of truth. There is nothing driving the narrative, there is no transcendental explanatory factor and there are no invisible actors. The further we delve into the 'black box' the harder it is for things to appear unmediated. The pill, the body, patriarchy, technocracy, and power all become outcomes of complex actor networks.

Haraway builds the world by telling stories. Latour's now classic phrase 'science is politics by other means' has been adapted by Haraway as 'primatology is politics by other means'. Using a similar analogy, I argue here that endocrinology is also politics by other means. What we need are the means to decipher and

8. Latour and Akrich (1992: 259) clarify the distinction between an actor and actant: 'an actor is an actant endowed with character (usually anthropomorphic)'. This definition, however, leaves the question of animals as actors rather ambiguous.

unravel the webs that produce a scenario whereby politics is consistently excluded from the scientific arena. The stories do not have beginnings, nor do they have ends. They have 'continuations, interruptions and reformulations' (Haraway 1992b: 68). Her work appears to epitomise what the network approach aims to do. It is consistently powerful in its refusal to demarcate what is social and what is scientific, what is cultural and what is political. Her stories are 'so finely textured, with networks so highly articulated that any hope of maintaining a dichotomy between the substance and the context or between science and ideology becomes forlorn' (Young 1992: 183). Context and substance become interdigitated and inextricably interwoven. Her worlds are all mixed up and her stories spin out a tale that weaves a narrative without reducing it to its parts, but includes them nevertheless. Dense, to the point of struggle, or as Young (1992: 183) suggests, exhausting yet exhilarating, her work combines and convolutes, and yet illuminates in moments of breathtaking clarity the encompassing world that we inhabit, its contingency and its messiness.

Drawing on Latour, Haraway aims to grant historicity to all the actors, and not just the human ones. Acknowledging Bruno Latour's work Haraway explains her reasons for including nonhuman actors. She suggests that although only some actors are language-bearing they are not the only ones that have a kind of agency (and note that this does not imply intentionality), adding that maybe only the actors that are organized by language are subjects. Haraway (in interview with Penley and Ross 1990: 9) notes that the acceptance of heterogeneous entities as actors is a 'risky business':

'Folks get mad at me because you can't be pinned down, folks get mad at me for not finally saying what the bottom line is on these things: they say, well do you or don't you believe that nonhuman actors are in some sense social agents? One reply that makes sense to me is, the subjects are cyborg, nature is coyote, and the geography is elsewhere'.

Haraway continues to evade being pinned down through the deployment of metaphors such as the coyote or trickster. Her tactical evasion is a powerful reminder that we do not know what, for example, nature is. Nor do we have the language to define it. Instead, categories such as nature are used strategically, in different ways and in different places, to have different meanings and effects. One metaphor, in particular, that Haraway has become synonymous with is that of the cyborg. Cyborgs belong to Nature, to the collective and to discourse (Latour 1993a: 64) .

Haraway's metaphorical use of the cyborg fits well with my work on the body of the woman on the pill. The woman on the pill, combining the technical and the biological, can be understood to be a point at which sex and gender and the body can be re-theorised. It is a site where radical contingencies can come into play, reworking old consistencies and conventions.

The cyborg is a myth of political identity; 'a creature of social reality as well as a creature of fiction' (Haraway 1991: 149). It is oppositional, utopian and completely without innocence. Embodied within it are possibilities of constructing new, monstrous, oppositional identities. It is self-conscious about its construction and production and operates to generate and be explicit about its coalitions, rather than naturalizing them. The cyborg is about new connections, new alliances and the creation of new boundaries and borders. It is about mixing and stirring and requires an acknowledgement of 'the primacy of multiple membership in many worlds at once' (Leigh Star 1991: 30). It is the potential of this 'monstrous' impurity, the disruption of boundaries, that promises something new. It allows for the possibility of re-articulating the body of the woman on the pill. The recombination of technological and human actants provides escape opportunities for evading patriarchal, technocratic and racist explanations. The woman on the pill could be one of Haraway's wily knowledgeable coyotes, even a cyborg: disrupting our constructions of the natural, of the social and of the technical.

The woman on the pill *could* be a cyborg. Blurring corporeal boundaries with technology the woman on the pill offers opportunities for new alliances and displacements. Haraway's work is also about uncovering the narration of nature and science in such a way that mediation, history and construction are excluded (Haraway 1989: 146). Latour and Woolgar (1986: 176) insist that it is not 'just that facts are socially constructed', but that the 'processes of construction involve the use of certain devices whereby all traces of production are made extremely difficult to detect'. The body, and especially the female body, is also narrated in such a way that it appears unmediated by culture and politics. The appearance of the sexed body, or woman, as always already there is a constant theme that will be reiterated throughout later chapters.

The body is constructed as innocent, as pre-discursive, and as natural. By revealing the constructed nature of the woman on the pill, her body becomes a site



for the reworking of meanings. The exposure of the ways in which her race, sex, gender and sexuality have been produced as inherent and natural, as well as in ways that endorse heterosexuality, racism, colonialism and sexism, provides opportunities for figuration. Figuration, as Haraway (1992b: 86) suggests, 'is about resetting the stage for possible pasts and futures'.

Donna Haraway is also exploring in inventive and challenging ways the use and coherency of dichotomous thought. She actively illuminates the flaws and incoherency implicit in much of our dualistic structures. Haraway's writings on the revisioning and de(con)struction of nature allow for a multiplicity of readings. I quote below an extract from one of Haraway's early (1979: 206) essays on this theme. A theme which she again develops a decade later, highlighting the historical and geographical specificity of the constructed natural body:

'part of remaking ourselves as socialist-feminist beings is remaking the sciences which construct the category "nature" and empower its definitions in technology. Science is about knowledge and power. In our time, natural science defines the human being's place in nature and history and provides the instruments of domination of the body and the community. By constructing the category nature, natural science imposes limits on history and self-formation. So science is part of the struggle over the nature of our lives'.

The traffic between nature and culture needs to be deciphered so that nothing can be said to be wholly natural or wholly cultural. We need to be able to trace how things become mediated and thereby challenge and legitimise ideologies and values. The reconfiguring of ourselves is part of that project. The history of the body has exemplified how nature is employed to legitimate beliefs. Although we have no shortage of twentieth century examples, the muscled body (Schulze 1990), the transsexual body (Epstein 1990), the cosmeticized body (Spitzack 1991), the anorexic body (Bordo 1990), this exposé of the natural body is only reluctantly applied to our own bodies. Contemporary bodies remain surprisingly un-interrogated as legitimators in specific social contexts.

So far, I have been arguing that the woman on the pill is an artefact. I have focused on the production and reproduction of the technology that contracepts the woman and renders her temporarily infertile. The pill is understood to be an outcome. The 'woman' is also an outcome. Drawing on theories of performativity, and recent work on the body, I want now to explore the making of

the woman who went on the pill. By revealing the constructed nature of the woman on the pill, her body becomes a site for the possible reworking of gender performances and subjectivities. Indeed, it is precisely because the production of the sexed subject has been so rigidly constrained, that Butler (1993: 123) argues that gender (and other regulatory fictions) 'ought to be repeated in directions that reverse and displace their originating aims'. It is this process that I address in the following section. How could the woman on the pill be repeated in ways that disrupted the conventions and fictions that already designated her performance?

Performing Bodies

If we are no longer able to start with 'the body', adding colour to make white, or adding sexuality to make heterosexual, or adding the pill to make infertile then we need to begin again. We need new ways of thinking about nature and biology: ways of thinking that do not endorse immanence nor truth. Recent work on the constructions of gender, sex, race and sexuality provide opportunities for re-laying our foundations of truth.

The pill contains a combination of synthetic hormones which modify the female reproductive system, inhibiting ovulation. The pill acts on a body that is sexed female. While it may sound banal, and even nonsensical, to suggest that the subject popping the pill is female, sex is, however, not simply something one has, or is. Despite appearances, sex is an affect, a means by which 'one becomes viable ... that which qualifies a body for life within the domain of cultural intelligibility' (Butler 1993: 2). Historians of the body, including Foucault, Gilman, Laqueur, Jordanova and Duden, have illustrated that the sexed body is as (un)natural as gender. There is no trans-historical female body of woman, rather sex is *produced* as the biological base on which gender is constructed. It is this appearance of sex as pre-discursive, prior to culture, that obscures and disavows the constraints that produce a domain of intelligible and unintelligible bodies.

The woman swallowing the oral contraceptive pill makes sense to us in the twentieth century. She has done since 1960. We accept her body in a way that we do not accept a woman taking steroids for muscle building, or a transsexual taking the pill. By using the example of the woman on the pill I want to try to show how bodies are made culturally intelligible. I want to illustrate how the body of the woman swallowing the pill may (or may not) conform to the cultural matrix of what Judith Butler (1990: 17) has called intelligible genders:

"Intelligible" genders are those which in some sense institute and maintain relations of coherence and continuity among sex, gender, sexual practice, and desire'.

The sexes/genders/desires (and races) that make sense to us are not natural or inevitable. The heterosexual, fertile, woman on the pill, wanting to plan the size of her family, for example, makes sense. Her body is both legitimate and intelligible. Located in another position, such as the postmenopausal single woman, or even as a man, she is less 'intelligible'.

Rather than understanding sex as a biological bed-rock upon which the cultural layers of gender are built, gender is the means by which the sexed body is established as natural. I am taking gender to be 'the repeated stylization of the body, a set of repeated acts within a highly rigid regulatory frame that congeal over time to produce the appearance of substance, of a natural sort of being' (Butler 1990: 33). There is, then, no sexed female body awaiting enculturation, or engendering. Instead, gender is understood to be performative, constituting 'the very subject it is said to express' (Butler 1991: 24). If gender is thus no longer assumed to signify, or be restricted by, sex, then as Butler (1990: 6) suggests, '*man* and *masculine* might just as easily signify a female body as a male one, and *woman* and *feminine* a male body as easily as a female one'.

If gender is performative, constituting identity, then it makes no sense to start with the subject behind the act, the woman prior to the swallowing of the pill. It makes no sense to start with the 'woman', since 'no subject is its own point of departure' (Butler 1992: 9), rather the subject is constituted by the positions that are already in existence through the performance of gender. There is no volitional subject before the act, but the woman on the pill is constituted by the taking of the pill. It is at this location, that the doing, the becoming, the repeated making of the woman on the pill offers a site of resistance. When Butler asks (1990: viii) what is the 'best way to trouble the gender categories that support gender hierarchy and compulsory heterosexuality', she argues that the answer lies in 'doing things differently'. I am asking whether the woman on the pill can also be 'done differently'. If the woman on the pill confirmed and perpetuated the norms that produced her, is there an alternative way of constituting the subject of the woman taking the pill that disrupts or subverts the same regulatory fictions? It is these codes and regulatory fictions that constituted the subject of the woman on the pill that I address in the following chapters. These regulatory fictions include racism,

compulsory heterosexuality, family norms and are also extended to notions of class, health and fitness.

If the woman on the pill confirmed and perpetuated the norms that produced her, is there an alternative way of constituting the subject of the woman taking the pill that disrupts or subverts the same regulatory fictions? I needed to understand how the woman on the pill had achieved stability and coherence; and how she had achieved 'intelligibility' before I could begin to rethink her.

The woman on the pill thus becomes a site of contestation. Her body is not stable, and as I show in the following chapters, nor is her sex, or her race fixed or given. The woman on the pill is 'doing' her gender in a specific way. She does it repeatedly, (and never completely), and in interaction with others. She does it in a way that produces an illusion; an illusion of essence. Gender is the 'mundane drama specifically corporeal, constrained by possibilities cultural' (Butler 1989: 261) that produces the illusion that we simply *are* our genders, that they are an expression of our identity. What Butler (1990: 141) argues, however, is that gender is performative, constituting the identity that it is said to express or reveal. Consequently, the exposure of 'a constructed identity, a performative accomplishment' such as the woman on the pill, reveals the 'performative possibilities for proliferating gender configurations outside the restricting frames of masculinist domination and compulsory heterosexuality'. In this way, the woman on the pill becomes a possible site for 'gender transformation'.

To understand gender as a performance, and identity as performative, is not, however, to presume that gender is, or can be, chosen. There is no 'sexed body' that 'decides' what gender it is to be. Gender is not a style, or a game that can be played. Gender is not voluntary, rather 'performativity has to do with repetition, very often with the repetition of oppressive and painful gender norms' (Butler in Kotz 1992: 84). It is this forced reiteration of norms, the repetition of 'regulatory fictions' that constitutes the subject (Butler 1993: 95).

Butler has attempted to find a new way of talking about 'the subject'. A subject that is not always, already positioned within phallographic, heterosexist and patriarchal discourse. She suggests that the current 'feminist subject turns out to be discursively constituted by the very political system that is supposed to facilitate its emancipation' (Butler 1990: 2). In an analogous way, the sexed body that is trying to create new radical, discontinuous ways of thinking about sex and gender requires a new vocabulary, a new way of understanding sexed bodies.

Stage Nerves: problems of performance

If there is no solid corporeal base on which gender, sexuality, and race can be built, but only compulsory practices that themselves produce the embodiment of these norms, then where does it leave us? Does it leave us stranded as the category 'woman' loses its coherency? Does the exposure of its complicity in the legitimisation of racism and homophobia make it redundant? Are we left wondering how to think and organise?

Di Stefano (1991: 87) questions the extent to which 'gender', as a 'central category of feminist analyses, [has] functioned as a partner of white privilege and as a beneficiary/proponent of the heterosexual contract'. She asks what is its future as a category of analysis if gender is no longer adequate. Once gender has been rejected, surely, Di Stefano argues, so too must race, class and other general categories be abandoned. But, what Butler and other theorists of performativity are offering are ways of reconfiguring the active female subject, and this includes the woman on the pill. Sex, according to Butler, becomes not something one has, or is, but that which qualifies a body, and renders it intelligible. The task is therefore to find ways of producing sex (and bodies, genders and races) differently.

Despite the radical possibilities of this project of performativity, other axes of power do not appear to be adequately or equally acknowledged. Butler has argued that it is not possible to 'be' a human body that is not always already sexed (hence the difficulties and confusion resulting with the birth of an intersexed infant (see Kessler 1990), and whilst it may be possible to render a body 'culturally intelligible' without knowing its class or ability, can we make sense of a body that does not have a 'race'? Although Butler (1993: 17) wants to include 'other regimes of regulatory production [that] contour the materiality of bodies', she appears to continue to privilege gender.

I argue that the fictions that produce the effects of race and other social norms are as equally compulsory and violent as gender, and yet persist in being relegated to a subsidiary role. Several theorists have suggested that this lies in performativity theories' emphasis on the visual. Peggy Phelan (1992: 98) has drawn on the work of the artist Adrian Piper and the film *Paris is Burning* to illustrate the 'failure of the visible to represent race'. Grigsby (1992: 90) also uses the work of Adrian Piper. Piper is black, but can 'pass' as white. Her confrontational work 'undoes complacent assumptions regarding the categories of race and racial

identity at the same time that she further entrenches them' by exposing and marking the invisible. In this case it is 'whiteness' that is rendered visible. Race, alongside gender, can be disrupted and subverted: race is not merely something that we have, or are. Its fictions have a history and a geography. The exposure of the constructed nature of racial types, ethnicities and colour offers opportunities for rendering new bodies intelligible and embodying a new kind of materiality.

Lisa Walker (1993) has also used the notion of visibility to critique theories of performativity. Stating that 'privileging visibility can be politically and rhetorically effective, it is not without problems' (page 868), she uses the figure of the lesbian femme (presumed to pass for straight) to assess attempts at 'denaturaliz[ing] categories that support the definition of the Western unitary subject (read: white male heterosexual)' (page 869). Walker contends that the lesbian femme is rendered invisible and her role in destabilizing heterosexual norms remains unacknowledged.

There remains another subtle tension in Butler's work. She insists that the pre-discursive is always already produced and maintained while at the same time continuing to appeal to an identity that cannot be recognised as a product of culture (Shearer 1991). Bordo (1992) also suggests that Butler lapses into linguistic foundationalism: her world is one in 'which language swallows everything up'. She argues that the body needs to be contextualised and needs to be located.

I like Butler's thesis. I have found it persuasive and illuminating and it has helped me make sense of the woman on the pill. But, if I accept Butler's argument, where am I left with sex, gender, race, sexuality and the body?

Whilst I do not remain convinced that the concept of gender is altogether redundant, I acknowledge that its conventional relationship with sex is now discredited. The sex/gender dichotomy is still the premise for much feminist geography and there remain many strategic reasons for retaining it. If we begin to undermine the sex/gender system (already seriously in jeopardy through critiques by postcolonialist and black feminists) then we also need to undertake a thorough review of how we have traditionally understood the body. We need to assess whether the political and theoretical intervention of 'gender' has now served its purpose, whether it is 'safe' for feminists to move on.

**'I know no woman - virgin, mother, lesbian, married, celibate - ...
for whom her body is not a fundamental problem.'**

Adrienne Rich 1979

In the 1970s white women no longer defined by their biology, no longer delineated by their hormones or their genes, began to argue persuasively that gender was a culturally constructed notion that varied across time and space (see Women and Geography Study Group (1984), Momsen and Townsend (1987) for early feminist geography examples of this type of uptake of gender). Gender, derived from Simone de Beauvoir's claim that 'one is not born a woman', was a useful intervention. It held out the 'promise of enabling an analysis of male privilege as the product of historically and culturally constituted systems of gender inequality, [and] not as the natural outcome of biological differences between males and females' (Yanagisako and Collier 1990).

Linda Birke (1991a: 244) notes that feminists have been just as good as everyone else at making the assumption that biology is fixed: set in opposition to a flexible culture. The argument no longer holds that just because something is natural, like female biology, it cannot be changed, or that conversely, because something is social, such as gender, it can easily be adapted. It certainly seems easier, for example, to eliminate the menstrual cycle than alter attitudes towards the (polluting) effects of menstruation. It seems to be more 'natural' to adapt pre-natal screening than change our attitudes to disability and incorporate an acceptance of disability rights. The social is now appearing as mutable or as immanent as the natural. We are increasingly being shown that what we had accepted as the 'truth' of science, whether it was our sexed bodies, or the fusion of sperm and ova (Martin 1987), has already within it a gendered perspective that is not divorcable from its cultural context. Our understandings of both the social and the natural are as contingent as each other. The time seems ripe for a new way of trying to think through sex and gender. Fuss (1989) cautions against a simplistic and reductionist analysis which necessarily identifies nature with fixity and sociality with change. She successfully illustrates how easy it is to buy into essentialism; to act as if essentialism has an essence. We urgently need to revise the way we think about nature and culture if we are to understand the body - its sex and its gender (and race and class).

'Gender' clearly enabled feminists to engage in debate, allowing the biological to remain 'fixed', neutral, yet capable of being bypassed. Now, it seems, in a similar move, feminists can take up 'the body' in a way never available before. The theoretical expansion in conceptualizations of the body has enabled groups which previously avoided it to enter into the debate on a different footing. Birke (1991b: 448) for example, acknowledges that the body and biology 'seemed a dangerous move for feminists'. Adrienne Rich (1979: 40) wrote that 'the body has been made so problematic for women that it has often seemed easier to shrug it off and travel as a disembodied spirit'. The 'equality versus difference' debates (see Bacchi 1990, Snitow 1991) reflect how entrenched the arguments over the importance of biology have become. Now, some feminists are 'willing and able to speak of what was unspeakable, to explore what was once forbidden, and risk positions that were once sacrosanct or untouchable' (Grosz 1991: 2). They are theorising the body in innovative, experimental and exploratory ways: now that the body is being conceived in ways that are no longer 'associated with immanence, nature and otherness' (ibid).

What Birke (1991a) calls for is a means of conceptualising the biological in terms of transformation. She continues to argue for the radical potential implicit within such a standpoint: 'for women to define and theorise their own bodily experiences would be a transformation in itself' (page 255). It should be pointed out that it is possible to theorise extensively about the radical potential of redeploying and destabilizing the binary categories of nature/culture and masculinity/femininity, but when it comes to practicalities the options are severely limited. We have no way of conceptualising, let alone negotiating what these new entities might be. I therefore have to agree reluctantly with Harding (1986: 662) when she bemoans the fact that we are forced to think and exist within the very dichotomizing we criticize: 'these dichotomies are empirically false, but we cannot afford to dismiss them as long as they structure our lives and our consciousness'.

The stance adopted by feminists on the topic of the body has ranged from explicit denial to whole-hearted acceptance. Indeed, Hermsen and van Lenning (1991: 125) go as far to suggest that 'no subject in the history of feminism ... has given rise to so much controversy as the body'. The either/or argument corresponding to the nature/nurture debate within which thoughts on the body tend to stagnate, is beginning to appear outmoded and conceptually inadequate. This has contributed to, and been inspired by, a debate over the inadequacy of the essentialist/social constructionist argument (Vance 1989).

Essentialist accounts of the body insist that the meaning and contours of the body are fixed: a given which occupies a pure, pre-social and pre-discursive space (Fuss 1989). Woman can thus be specified by one or a number of inborn attributes which define, across cultures and throughout history, her unchanging being, in the absence of which she ceases to be categorized as woman (Schorr 1989: 40). It is no coincidence that historically the essence of woman has been located in her biology, in her body, and not in her mind (Spelman 1982). For the dominant culture, Cocks (1989) suggests that the 'body is entirely straightforward'. It is divided into two sexual types which are genitally distinct. Every body must be coded as either male or female and fixed to each type is a detailed script which naturally codes the flesh. So entrenched is the 'natural' divide between the sexes that 'for many people the notion of natural sex difference forms a limit beyond which thought cannot go' (Connell 1987: 38). Foucault (1980), however, is one of many authors (see also Gilman 1989, Frieled 1990) who has documented the 'persistence that borders on stubbornness' with which modern western societies have insisted upon the polarity and binarism of sex. This almost intractable insistence exposes the fragility and fluidity of the boundary itself. Constant and continued effort is required in order to sustain its appearance of stability. Kuhn (1988: 16) concludes that the body 'figures as an irreducible sign of the natural, the given, the unquestionable, and functions principally as a signifier of sexual difference'. And yet there appears to be little, or no historical consistency to the bodies which gather under the rubric of the 'natural' body. What counts as the 'real' and as 'intended by nature' seems to change rapidly, and yet, the bodies upheld as 'correct' have foundation. They are constructed, geographically and historically specific, and their legitimacy lies in the social ideologies they are said to embody. The exposure of the inconsistency of natural bodies, and in particular of women's bodies, helps to reveal the seamless *production* of the natural sphere.

Whilst it may have been useful for feminists to adopt an anti-essentialist stance it was also too easy and convenient. Simply through an accusation of essentialism, and one barely needed to qualify it further, it was possible to undermine an argument, pronouncing it dangerous and disempowering. The political difficulties, particularly in terms of alliance-making, are exposed by Spelman (1982, 1988) in her analysis of somatophobia⁹ exhibited by some feminists. She

9. Somatophobia is a term used by Spelman (1988: 126) to represent fear of and disdain for the body. She argues that somatophobia is a 'centuries-long tradition in Western culture'.

notes how many anti-essentialist feminists (eg. Firestone, Friedan, de Beauvoir) have ignored the assumption of racist, sexist and classist (and I would add heterosexist, ableist and ageist) attitudes in their outright rejection of essentialism. Fed-up with the 'self-righteous' tone of superiority and the 'contempt' from the accusers of essentialism (de Lauretis 1989: 3), new theoretical possibilities are currently being explored. Alongside a critical revaluation of the way in which the word, in the context of feminism, has been endowed with the power to reduce to silence, to excommunicate those 'guilty of it' (Schorr 1989: 40), essentialism is now being de-essentialised. Essentialism, therefore, needs to be contextualised and given historical specificity. Rabine's (1989) essay on the St. Simoiennes' women of early nineteenth century Paris exposes how essentialism may be the only means available to speak against the dominant ideologies of sex and gender. Essentialism need not be reactionary always and everywhere. Essentialism and anti-essentialism should not be conceived of as fixed and in opposition, but at times, as working towards the same ends but deployed at different times and places. Essentialism thus becomes a 'necessary fiction': necessary at specific times and places (Weeks 1991, Spivak 1988, Fuss 1989, Jackson and Penrose 1993).

We are therefore at a point where we are trying to find new, and appropriate, ways of talking about men and women; ways of talking that embody multivocality and mobility. Within such an understanding, the woman on the pill is not definable by one singular discourse. As Riley (1988: 2) has noted, "'woman" is historically [and] discursively constructed and always relatively to other categories which themselves change'. In an analogous manner, the woman on the pill is an unstable category and her embodiment can be read in ways that 'undo' nature. As Scott (1989: 94) highlights, the point of new historical investigation is to disrupt the notion of fixity, to discover the nature of the debate or repression that leads to the appearance of timeless permanence in binary gender representation'. This perspective resonates with the aims of both Haraway and Butler, as well as with Latour. It is about unpicking the threads that give rise to a 'seamless web', and about uncovering the mediations that generally lie submerged and hidden.

Joan Scott (1989: 99) goes on to say that 'only if we recognize that "man" and "woman" are at once empty and overflowing categories ... empty because they have no ultimate, transcendent meaning, overflowing because even when they appear to be fixed, they still contain within them alternative, denied or suppressed definitions'. Paralleling the acceptance of gender as an 'empty and overflowing'

category, the body can also be understood in ways that do not endorse ahistoricity or aspatiality.

The body and the environment have tended to be consigned to opposing realms with the body, nature and biology, assumed to be stable and unchanging, counterposing the constantly changing social environment and history. Duden (1991) asserts that the drawing of this boundary expelled the body from history, and I would add from geography (see Gillian Rose (1993) for discussion of disembodied geographies). Thus the body is never outside history, and in turn, history is never free of bodily presence. Nor is the body ever outside geography, or geography free of embodiment. The body is seen to be invested with political and historical meaning, of which, none is immutable or incapable of being subverted. The body is thus seen as possessing no pure, uncoded state, outside the realm of culture (Fuss 1989). There is no way that a body can escape its social and cultural setting; there is no body outside of it, recognisable as human. The work of Mary Douglas has informed contemporary understandings of the body. Douglas' (1973) pioneering work proposes that there is no way of considering the body that does not at the same time involve a social dimension. The social body constrains the way the physical body is conceived and bodily experience, in turn, reinforces and mediates understanding of the social.

Summary

The contracepted body of the woman on the pill is a co-product of nature and culture: neither of which should be privileged over the other. Could the sexually active woman on the pill, combining the technical and the social in one swallow, consuming decades of scientific research, subvert the intended message? We need to know how she was meant to be read. We need to know who was doing the defining of the pill and the problems that it was purported to solve. We need to know about the development of the pill and the constitution of the woman on the pill before we can think about the ways in which her body could be read; read in ways which do not inscribe racist, patriarchal and heterosexist meanings on her body.

Embodied within an anatomical and physiological narrative are values about how the sexes should be ordered, and the roles and spaces that they should inhabit. Just as Butler suggests that we 'do' our gender, I am arguing that we 'do' our bodies. It almost sounds nonsensical to suggest that even our bodies are 'done',

and yet this performance is about constituting sex, gender and race relations. But, there could be no body of a woman on the pill if there were no discourses to make her body culturally intelligible. This is not to say that there would be no bodies, but that they would mean something very different.

In this chapter I have outlined the method by which I 'found' the woman on the pill in the 1950s/1960s. She is not singular, nor is she monolithic. She is found in different places and at different times and it is her story that I have traced and begun to retell. Pointedly, Haraway notes (1989: 8) that 'stories are always a complex production with many tellers and hearers, not all of them visible or audible. Story-telling is a serious concept, but one happily without the power to claim unique or closed readings ... Stories are means to ways of living'. The story I tell about the woman on the pill has implications for the ways in which we continue to construct our knowledges and our experiences. It privileges theory perhaps over method and is about the questions that we ask and those that get foreclosed in the (re)telling of stories.

In the next chapter I begin to explore the ways in which the body has been socially, historically and geographically constituted. The body has a history and a geography, and the ways in which these have been excluded is pertinent for my analysis of the woman on the pill. The re-drawing of the links between science and culture, between hormones and sexual politics is the project of both feminism and science studies.

CHAPTER THREE

CONCEIVING THE CONTRACEPTED BODY

There is nothing new about contraception; it has always been practised. Everything from dung to douches has been tried as men and women have attempted to regulate their fertility. The woman on the pill is one example of women (and men) attempting to exercise control over their bodies.

The woman swallowing the pill did so in order to inhibit ovulation. And, although I show in later chapters that this has not always and everywhere been the case, by the time the pill had been accepted as an effective and safe contraceptive, 'contraception' had been clearly re-defined as the prevention of sperm fusing with an ovum. Alongside this re-definition of contraception, 'contraception' and 'birth control' ceased to mean different things. Practices such as abortion and infanticide were edited out of both of these remits¹⁰.

The woman on the pill re-defined what 'contraception' meant. As the terms of reference shifted so that contraception became scientific, medical and effective, so too did those who promoted and used it. Those that opposed the use and dissemination of the pill now appeared backward and tainted with a reactionary brush. What I want to do in this chapter is suggest that the way in which we understand the contracepted body cannot be isolated from the way in which we understand reproduction, fertility and sex. I want to argue that it is not possible to start with a woman *not* on the pill. I want to illustrate that there is no 'natural' fertile female body of a woman ready and waiting to take the pill. Her body, a body that is not yet contracepted, not yet rendered infertile, necessarily demands an understanding of what conception and reproduction are.

The body is not a starting point (Eisenstein 1988: 91). I cannot start with a woman *not* on the pill. Feminist historians and geographers have shown that the category 'woman' is spatially and temporally specific. Gender has been shown to be a mobile and mutable variable that has no origin. We are now beginning (as I outlined in the previous chapter) to question the foundations of sex as well as gender. Sex is now being exposed as specified and not universal. Consequently,

10. When I first started the research I was puzzled to find such a clear distinction between contraception and birth control. They did not mean the same thing. Indeed, in the 1990s, the use of both terms has become almost interchangeable and the differences have become indistinguishable in popular discourse.

the woman on the pill (her body, race, sex and gender) is dependent on geographical and historical contingencies.

In this chapter I detail how we have come to understand the ways in which we sex bodies. I want to build on the work that challenges the naturalness of sex and the categories of 'female' and 'male' and show how the contracepting of bodies is deeply implicated in the construction of gender ideologies. Appropriating Triechler's (1990: 117) comments on the experience and meaning of childbirth, the social expression of contraception 'is often assumed to be an overlay, as it were, upon a biological reality which is, in contrast, unchanging and universal'. It should not be plausible, therefore, to take the notion of a biologically, naturally fertile female or, for that matter, male body on which contraception can be introduced or simply applied.

The history of the contracepted body is not simply about which devices were used, by whom, when, and in which places. Indeed, the tale of contraception that I provide is not the one that is commonly found in histories of contraceptive practice and technology (see Himes 1936, Robertson 1990). I have wanted to question the 'logical' progression of techniques from the primitive to the sophisticated, and its associated narrative laced with humour and disdain. Technologically 'advanced' methods such as the RU486 abortion pill, or intra-uterine devices (IUDs) are frequently harmful and unsuccessful when compared to low grade technological practices such as menstrual extraction (Punnett 1990), and yet continue to be promoted as 'better' for women. Moreover, I have not provided an account of past contraceptive techniques, for these are documented elsewhere (see for example Riddle 1992 and McLaren 1990 for contextualised accounts). The story of contraception that I am interested in telling, however, is about the contracepted body and its dependent stories of politics, places and pleasure.

Contraception and Corporeality

Ideas surrounding the fertile and reproducing body are closely allied to the sexed and sexualised body, and in turn these are inter-related with notions of ageing, health, class, disability and race. Our past, present, and future interpretations of the flesh have, embedded within them, presuppositions about how the sexes, races and classes should inhabit the world. The corporeal drama, of the changing contours of the body, weaving its way through history and geography, has

enabled the body to be read and deciphered as a marker, signifying changing social and cultural boundaries.

Sex is not fixed, nor is its assignment neutral. Sexual markers, such as menstruation and ejaculation, reappear in different guises; their functions varying across time and place. The tales that they help spin construct sexual identity. They also expose the flexibility and the 'opportunism' of these bodily markers that help construct the natural. The constructions of the sexed body that I relate are not presented in order to illustrate previous error, or false science, but rather to illustrate the cultural constructedness and historical and geographical specificity of western sexual and scientific knowledge.

One Sex or Two?

From the period predating the Middle Ages, and up until the mid-eighteenth century, sex was understood to be a sociological, not an ontological category¹¹. A biological parallelism existed between men and women, whereby women were understood to have the same genitalia as men but turned inside out. Galen¹², the Greek anatomist, wrote that woman is but the inverse of the male:

'turn outward the woman's [genitalia]; turn inward, so to speak, and fold double the man's, and you will find the same in both in every respect' (in Gilman 1989: 58).

In another description, also ascribed to Galen, the comparison of the 'instruments of reproduction' in the man and the woman is compared to the relation which 'exists between the impression of the seal which leaves its imprint and the impression of the seal in the wax' (in Jacquart and Thomasset 1985: 37). This conception of the human body is what Laqueur (1990) has named the 'one-sex model'. According to the 'one-sex model' the vagina is understood to be an interior penis, the labia as foreskin, the uterus as scrotum and the ovaries as testes (figure 3.1).

¹¹. As Cadden (1993: 2) reminds us not only did scientific ideas about sex differences in the later Middle Ages 'participate in the broader culture's assumptions about gender, but medieval society in Western Europe was not homogeneous: it was peasant and noble; north and south, rural and urban; Christian, heretic, and Jew ... There is no coherent set of concepts that can be said to constitute the medieval gender framework'.

¹². Galen (129-199 AD.) wrote widely on the major medical and philosophical issues of the time. Born in Pergamum, Asia Minor, he eventually settled in Rome and was highly influential.

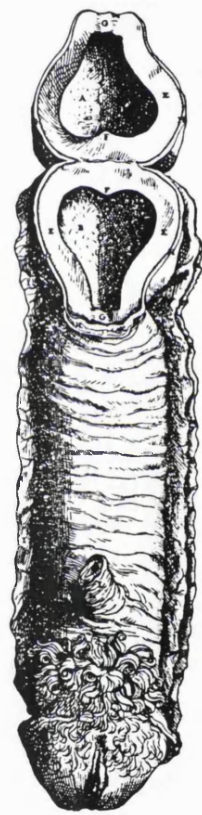


Figure 3.1. Female Reproductive organs by Vesalius (1543)
(source: Roberts and Tomlinson 1992: 164)

Despite this apparent biological symmetry, a hierarchical order was nevertheless maintained. Not only were women seen as smaller in size than their male equivalents, but man was taken as the norm, the standard. Woman was an inferior model of the male. Biology was not a privileged discourse that could be deployed to fix the essence of gender (Jones and Stallybrass 1991: 81). Instead, heat or social temperament determined not only sexual character but also the shape of the genitalia. Masculinity and femininity were not associated with the sexual act, but were seen as a combination of the four elements: air, water, earth and fire and their corresponding humours of blood, phlegm, melancholic humour and yellow bile (Schiebinger 1989: 161). In Aristotelian and Galenic terms, Man was held to be the hottest and most perfectly created thing (Maclean 1980: 31). Woman was seen to be less fully developed than man because of a lack of heat in generation. She was cooler and therefore had to retain her reproductive organs within the body. Order and hierarchy were therefore imposed on the body from outside: sex was thus determined by gender and not vice versa (Schiebinger 1989: 160). Carol Rawcliffe (1994) has also noted that Galenic teachings were closely associated with interiority and exteriority. She notes the analogy between inner and outer body space and the domestic and public spaces occupied by women and men.

Not only were men and women's forms and organs held to be directly comparable, so too, were their fluids and physiological properties. Woman was held to be colder and moister in dominant humours, and thus unable to 'concoct' perfect semen from blood. After 1580, Maclean (1980: 34) points out that the 'coldness' of women was no longer seen as a sign of imperfection. Instead, her cooler metabolism became functional: causing her to consume (burn up) food less quickly, thus leaving residues of fat and blood which could be used in the nutriment of the foetus and newborn child.

Menstruation was also seen as a result of a woman's cooler metabolism. Menstrual blood was understood to be the leftover of nutrition (Laqueur 1990: 35). Pregnant and lactating women, who did not menstruate, turned superfluous food into nourishment for the foetus. Showalter and Showalter (1970: 83) indicate that such a belief continued throughout the first half of the nineteenth century. Gélis (1991: 11) details the related nature of milk and blood, and the perceived connection between the womb and the breast. Milk was understood to be menstrual blood which had turned white and been diverted into the breasts.

The perceived physiological similarity between men and women was therefore maintained through an elaborate (and at times highly contradictory) schema.

In some of the earliest documents recording beliefs on conception, and its closely related ally, contraception, Greek anatomists denied that women contributed actively to procreation. Rather, women provided the womb which merely acted as a container. Aristotle (c.384-322 BC) argued that 'a woman is as it were an infertile male' and proclaimed that woman did not produce seed (cited in McLaren 1990: 19). She was thus unable to reproduce by herself. Instead, woman provided the matter out of which a foetus was fashioned: 'Aristotle likened the male element operating on inactive female matter to a carpenter working on wood or to rennet changing milk into cheese' (McLaren 1990: 20).

These Aristotelian views were contested and did not attain widespread currency. By the late fifth and fourth centuries BC the role of the female in procreation had been acknowledged. The Hippocratic texts asserted that not only did women contribute seed, but also insisted that both partners had to experience pleasure for intercourse to be productive. By the first century AD, the dominant ideologies of reproduction had emerged from the teachings of Galen the Greek anatomist who codified medical knowledge. He declared that women secreted a colder, less active semen (Horowitz 1987: 89). Ideas surrounding contraception and sterility continued to be associated with humours. Insufficient 'heat' led to a failure to concoct seed. Moreover, too much heat was also considered to be a cause of infertility, since excessive heat burnt up the seed (Laqueur 1990: 101).

Galen's work was derived largely from animal dissection. Knowledge of animal anatomy was applied to humans, giving rise to theories supporting the 5-lobed liver and the 3-ventricled heart. The notion that the womb consisted of seven compartmentalized cells resulting from the dissection of sows was also popular. The seven cells, consisted of three on the right, warmer, side in which the male embryo developed and the three cells on the left, cooler, side which were reserved for the female embryo. The cell in the middle was reserved for the generation of the hermaphrodite (Kudlen 1965: 415).

It was not until the Renaissance that the prevailing Galenic-Hippocratic perspective began to lose its ground. Vesalius¹³ anatomical text, *Fabrica*, was

13. Vesalius (1514-1564), based at Padua, produced new Latin versions of Galenic texts. He went on to transform western concepts of the structure of the human body, insisting that 'human anatomy must

seen as a serious challenge to Galenic anatomy. The female reproductive anatomy became the focus of intense scrutiny and debate. It was not, however, until the late sixteenth - early seventeenth centuries that the old 'two-seed' theory began to be seriously undermined (McLaren 1990: 152). With the claim by Harvey¹⁴ in 1651 that all life came from the egg and the subsequent 'discovery' of the 'ovum' in 1672¹⁵ by de Graaf (1641-1673), the male appeared to be relegated to 'an unaccustomed and distinctly secondary role in reproduction' (Laqueur 1990: 171). When van Leewenhoek¹⁶ 'discovered' the existence of spermatozoa in 1678, semen was said to contain millions of small complete animals or animalcules. This claim once again restored the creative role for men. A debate ensued between the 'ovists', who argued that all beings were created at the beginning of time and encapsulated in eggs, and the 'animalculists', who asserted that mothers were accordingly little more than incubators. Debate between ovist and spermatocist positions continued unabated with the role of man and woman in the reproductive process a matter of heated dispute (see Horowitz 1987).

Towards the end of the eighteenth century 'sex as we know it was invented' (Laqueur 1990: 149). The 'one-sex' model of sexual symmetry collapsed and was steadily replaced by a horizontally ordered 'two-sex' model. The Male and the Female emerged as biologically divergent beings, opposite yet complementary. Man and Woman became physiologically and anatomically incommensurable as sexual difference became grounded in the biological, and the natural. This transition in symmetry did not happen everywhere, or at the same time, and nor was it a permanent shift.

Organs that had once shared the same name became linguistically differentiated eg. the female testes were now known as ovaries. The nervous system was feminized

be read from the "book of the human body" and not from the pages of Galen', especially since Vesalius declared that Galen had never dissected the human body (Magner 1992: 158).

14. Harvey (1578-1657) discovered the circulation of blood and transformed understandings of the body. He also studied at Padua.

15. Technically the ovum was not discovered until 1827 when Karl Ernst van Baer microscopic studies revealed its existence.

16. van Leewenhoek (1632-1723) was a Dutch microbiologist.

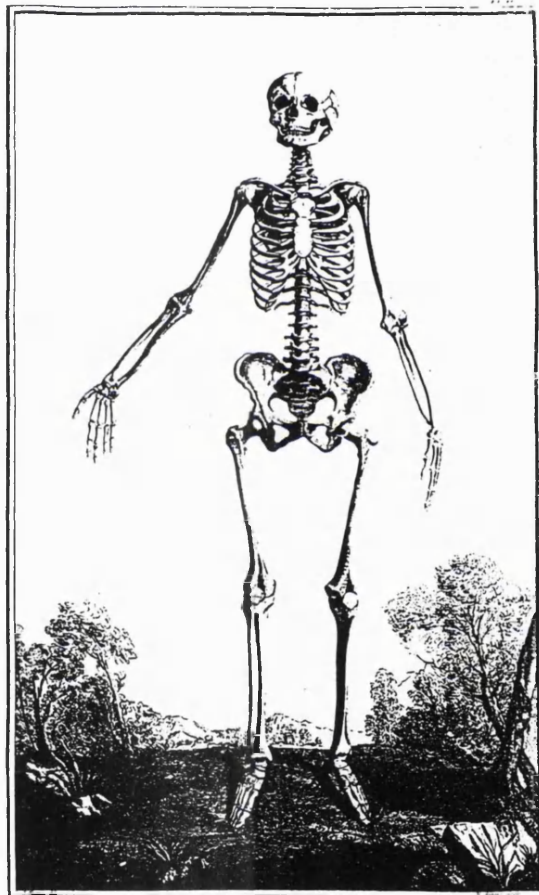


Figure 3.2. Female skeleton (1759)
(source: Roberts and Tomlinson 1992: 441)

and the musculature was masculinized (Jordanova 1989: 58). Londa Schiebinger (1989: 191) has documented the emergence of the female skeleton at this time (1730-1790) in Western Europe with a tiny head and a large pelvis (see figure 3.2). The differences between the skeletal structure of the two sexes were posited as being complementary. The large pelvic structure of the woman complemented the male's by providing a large passage through which the larger, superior skull of the male infant could pass. By the 1790s, the body had been re-sexualised. European anatomists presented the male and the female body as each having a distinct morphology: physical and intellectual strength for the man and motherhood for the woman. Perry (1992: 116) has also suggested that the 'desexualisation of women was accompanied, in part, by redefining them as maternal rather than sexual beings'.

The revaluation of woman's reproductive system was, however, simply one element in a much broader revolution. New models of the body were employed in contexts of legitimation. The body was codified and re-shaped concurrently with the re-negotiation of social order. Sex roles were re-assessed as a matter of urgency during the Enlightenment period as patriarchal authority was challenged and new public spaces evolved. The continued subordination of women had to be reconciled with a newly envisioned order that purported that, by nature, all men were equal (Schiebinger 1991). There was no inevitable reason why science was called upon to arbitrate an essentially political debate, but, as Schiebinger (1989: 215) highlights, in the eighteenth century 'there was still great optimism that social issues - such as women's rights and abilities - could be resolved' by an impartial and objective science.

In her analysis of the French Revolution, Dorinda Outram (1989: 26) writes that 'histories of the body are also histories of the state'. The recreation of a public sphere and the (exclusion of the) female body were central to the French Revolution. Femininity became 'radically incompatible with the new definition of the public sphere' (Maza 1991: 82), a theme taken up by Pateman (1988) who argues that the construction of a citizen demanded the exclusion of women from the public sphere.

Hunt (1990) endorses the view that the boundaries between public and private life were highly unstable during the French Revolution. Using the portrayal of Marie Antoinette, Hunt (1990: 2) suggests that women were depicted as particularly suited to the private sphere. Marie Antoinette was depicted as:

'the inversion of everything woman was supposed to be ... She was the ultimate, vicious expression of what the revolutionaries feared women would become if they entered the public realm: hideous perversions of female sexuality'.

Moreover the feminine appeared to threaten the virility of the state (Hunt 1991: 110).

By contrast, Laqueur (1990: 193-194) cautions against the wholesale acceptance of simple correlations between changing social ideas and the emergence of new ideas about the body:

'The rise of evangelical religion, Enlightenment political theory, the development of new sorts of public places, the eighteenth century; Lockean ideas of marriage as a contract, the cataclysmic possibilities for social change wrought by the French revolution, postrevolutionary conservatism, postrevolutionary feminism, the factory system with its restructuring of the sexual division of labour, the rise of a free market economy in services and commodities, the birth of classes, singly or in combination - none of these things caused the making of a new sexed body. Instead the remaking of the body is itself intrinsic to each of these developments'.

While I empathise with Laqueur's rejection of a deterministic and totalizing explanation, his analysis tends to lapse into broad sweeping statements that are uncontextualised and uncontested. Nevertheless, the emergence of the two sex model is persuasive and confirms the view that there is no simple determining or uni-linear relationship between nature and culture nor between social relations and socially coded bodies. The inter-connected and mutually constitutive relations provide fertile ground for detailed empirical work.

Schiebinger (1989: 214) notes that although the 'search for sex differences' was political, she adds that the medical community's interest in the comparative anatomy of men and women in the late eighteenth century was shaped, in part, by concerns for women's health. It was during this period that male midwives were attempting to consolidate their position and their professional identity, and thus, required a greater understanding of women's physiology (Donegan 1978). Roberts and Tomlinson (1992: 447) also suggest that the rise of professionalism of the male midwife is indicated by the publication of three major obstetrical atlases in England. Men had previously been excluded from the actual delivery,

but with the use of a new instrument, the obstetrical forceps, and a new literate knowledge unavailable to most, and especially to women, men midwives were able to acquire much of the lucrative practice formerly open to women only.

In her attempt to make visible the corporeality of the women of Eisenach, in eighteenth century Germany, Barbara Duden (1991: 113) attests to the fact that what we now perceive clearly as sex characteristics were not in the seventeenth and eighteenth centuries unequivocal signs of difference between man and woman. She finds that what distinguished women from men was not their monthly bleeding as such but solely its periodic nature. A periodic, spontaneous excretion was habitual to women: discharged matter was not gender specific. The same analogies evident in the Middle Ages come into play once again. Bleeding piles were seen as analogous to women's 'monthlies'. Haemorrhoids and the menses were understood to be interchangeable. Men could even experience regular menstruation: they bled from their fingertips and could have milk in their breasts (page 117). Duden's work clearly illustrates that processes such as the flow of semen or the monthly bleeding have not been seen at all times and everywhere as unique to a specific gender. She asserts that it was only from the end of the seventeenth century that menstrual blood and milk were definitively assigned to the functional sphere of physiological motherhood, adding that the physiology of woman was only subsumed under the primacy of motherhood from the end of the eighteenth century (page 158), an issue questioned, perhaps, by Cooter's (1991) work on male menstruation in the Victorian period. The importance of menstruation as a mark of fertility and of femaleness is again highlighted in chapter eight.

The sexed body in the nineteenth century underwent a consolidation of this newly defined sexual difference which had originated in Western Europe. There are a number of alternative, and not exclusive, theories as to what happened to the body, both male and female, during the nineteenth century. This period, in which sexual difference was increasingly founded in the body of the woman, is particularly important for the foundations of the making of the body of the woman on the pill. The legacy of Victorian medicine, anthropology and science is pervasive and continues to have material implications in the late twentieth century. Gilman (1985) documents how the deployment of the physiognomy of the black female, specifically in the personification of Sarah Bartmann, or the 'Hottentot Venus', provided an arena in which black female sexuality was labelled as deviant. Sexual difference became naturalised and enroled in a wide range of

debates in order to legitimate social ideologies. Women became fundamentally different from men: their polar opposites. The legacy of this sexual system is still with us today and we are perhaps only beginning to break out of the cycle, once again beginning to confuse and blur the boundaries of sex.

During the nineteenth century Woman became, almost exclusively, determined by her biology and in particular by her reproductive organs. All female functions were identified by the medical profession as inherently sick: puberty was seen as a 'crisis', a pregnant woman was 'indisposed', and menopause was the final, incurable ill. Ehrenreich and English (1979: 108) have coined this period, in which women were frequently reduced to the pathological functioning of the body, as the 'dictatorship of the ovaries'.

A woman's body was understood to contain a limited amount of vital energy; if a girl used this energy up in activities, such as sport and education, the development of her reproductive organs was bound to be disrupted. Intellectual stimulation was understood to be more harmful to a woman than physical labour. Brainwork destroyed feminine capabilities as educated women became sexless creatures (Bullough and Vogt: 1984). An educated woman was held to be unable to achieve true womanhood: 'she would become weak and nervous, perhaps sterile, or more commonly, and in a sense more dangerously for society, capable of bearing only sickly and neurotic children' (Smith-Rosenberg and Rosenberg 1984: 15). All women, to a lesser or greater extent, were deemed to be hysterical. They were perpetually ruled over by their reproductive organs (Cooter 1991: 158). Indeed, Smith-Rosenberg and Rosenberg (1984: 13) cite a physician stating in 1870 that it was 'as if the Almighty, in creating the female sex, had taken the uterus and built up a woman around it'. Woman appeared to be pathologically reduced to her uterus (Cooter 1991: 158). There was no parallel development for the male: men could choose whether to indulge or repress their sexuality (Smith-Rosenberg 1988: 183).

The fragility and frailty of woman was believed to permeate her bones. In 1892 Alexander Walker wrote that not only were woman's organs and bones less hard than man's but that she is 'further distinguished by her softness, the smoothness, the delicacy and the polish of all her forms' (page 159). This idea of 'softness' took a particularly strong imaginative hold upon people' (Jordanova 1989: 28). The female body began to acquire a distinct physiognomy, indicating her passivity: 'woman, in advancing towards puberty, appears to remove less than

man from her primitive constitution; she always preserves something of the character proper to children. The texture of her organs was said to never lose its 'original softness' (Walker 1892: 156). The ovary, which did not even have a name of its own for two millenia, had by the beginning of the nineteenth century 'become a synecdoche for woman' (Laqueur 1990: 4).

Although by the late eighteenth century the Galenic model was in retreat, with women being seen as a race apart by virtue of their reproductive functions, sex differences were not of kind but of degree. There appears to have been an unfailing reluctance to accept natural differences. With nineteenth century advances in developmental anatomy pointing to common origins of both sexes in a morphologically androgynous embryo (Laqueur 1987: 3), the notion of latent hermaphroditism became a popular and haunting theme. 'It was precisely the way in which one sex could shade into the other which posed the greatest problem for the Victorians' (Moscucci 1991: 194) as hermaphroditism continued to haunt those who asserted the biological, scientific argument for sexual difference.

Friedli (1980: 246) notes that prior to the eighteenth century enshrinement of the problem of hermaphroditism in medical discourse, the existence of hermaphrodites appears to have been of little concern to society. The figure of the Renaissance hermaphrodite suggested that the category of gender was 'inevitably unstable'. Consequently, 'the imagined "truth" of gender which a post-Renaissance culture would later construct depended upon the disavowal of gender as fetish. In its place, it would put a phantasized biology of the "real"' (Jones and Stallybrass 1991: 106). Sexual ambiguities were suppressed as a continuum of sexual forms was slowly replaced by a polarity. The re-structuring of our understanding of ourselves and our bodies as a result of the newly defined sexual boundaries produces the illusion that 'these boundaries are permanent, unchanging, static; the reality is that we are always at work creating and maintaining them' (Gilman 1989: 4). The scientific and medical discourse disallowed, and even annihilated any consideration of the possibility that a person could be a mix of two sexes. Through the use of the autobiography of Herculin Barbin, Foucault (1980) powerfully illustrates the implications of forcing everybody to have one, and only one, sex. The hermaphrodite soon became marked as pathological, disrupting the discrete male/female dichotomy. Doctors became the arbiters of ambiguous sexual identity, discovering and deciphering the 'true' sex. Kessler (1990) has examined the 'treatment' of intersexed infants in the USA in late twentieth century. She argues that the medical management is

ultimately dependent on a cultural understanding of gender. Gender is again equated with genitals. Physicians remain the interpreters of the physical body, using medical technology 'in the service of two-gender culture' (Kessler 1990: 25). Epstein's (1990) assessment of how sexual ambiguous persons have been treated and understood throughout the centuries reveals the way in which they have been 'progressively' labelled as 'monsters' as well as 'anomalies'. She goes on to note that their existence has been increasingly suppressed by medical science as their anomalous bodies are erased.

We are, then, living with the two sex model¹⁷. The belief, both biological and social, that there are two opposite sexes is firmly anchored in western twentieth century culture. The naturalness of our own sexed bodies appears to be almost beyond reproach. The cultural assumptions built into the body are harder to elicit when both the understanding of the sexed body and prevailing cultural beliefs are embedded within, and invested in, the lived experience. But, if one accepts the contingency of the sexed body as detailed in this chapter, then it follows that the way that we currently understand our bodies is far from straightforward. Perhaps it is too preposterous a suggestion that the bodies that we currently know, love and hate are really not what we think they are. Perhaps it is too hard to envisage a different body, too confusing to contemplate that we might have an inaccurate, or at the very least, culturally 'distorted' way of understanding them. Perhaps I should go back to the beginning.

I started this history of the sexed body by outlining the parallelism of the sexes found in the Middle Ages. It may have appeared humorous, we all know that the vagina is not an inverted penis, but what happens when we come full circle? There appears to be something familiar about the following extract from Stephen Jay Gould's (1989: 135) essay on why men have nipples:

'The external differences between male and female develop gradually from an early embryo so generalized that its sex cannot be easily determined. The clitoris and penis are one and the same organ, identical in early form, but later enlarged in male fetuses by the action of

17. Ullman (1992) points out one of the inconsistencies of Laqueur's approach. Citing the lack of provision and resources devoted to 'women's diseases' she argues that the process of 'establishing a two-sex model in the twentieth century medical discourse has remained highly problematic ... It seems that despite the evidence presented by Laqueur, women still do not exist as an "ontologically distinct category"'.

testosterone. Similarly, the labia majora of women and the scrotal sac of men are the same structure, indistinguishable in young embryos, but later enlarged, folded over and fused along the midline in male fetuses'.

Not only have I found circularity in our understandings of the body, but I have been interested to see the knowledge-biology nexus working in reverse. It is not just that our biological understandings affect what we come to consider as contraception, but what we name as contraception also comes to infect our biological truths. A glaring example is the redefinition of a human embryo. Following the Warnock Report, an embryo is not an embryo until 14 days after fertilization. This has implications for post-coital contraceptives and abortifacients (Warnock 1985: 66, Crowe 1990).

Although I do not wish to refute the notion that our understandings of the workings of the body, both male and female, have 'advanced', I am loathe to endorse Roberts and Tomlinson (1992: 248) when they argue that 'the idea of progress in anatomy is not a whiggish interpretative imposition on the history of that science, not an opinion, but a reality'. I would caution the reader not to adopt such a view wholeheartedly. The historical interpretations of the body have clearly shown how our understandings of the body can flow in an almost circular fashion, with anatomical knowledge being suppressed to suit ideology. Or, to be more precise, since it is we who anatomize the body, it is our thought which has flowed in a circular fashion and it is we who have done the changing of the body.

Shapin's work on anatomists illustrates the social construction of scientific and medical knowledge during the eighteenth century. His pioneering work allows us important insights into the construction of knowledge, including that of the body. Shapin's controversial work on the Edinburgh phrenologists highlights the way in which the 'politics of observation' helps determine medical interpretations. Shapin (1979) dissected the intense and heated dispute between two opposing sets of anatomists. Focussing on cranial anatomy, Shapin illustrates how the same brain could be seen differently depending on the underdetermination of scientific knowledge. Anatomical evidence was deployed as a naturalistic resource in an increasingly elaborate and confident programme of social policy and used to defend (and reject) specific components of the social system during a time of fluid social order and class politics (Shapin 1979).

Yet another arena in which the contingencies of biology and ideology are found is that of sexual pleasure. Beliefs surrounding sexual pleasure have often fed debates about the rights and wrongs of preventing conception, and it provides an interesting opportunity to explore the fickle nature of the natural.

As I mentioned earlier, the Hippocratic texts decreed that both partners had to experience pleasure for intercourse to be productive. The shifting nature of this belief exposes the way in which culture is narrated in anatomical disguise. During the sixteenth to eighteenth centuries it was still commonly assumed that a woman had to find pleasure in sexual intercourse if the union was to be a fruitful one. The belief that pleasure and procreation were necessarily linked was so strong that it was held that rapes were necessarily sterile. With a change in anatomical understanding and concurrent changing sexual relations, courts dealing with rape cases, in the nineteenth century, no longer assumed that the pregnancy of the victim implied her acquiescence (McLaren 1984: 14-15).

In a related story of pleasure, Laqueur (1989: 92) recounts a curious tale of the re-discovery of the female orgasm. Towards the end of the nineteenth century, and in the beginning of the twentieth century, the clitoris was reconstructed. Laqueur remarks somewhat ironically that, 'Masters and Johnson's revelation that female orgasm is almost entirely clitoral would have been a commonplace to every seventeenth century midwife ... for some reason, a great amnesia in this matter descended on scientific circles around 1900 so that hoary truths could be hailed as earth-shatteringly new in the second half of the twentieth century'. Laqueur (1989: 103) describes Freud's assertions about the superior nature of the vaginal orgasm as 'flying in the face of three centuries of anatomical knowledge'. Biology and nature are appropriated in the construction of culture. The rhetoric of the natural was essential because the clitoris, which gave women pleasure, was not seen as pivotal for heterosexual, procreative intercourse. Homoeroticism was a perennial threat, solitude and masturbation were sins and 'against nature'. In the one sex model, remember, woman could only become pregnant if she had an orgasm.

Throughout this review of the histories of the body I have privileged the medical and scientific aspects of the Middle Ages. I may appear to have fallen into the trap highlighted by Jones and Stallybrass (1991: 88) of repeating 'the priorities of Post-Enlightenment thinking, in which it is "obvious" that to determine gender is

to appeal to biology'. In a critique of Laqueur's thesis Park and Nye (1991: 54) suggest that Laqueur 'insists on collapsing their rich world of analogies into notions of identity, in keeping with our modern outlook'. Cadden (1993) also opposes Laqueur's neat model, and argues instead that different models co-existed and it is inaccurate to talk of a unified medieval concept of gender. Gender and sex were not fixed, nor were they seen as essentially biological categories. What constitutes a man and a woman, as well as sex and gender, is never static and this needs to be constantly reiterated and incorporated into scholarship on the body.

Importantly, when I talk of women and men, and the sexing of male and female bodies I am not simply talking about changing corporeal representations. The distinction between the representations of the body and a history of the body may be a theoretical subtlety, but it is crucial to any understanding of the history (and geography) of 'the body'. The former assumes, and requires, a 'real' body to exist underneath the cultural layers (Feher, 1989: 11): a real body that can be exposed beneath layers of fashion and dieting, building and steroids. The latter body is one which is constructed through ideas and structured by discourse. It is, however, not reducible to it. Both Laqueur (1990) and Gilman (1989) make a useful distinction between what is real and what is not¹⁸. They do not dispute that genitalia, for example, exist, or are real, but state categorically that 'we label them as having qualities apart from their physical reality' (Gilman 1989: 2)¹⁹. Corporeal narratives illustrate the myriad ways in which biology has assumed an almost insurpassable appearance of stability and immutability.

Sex and the sexed body are, in the words of Rosemary Pringle (1993: 88), 'staging a comeback'. And while research on the sexed body is rapidly expanding Flax's (1990: 53) concern that 'women sometimes seem to become the sole bearers of both embodiedness and difference' remains valid. The evidence shows that the majority of the work on the history of the body has been done on the female body. This raises issues that may not be immediately apparent, but deserve greater interrogation. Laqueur (1990: 22-23) defends his focus on the female body by imputing that 'the male body may always be the standard in the game of signification, but it is one whose status is undermined by its unrepentant

18. This point continues to be a matter of contention amongst body historians. Laqueur (1993) in his review of Duden's work takes issues with the notion of the body as experienced and the body as representation, and provides a useful discussion. He suggests that culturally mediated experiences of the body are not that different and remains unconvinced of Duden's claim that people in the past did not have bodies in the same sense that we do.

19. Hastrup's (1978) discussion on virginity is an excellent early example of this where biology takes on a particular cultural meaning and social significance quite distinct from its biological reality.

historical inconstancy'. He denies that his work grants the male body the stability and immanence it implicitly claims, and yet, appears to fail to disrupt the consistency of the male. Other writers have disputed such a claim, almost suggesting that the history of the male body cannot be written. Jordanova (1989: 96) even suggests that the very idea may be comical. With reference to the unveiling of a man's body she goes on to write that it seems 'implausible and unthreatening' presumably because their bodies are not symbolic carriers like women's are. Park and Nye (1991: 56) insist that men's bodies as well as women's need to be liberated from the constraints of phallogentric discourse. They note with irony that Laqueur's failure to accommodate men's bodies leaves homophobia unchallenged and obliterates women from the narrative. Hitchcock (1991: 343) also notes that Laqueur's text allows men's bodies to remain the unquestioned norm against which women and their bodies are compared.

Riley (1987: 103) is one of the few historians (feminist and nonfeminist) to speculate and include an analysis of the male body. She points out that:

'the sum of the two parts, men and women, would still not produce a satisfying total of "the body" ... Only at times will the body impose itself or be arranged as that of a woman or a man. So that if we set out to track the bodies of women in history, we would assume in advance that which really we needed to catch, instead, on the wing of its formulation ... It's more of a question of tracing the (always anatomically gendered) body as it is differently established and interpreted as sexed within different periods'.

Riley does not simply advocate the 'history of the male body', but persistently argues for the history of the construction of the category male and the ways in which bodies are demarcated to be men's. This approach parallels the projects of feminists such as Judith Butler (1990), Joan Scott (1992), Gayatri Spivak (1988) and Donna Haraway (1989) that I outlined in the previous chapter.

The different understandings of con(tra)ception that I have drawn on in this section are not meant to serve as a reservoir of truth, a resource with which to refute modern day understandings of the body. Rather, I hope to undermine any claims to the authority of 'naturalness', and illuminate both the contingency of the body and what we know to be contraception. It provides us with a way of understanding our own current beliefs, not as natural, unchanging biological facts, but as cultural productions of our times and places. We employ networks

and metaphors to help us make sense of our bodies and this is now what I want to address.

Embodying Metaphors

When we 'see' our flesh and bones, it is hard to imagine ever being able to see anything different. And yet, as Gilman (1989: 1) suggests, 'we cannot easily understand that our sense of our bodies is shaped within our culturally determined perception of ourselves'. We expect to know what we see, and yet the historical reconstructions of the body have illuminated the ways in which we see what we know. The representation of anatomical differences between men and women has been shown to be independent from what the actual organs looked like. As Laqueur (1990: 88) highlights; 'ideology, not accuracy of observation, determined how they were seen and which differences would matter'. Demystification grows more difficult the closer we are to the period under appraisal. For us, then, it is harder to identify and expose our 'beliefs' in a period when our truths lie in science: a science that 'wields unprecedented cultural authority, and massive material investments guarantee its truths' (Jacobus et al 1990: 4). It is only four decades since the beginnings of the pill, perhaps we are still too close to the period to attain any critical distance, an issue that I return to in chapter eight. Whilst it is hard to decipher 'beliefs' from 'fact', it may be more difficult to envisage alternative anatomical and physiological understandings to those that we have today.

Emily Martin's work on anthropological understandings of the late twentieth century western body provides a rich source from which to begin rethinking our reproductive processes. She uses metaphors of the body to help expose the way in which culture and ideology has saturated scientific knowledge. With a shocking familiarity, Martin has managed to render the everyday and commonsensical knowledge that we have about our bodies as a topic worthy of interrogation. She shows how it is not just *what* we know, but the *ways* that we know that are important. Martin rescues contemporary 'scientific facts' of life from the realms of objectivity and replaces them in the narratives of culture, gender, ideology, nationalism and science.

Martin uses a series of metaphors to explain our understandings of reproduction. The metaphor of the body as machine remains a powerful image within which we locate our corporeal narratives. The female reproductive

system/mechanism/apparatus with which we are familiar today is pre-eminently *designed* to produce eggs. Menstruation is also described as debris, as *production* gone awry. George Corner's (1951: 922) reminiscences provide a candid account of how our knowledge of menstruation and ovulation has shifted. Questioning the purpose of menstruation he noted that apart from one inadequate conjectural explanation 'we have not the slightest notion as to what, usefulness; if any, appertains to the menstrual flow'. Corner's frankness illustrates the underlying metaphor of machine and function that saturates understandings of the body in the early-mid twentieth century.

The egg is seen as large and passive; it is transported, or drifts. In marked contrast, the male sperm swim powerfully upstream and penetrate the egg (Martin 1992a: 411). Interestingly, in the 1990s, such a perception of passive egg and active sperm seems to be inaccurate. The sperm's tail is now understood to be weak, and the egg holds on to the sperm. In such a turn, new metaphors for making sense of an active female role come into play: the egg becomes an engulfing female aggressor, dangerous and terrifying (Martin 1992a: 413).

The dominant representation of female reproductive biology is that of a signalling system (Martin 1987: 40). Subsequently, the imagery associated with menopause becomes one of a breakdown in control, when the ovaries fail to produce enough oestrogen.

Within such a mechanical understanding of our biology, hormones become messengers, signalling the turning off and on of reproductive processes. Although hormones influence the reproductive processes of both men and women, it often seems that they appear to exist only in women's bodies. The female reproductive cycle has come to be understood to be in need of control. Hormones provide both the source of, and solution, to a woman's lack of control. Ford (1986: 38) notes that today, for the first time in history, the entire span of the female reproductive years can be controlled with synthetic hormones: ranging from contraception, the prevention of menstrual cramps, the induction of labour, to hormone replacement therapy.

The metaphors used to understand menopause have, however, undergone a radical shift in the late twentieth century:

'In the 1940s and 1950s menopause was described as usually not entailing "any very profound alteration in the woman's life current". By the 1965 edition [of a major gynaecology text] dramatic changes had occurred: "In the past few years there has been a radical change in viewpoint and some would regard the menopause as a possible pathological state rather than a physiological one"' (Martin 1987: 51).

Martin's work continues to remind us that there is nothing inevitable or 'natural' about the way that we think about our bodies (see also Lock 1993, Dickson 1993). The increasing importance of hormones in the reproductive biology and sexual behaviour over the last 50 years has had important repercussions for women and men. The ways in which we understand and experience the lived materiality of our bodies affects policies and treatments (Duden 1993).

With the development of new reproductive technologies, the machine metaphor appears to have attained a revitalized currency. Rowland (1992) has extended the theme of the female body as machine in her exploration of new reproductive biologies. Arguing that women have become 'wombs for rent' analogies with factories and machines is most pertinent. Women's bodies have become 'incubators' and 'fields for harvesting eggs' (Scutt 1988). Note how our biological arguments have, once again, come full circle.

The metaphor of the machine is frequently invoked for ideas surrounding contraception. Pincus (1965), one of the key actors in the making of the pill, describes the *mechanisms* that operate at every step. Indeed, the idea that reproduction occurs through a series of steps attained widespread currency during the twentieth century. With the advent of endocrinology the idea that each of these steps offered opportunities for *intervention* focussed attention on isolating each step. The ovaries are understood to be stimulated by the hormones and to make 'their finest product' the ovum (CMAC: PP/RJH/A7/99a).

As I show in chapter four, hormones are not neutral substances that exist in our bodies. They may be clothed in the narratives of science and biology, but they also embody the cultural narratives of social relations. The metaphorical use of biology in making sense of our bodies, and of our sex, gender, race and sexuality is an important thread that runs throughout this thesis.

Another metaphor that we continue to use to make sense of the body is that of the nation state and notions of invasion. Body politics are unusually masculinized in this context. A site of injury is transformed into a battle field as corporeal boundaries are defended from invaders (Martin 1990b). Often cloaked in the guise of scientific neutrality, battle metaphors are indeed prevalent in the contraceptive and family planning literature. A woman's body becomes a battleground over which values are fought and ideologies played out. Contraceptive devices frequently 'stand on guard' (Stopes 1926: 17) between the ovum and the spermatozoon. War on sperm is waged using an 'armamentarium' of contraceptive devices (Djerassi 1979, Segal 1987): vault caps, creams, jellies, pills and IUDs all *protect* the female body from invasion. The contraceptive becomes a 'first line of defence against unwanted pregnancy' (Sai 1976: 12) and an 'important social weapon' (Macaulay 1953: 5).

To reiterate, the way that we think about the body, from the Middle Ages to the surrogate maternal body and the muscle building woman of the 1990s, is infused with ideas about what is 'natural' and subsequently, what the body should be like. These issues are not fanciful theoretical possibilities restricted to irrational science, but impinge directly on the material realities of women's, men's and children's lives. The implications of thinking through the body differently are thus not abstract luxuries, but central to the treatment and lived experience of the body. In Susan Sontag's (1989) eloquent critique of bodily metaphors she argues 'against interpretation'. Highlighting the danger of 'metaphoric trappings [that have] very real consequences' Sontag documents the ways in which metaphors and myths kill. She (1989: 14) notes that metaphors cannot be distanced through abstinence: 'they have to be exposed, criticised, belabored, used up'. Metaphors need to be identified within scientific and medical discourse because they are so closely related to the languages of objectivity and reality. As Nancy Stepan (1990: 54) has argued 'we need a critical theory of metaphor in science in order to expose the metaphors by which we learn to view the world scientifically, not because these metaphors are necessarily "wrong", but because they are so powerful'. The metaphors that I expose throughout these chapters extend beyond the boundaries of the body. Metaphorical debates emerge in different guises throughout the chapters in discussions on science, eugenics, population explosions and security.

Summary

Benjamin (1993: 12) may be right when she says that 'the notion that woman and man are fashioned from different stuff has a history as old as the species itself', but the history of sexual difference is more than 'matter', it is about the stuff of politics, ideology, oppression and science. In an analogous way, the story of the woman on the pill is not just about the action of steroids on a woman's reproductive cycle. It is also about the way that the female body was differentiated from a male's, it is about women going out to work, a society recovering from one war and entering another (cold) war. It is about children, doctors and scientists, Mexican yams and money.

What I have therefore tried to indicate, by tracing the varying understandings of conception, contraception, fertility and sex, is the way in which our knowledge of sexual difference, while located firmly in the realm and rhetoric of the natural, is always and everywhere infused with notions of what society should be like, about the roles that the sexes should occupy and the spaces that the sexes should inhabit. By focussing on the woman on the pill I have tried to avoid the dangers of reviews of the body that 'often seem to float free not only of individual experience, but also of place' (Outram 1993: 349).

Childbearing as a function of woman is heavily inscribed upon her body. Not all women menstruate, not all women have children, not all women have wombs or ovaries. But, as yet, only women can bear children. This distinction between men and women remains a critical sexual marker in an age when sex and gender are appearing increasingly mutable. Sex changes and gender bending are common parlance in our vocabulary. As the differences between the sexes become increasingly blurred the roles that are attributed to hormones shift.

Hormones, common to both sexes, have become one of the last vestiges in which we can invest our gender and sexual stereotypes. As hormones evade the bright glaring spotlight highlighting the fallacies of sexual binarisms, the pill, that synthetic formulation of hormones, becomes an interesting vehicle in which to traverse the dilemmas and divergences between theories of the body. We all have hormones, in varying amounts, but the degree to which they are credited with influencing our behaviour varies with context. In the next chapter I trace how the pill, believed to alter a woman's hormone levels, sent out more than chemical messages.

CHAPTER FOUR

SWALLOWING SCIENCE WHOLE

'The Pill was a cultural product as no other pharmaceutical has ever been'

Linda Grant 1993.

This chapter is about the development of hormones and the production of the pill. It is concerned with illuminating the links between the social/scientific/technical worlds as I try to show how endocrinology has become politicised. Hormones are highly charged, carrying not only messages inside the body but complex ideas that extend far beyond corporeal boundaries into the nether reaches of sex and gender. Hormones are not neutral bodily substances (as if any are) and this chapter begins to offer one explanation of the way in which the enculturation of science occurs. It sets the scene for the arrival of the finished product: the woman on the pill.

The woman on the pill was not simply swallowing a combination of synthetic hormones designed to inhibit ovulation, but was ingesting decades of scientific and social research. Her body cannot be isolated from the development and testing of hormones, rather she is embedded within the same social, scientific and technological matrices which helped to produce the pill. It is these worlds that need to be digested in order to piece together the story of the making of the body of the woman on the pill.

But there is no *one* history of the pill. Indeed, as Djerassi²⁰ (1979: 227) notes 'there is no such thing as *a* history of the Pill'. First, there were two Pills and second, pieces of the history are missing as not all of the participants in this scientific development have told their story'. As I outlined in the previous chapter every account is different, adding events, omitting people, according to what is regarded as important. By exposing the absences and by asking the *why* rather than the *when* questions, a different history is produced, a different story told. I have tried to provide a narrative that makes it difficult or redundant to try to remove the history of hormones from the body of the woman on the pill. The woman on the pill cannot be divorced from her social-scientific worlds. There are many actors in the production of the pill, including pharmaceutical companies,

20. Carl Djerassi (1923-) is Professor of Chemistry at Stanford University, California. He arrived in the US in 1938, a refugee from Austria.

pills, doctors, animals, religious and political leaders, population planners, children and scientists.

This chapter ends with 'a pill' (and a woman) waiting to be tested. And although my focus is on changing conceptions of the body, and it is for this reason that I have chosen to demarcate the construction of the woman on the pill in this way, it does not imply that I wish to endorse the conventional understanding of technological innovation. There is no inevitable or natural trajectory which prefigures the arrival of the pill. Everything that I want to say about hormones and the pill also contains something about the woman who takes it (and those who do not). Just as the social and the technical are indivisible, so too are the pill and the woman.

In an attempt to dislodge traditional and over-assumed conceptualisations of scientific discovery Carlson (1992: 175) points out that it is misleading to suggest that 'problems really exist "out there" waiting for inventors to find and solve them'. And while I agree with him, in that 'just as stars do not exist in order that astronomers may name them, so there was no "telephone problem" in 1876 waiting for Alexander Graham Bell' I am struck by the constant and recurring desire on the part of British and American supporters of birth control for a pill. The pill appeared to be the ideal solution for both the fertile woman and the fertile world, and yet, as Vaughan (1970: 5) suggests 'nobody cried "Eureka!" when the first contraceptive pill was held aloft in a pair of laboratory tweezers'.

The 'discovery' of the pill was a complex affair involving various actors. The oral contraceptive pill contained synthetic hormones, 'relatives' of the naturally occurring hormones, oestrogen and progesterone, and it is to these substances that we must turn initially. Hormones are not merely neutral chemicals whizzing around our bodies; but are saturated with notions of what makes a man and what makes a woman. I give two examples of how hormones are embedded in wider social-sexual relations:

'the two hormones, oestrogen and progesterone, make a woman what she is. Not only do they give her feminine contours, but each month they prepare her uterus to receive a fertilized egg and to encourage it to develop into a child' (Llewellyn-Jones 1975: 246)

'most women, in fact, feel well on the pill - and often better than they felt before taking the extra female hormones' (Cooper and Smith 1984: 11).

Hormones have a very specific historical legacy which continues to structure our thinking as well as informing our biological and social truths. Drawn into the arena of naturalising and coding sexed bodies, endocrinology²¹, specific to the mid-twentieth century, participates in the construction and maintenance of sexual dimorphism (Hausman 1992). Designated an unusual position as arbiters of sexual difference as well as harbourers of sex and of gender, hormones are deployed in ways that tend to endorse rigid dichotomous categories. Sexual differences in anatomy, physiology, temperament and behaviour, as well as differences in cognition have all been attributed to sex hormones (Longino and Doell 1983).

The pill contains hormones, artificial ones, yes, but (sex) hormones nonetheless. Hormones are heavily sexualised and are most often seen as 'something women have' (Vines 1993: 2). 'Normal' men do not appear to require (additional) hormones: only 'normal' women do. It is no accident that hormones are still associated with something that requires careful control. Hormones are associated with the 'treatment' of menopausal symptoms (Lewis 1993), premenstrual tension (Allen 1990, Stoppard 1992), and infertility in women. Hormones are rarely prescribed as appropriate for men. They tend to be associated with the deviant and the pathological: used for the treatment of sex offenders, growth disorders, or transgender desires in men. Male sex hormones are firmly associated with rape, sexual abuse and aggression, or with restoring energy (Nicholson 1967: 69) whereas female sex hormones are allied to mothering instincts, instability and unpredictability. Indeed, Loraine (1970: 1) asserts that 'throughout the greater part of our lives on this planet we are dominated by our hormones'.

This situation is, however, at odds with contemporary understanding of reproductive biology. While it may be convenient to reduce categories of sex and of gender as well as homosexuality to biological and chemical substances our knowledge of the body does not sustain such a view. The apparently contradictory knowledge that men and women share sex hormones continues to arouse surprise and suspicion. How can opposite sexes share the chemicals that construct sexual characteristics? This knowledge evoked consternation and disbelief at the time of discovery, and what is hard to swallow now is the persistence of this fallacy of sex-specific hormones.

21. Endocrinology is the study of hormones, their production, nature, and effects.

Sexing Hormones

Oudshoorn and Van der Wijngaard (1991: 460) argue that our understanding of sex hormones is underscored by a 'dualistic concept of sex in which male and female are defined as mutually exclusive categories'. They argue that the history of research on sex hormones has been structured by cultural assumptions about sexual duality. The history of sex endocrinology employs a scientific model of opposite sexes which feeds directly into the construction of 'sex' hormones.

Initially, scientists labelled sex hormones according to the sex of the organism from which the hormone preparation originated (Oudshoorn 1990). Later, scientists were confronted with data that suggested that both 'female' and 'male' sex hormones were present in both sexes rather than restricted to one sex or the other. Oudshoorn and Van der Wijngaard (1991: 461) note the evident 'astonishment and confusion' expressed by the scientists in the American and European journals of the period when faced with such challenging data. Consequently, during the 1920s, the sexual specificity of hormones became an area of intense debate within the scientific community.

Despite suggestions that the 'female' sex hormone had no function in the male or that it was the source of disease or homosexuality, scientists gradually accepted that the 'female' sex hormone did have a role in the normal physiological development of the male (and vice versa). The new classificatory terms of oestrogen²² and androgen did not, however, replace the old and incorrect terms of female and male hormones. To this day, in both scientific and popular literature, sex hormones continue to be employed in a manner that is thoroughly compatible with theories of sex-determined masculinity and femininity. Hormones attributable to one sex or the other continue to be employed as legitimators of sexual difference in the late twentieth century despite biological evidence that indicates that hormones are not restricted to one sex or the other.

Oudshoorn (1990: 256) points out that 'the history of the "male" sex hormones illustrates that sex hormones are not entities that had to be "discovered" in nature, rather, they are entities constructed in the laboratory as embodiments of particular ideas about what sex hormones look like'. Hormones were *constructed* in a manner analogous to the construction of scientific facts outlined by Latour and Woolgar (1986). In naming the 'female' sex hormones endocrinologists specified

22. Oestrogen is the term used in English and estrogen is the American version. I have chosen not to standardise language so the reader will find inconsistencies in the spelling of this term.

the meaning of femininity. The word 'oestrogen' derived from the word 'oestrus', refers to the period of sexual activity and fertility and its associated cyclic changes in the vagina. By choosing to name oestrogens thus, scientists defined femininity in two ways - both as a quality relating to reproduction and cycles. The implications from this naming led to negative associations in practice. Although Oudshoorn (1990: 258) points out that the connotation of femininity with cyclicity can also be positive, she notes that it more often than not refers to instability and unreliability. A parallel naming did not happen with the male hormones 'androgens'. Androgen literally means 'masculinizing': making a man. The meaning of masculinity is not therefore specified through this naming.

The naming of hormones and their associated intimacy with femininity and masculinity illustrates how symbiotic the relationship between science and society is. Just as the debate over the sexual specificity of hormones did not occur in a social and scientific vacuum, nor did the broader research on sex endocrinology. During this period there was also a renewed interest in sexual activity which was viewed as important for the stability of marriage. Borrell (1985: 28) adds that although physiologists were able to exploit this new interest, and even pursue new lines of inquiry suggested by social reformers, she states that scientific investment in the reproductive process was 'neither a cause nor a direct result of changing social attitudes towards sex'. Instead, it was closely tied to earlier concerns about the power of internal secretions which filtered understandings of hormones.

History of Hormones

The term 'hormone' was not employed until 1905 when Ernest Starling (1886-1927) coined the phrase. The name is derived from the Greek word meaning 'to arouse' or 'to urge on'. The products obtained from the ovaries had, however, been obtained and extracted at an earlier date. As early as 1890, research was published outlining the discovery of substances which had been obtained from the ovary (for a detailed history of endocrinology see Medvei 1982).

In 1891 Brown-Sequard²³, identified internal secretions and consequently suggested crushing animal organs for the use of therapeutic organotherapy. Brown-Sequard claimed that the liquid obtained from crushed animal testes contained active, invigorating substances. After experimenting on himself, at the

23. Brown-Sequard (1817-1894) was a French neurologist and physiologist.

age of seventy-two, with injections of testicular extract, Brown-Sequard testified to 'the remarkable effects produced on myself by subcutaneous injections of a liquid obtained by the maceration on a mortar of the testicle of a dog or of a guinea pig to which one has added a little water' (cited in Medvei 1982: 289). Brown-Sequard initiated the use of organ extracts for a range of diseases and precipitated a flourishing trade in testis and ovary preparations (Oudshoorn 1990: 244). Organotherapy flourished as manufacturers used abattoir waste to make creams, pills, and injections of single gland preparations (Pfeffer 1993: 69): 'preparations of dried testes or active male hormones were also marketed as treatments of the male climacteric; "Viriligen" was advertised as an endocrine tonic that compensated for the penalties of a tumultuous life' (Pfeffer 1993: 51). Throughout the 1920s, organotherapy was used in the treatment of sterility, frigidity, and amenorrhea, despite fierce opposition from the medical establishment (Pfeffer 1993: 70). Hormone preparations were therefore used for a wide range of conditions. This flexibility not only indicates the fluidity of a drug searching for a market (and a body), but also exposes the way in which new groups are drawn in, or enrolled into a network.

Despite this rather disreputable start Borrell (1976: 320) suggests that the organotherapy movement can tell us a lot about the 'birth of the science of endocrinology in the next decade'. As late as 1931 patients were reported to have had repeated injections of human semen; and there were less reliable reports of 270 women being injected with ram semen (Daniel 1931: 110). In his historical review of the immunology of infertility, Katsh (1959) reports that by 1921 cumulative evidence was so appealing as to motivate an editorial in the *Journal of the American Medical Association* asking if the sterility of prostitutes was a result of repeated exposure to frequent sexual indulgences and spermatozoa. Katsh also records the injection of 3 women with human sperm, inducing sterility for about 29 months in 1926 and also reported a later claim by Dr Istvan Sugar of Budapest. Dr Sugar was said to have treated 30 women with bull sperm and found that they remained sterile for 6 months.

Endocrinology benefited from the association with the sensationalism of the organotherapy movement although the publicity stigmatized a field already labelled as 'dirty work' (Clarke 1990: 23). The medical profession at large remained opposed to the practice, and instead it was pushed and adapted to people's needs by pharmaceutical companies.

'Advances' in reproductive understanding were not restricted to hormones. In 1897, building on the information known about the reproductive system, Beard, an Edinburgh scientist, suggested that the corpus luteum inhibited ovulation during pregnancy and by the beginning of the 20th century the role of the ovaries in the sexual cycle was partly understood (Robertson 1990, Diczfalussy 1979). There was little available information about the reproductive sciences and the first English-language book on reproductive science was not published until 1910 (Clarke 1990: 19). Corner (1958: 30), an eminent endocrinologist and anatomist, declares in his autobiography that in 1914 'gynaecologists could diagnose and very skilfully eradicate infections and tumours of the pelvic organs and repair obstetrical damage, but their efforts to treat the functional disorders of menstruation and sterility were mere puttering, scarcely beyond the procedures of the Hippocratic era'.

While Fellner's research in 1912 showed that ovarian extracts promoted uterine and mammary growth it was not until the 1920s that the first public expression of the idea that such products could be used for contraceptive purposes was aired. Haberlandt, an Austrian researcher funded by Rockefeller money (McLaren 1990: 239), showed that ovulation in animals could be prevented by the injection of oestrogen (Vaughan 1970: 7). Haberlandt went on to suggest that:

'of all the methods available, hormonal sterilization based on biological principles, if it can be applied unobjectionably in the human, is an ideal method for practical medicine and its future task of birth control' (cited in Gunn 1987: 29).

Haberlandt clearly advocated the use of hormones in fertility regulation in both animals and women in 1931 (Diczfalusy 1979: 3). As Gunn (1987: 23) notes, however, it was to be another quarter of a century before the chemical processes were fully understood and the hormone preparation, infecudin, that Haberlandt had helped to pioneer, was halted with Haberlandt's death in 1932. Haberlandt's observations were later rediscovered in America in 1945.

Golden Age of Hormones

Described in Parkes²⁴ (1985: 117) autobiography as the 'heroic age of reproductive endocrinology', the period 1924-1940 was rich in hormone

24. Sir Alan Parkes is a British biologist. His work at the National Institute for Medical Research in London focussed on developments in endocrinology. He was a keen supporter of birth control in the postwar decades. He was the only biologist to serve on the Biological and Medical Committee of the

discoveries. This was despite continued lack of funds for work on reproduction. The convergence of interests between social reformers and theoretical science played an important role in moulding the shape of the hormone field. Both Borrell (1985) and Clarke (1991) note how deeply social attitudes were implicated in the amount and type of reproductive research that was carried out in the interwar years.

Despite this renewed interest in hormones, contraceptive research remained stigmatized. Although knowledge about the contraceptive properties of hormones was determined early in the twentieth century any application for such a purpose was slow in forthcoming because the social context influenced the 'progress' of science. Scientific and medical opinion on birth control diverged widely from much of the popular attitudes and practices. This difference of opinion was not new, and changed slowly throughout the early decades of the twentieth century.

A shift towards smaller families had begun in Britain in the late 1870s (Pugh 1992). Leathard (1980: 4) suggests that the publicity afforded to the 'notorious' Besant and Bradlaugh Trial²⁵ actually aided the dissemination of contraceptive information. Carr Saunders (1936: 99) confirms this notion and is in 'little doubt' that the use of contraceptive methods in the UK was 'very extensive'. He notes that a birth control pamphlet written by Francis Place sold over 40,000 by 1876, and that 200,000 copies of such pamphlets were sold between 1876 and 1881. He estimated the sale of books and tracts giving contraceptive information to be 1-2 million between 1879-1891, rising to 6 - 8 million between 1918 and 1926. By 1889, a whole range of appliance methods, barrier products, spermicides and IUDs had been patented (Newman 1985). The popularity of Marie Stopes²⁶ books reflects a genuine desire to know more about sexual health and contraception (Rose J. 1993). Letters written to Stopes from couples frequently

Royal Commission on Population established in 1944 (Parkes 1985: 221). He also founded the Journal of Biosocial Science and was Chairman of the Council for Investigation of Fertility control and science convener of IPPF research committee. He was also a member of the Eugenics Review board.

25. Annie Besant and Charles Bradlaugh, known as advocates of atheism, republicanism and socialism, had challenged a court decision by reprinting and selling copies of Dr. Charles Knowlton's 'Fruits of Philosophy'; an American book advocating birth control which had first been published in England in 1834 (Pugh 1992: 254).

26. Marie Stopes (1880-1958) was a paleobotanist and was the first woman to be appointed to the scientific staff at the University of Manchester. She is known for her work as a birth control campaigner. She established the first birth control clinic in London in 1921. She vigorously denounced the pill (Parkes 1988: 387) and unlike Sanger, often worked against the medical establishment rather than with it. The birth control movement that she founded had often acrimonious relations with the Family Planning Association and she left her wealth to the Eugenics Society.

enquire about contraception, and document the refusal of doctors to help (Hall R. 1981, Hall L. 1991). Indeed, within five years of opening the first birth control clinic in London 5000 women had been seen. Together with Margaret Sanger²⁷ in the US, and a host of often neglected campaigners around the world (see Huston 1992) birth control movements attained widespread popular support and clearly fulfilled a need.

The popularity of birth control was, however, not reflected in scientific research or on political agendas. Margaret Sanger, the American birth control pioneer, frustrated by a lack of response at an international level, organised a Conference on World Population in Geneva in 1927 and determined that issues such as birth control should be discussed. Sanger made an impressive debut in the agenda setting process. The conference was a success, but any mention of the controversial and sensitive topic of birth control was forbidden. Scientists' resentment that a woman had been responsible for organising the conference meant that Sanger had reluctantly to agree to remove her name from the official programme (Symonds and Carder 1973: 12).

As I explore later in chapter seven, the medical profession were uninterested in, if not hostile to, dealing with people's contraceptive needs. It is important to examine how not only the doctors, but also other professional groups, including groups of women and feminists who had earlier rejected contraception as a goal, were enroled in furthering the promotion of the pill. Greta Jones (1986) has also highlighted the historical importance of the social hygiene movement to the debates over population and sexual hygiene in the twentieth century. After the First World War, scientists drew on the increasing legitimacy of the new social movements of birth control, eugenics and neo-Malthusianism which in turn flourished on their support. New markets for scientific knowledge continued to emerge and Clarke (1990: 20) also proposes that a post-Darwinian focus on evolution and heredity were important for the development of endocrinology as well as genetics and embryology. Social policies advocated by the eugenics and birth control movements became widely debated and scientists were called upon and asked to participate in public commissions (see Parkes 1985: 221). Although all three movements had different priorities, they shared a common aim of separating sexuality from reproduction.

27. Sanger (1879-1966) was a pioneer of birth control, and the term is credited to her. In her autobiography, Sanger (1971) tells of her visit to Mrs Sachs who eventually died as the result of a self-induced abortion. Sanger was prompted to work for the birth control movement on witnessing the plight of this mother to whom the only contraceptive advice the doctor provided was to tell the husband to 'sleep on the roof'.

The postwar popularisation of eugenicist ideas of racial improvement and social control helped legitimise and endorse contraceptive measures. This was no easy task since opposition to birth control was deeply entrenched and eugenicists' claims were now deeply tinged with the crimes of the Nazis (see Blacker 1952). Fears over the diminishing fertility of 'intelligent and efficient classes' provoked deeply ambivalent attitudes towards birth control. On the one hand, contraception was an indispensable aid in limiting the fertility of the 'undesirables', but on the other hand, any propaganda about the availability of such measures was held to be detrimental to public health and morality. As I show in later chapters these concerns were frequently aired whenever the issue of contraception arose.

It was not just the world of politics that censored any discussion of contraception, but the scientific laboratory, the supposed haven of apolitical neutrality, also vetoed work on contraception. John Baker, for example, who was later to be awarded the Oliver Bird Medal for his contributions to birth control, was hounded out of his laboratory in Cambridge, UK in the 1930s when the nature of his work on spermicides was discovered (Gunn 1987: 20, Peel 1964: 142). He was rescued, however, by Howard Florey, later famous for his work on penicillin. John Baker was attempting to find the ideal contraceptive method on behalf of VOLPAR (the Voluntary Parenthood Association). Goldzieher (1993: 364) also notes that in 1943 contraception was not mentioned, it remained a 'subject that was simply not discussed in proper academic circles'.

In the United States of America, projects were sponsored under the auspices of The National Research Council's Committee for Research on Problems of Sex (established 1916-1962), which itself was funded almost exclusively by Rockefeller monies initially channelled through the Bureau of Social Hygiene (set up in 1911) (Clarke 1991) until 1931 when the Rockefeller Foundation assumed financial responsibility (Greep, Koblinsky and Jacobs 1976: 361). The committee sponsored much of the research that was intimately tied up with what we now call hormones (Bullough 1988: 87). The committee also aimed to show that the study of sex and reproduction could be undertaken scientifically, thereby hoping to foster public acceptance and enlightenment (Greep, Koblinsky and Jacobs 1976: 369).

Kennedy (1970: 209) mentions that Sanger funded a project in the department of animal genetics in Edinburgh University in the 1930s. It is not clear, however, if

this is the same project that McLaren (1990: 239) cites. McLaren describes a project initiated in the 1920s using American funding to support the work of Dr B.P. Wiesner at Edinburgh. When Wiesner and his colleagues reported their work in Zurich, they emphasised the primitive nature of their findings and warned that: 'it is doubtful ... whether we shall ever wish to obtain a point where these dangerous weapons will be at the disposal of man' (Wiesner et al cited in Taylor 1931: 104). Peel (1963: 113) also cites the work of Professor Crew also in the same laboratory in Edinburgh, funded by the US birth control movement, who was searching for an 'effective, easily available chemical in a form that should keep in good condition over a long period of time and in all climates, and be so easy to use that the most ignorant women in the Orient, the tropics, the rural outposts or the city slums might be protected'.

Contraception continued to be a controversial field. Johnson (1977: 66) suggests that Sanger saw 'several benefits from scientific research beyond the possibility of lending prestige and legitimacy to birth control'. Her pursuit of a scientific contraceptive that was removed from the sex act was an early goal that continued to structure the scientific research process. It is clear however, that contraception was clearly infused with dysgenic concerns and in the US, for example, eugenic sterilization acts were on the books in 30 states in 1940. Although they were never mobilized within key medical groups, over 36,000 individuals were sterilized under the authority of these laws (Reed 1985: 387). Work on hormonal contraceptives was neither a legitimate nor an identifiable research topic during the middle of the twentieth century. It was not until the 'discovery' of the pill that things began to change. Nevertheless, research on hormones proceeded at a quickening pace.

Hormones and the Pill

The pill is made up of two synthetic hormones that replicate the action of oestrogen and progesterone, both of which are found 'naturally' in the sexed female body. The pill helped to facilitate an acceptance of extra hormone substances, but as the previous sections illustrated, the notion of the hormonal body had already been initiated.

Oestradiol was isolated and described in 1938 (Dodds et al 1938, Goldzieher 1993): a culmination of more than a decade of work. Subsequently, diethylstilbestrol (DES), a synthetic analogue of oestradiol, was found to prevent

the implantation of fertilized ova and although it was predicted from animal experiments that the conclusions should be applicable to women, it was felt that such applications were better not pursued. Parkes (1985: 229) provides an alternative version of the story. Commenting on the jointly authored report by Dodds, Parkes and Noble in 1938 in British Medical Journal (BMJ) on oral administration of ethinyl oestradiol or stilboestrol to rats or rabbits, Parkes (1985: 229) notes that the original draft of this paper included a paragraph pointing out the possibilities of this observation for the control of human fertility. This paragraph was, however, struck out of the published version at the request of the Medical Research Council. Not only was it considered an impropriety to mention birth control in a scientific paper in those days (Goldzieher 1993: 364), but oestrogens were then thought to be rather dangerous substances which should not be used without therapeutic justification. A sentiment confirmed by Dutton (1988: 34) who contends that Dodds, one of the scientists involved, apparently wanted no part in developing a contraceptive pill because he was concerned that women would get breast cancer. Parkes (1985: 229) continues to explain that although 'the possibilities which have been obvious in spite of the deletion of the relevant paragraph' his clinical colleagues remained indifferent, consolidated by the idea that 'to prevent implantation of a fertilized egg could be held, by those sufficiently pre-conditioned, to constitute the destruction of human life'.

The Food and Drug Administration (FDA) approved the use of DES for post-menopausal complaints in 1941. In 1948 Drs Olive and George Smith initiated the use of DES for the prevention of miscarriage and spontaneous abortion and it was administered to millions of women in the 1940s, 1950s and 1960s. It has subsequently been used as a post-coital contraceptive, in the suppression of breast milk after delivery, in the treatment of breast cancer and prostate cancer, and in sex pills, growth stimulator in cattle field and hair growth tonic (Direcks and Hoen 1986: 44). Seaman and Seaman (1978: 38) note somewhat cynically how flexible population ethics are. Commenting on the DES trial in which it was hoped that women with problem pregnancies would achieve motherhood, they point out that 'it was all right to give women a potentially dangerous drug in the hope of preserving their pregnancies, but not for birth control. In those days it was a woman's duty, her purpose in life, to reproduce'.

Progesterone, the other 'female' sex hormone, was isolated in 1934 (Corner 1958: 48) and by 1934 its structure had been determined (Rock 1963: 93). In 1936, MacCorquodale, Thayer and Doisy extracted 25mg of pure crystalline 17 β -

oestradiol from 4 tons of sows' ovaries (Peel and Potts 1969: 89) and Parkes (1985: 123) humorously details the laborious process of obtaining the hormone from pregnant mares, giving us some idea of the urgent feeling for the need of a synthetic hormone. In 1937, in a project conducted by Makepeace, Weinstein and Friedman at Pennsylvania University, rabbits were injected with progesterone. Progesterone was shown to inhibit ovulation (Pincus 1955). Doctors are also known to have experimented with hormone treatments to delay the menstrual period following the 1932 Los Angeles Olympics (Lenskyj 1986: 44).

The pharmaceutical industry played an important role in 'the decade of the sex hormones' (Djerassi 1979: 233), supplying large quantities of compounds to researchers (Oudshoorn 1990: 255). Focussing on the marketing of female sex hormones by the Dutch pharmaceutical company, Organon, Oudshoorn (1993: 11) shows how the new drugs quickly adapted to a wide range of 'women's diseases'. Schizophrenia, diabetes, epilepsy, as well as menopausal complaints and sterility were among the many complaints that were believed to be reducible to the dysfunction of the ovaries. Her study disrupts conventional understanding of technological and drug 'development', illustrating the gendered undercurrents running alongside the production of any drug. Unlike female preparations, male sex hormones were marketed in 1931, only when clinical therapeutic effects were known in advance. Initially promoted as treatment for hypertrophy of the prostate, male sex hormone preparations were used by urologists not gynaecologists. Oudshoorn suggests that any emphasis on sexual impotence in advertising male sex hormones was felt to be far too risky because of negative associations with the earlier rejuvenation claims of Brown-Sequard. The importance of consolidating a position that was seen to be scientific and removed from the quacks was integral to the development of the sex hormones, and female sex hormones in particular. Parkes' (1985: 219) assertion that endocrinological research had become respectable as early as 1936 thus seems somewhat premature.

By the early 1940s, the medical usefulness of sex steroids was no longer in question (Maisel 1965: 43). And yet, the development of the pill was not simply a logical extension of the linear progress of scientific research on steroids. There are no natural trajectories which steer the course of technological development. The idea of a product life cycle, in which an artefact moves from development, to production, to marketing and then to maturity, is a post-hoc rationalization. It did not simply 'happen' that endocrinology entered a 'golden era' in the 1940s.

Side-effects of Cortisone

The production of progestin (a synthetic analogue of progesterone) can be seen as a spin-off from the remarkable surge of interest in research in chemical steroids, and in particular cortisone. In the US, in 1940, research into the application of hormones was enhanced and legitimised by the pressures of World War II. Not only were steroids associated with the reduction of stress and battle fatigue (Gunn 1987: 25), but Djerassi (1979: 238) also notes that rumours about cortisone, enabling German aviators to fly at altitudes over 40,000 feet, stimulated research on steroids. Birch (1992: 364) confirms that research was stimulated by a rumour from the Polish Underground that Luftwaffe pilots were being dosed with cortical hormones. But, before I elaborate on the importance of cortisone to the development of the pill, another factor involving the second world war is important.

Frequently omitted from steroid histories are the experiments done at Auschwitz and other concentration camps. Seaman and Seaman (1978: 103) have asserted that both men and women were given daily doses of liquid oestrogen which caused women to stop menstruating and men to lose their sex drive. It is difficult to evaluate such claims, but it appears highly probable that prisoners were fed hormones of some kind. Revealed at the Nuremberg Trials, the Nazis used drugs in the search for a new effective method of cheap, mass sterilization. Experiments at Auschwitz, under the direction of Dr Clauberg, were part of this search and included injections of formalin as well as injections of hormonal preparations of substances called Progynon and Proluton. These were substances that had first been developed to treat infertility and were tested with the aid of Dr Johannes Goebel, the chief chemist at the pharmaceutical firm Schering (Lifton 1986: 272). The bodies of Jews and the disabled were used for experimentation and the promotion of what was then called scientific advance.

I have been unable to verify the scientific validity of these substances or the connection between these human experiments and the ones for the pill. Nor have I been able to find any mention in scientists' work of the contribution or stimulus of this research to their own thinking²⁸. Nevertheless, the similarities between a letter written by Porkony, a defendant at the Nuremberg Trial, to Himmler in 1941 and the statements made by chemists and birth controllers, with the advent of the oral contraceptive pill, are striking. Porkony wrote: 'If, on the basis of this

28. Blacker (1952) notes the work of Pockony(sic) and his sterilization experiments with caladium seguinum.

research [on caladium seguinum], it were possible to produce a drug which, after a relatively short time, effects an imperceptible sterilization on human beings, then we would have a powerful new weapon at our disposal' (cited in Taylor 1992: 79). The notion of contraceptives being part of an 'arsenal' is frequently found in the literature on birth control and the desire for a method to be 'imperceptible' is also common. Compare, for example, Porkony's statement with Pincus' in 1955: 'the delicately balanced sequential processes involved in normal mammalian reproduction are clearly attackable. Our objective is to disrupt them in such a way that no physiological cost to the organism is involved' (Pincus 1955: 184).

It is cortisone, however, that should be credited with spurring the steroid industry and acting as a catalyst for the development of the pill. Cortisone was synthesized in 1949 and proved remarkably effective in the treatment of rheumatoid arthritis. A 'discovery of heroic proportions' (Hogg 1992: 2), cortisone was hailed as a new miracle drug in April 1949. Its 'discovery shook the whole medical community: researchers, physicians, and pharmaceutical companies. Even the *New York Times* ran a front-page story describing a film (presented at a medical convention) that showed badly crippled patients walking with ease after cortisone therapy' (Zaffaroni 1992: 643). The supply of this wonder-drug, cortisone, was, however, only 'a trickle in comparison with the number of arthritis sufferers' (Syntex 1966: 36). Predicting a massive market the pharmaceutical companies entered the race to 'develop a better and cheaper method of synthesizing cortisone' (Djerassi 1979: 239). A report in *Fortune* magazine (1951: 83) reflects the urgency of the race, stating that 'probably no other material shortage of modern times has had the tragic character of the cortisone shortage, now entering its fifth month'. The first research group to publish the synthesis of cortisone was a small, unknown drug house called Syntex. Syntex was to play a pivotal role in the making of the pill.

Syntex

The story of Syntex (once called the university of steroids (Nicholson 1967: 68)) is remarkable, and its achievements in the development of steroid chemistry is widely acknowledged. Syntex owed its good fortune to Russell Marker (1902-) (for biographical details see Perone 1993): an 'erratic genius' (Robertson 1990: 124) and 'maverick' (Djerassi 1979: 235) who provided the means of producing cheap progesterone.

Marker left his research post at Pennsylvania State University, and went to Mexico where he started work on a synthetic hormone. Roberts (1989: 128-129) recounts the story simply: 'he went to Mexico, rented a cottage, and set out by mule to the jungle covered hills of Southern Mexico. He collected 10 tons of yams and isolated the sapogenin he wanted, diosgenin, working in a rented laboratory in Mexico City'. He successfully produced cheap progesterone from extracts of a Mexican yam. This is not, however, the whole story.

Marker was unable to obtain financial support for the synthesis of the hormone from yams. In 1940 Mexico did not appear to be the ideal place to invest in a pharmaceutical company and financial and other pressures from the war obviously affected the pharmaceutical industry. The President of Parke, Davis and Co. was, when approached, convinced that 'it was impossible to do anything as complicated as this', and refused even to patent the process in Mexico (Lehmann, Bolivar and Quitero 1970: 198). During the rest of 1942 Marker tried to convince other pharmaceutical houses to exploit the process in Mexico, but he always received similar answers, 'I became convinced by the end of the year: that the only way in which those hormones could be made from Mexican roots was for me to do it myself. Marker later commented that 'nobody would help me ... Everyone predicted it would be a failure' (cited in Vaughan 1970: 13).

Marker had managed to prepare more than 3kg of progesterone through persistence, determination and with the aid of Alberto Moreno, an Indian shop-owner who helped Marker find the *cabeza de negro* which was used in the production of progesterone (Marker 1987: 5). He visited several enterprises in Mexico City, trying to interest them in exploiting his process, but he was turned down everywhere. Marker found the 'Laboratorios Hormona' in the Mexico City telephone directory and formed Syntex together with Drs. Emeric Somlo and Frederico Lehmann on January 21 1944 (Djerassi 1979: 236, Lehmann 1992)²⁹. The Syntex Corporation (from Synthesis and Mexico) was established and swiftly broke the European cartel of the exorbitantly priced progesterone (Syntex 1966: 23).

By 1950 steroid hormones were available at one hundredth of their price a decade previously (Gunn 1987: 29) Prior to Marker's discovery, progesterone was

29. Lehmann, Bolivar and Quitero (1970: 198) point out that a story that I came across frequently stating that Marker took Lehmann 2 newspaper-covered jars each with a kilo of progesterone, which would have been worth \$160,000, is false.

valued at \$80 a gram. Late in 1945 it was sold by Syntex for only \$18 a gram. Within a few years the price was down to \$3 and it continued to fall (Syntex 1966: 30). Within a year, after a major disagreement, Marker left the company in 1945. Even though Marker had published an account of the production process, and had not taken out a patent, the large pharmaceutical companies did not immediately notice this untapped source. Perhaps, as Djerassi points out, it was because of 'the disruption of the war' (Djerassi 1979: 237). Feeling swindled of his share of the profits, Marker established a rival company of his own, Botanica-Mex SA, in Texaco, 30 miles from Mexico City. Marker found himself the subject of physical and legal harassment, and his workers were intimidated and murdered (Marker 1987). Not surprisingly, Marker, a talented practical steroid chemist, abandoned industrial chemistry in disgust in 1949 (although he sold Botanica-Mex SA in March 1946 to Richter SA which was eventually bought by Organon), and became a dealer in Mexican antiques. He had, however, 'seeded the contraceptive revolution' (Brock 1992: 627). On losing Marker, Syntex hired Rosenkranz³⁰ as scientific developer. Djerassi joined the team in the 1949 and together they built up a team of hard-working (mostly poorly-educated but dedicated) Mexican women that attained a high productivity rate and soon established a worldwide reputation for the company (Djerassi 1992a: 38).

Although Syntex published the first process of synthesizing cortisone from progesterone their role quickly shifted away from the production of cortisone to one of supplying large quantities of progesterone to other pharmaceutical companies (see Rosenkranz (1992), for the importance of this link in the growth of Syntex). In 1951 Syntex received a telephone inquiry from Upjohn Company, of Kalamazoo, Michigan, requesting 10 tons of progesterone in a 12 month period: 'no other hormone order in history had approached this size'. Before the advent of Syntex the world output of progesterone had been only a few pounds a year, and even in 1951 it was less than one ton (Syntex 1966: 39).

Having developed a cheap method of producing progesterone, Syntex was in a good position to exploit the market. Progesterone was scarce and reasonably priced and Syntex recognised this drug-niche to be a rich one. A cheap and abundant source of progesterone was now available. It was used in a variety of therapeutic experiments and used to 'treat' spontaneous abortion and menstrual

30. Rosenkranz was born in Hungary, but schooled in Switzerland. He worked on the development of steroid chemistry and prior to Syntex, worked in Cuba.

disorders in dosages of up to 400mg a day. But, it was still ineffective when taken orally and often caused a severe reaction at the site of injection.

The contraceptive properties of progesterone had been known for decades, but this did not provide legitimate grounds for research. Djerassi (1992a: 50) states however that the pill was not discovered by serendipity, rather:

'to a considerable extent, the development of steroid oral contraceptives represents a successful instance of this predictive approach, in which we deliberately set out to synthesize a substance that might mimic the biological action of the female sex hormone progesterone when administered orally'.

This research was not carried out with the purpose of birth control. Djerassi (1992b) insists that progesterone was used to treat menstrual disorders, infertility, and 'most importantly' certain forms of cancer, particularly cervical cancer. Moreover, Djerassi (1992a: 58) goes on to declare that 'not in our wildest dreams did we imagine that this substance would eventually become the ... ingredient of nearly half the oral contraceptives used worldwide'.

The need for an effective synthetic analogue of progesterone had already been established when Carl Djerassi began work at Syntex in 1949. Djerassi had originally been employed on a research project at Syntex to develop a synthesis of cortisone from the yam-derived plant steroid diosgenin in 1949. His position at Syntex allowed him the opportunities to continue research on sex hormones which he had pursued at doctoral level, and which continued to preoccupy him (Djerassi 1992c: 633). Djerassi is popularly thought to have accomplished the synthesis of an orally effective progestational agent. But, in his latest account, Djerassi (1992a: 58) reminds us that Luis Miramontes, a Mexican chemistry student carrying out his bachelor thesis in the Syntex laboratories under the direction of George Rosenkranz and Djerassi succeeded in synthesizing norethindrone on October 15, 1951. Miramontes is indeed cited as an author of the paper published in *Journal of the American Chemical Society* announcing the synthesis of a 19-nor-steroid. The product 'born' on what Djerassi names the 'chemical birthday of the Pill' is not, however, the same product that eventually became the Pill to be first tested in a large scale field trial.

Searle

Another group of research scientists who had failed to win the 'race' to synthesize cortisone were those at the Worcester Foundation For Experimental Biology, in Shrewsbury, Massachusetts. It was soon apparent that one of the by-products of the race was a strong team of steroid chemists headed by Pincus and Hoagland. In October 1951 Pincus asked Raymond, Searle's director of research, to consider a programme of directed research aimed at developing a contraceptive injection or pill. Raymond told Pincus 'you have the nerve to ask for more research', reflecting Searle's increasing scepticism at the low returns on their previous investments in the Foundation (cited in Reed 1978: 332).

Gregory Pincus³¹ is the man most commonly described as the 'Father of the Pill'. Parkes (1968: 426) states clearly that Pincus was 'the man, who, more than any other, gave oral contraception to the world'. Pincus did not, however, work on his own. Together with John Rock and Carl Djerassi these three men are accredited with the birth and delivery of the pill to the world³². Pincus' collaboration with Searle and his work with the Worcester Foundation for Experimental Biology is an important part of the development of the pill. What Pincus himself felt about the need for a hormonal method of birth control is rarely documented, his motivations appearing to be firmly located in the service of scientific endeavour. In an interview with *The People* in January 1967 (CMAC: SA/F/PA/A17/98) Pincus offered a rare comment on the 'social' side of the pill. On being asked whether he was in favour of woman's sexual freedom, Pincus replied:

'No, I'm against women having sexual freedom - just as I am opposed to sexual freedom among men. I am certain that the Pill cannot revolutionise family life and certainly I do not believe that sex controls the development of the family or of society . . . Far from being the cause of moral anarchy, the Pill is a means of discipline for peoples who have reached a state of maturity'.

31. Gregory Goodwin 'Goody' Pincus (1903-1967) came from a family of Russian Jews. His father was a farmer based in New Jersey, USA. Interestingly, given his involvement with science, sex and reproductive physiology, Pincus reported, on being asked about his basic ambitions, that he wanted to be a 'sexologist'. He also stated that he shunned medical research because one could not really experiment on human beings even though people desperately needed knowledge which could only come from experimental science (Johnson 1977: 68).

32. Djerassi (1992a: 49) rejects this 'phallogocentric term'. Rock also decries the term suggesting that 'if anything, 'I am the stepfather' (in Breo 1980: 3).

Pincus established himself early on in his career as an expert in the field of mammalian sexual reproduction, receiving sensationalist, and often unfavourable, publicity (Werthessen and Johnson 1974). His work on 'in vitro' reproduction and parthenogenesis (labelled 'Pincogenesis' by the American press) aroused hostility of 'the religious-minded in and out of science who resented his attempt to reduce the mysteries of conception and birth into mechanistic terms' (Reed 1978: 322). Reactions such as these led Pincus to remark that he was 'not interested in the implications of the work' (Reed 1978: 323) and adversely affected his reputation as a scientist (Johnson 1977: 69). And yet, with the advent of the pill, Pincus clearly took on a role of 'product champion', promoting the pill beyond the realms of science.

Unable to get his contract renewed, Pincus went to Cambridge, England in 1937. His research career may have been impeded by anti-semitism, an issue largely unacknowledged in accounts of the history of the pill, and one which Reed appears reluctant to endorse. Evidence suggesting that anti-semitism was rife can be deduced from a letter written between the biologists Raymond Pearl³³ and East in 1927. Pearl asks: 'By the way, who is this Jew of yours named Gregory Pincus who writes me that he wished me to prepare for him "at my earliest convenience" a comprehensive list of references to literature on sterility ... just how did he ever get the notion that I have no other amusements in life except making bibliographies for lazy Jews?'³⁴ (cited in Allen 1991: 255).

Pincus returned to America in the face of the Second World War and remained, like many of his colleagues, insecure institutionally. Werthessen and Johnson (1974: 92) note simply that 'since there was no money to support the work [on reproduction and parthogenesis] it stopped'. Following a temporary position in Clark University, funded by Lord Rothschild, Pincus joined Hudson Hoagland in February 1944 and established the Worcester Foundation for Experimental Biology (Johnson 1977: 69). Their success depended on the expertise in steroid research: which was booming as a scientific and commercial enterprise. Forging links with G.D. Searle & Co. they tested and pioneered research on new drugs. Searle promised to pay the salaries of 5 investigators and 4 technical assistants as well as Pincus' fee as a consultant. In 1946 Searle paid over \$44,000 out of a research budget of less than \$160,000 to the Worcester Foundation (Reed 1978:

33. Pearl was well known for his activities in the American Eugenics movement.

34. Pincus was colleague of East's at Harvard.

331). By 1951, Searle was heavily subsidising Pincus' work. Pincus received over \$40,000 from Searle on top of the \$7000 - \$9000 which they contributed to his salary (Johnson 1977: 70).

Parents of the Pill

Pincus was already involved in testing the contraceptive value of steroids under a small grant from the Planned Parenthood Federation of America (PPFA). Moreover, Johnson (1977: 67) suggests that Pincus had a 'long-standing but passive sympathy for the birth control movement'. He had received \$14,500 in 1948-49 from the PPFA for the study of early development of mammalian eggs. After talking with Sanger (1903-1967) in March 1951, Pincus re-appealed to PPFA for support of 'studies in hormonal control' and received \$3,400 in 1952 - a fraction of what was needed³⁵. Pincus (cited in Johnson 1977: 68) notes, however, that it was in 1950 that he 'was harnessed to the task of perfecting the pill'. The issue was still controversial and highly politicised. As late as 1961 a National Institute of Health Report was only published when its recommendation that \$17 million should be spent on fertility research as opposed to the \$1.7 million that was currently earmarked was deleted (Harkavy 1987: 313).

Pincus, then, had the courage and vision to recognize the potential utility of his early laboratory experiments. Parkes (1968: 425) documents that it was not a startling discovery that progesterone inhibited ovulation:

'there was nothing new in the principle ... It had been known for more than a decade that exogenous estrogen inhibited ovulation in women, and similar reports existed for progesterone ... It remained for Pincus to recognise the potential'.

As Hechler (1968: 363) points out, he did not merely wait for some one else to undertake clinical trials at a time when work on abortion and contraception were taboo, but organised and initiated them himself.

35. Johnson (1977: 70) notes that Pincus initially received \$2000 from Sanger. This was quickly supplemented by a grant of \$3,100 from the PPFA. Johnson (1977: 71) also states that the money Pincus received from Sanger 'helped but was not really needed' although the support from Searle had nothing to do with the contraceptive research project at this point.

Interestingly, contrary to popular conception, Dr Ann Szarewski (1991: 10) chooses to advocate 'two mothers' of the pill: as opposed to the fathers³⁶. She suggests that Margaret Sanger and Katherine McCormick³⁷ communicated their vision of relieving women of unwanted pregnancies to Gregory Pincus on June 8 1953. A later generation of feminists would point out that the pill placed all of the responsibility for contraception on women. That, however, is where Sanger and McCormick wanted it. For them, absolute security in contraceptive practice seemed a fabulous achievement and they both were enthusiastic campaigners for women's rights. The Planned Parenthood Federation, headed by William Vogt, did not appear to share Sanger's and McCormick's enthusiasm for the search for the oral contraceptive pill, and consequently, McCormick worked directly with the Worcester Foundation (Johnson 1977: 74). Hoagland credits the women, acknowledging that the pill would never have been developed without them (other known contributors included Mrs John Rockefeller and Amy Du Pont). Ann Szarewski (1991: 10) states that responsibility for making the pill available to women should lie, 'more than anyone else', with these two women. Greep et al (1976: 377) also point out that on top of Mrs McCormick's contribution of \$2 million over a decade, another woman, who remains anonymous, gave \$25,000 a year to the research programme and that Searle also aided Pincus' research. Moreover, Pincus credits Sanger with the vision that a new type of contraceptive was required, stating that he 'invented the pill at the request of a woman' (Pincus interviewed in 1967 cited in Reed 1978: 309). Pincus (1965: 6) attributes the increase in activity in steroid studies to a visit from Sanger as well as the 'emergence of the appreciation of the population explosion'. Perhaps, though, this is only part of the story.

Pincus and his colleague Dr Min-Cheuh Chang³⁸ were actively engaged in research to find a new orally effective contraceptive. Chang's first successful experiments on rabbits were made on April 25 1951, and the first major paper published in 1953 (Perone 1993). Even though his experiments were vital to the

36. McLaren and McLaren (1986: 12) also name these two women as 'godmothers' of the Canadian birth control movement.

37. McCormick (1875-1967) was the second woman to graduate from MIT. She became involved with Hoagland and the Worcester Foundation through their search for hormonal treatments for schizophrenia. Her husband had been diagnosed as having schizophrenia two years after their marriage. McCormick campaigned actively for women's suffrage. She also smuggled diaphragms from Europe into the US for Sanger's Research Bureau (Reed 1978: 307).

38. Chang (1908-) joined Worcester in 1945. Pincus asked him to begin testing the contraceptive effect of progesterone on animals in 1951.

development of the pill, and despite Pincus often mentioning him, Chang's contribution remained unacknowledged by Searle until 1967 (Chang 1968).

Running concurrently with Syntex's work on synthesising progesterone, Pincus and Chang began their search for effective compounds which exerted an intense progesterone effect in small doses when taken by mouth. Chang and Pincus (1953) also tested phosphorylated hesperidin and concluded that it was an unlikely anti-fertility agent despite Sieve's (1952) earlier report of an experiment with 300 couples that had raised the hopes of family planners around the world³⁹. Pincus wrote to a number of pharmaceutical companies in 1953 requesting supplies of potential compounds (Searle 1990). Among the samples that Pincus received were Searle's norethindrone and Syntex's norethynodrel. Pharmaceutical companies played an important role in the production and development of the pill. Indeed, by the end of the Second world War, 'the manufacture and sale of sex hormones had become a highly commercialized business. In 1951, sales of sex hormones in the UK were valued at £684,000 (Pfeffer 1993: 78).

By April 1951 Djerassi and the others at the Syntex laboratory had announced, and confirmed the effectiveness of, the synthesis of analogues of progesterone (Syntex 1966: 47). Djerassi had had no practical means of testing the biological activity of the compounds produced, so Syntex sent a sample of the substance to a commercial laboratory in Madison, Wisconsin. The laboratory confirmed that the compound had a highly effective progestational activity. The compound was then promptly sent to the National Cancer Institute, where Tullner and Hertz confirmed that the product possessed 5 - 8 times the biological activity of progesterone, thus making it the most powerful progestational hormone known at that time (Djerassi et al 1954).

On request, Syntex's 19-norprogesterone was sent to Pincus. The compound was also sent to other researchers. Other initial experimenters included Roy Hertz at the National Cancer Institute in Bethesda, Maryland, (who was using progesterone in the treatment of cervical cancer), Alexander Lipschutz in Chile, Robert Greenblatt (pioneer of steroid hormone therapy) in Augusta, Georgia and Dr Edward Tyler (who used it to treat menstruation and fertility problems) in Los Angeles (Robertson 1990: 128, Djerassi 1979: 247).

39. Prompted by reports of Sieve's work, an editorial in the British journal of the FPA (Family Planning Vol. 1 No. 4 January 1953) noted, under the headline 'Birth Control by Mouth?' that 'it scarcely needs to be argued that to devise a contraceptive that could be taken by mouth would be a great advance'.

To summarize, Djerassi and his team at Syntex synthesized the first orally active progestational agent, norethindrone, in 1951. But it was G. D. Searle & Co. that eventually launched the first oral contraceptive pill. Why a different compound than that produced by Djerassi was initially taken up and marketed as the Pill needs further enquiry. The answers lie in the social-technical-scientific networks that were operating in the early-mid 1950s.

Patents and Patients

The application for a patent for a slightly revised compound was made in November 1951. On August 31, 1953 Frank Colton of G. D. Searle & Co. filed a patent for the synthesis of the double bond isomer of norethindrone, named norethynodrel. This analogue was different enough to be patented, but Djerassi disputed the difference between the two compounds, questioning the validity of Searle's patent.

Confessing to what he admits is 'pure speculation', Djerassi (1992c: 637) alludes to imitation on the part of Colton, Searle's chemist. Djerassi has remained sceptical about the lack of disclosure of any of Searle's chemical work in the peer reviewed literature. He ponders over why Pincus made not 'the slightest reference in his opus magnum, *The Control of Fertility*, to any chemist (eg. Frank Colton) or to how the active ingredient of the Pill actually arrived in his laboratory'.

Relating confidences of Leon Simon, a respected patent attorney who served as Syntex's, independent patent counsel, Djerassi (1992c: 637) suggests that:

'in January 1952 Dr Emeric Somlo, then the owner of Syntex S.A., had some negotiations with the Searle family about their possible purchase of Syntex. In order to assess Syntex's non financial assets, Somlo instructed Simon to permit Dr A. L. Raymond, Searle's research Vice-President to inspect in Simon's Washington office all of the then pending Syntex patent applications. One of these was the Mexican patent application of November 22 1951, which disclosed the structure, the progestational activity, and the specific experimental details for the synthesis of norethindrone. What, if anything, Raymond did consciously or subliminally with this proprietary information after returning to the headquarters of G. D. Searle & Co. in Skokie, Illinois, will never be known.'

Parke-Davis, Syntex's American licensee, did not want to pursue a legal dispute because of links with Searle. Parke-Davis sold the antihistamine Benadryl to Searle so that Searle could make the important anti-motion sickness drug, Dramamine. Syntex's norethindrone 'seemed small potatoes over which it was not worth fighting a valued customer' (Djerassi 1992c: 636).

Syntex sponsored contraceptive trials with norethindrone, first conducted by Edward Tyler and subsequently by Joseph W Goldzieher in San Antonio, Texas, as well as conducting their own toxicology and monkey experiments (Djerassi 1992a: 60). Parke-Davis received FDA approval for use of norethindrone as a menstrual regulator and the treatment of infertility in 1956. Syntex collaborated with Parke-Davis, and signed over the license to produce and market norethindrone, but 'just as it became obvious that oral contraception was about to become a practical reality, Parke- Davis got cold feet and refused to even consider marketing norethindrone as an oral contraceptive'⁴⁰ (Djerassi 1979: 253). Parke-Davis chose not to pursue the results because of the possible religious backlash (although Parke- Davis did contribute \$5000 to the Foundation) (Syntex 1966: 50).

The marketing license was returned to Syntex, who then negotiated a new agreement with Ortho Division of Johnson and Johnson. But the delay incurred through this abandonment by Parke-Davis, as well as their unwillingness to hand over the results of biological trials to Ortho, meant that Syntex's nor-progesterone received FDA approval for contraceptive use nearly two years after Searle. Syntex thus lost out to Searle because it was unable to 'enrol' a larger pharmaceutical company, a marketer or a distributor⁴¹. A US patent number was issued to Fred Colton of G. D. Searle & Company on November 29 1955 and to Djerassi and others at Syntex on May 2 1956⁴².

Hogg (1992: 611) has also suggested that Upjohn was able, but not willing, to offer products for contraception in the mid-1950s. Instead the first orally active

40. Interestingly, the same fears and threats appear to be circulating in the US in the 1990s with the introduction of RU 486 the 'abortion pill' (see Klein et al 1991).

41. Reed (1978: 357) also notes that Searle managed to acquire Productos Esteroides, Syntex's chief competitor, and its American marketing agent, Roots Chemicals.

42. I am grateful to Djerassi (personal communication) for clarifying the important difference between patent issuance and filing dates: 'Pharmaceutical companies try to delay the issuance dates ... as long as possible ... because the 17-year proprietary clock of a US patent starts running with the issuance of the patent and a good part of that period is cannibalized by development work long before the product is actually marketed'. It is the filing date that establishes legal priority.

progestin, 17 α -acetoxyprogesterone, was developed for pet use in the veterinary division. This 'testing' of the pill on animals was never isolated from humans. Not only were crucial lessons in reproductive control learnt, but as Busfield and Padon found (1977: 244), potential consumers of the pill were also influenced. Stating that the pill did not appeal to her, one woman said: 'It's rather silly, I suppose, but ... the time I was interested in farming they used to give these types of drugs to cows ... In the 1940s it was quite a new thing and very interesting because you can make the heifer come on heat just when you wanted to, and the idea of me taking drugs of this sort is repugnant. I think one's personality depends tremendously on one's hormones and I don't want mine mucked about with'.

Searle was the first company to make the policy decision to market an oral contraceptive pill. Searle therefore has received the retrospective credit for daring to launch a contraceptive into a 'hostile' (male-defined) market⁴³. Djerassi (1992c) notes that 'there is no question that Searle's norethindrone double-bond isomer norethynodrel was the first steroid active ingredient of an FDA-approved contraceptive pill, and that the company deserves enormous credit for marketing the product in 1960 despite a possible backlash by consumer opponents of contraception'. Colton (1992: 628) confirms this, adding that 'the management of Searle deserves special commendation for its foresight and willingness to get involved and wholeheartedly support what appeared at the time, four decades ago, such a socially controversial, financially questionable, and scientifically challenging area as oral contraception'. Nevertheless, Reed (1978: 356) documents that even Searle had reservations about their involvement in the field of contraception. It was felt that interference of the menstrual cycle would not be acceptable for regular use by healthy women. Vaughan (1970: 36) also cites an interview in 1969 with a Searle spokesman:

'We recognised right from the start this was going to be as controversial as hell, and we moved very cautiously. If anyone had told us the pill was going to be discussed at bridge parties and across dinner tables, well, frankly, we would have disbelieved it'.

Despite these fears Searle continued to support Pincus, but cautioned him not to publicize their involvement. Davis (1978: 89) emphasises that 'Searle was by no means sure that it *wanted* to go into the contraceptive business, which was

43. A report in *Time Magazine* (February 17 Vol. 77 1961: 33) noted interestingly that 'Searle sells Enovid as as a contraceptive but advertises only its other uses'. The sensitivity of the issue of birth control should not be underestimated.

regarded as a rather sleazy enterprise. The firm's public relations people warned that doing so might destroy Searle's theretofore "impeccable reputation". Financially, Searle made a wise decision. Searle made \$47 million (44% of its total sales in 1965 (LaCheen 1986: 109)) as oral contraception became the most rapidly adopted contraceptive in the early 1960s. Zaffaroni (1992: 644) also notes that Syntex profited from the promotion of the pill: 'the acquisition value of Syntex in 1956 was \$4 million; by 1965 the stock market value of Syntex Corporation reached \$1 billion in 1965 dollars. Today that is worth about \$10 billion'.

Summary

The development of the pill is a complicated affair, and alternative outcomes were possible at every stage. It was not developed in a vacuum, isolated from a social and political context. The pill has never been able to remain isolated from conflict and controversy: it has always been immersed in power relations of gender, race, age, class and inequality that are highlighted in subsequent chapters.

The pill did not succeed because it 'worked'. A contextualised knowledge of technological development is required in order to counter any claims of technological determinism. I have, in this chapter, begun to break down 'the black box' of the pill, get inside the pill's sugar coating and tease out its inner beginnings. The story of the woman on the pill may appear to be a seamless web, a web of science and politics, religion and culture, but it is also a web of broken threads, false starts and contradictions.

We leave this chapter with a product, or two, that needed to be tested. It is not clear what or who is being tested, nor are we certain whether the 'testing' occurs separately from the production. The division between testing, marketing and product definition is arbitrary and should not be interpreted literally. The progesterone compound was tested on a number of different groups and there appears to be little substantial or verifiable evidence documenting what the results were. There are, however, numerous accounts of early trials and it is these that I have managed to collate. The stories of the first tests often contradict each other and it has been difficult to trace and verify tales. This is what I address in the following chapter: *The Body on Trial*.

CHAPTER FIVE

THE BODY ON TRIAL

'A tablet a day keeps a baby away'

Wallace 1960.

The chemical content of the pill has not changed radically over the years. What has changed is the *woman* on the pill. The woman on the pill has been continually redefined through a series of tests. From the illiterate married mother of the Third World to the highly educated, 'liberated', single woman of the Western world, the digestion of the pill has modified more than hormone balances.

The woman on the pill is 'doing' her gender in a specific way. She does it repeatedly, (and never completely), and in interaction with others. She does it in a way that produces an illusion; an illusion of essence. Using the framework of Judith Butler that I outlined in chapter 2, I want to argue here that the body of the woman on the pill becomes a site for the reworking of gender performances. By revealing the constructed nature of the woman on the pill it is possible to expose the ways in which her sex, gender and sexuality have been produced as inherent and natural, as well as in ways that endorse heterosexuality, racism, colonialism and sexism.

Whilst conventional analyses assume that it was the oral contraceptive pill that was tested, I am trying to show in this chapter how it was the 'woman', rather than the 'pill', who was put on trial. Testing provided a means for scientists to explore the geographic and ethnic differences between women, as well as possible differences in seasonal birth rates. As late as 1967, Nicholson suggests that 'a pill that works in Texas may prove less reliable in Sweden' (page 71). Similar fears were again expressed when women in a British trial were insufficiently 'protected' by a dose successfully applied to women in Puerto Rico, and Mears (1961: 1181) raises the question herself of whether different doses are required for women in different parts of the world'. Tyler et al (1961: 367) concluded that it was 'not routinely possible to transpose results pertaining to acceptability, tolerance, and the like from one population group to another'. Testing not only redefined what the pill was used for, and marketed as, but also who exactly the woman on the pill

was or who she was supposed to be. The values embodied within the female sexed body shifted concurrently with the social context.

Just as the success of a scientific experiment is not reducible to its efficacy, neither is the successful uptake of an innovation found in an inherent logic or features of design. The pill was not swallowed because it worked. The definition of success, and of what 'work' meant, was being negotiated throughout the period of testing. The sociology of testing is about establishing 'workability' (Pinch 1993). Workability is not an abstract quality, essential to the artefact, but is instead culturally contested and highly contingent. Using his work on the testing of missiles, Donald Mackenzie (1989) argues that the test site is a major locus for the construction of facts. How credible knowledge is generated from technological testing relies heavily on the tester's previous knowledge, agreement on what constitutes successful testing, and a consensus on how something should be tested. The testing of progesterone, and synthetic analogues in the form of the pill, highlight the ways in which what is demarcated as 'success' or 'workability' is in no way fixed. What is put on trial and tested, for example, in this case either the woman or the pill, cannot be read off from either the artefact undergoing testing or the context in which it happens.

What I hope to avoid in presenting the stages of testing is any impression that an artefact passes through a linear trajectory. Drawing on the notion of heterogeneous engineering (as outlined in chapter 2) the development and refinement of a technological artefact, such as the pill, cannot occur without the contemporaneous development and refinement of the social context. Society cannot be divorced from the technical as 'society itself is built along with subjects and artifacts' (Bijker and Law 1992: 19). We therefore need to know about the content of technology as well as the context. Technologies always embody compromise, and as fatuous as it may sound, it is vital to remember that technologies 'might have been otherwise' (Bijker and Law 1992: 3). There was no inherent linear trajectory that fashioned the changing contours of the body of the woman on the pill.

Beginning at the Beginning?

Although I have adopted a chronological approach to the reconstruction and evolution of the woman on the pill, I hope to illustrate that there is nothing inherent about either the pill or the woman that determined the acceptance of the woman on the pill. There is nothing inevitable about a woman taking the pill.

Whilst I start at the point of testing on humans, both men and women, earlier tests on animals as well as with different compounds are also implicated in the story as I hope these chapters illustrate.

The previous chapter, on the development of the pill, does not merely provide a context or a background. Earlier research on hormones and steroids cannot be divorced from the testing of the pill since it helped to define the way the pill was formulated as well as the women selected. The demarcation of boundaries between discrete stages of, for example, basic laboratory research, clinical testing and diffusion, is anathema to the STS approach that I have chosen to adopt. Not only are new technologies adopted prior to testing as testing continues alongside marketing, but with a process of heterogeneous engineering, the actors' labour cannot be divided up into neat stages (Oudshoorn 1993). Pincus, for example, acts as scientific researcher, promoter, marketer, clinician, and entrepreneur. Indeed, Greep (1975: 211) wrote that Pincus was a 'distinguished scientist, a celebrity of pervasive influence, and an astute politician ... He was a disciple of science, he knew politics, and he was a benefactor of society'. In one man, who happened to be at the forefront of the dissemination of the pill, we find science *and* politics mixed up. Pincus embodied a classic combination of STS. What seems remarkable is that this did not impinge on his credibility as scientist and researcher.

Contraception was not a topic that could be discussed lightly in the 1950s, with its promotion prohibited in many states in the US. Indeed, Jaffe, an early staff member of the Planned Parenthood Federation of America (PPFA), noted that advocacy of birth control in the 1950s involved 'trying to persuade people that the roof will not fall down on them if they mention or support birth control' (in interview with Piotrow 1973: 16). Despite the hostile social climate, some scientists persisted in their attempts to find the ideal contraceptive. At the 1953 IPPF conference, for example, Stone (1953: 61) provides an 'update' of the latest scientific advances in contraception. Amidst discussion of experimental research with umbilical cord extracts injected in to female mice, he suggests that:

'it is quite likely that we shall be able to render in the not far distant future a woman, or a man, for that matter, infertile for a definite length of time by the occasional hypodermic injection of a hormone, or even by the administration of a few compressed tablets'.

The notion that, one day, scientists would 'discover' a pill that one could swallow to prevent conception had been a dream of women, men and family planners for decades. Sax (1951: 122) predicted that a successful ingredient could be used as a contraceptive pill and 'incorporated in a staple food such as sugar or salt, or a basic cereal such as rice or wheat'. This chapter examines not only how the emerging scientific discourses helped to mould the pill and the woman who took it, but also provided ways in which to make the woman on the pill culturally 'intelligible'. The structures, discourses, desires and fears embodied in the notion of a contraceptive pill existed prior to a birth control pill that could be swallowed. Nevertheless, it is these structuring ideas that helped to constitute the woman on the pill. The woman on the pill was always already constituted by regulatory norms that varied with time and particularly place. What made sense for the Puerto Rican woman on the pill was, for example, very different from the British woman on the pill. I show how cultural intelligibility was not a fixed notion, but shifted with varying expectations and fictions of gender, race, sexuality and class. The constructions of the body of the woman on the pill were constantly open to negotiation and challenge and her embodied meaning not only shifted throughout this period of the late 1950s and early 1960s, but her position changed over time as she passed through different 'stages' of the reproductive life cycle. A woman nearing menopause was thus constructed differently, and entered the story of the pill at a different location than a childless young wife.

I have focused on three ways in which the woman on the pill was made culturally intelligible during this period. She is explicable only within situated contexts of particular battles of power and gender. This notion of 'intelligibility' lies easily with the notion of workability that I want to explore. Beginning, in the early 1950s, with the unlikely candidate of the infertile woman, the notion of 'workability' was defined in terms of successful conception. The criterion used to judge the success of the first trials of the pill and of progesterone was that of pregnancy. The first trials of women on the pill in the US and UK were therefore measured in terms of fertility *promotion*. Workability thus reflected the cultural mores of a society that was investing heavily in the cult of motherhood. Being a woman was, for the woman on the pill, apparently inseparable from being a mother. A correct gender performance for the woman on the pill was inexorably linked to the facilitation or prevention of pregnancy.

I do not want to portray the woman on the pill as a cultural dupe, nor as a passive victim. The women who swallowed the pill may not have had complete

knowledge about the potential hazards of the pill, nor full information about the alternative contraceptive technologies, but then again, I do not want to suggest that if they had had complete knowledge they would not have swallowed the oral contraceptive pill. Notions of agency, and in particular the agency of the woman ingesting the pill, are complex and should not be reduced to matters of 'choice'. As I outlined in chapter two, Butler is at pains to point out that it is simply not possible for an individual woman to decide to do her gender differently, nor is it easy to redefine the meanings surrounding the pill. As I outline in the final chapter, ways of doing one's gender differently, including ways of doing oneself on the pill differently require a knowledge about how things are conventionally 'done'. This chapter is about the foundations on which the woman on the pill, as we know her today, was built. We need to know what her foundations are in order to rework them and construct her differently.

The three stages of testing, or bodies, that I elucidate are not discrete. Some women, and some contexts, cross boundaries and blur divisions of race, class and gender. The three different bodies that I have chosen to highlight, the infertile, the over-fertile/black, and the contracepted, are all intelligible. They are located at positions that are explicable given the sex/gender/desire regulatory fictions that were operating in the 1950s-1960s. It is to these narratives, with their mix of science and the social, that I now turn in order to assess how the woman on the pill was constituted.

The Infertile Body

It was the infertile white woman on whose body the pill was first legitimately tested. In the early 1950s, progesterone had already been tested for its use in reversing infertility. Progesterone had been tested on rats and rabbits, and in 1953 large doses of progesterone were given to women, or rather, to members of a sexless 'human species' (Pincus 1959a: 308). Although little was known about the actions of hormones, progesterone had already been used in the treatment of habitual miscarriage, cervical cancer and other gynaecological diseases (from amenorrhea, infertility, foetal salvage, habitual abortion, uterine bleeding, and surgical castrates). Indeed, Naomi Pfeffer (1993: 70) details the treatment of menopausal women, and women who had never menstruated with injections of synthetic oestrogen and natural progesterone in Medical Research Council test trials prior to the Second World War.

In popular accounts of the pill the earliest administration of progesterone to infertile women that is usually acknowledged is that of 80 women in Massachusetts. It appears likely, however, that smaller, and little mentioned, trials prefaced this larger, and more widely publicised project.

Progesterone appeared to induce a physiological state that was named 'false' or 'psuedo' pregnancy. This 'pseudo-pregnancy' routine was developed, by Drs George and Olive Smith (of DES fame) for Dr Horne (personal communication 1993). Horne was working as a Research Fellow in infertility studies with Dr John Rock in 1950-51 (and had been taught physiology by Pincus in 1933 at Harvard). John Rock, a physician at the Reproductive Study Center in Brookline, was working with women with very small uteri who were unable to conceive. I shall let the tale of how synthetic hormones came to be used on infertile women be narrated by the 'discoverer' himself, since it exemplifies the 'eureka' line that I tried to denounce in chapter two. I have quoted this section in full since it eloquently captures what I have been trying to reject, except that this time the moment of genius happens in the shower, and not in the bath! It also documents a story that I have not found elsewhere:

'One morning, in the shower where I did my best thinking as my brain warmed up, I had the idea that perhaps we could stimulate these infertile women with hypoplasia with the synthetic hormones duplicating what hormone levels of estrogen and progesterone a normal pregnancy produced during the first 16 weeks and thus mature their uteri sufficiently to allow them to conceive. That morning I went in to Dr. Rock's office and explained to him my idea. He looked at me like a paternal grandfather and said "Trader, that's the craziest idea you've had in your life". I backed out of his office 'with the tail between my legs'!!! About a week later he called me in to his office and said "What was that crazy idea you had last week?" I repeated the thought and he replied 'Well. I've been thinking about it. It couldn't hurt anybody, could it?' I answered that I didn't think so. So that is when we started what we called the "Pseudo Pregnancy Routine" for about 15 of these "girls" with small uteri'.

Ovulation was inhibited on all 14 patients undergoing treatment as indicated by the basal temperature records and Horne notes that they had found the key to what Rock had been 'looking for all [his] life'. Four out of the 24 patients who had taken the medication became pregnant within 6 months after finishing the routine (Horne 1993).

Continuing to work with infertile women, John Rock, ran a trial with 80 childless women in 1952:

'Eighty frustrated but valiantly adventuresome patients to whom the experimental nature of the treatment and its unknown, but probably harmless and only possibly helpful, effects were carefully explained, like us, wanted to try it' (Rock et al 1959: 324)⁴⁴.

These patients agreed to try treatment with added natural hormones (progesterone and oestrogen). Rock's interest was 'aroused in the frequent complaints of barrenness by hopeful parents' and only too often he 'found there was no way to determine the causes' (Rock 1963: xiii). Pincus advised Rock on how to best proceed with the 'particularly baffling' infertile women who were hoping to conceive (Rock 1963: 94). The hormones, which by 1963 were 'known to be harmless' (Rock 1963: 95) were used on the women who 'had been seeking motherhood' for two - six years, and who had volunteered for the experiments (Maisel 1965: 118). Thirteen out of the 80 women became pregnant by the fourth month after discontinuation of the treatment (Jarrett 1966).

Despite this apparent 'success' Rock needed a therapy that would imitate the normal menstruation cycle, since women became upset with the complete absence of menstrual periods under the misapprehension that they were pregnant. Maisel (1965: 118) notes that both husbands and wives suffered from emotional shock when menstruation was suppressed and Jarrett (1966: 619) also confirms that 'the signs of pregnancy which invariably developed throughout the 3 month period of treatment raised too many false hopes in women who had been previously infertile and the mental strain of waiting to discover the results of discontinuing the treatment became too great'. In what now appears a remarkably honest (and naive) account, Rock, Garcia and Pincus (1959: 324) recount how women did feel:

'most patients and most husbands were not, to put it mildly, at continuous ease. In the early weeks, moderate nausea, and occasional vomiting were suffered, not always without complaint. ... Consorts, recognizing these various signs of pregnancy, although remembering that they had been assured conception could not occur during the treatment, were prone to disquieting hoping-against-hope confusion ... The none too positive assurance of the slightly uneasy

44. I am assuming that these women were white, married and predominantly middle class. When women of a different status were used, it is usually noted in the scientific/medical text. Such women were thus constructed as the norm.

experimenter was not entirely conducive to sublime confidence that *all* would be well' (emphasis in original).

Interestingly, however, Horne (1993) does not recount any such event with the women following the psuedo-pregnancy routine. He states (1994) that although most had swelling of their breasts and 'a few had mild nausea early in the treatment schedule' no one complained and all finished the 16 week dosage. He does not remember women being upset by the absence of menses, since they were told that their menses would stop just as it did when pregnant. Nevertheless, on the advice of Pincus, a new regimen was introduced in 1953 which left patients with 'a greater sense of normality'. 'After a few preliminary trails', and we are not informed what they were, 'a standard regime was developed' (Pincus 1955: 177).

A second series of 27 women were 'put on trial'. Only progesterone was administered this time, and on the suggestion of Dr Pincus, the regimen was changed from one continuity to successive cycles of 20 days of medication. Pincus suggested that Rock work with progesterone alone, administering it from the fifth through to the twenty fifth day of the ovarian cycle, then withdrawing it to simulate menstruation. Each 'subject' on the trial had to undergo a series of observations: daily vaginal smears, daily basal temperature, a 48-hour urine specimen on days 19-21, and an endometrial biopsy on day 21 (Pincus 1959a). Pincus adds that 'it was not possible to make all the planned observations on all the patients, but a fair quota was obtained' possibly indicating that some of the women withdrew or refused to participate in the barrage of tests. Davis (1978: 85) confirms that several of the women did not complete the course, but does not indicate why⁴⁵.

This method required very large doses of pure progesterone (dosage of up to 300mg of progesterone per day by mouth) which was supplied by Syntex at cost rate (Reed 1978: 475, footnote 36). Unfortunately, the effectiveness of the oral dosage was short-lived and it was painful to give intramuscularly. The induced state of 'ovulation-free psuedo-pregnancy' with the administration of progesterone appeared to have a 'rebound' effect (Pincus 1959a: 308). Four of the women became pregnant shortly after the cessation of the trial. Hesitant and uncertain, Pincus (1955: 180) appears reluctant to make any bold claims; pointing out 'that

45. See discussion in Searle 1957

the progesterone treatment may have been responsible for therapeutic alterations in the reproductive tract' and concludes that 'surely there is at least no evidence that it did damage to it'.

There was, however, enough 'evidence' for the trials to proceed. When it came to clinical testing, Pincus considered Drs. Guttmacher and Stone, but eventually selected Dr John Rock. Unlike the other two, Rock was not a Jew, nor was he a leading light in the birth control movement. A confirmed Catholic, and father of five children, Rock appeared to be an unlikely choice for the supervision of the initial testing of progesterone treatment on women. Indeed, Sanger was opposed to his selection and wrote: 'he will not advance the cause of contraceptive research and remain a Catholic' (cited in Reed 1978: 352). Pincus insisted, and Rock was to be instrumental in later attempts to get the pill accepted by the Catholic church. Rock, however, did not have an unblemished public record. He had already involved himself in controversial, and often unpopular, activities. He had collaborated with Pincus on an earlier project in the 1930s and had received a grant of \$17,064 from the PPFA for statistical evaluation of sterility cases during the period 1948-1951. Rock had been 'the first Catholic among 15 Massachusetts medical men who signed a petition endorsing birth control' in 1931 (Breo 1980: 13). Not only had Rock fitted diaphragms in the 1930s in Massachusetts, a state in which contraception was illegal, but he had also recovered and preserved a series of 30 human embryos (Breo 1980: 13). A group of Catholic doctors had already attempted to get him excommunicated (Grant 1993: 69). Nevertheless, as Sanger (cited in Reed 1978: 174) decreed in a letter to Mrs John D. Rockefeller in 1954, 'being a good R.C. (sic) and as handsome as a god, he [Rock] can just get away with anything'.

Although Rock was a devout Catholic, he argued that clinical trials could be carried out *ex curiosita*. This meant that while he could not give a pill to prevent conception, he could give a pill to *find out* if it would prevent conception (Ramírez de Arrellano and Seipp 1983: 112). Rock resolved and adapted his religious convictions in order to further accommodate his desire for scientific advances. He redefined the dilemma thus: 'the religious conflict regarding birth control is over *method*, and not over *objectives*' (Rock 1963: 40). Rock believed that his work contributed to the resolving of differences. He envisaged that the eventual resolution of doctrinal differences would occur 'only after the expansion of the armamentarium of birth control' (page 75). The steroid compounds 'merely served as adjuncts to nature' (page 100), creating an artificial 'safe' period. Rock

justified the use of the contraceptive pill in his book, *The Time Has Come*, stating that it created a 'pill-established safe period' and thus carried with it the same moral implications.

The first synthetic compounds to be tested in December 1954 by Drs Rock, Pincus and Garcia were norethynodrel, 17-ethyl-nortestosterone (both Searle products) and 17-ethynyl-19-nortestosterone (Syntex's) (Colton 1992: 628). This study was supported by grants from the Planned Parenthood Federation of America and from Searle. Prior to this testing stage it appears that Pincus also tested the new nor-steroids on 8 women (Pincus 1955). One or another of these 3 compounds of a dosage of 5-50mg daily was given orally and cyclically during 3 menstrual cycles to 50 childless women with idiopathic infertility, who volunteered for the study at the clinical centre in Brookline. These 'unreproductive patients' (Garcia et al. 1958: 82), aged between 22 and 39 years, 'served as subjects' for the trial (Pincus 1958: 5). None of the women became pregnant during the treatment, and it appeared that fertility was enhanced after discontinuation of the treatment with 7 patients conceiving within only 5 months of the last treated cycle. Rock, Pincus and Garcia (1956) appear unsure about the contraceptive potential commenting on the fact that none of the 50 women became pregnant during the months of medication. The action of the synthetic progestogens in inhibiting ovulation was confirmed by performing laparotomies on a further seven women who required laparotomies. They were given 'medication' for 3 cycles and their ovaries were then examined (Garcia et al 1958: 90).

Because none of the women suffered from infertility after taking 'medication for more than four experimental cycles', a second, longer study was carried out. This comparative study 'on a group of young, regularly menstruating and ovulating psychotic women' was initiated (Garcia et al 1958). It remains unclear as to whether or not these women are the same as the patients referred to in other accounts. Sai (1976: 23) records that permission was given by relatives for this early experimentation, including sixteen 'institutionalized males'.

Women were only questioned about side effects 2-3 months after they had stopped therapy 'in order to avoid complicating the matter through subjective feelings of the patient' (Garcia et al 1958: 93) (although Hornes' unpublished notes indicate that women were questioned on a range of side effects from an increase (not decrease) of sex interest, nausea and breast soreness). The notion

that women cannot be trusted to define their own experiences is echoed in an essay by Gena Corea. Interested in the 'unreality' of women's experiences of new reproductive technologies, Corea (1988: 86) cites one woman's tale:

'the professor tells us that according to the labels and his books they [the hormones] don't have side effects. Once someone comes out and is brave enough to say you get side effects, other women say so too. I think that's what he's worried about - that side effects are catching'.

The idea that side effects are precipitated and exaggerated by female gossip is a recurring theme throughout the trials and it helps to redefine women's experience of the pill. Indeed, the trivialising of side effects encountered by women on the pill appears to have retained its potency. In 1979, an article in *Modern Medicine* (FPA: 1/1961-1979) accounts for the fact that 'some women get six different varieties of pills in the first year simply because of minor side effects' by asserting that 'this reflects inadequate counselling ... continuing returning to the doctor for a change may also be a sign of ambivalence to the pill. It may be that she wants to discuss the risks, or needs psychosexual counselling'. Such statements undermine the legitimacy of women claiming knowledge, of either their own bodies, or of being able to assess the risks.

It is worth noting here why women should undergo such pain and anguish and even risk their lives and health in order to have a child. As Havermann (1967: 89) suggests women agreed to the trials, they would have 'gladly volunteered ... they were willing to experiment with almost anything that promised any hope at all of motherhood'. These questions are not only of historical interest, but they have retained a currency within contemporary debates surrounding in vitro fertilization, pregnant postmenopausal women and surrogacy. Sandelowski (1990: 35) argues that 'infertile women experience a profound sense of Otherness, of being neither female nor male'. She points out that a feminist discourse tends to deny the existence of a maternal instinct or innate desire, as women's desires become trivialised and dismissed (page 41). The image of the 'obsessed' and 'desperate' infertile woman and her determined efforts to have a child have served the interests of those feminists who wish to illustrate the extent of female oppression, exploitation, and lack of freedom. Sandelowski emphasises that the painful reality of the infertile woman should not be minimised or trivialised. Rather, women's agency and the use of technology should be recognised. A similar point is raised by Maggie Humm (1989: 39-43). Also writing on feminist interpretations of infertility, Humm goes on to refute the notion of women as victims within a

masculinized medical science. She asserts the need to recognise the women's agency. Nevertheless, the dominant treatment of the infertile woman, then and now, continues to be medicalised and pathologised. Infertility becomes a disease that needs to be cured, and as Klein (1989: 239) states, 'what is claimed to be "treatment" is, in fact, a process of trial and error, and women's bodies are the experimental test sites'.

To understand the reasons why women were willing to go through extreme and painful 'treatments' in the quest for children, women need to be located in a social, political, cultural context. The 1950s was a 'family-focussed era' (Miller et al 1991) and the UK and the US, in particular, were infused with pro-natalist propaganda. Childlessness was considered deviant, selfish and pitiable (May 1988). To remain single, let alone married and childless was deviant. As Busfield and Padon noted (1977: 119) 'those who do not marry run the risk of being regarded as deviant - of being thought to be somehow less competent and less successful in their social relationships, and of being thought to be less desirable, less attractive and less mature'.

The pervasive cultural, political and social investments in motherhood help to explain the paradoxical situation in which the oral contraceptive pill was derived from reversing infertility. There was intense pressure on couples to have children, and within such a context, the body of a woman exhibiting signs of infertility was a legitimate site for the experimentation of fertility agents. Her body made sense because motherhood was clearly tied up with doing one's gender correctly.

The baby boom was not solely the result of the return to peace, nor of births to older parents postponed because of the war, nor was it the result of larger families (Mintz and Kellogg 1988). Rather, everyone was having babies. Women of all ages, ethnic groups, and income levels participated in the baby boom; it was a mass phenomenon (Van Horn 1988: 85). Advertisements in mass-circulation magazines ceased to show a 3-person household and began to feature pictures of 5- and 6- person families (Chafe 1972: 217) as the birth rate for third children doubled between 1940 and 1960, and that for the fourth child tripled. Gallup polls suggested that families of smaller children were much less acceptable in 1960 than they were in 1936 (Van Horn 1988: 91).

Barbara Ehrenreich (1983: 14) notes that, in the late fifties, according to popular wisdom the average age for marriage was 23 and that 'if a man held out much longer, say even to 27, "you had to wonder"'. By 1953, almost one third of American females were married by the age of 19 and in 1960, almost 75% of all women between 20 and 24 were married (Oakley 1990: 114). American women were marrying younger, having children sooner, and bearing more of them than at any time in the twentieth century (D'Emilio and Freedman 1988: 249).

In conversations with men and women who married in the early or middle years of the 1950s, Eisler (1986: 204-5) found the phrases 'wanting or planning to have lots of kids' was a constant refrain. Many of them pointed out the one brother or sister, typical of Depression families, as a privation for them and, they assume, for their parents. She continues to agree that 'large families, to be sure, were in "style", but the extent to which individuals are seen as patterned by the culture is always greater when the critics disapprove of what they are doing ... We tend to see an 'autonomous' individual when we approve his or her script'. Rich (1979: 25) confirms this sentiment stating that 'to have a child was to assume adult womanhood to the full, to prove myself to be "like other women"'. The regulatory fictions governing gender norms in the 1950s were tightly organised around motherhood. Although women did indeed deviate from the norm (eg. single career women, and lesbian women), there was little room for such deviation and it threw the status of 'womanhood' into question.

Interestingly, during the period in which the pill was modified from a fertility promoter (Langer 1963: 621) to a fertility inhibitor, the meaning of motherhood remained quite static. Motherhood remained a goal quite distinct from fatherhood: naturalized and legitimized by the body of the woman on the pill. Understanding the contradiction arising out of the development of the pill as pro-fertility agent at a time of unprecedented fertility helps situate the way in which values are embodied in the (re)constructions of the body.

Paradoxically, then, not only did the baby boom encourage the search for a cure to infertility, but it also made the need for contraception more pressing; 'wives who had 2, 3, or 4 children while still in their twenties could hardly be accused of seeking contraceptive devices in order to avoid their biological destiny, or to escape the confines of the home' (D'Emilio and Freedman 1988: 249). Having accomplished their procreative duties, married couples of the 1950s had earned the

right to continue their sexual relationship without doubling the size of their families. This topic is taken up again in the following chapter.

The values imbued in having children were very strong: you were not 'fulfilled' until you had children. Women were not only defined by their role as mothers, but if they were unable to 'develop' their maternal role, then, questions were asked and insinuations made. The legacy of the 1930s' fear of depopulation ensured that childless women were pitied and/or thought of as selfish in their motives (similar to debates about women having abortions in the late twentieth century).

Prompted by concerns over the falling birth rate, and subsequent 'depopulation mania', the problem of infertility was one of the principle subjects of a Royal Commission set up in 1944. Documented and identified as a problem worthy of serious attention, infertility and subfertility became a legitimate area of women's health for doctors to be involved in. It attracted research money and sympathy. In the early 1950s the bulletin of the FPA (Family Planning 1952: 5) notes the increased demand for the subfertility services. In the US over 10,000 childless husbands and wives sought medical help from the Planned Parenthood centres in 1955 (Houghton 1956: 5). As Pfeffer (1993: 140) has noted the services offered were directly linked to wider social and economic concerns. In 1951, 46 out of 55 of FPA clinics gave women advice on infertility. 'However in the postwar antinatalist climate, the organization became increasingly concerned with helping women not to have babies; by the 1960s, infertile women made up just 1.6% of its 102,930 patients ... by 1982 only 67 out of 193 British health authorities incorporated advice on infertility with in a family planning service, two years later, that number, had fallen to 49 out of 145'. This shift may also reflect the changing relationship the medical profession has with in/fertility which is further elaborated in chapter seven.

The values, and hopes, invested in the pill have shifted across time and space. Different standards of workability can also operate at the same time. Abraham Stone and Herbert Kupperman were also examining the effects of progesterone on thirteen patients at the Margaret Sanger Research Bureau. They were interested in the inhibition of ovulation, and therefore did not perceive the experiment successful when three of the women with long-term histories of infertility became pregnant shortly after the cessation of the trial (Suitters 1973: 128). The same trial

would have been perceived as a success by Rock, thereby illustrating that opposing standards of success can co-exist.

Whatever problems remained with the administration of oral progestogens, it remained apparent that it was a remarkably effective inhibitor of ovulation. This attribute was announced by Pincus (1955: 184) at the Fifth International Planned Parenthood conference in Tokyo in 1955 and was widely covered in the press. Rock refused to travel with Pincus and Chang, arguing that the animal experiments were too tentative and inconclusive to warrant publicity (Ramírez de Arrellano and Seipp 1983: 19). Despite Rock's disapproval and resistance to such early publicity, Pincus concluded that:

'We cannot on the basis of our observations thus far designate the ideal anti-fertility agent, nor the ideal mode of administration. But a foundation has been laid for the useful exploitation of the problem on an objective basis. The delicately balanced sequential processes involved in normal mammalian reproduction are clearly attackable. Our objective is to disrupt them in such a way that no physiological cost to the organism is involved. That objective will undoubtedly be attained by careful scientific investigation'.

In an article for *Eugenics Quartely*, Warren Nelson⁴⁶ (1956: 141) cautioned that the 'overt enthusiasm exhibited in Tokyo should be tempered with the realization that in actuality nothing significantly novel was presented there'. Commenting at the same Tokyo conference, Zuckerman (1955: 212) concluded that although the results appear 'promising' he suggested that 'the extent of that progress will not be measured before we first agree about the design of our chemical trials and judge the criteria by which we are going to judge their success'. Zuckerman clearly recognized the importance of 'workability', but what he failed to grasp is that 'success' is defined by scientists and the doctors and not by the women ingesting the pill. And yet, it is the workability of the women swallowing the pill that became the focus of research; redefining once again the notion of workability. This time it is the women, and not the pills' action, who are under scrutiny. Workability cannot, however, be understood without a corresponding notion of intelligibility. What it meant for the pill to work is clearly linked to the women on which the pill was said to work. Why did it make sense for some women to swallow the pill and not others? I try to show in the following sections that cultural intelligibility and workability are dependent on notions of what it meant to be a woman in different places and at different times.

46. Nelson was Medical Director of the Population Council, New York.

Although it was unclear how the pill worked, and what effects it had on the body, by 1956 it seemed apparent that it inhibited ovulation. As the pill shifted from a fertility promoter to a fertility inhibitor, its target population multiplied. The next appropriate step appeared to be a large scale field trial.

Foreign Bodies: testing in Puerto Rico

The use of colonial bodies as sites of medical and scientific experimentation was not new (see Anderson 1992, Savitt 1978). What is interesting, however, was the concern expressed over public perceptions of contraceptive programmes. Julian Huxley (1957: 19) noted that one of the retarding factors had been 'the reluctance of colonial powers to encourage birth control in their colonies, often out of fear that they might be considered to be seeking to use population control as a weapon against an "inferior" race'. Stycos (1958: 128) also adds, with reference to Puerto Rico and Jamaica, that attention to fertility may be interpreted by the populace as efforts on the parts of whites to curtail population growth of people of colour - or more sensationally stated, mass sterilization of the Negro'. The legacy of population control and oppression was clearly still pertinent for colonised and post-colonial peoples in the post war world.

The first mass testing of the pill, in the form of Searle's⁴⁷ compound norethynodrel, took place in Puerto Rico. This island, its government, its physicians, social workers, church leaders, women and men all became actors in the development of the pill. Puerto Rican women, in particular, played a special role in the chain of actors and events, that helped redefine the pill and the women who took it. Their bodies were a site on which tolerance was tested as well as pill action. The large scale testing required not only a particular construction of 'woman', but also of the island in such a way that both were seen to be in 'need' of a contraceptive panacea.

Puerto Rico has a legacy of population policies which cannot be extricated from its colonial history (Mass 1976); the testing of Puerto Rican women on the pill is no exception. Caldwell and Caldwell (1986: 24) suggests that during the 1950s and 1960s Puerto Rico came to be almost as influential on American thought concerning the control of high fertility as India had been on British thought a

47. Searle's compound was chosen because it had purportedly been found to have a slightly lower virilizing effect. Pincus was also a Searle consultant.

century earlier (a theme taken up again in the following chapter). Indeed, Grant (1993: 51) names Puerto Rico 'America's offshore experimental laboratory for birth control'. In 1925 the Birth Control League of Puerto Rico instigated an educational campaign in collaboration with Margaret Sanger. They unsuccessfully challenged the Comstock Laws⁴⁸ embodied in the criminal code of Puerto Rican law. Between 1922 and 1932 public discussion concerning overpopulation was rife. The advocacy of birth control was aimed at preserving the economic status quo and the prevailing social order. Population reduction was seen as a precondition for development.

The interest in population control measures was not restricted to internal Puerto Rican politics, but precipitated a high level of American interest on the US mainland. Puerto Rico is a US 'colony'. It was 'acquired' in 1898 and became a semi-autonomous Commonwealth in 1952 (Earnhardt 1982). American citizenship was granted to Puerto Ricans in 1917, but mass emigration only arose as an issue in the 1950s (Kelly 1972). In an intergovernmental report in 1940, (cited in Earnhardt 1982: 35 footnote 5) it was acknowledged that birth control was 'by no means the only remedy for the Puerto Rican problem'. Nevertheless, birth control remained 'that remedy without which all the other remedies are mere palliatives'. Eleanor Roosevelt declared her support for family planning in 1940, although Ramírez de Arrellano and Seipp (1983: 68) suggest that changes in federal policy should not be attributed solely to pressures from the White House. The health and productivity of the female population became a prioritised issue once the US entered the war. The provision of birth control services became part of the war effort, ensuring that women could stay on the assembly lines. Roosevelt sponsored birth control campaigns in Puerto Rico. It was considered a rational means of reducing migration.

Meier (1958: 30) suggested that the Puerto Ricans' solution to 'their population problem' was emigration to the US mainland to such an extent that the island population 'remained virtually stable' during the 1950s. Interestingly, Jackson (1987: 314) notes that although US political discourse about Puerto Rico was simplistic and implicitly racist, the explanatory account of overpopulation

48. Anthony Comstock believed that advocates of contraception were doing the devil's work. His beliefs were enshrined in law in 1873 which made the sending of contraceptive information or appliances through the post, or through customs, illegal. Comstock was made a special agent of the Post Office Department and supervised the enforcement of the law for the 33 years that he was in office (Sulloway 1959).

provided a justification for the encouragement of mass migration at a time of labour shortage in the US.

The rapidly expanding population on the island was framed as a 'problem' and birth control as a logical 'solution'. By the 1930s, a strong eugenics movement acted as a powerful lobbying group and fought a major campaign for the legalization of birth control (Ramírez de Arrellano and Seipp 1983). The first birth control clinic was established in 1932 supported with funds from Dr Gamble, sole heir to the Proctor and Gamble fortune, and promoter of birth control (Earnhardt 1982: 10), and by 1949 there were over 100 birth control clinics in operation throughout the island (Ming, Tayback and Gamble 1958). Gamble believed that the success of the introduction of the diaphragm was due to 'the lithe figures of the women, their long fingers, lack of inhibition in regard to sex, and their teachability' (cited in Ramírez de Arrellano and Seipp 1983: 47). The campaign was finally won in 1937 despite strong opposition from the Catholic Church, and Gordon (1976: 336) adds that 'US pressure was extremely important, if not defining in this victory' for birth control.

Numerous studies were undertaken in Puerto Rico and included the influential survey of 14,000 couples in 1946-7 by Paul Hatt at the Office of Population Research. He showed that a completed family size of six children hid the fact that many women would have preferred smaller families (Caldwell and Caldwell 1986: 24, Fitzpatrick 1987: 77 footnote 12). In 1951 Stycos (1952), an American demographer, interviewed working class families in depth and illustrated that there was some demand for the restriction of family size. A campaign for female sterilization was introduced and supported by some of the island's physicians. Female sterilization was considered a 'drastic measure' by American standards, but a 'godsend' and 'panacea' for many Puerto Ricans, legitimised by their demands for it (Stycos 1954: 9). Only the oral pill was said to have a chance in usurping the popularity of, and demand for, sterilization in Puerto Rico.

The following extract clearly illustrates the way in which the 'small' island of Puerto Rico came to figure large in the minds of many American commentators:

'Like white blood cells around an infection, a social crisis like that in Puerto Rico always draws a flock of commissions and committees, but they are a waste of time and effort unless they lead to effective action. Since 1940, nearly every year's new increment of more than 60,000 Puerto Rican souls has been balanced by

some new report of a committee or commission. Books and articles have poured from the presses. Many of these reports are factual and courageous. But since 1947 the rate of increase in population of the unhappy island has been the greatest in its history' (Cook 1951: 27).

It was described as a 'region in which population pressure is a public health problem' (Cook, Gamble and Satterthwaite 1961: 437, Hartmann 1987: 177). Stycos (1952) stated that Puerto Rico's problem was clearly 'Malthusian'. Although careful to blame the situation on American colonialism, Puerto Rico was given special attention; epitomising the worst case scenario in the writings of population planners. Boasting 'the worst and most dangerous nutritional conditions of the whole Caribbean area', De Castro (1952: 108) describes Puerto Rico as a 'very black spot in the map of universal hunger'. It is therefore surprising to discover that 'by 1955, with a high level of sterilization achieved and a huge loss of population through emigration, Puerto Rico's population growth rate had become the lowest in all the Caribbean' (Mass 1976: 93).

Puerto Rico had been established as a site that not only 'needed' population control measures, but also an area in which women were already accustomed to their presence. The only solution, for the women who were already 'thronging to the inadequate clinics' (Cook 1951: 39), appeared to be female contraception on a mass scale. Earnhardt (1982: 25) notes that over 10,000 women had been given birth control services by June 1936, while Thimmesch (1968) declares that by 1966, more than 100,000 Puerto Rican women had been 'familiarized' with contraceptives. Meier notes (1958: 30) that one fifth of the women in Puerto Rico had been permanently sterilized in the previous decade. Whatever the actual figures, the bodies of Puerto Rican women became established as potential sites for experimentation with contraception. Moreover, the importance of Puerto Rican women's bodies to the 'progress' of science is critical. By 1963, it was felt that 'a meeting on oral contraception without any report from there [Puerto Rico] is incomplete' (Venning 1963: 7).

Pincus visited Puerto Rico in 1954 and decided to attempt 'certain experiments which would be difficult' in the US. These difficulties presumably stemmed from legal restrictions encoded in the Comstock Laws⁴⁹ rather than ethical

49. Indeed, Fryer (1984: 204) has documented that 'from its foundation in 1873 to 1882, Comstock's New York Society for the Suppression of Vice was responsible for 700 arrests, 333 sentences of imprisonment totalling 155 years and 13 days, fines totalling \$65,256 and the seizure of 27,856 lbs of "obscene" books and 154,836 articles for immoral use of rubber etc'.

conundrums. Even in 1960, 31 states continued to prohibit the provision of information about prevention of contraception or the display and advertisement of contraceptive materials. Twenty six of those states also made it a crime to sell contraceptives. And yet, as Sulloway (1960: 601) highlighted, in all of these states, contraceptives were readily available in the drugstores. Indeed, Rock (1963: 91) appears to revel in the fact that the 'first breakthrough in contraceptive technology in 75 years suffered its labor pains in the environs of Worcester and Boston', where the Comstock Laws firmly prohibited the use and dissemination of contraception. Nevertheless, their interest in contraception was well concealed. Goldzieher (1974: 424) recalls that when Pincus, Rock and Garcia presented a paper at the Laurentian Hormone Conference in the fall of 1956, and made no comment on the contraceptive potential even though a clinical trial was already underway in Puerto Rico, Greenblatt was moved to comment on the absence of the topic of contraception. Greenblatt said 'one fact which stood out in this study is that Dr Rock has *unwittingly* given us an excellent oral contraceptive which may be employed with little untoward effect'(emphasis added) (Greenblatt 1957: 344). Despite the issue coming up again in discussion (Hartman 1957: 346), Pincus, Rock and Garcia all avoided referring to the issue of contraception saying only obliquely that 'soon our attention spread from the possible effects of these compounds on fertility to their influence on ovulation and on menstruation' (Rock et al 1959: 326).

Pincus was pleased to find a 'willing and able research team' which had been American trained and 'had the American approach' (Ramírez de Arrellano and Seipp 1983: 109). The medical school in Puerto Rico was keen to be involved since it received not only valuable research dollars but also collaboration with prestigious scientists. It was both convenient and fortuitous that an old friend of Pincus', Dr David Tyler, was working in the medical school. Any potential contraceptive application of the study's findings was obscured. Instead, they described their aim as an investigation into the physiology of progesterone in women. It therefore appears unlikely that, as suggested in a Conovid Physician's booklet, the 'project was initiated by the Family Planning Association of Puerto Rico (CMAC: SA/FPA/A5/ 161/3). Rather, the impetus for research came from the US.

Pincus and Rock wanted to test the steroid regime on poor and uneducated women and were pleased to find consumers who were 'feckless and illiterate' (Vaughan

1970: 39). The Puerto Rican trial was deemed necessary since it was felt that only 'a mass clinical test among women without the cultural and educational advantages of the Boston volunteers could prove whether the new pills were a practical replacement for traditional methods of contraception' (C M A C : SA/FPA/A5/161)⁵⁰. It soon becomes clear, that what is being tested in Puerto Rico is not the pill, but its women:

'If this method is to be of value in a public health program, it would be necessary to demonstrate that the poorest and most illiterate patients could be relied upon to take the medication faithfully and according to instructions, month after month, year after year' (Rice-Wray et al 1962: 355).

The ability of women to take the pill on a daily basis became the focus of the field project. Their durability rather than the pill's was on trial. The effectiveness of the pill had already been ascertained, but the tolerance and acceptance of the woman had not. How a woman, especially one with little education, was going to cope with remembering to take a pill every day was a matter for serious concern.

A pilot study was carried out in March 1955 with 23 female Puerto Rican medical students. It lasted only 3 months, and suffered from a large dropout rate. Each subject (like the Boston volunteers) was 'required to take her temperature every morning, take a daily vaginal smear on a special glass slide, collect a 48-hour urine sample on a monthly basis, and submit to an endometrial biopsy once a month' (Ramírez de Arrellano and Seipp 1983: 110). Tyler indicated that any irresponsibility with respect to the experiment would be held 'against her when considering grades' (Ramírez de Arrellano and Seipp 1983: 110). A second study failed due to the inability to recruit volunteers from either the nursing or the medical staff. Consequently, female prisoners were used, but that failed too due to the difficulty of securing more subjects after prisoners expressed their objections. I have been unable to find either of these trials reported in the scientific and medical literature.

A large scale trial of 100 women was subsequently carried out under the aegis of the FPA, financed by money from Searle and the Dazian Foundation. In April 1956⁵¹, the Rio Piedras section of San Juan, a slum clearance area, and close to

50. Albert Maisel, March 1961.

51. Edward Tyler (1959: 231) suggests that this trial started earlier than April 1956. Although women attending the Los Angeles Planned Parenthood Center had been offered 19-nor steroid compounds for promoting fertility it was not until Pincus visited Los Angeles on his return from Japan that he tried to interest them in a sturdy of these steroids as anti-fertility agents.

the university area was selected. Perone (1993: 358) notes that women were selected from a government housing development scheme where people had been relocated from El Fanguitol, one of the worst slums. They were unlikely to move away, thereby providing the researchers with a stable and secure(d) population.

In McCormick's words it was necessary to find 'a "cage" of ovulating females' who would submit themselves to clinical experimentation (cited in Ramírez de Arrellano and Seipp 1983: 107). By 1963, however, doctors and scientists were admitting (not publicly) that 'you simply can't handle a population of human beings, particularly in this area [of contraception] as one can a group of laboratory animals' (CMAC: PP/RJH A11/11)⁵². Nevertheless, that same year, Finch and Green (1963: 116) enthusiastically talk of the Puerto Rican trial in terms of there being 'at last ... one great advantage - guinea pigs who could talk!'

The women selected for the trial ranged in age from 16 to 44 years and all were on a low income (Pincus et al 1958). The women were carefully selected from the records of the housing development project by a social worker who was already familiar with some of the people living in the area (Rice-Wary 1957: 78). Each woman was interviewed every time she received another month's supply of pills. Each 'allegedly faithful wife' (Pincus et al 1959a: 1052) was questioned about the number of days she forgot to take the pills, the occurrence of any menstrual irregularities, the occurrence of any 'reactions', the frequency of sexual intercourse and any specific problem that might have arisen. The return of the vial containing the tablets was a 'rigid condition of participation in the project' and the number of tablets left in the vial was checked by the project worker (Pincus 1958: 16). This procedure was not always successful since 'in a number of instances, the *housewives* were not at home when she [the project worker] called' (Pincus et al. 1958: 1335, emphasis added). The assumption that women participating in the trial were 'housewives' may reflect the biases in the trial, and as Satterthwaite⁵³ (1965) interestingly notes, the background of the mass sterilization programme was important in creating more job opportunities for women, which was allied to the reduction in family size. She also points out that due to the costs of maternity benefits, many employers favoured women 'who can present medical certificates

52. Dr Irwin Winter was director of clinical research, G. D. Searle & Co. He was speaking at a conference sponsored by Searle in 1963 which Heathrington notes was unpublished and confidential, and 'one of the most important documents on the pill including as it does uncensored comment from all the celebrities'.

53. Dr Adeline Satterthwaite helped set up trials in Humacao, in the south east of Puerto Rico. She was a Quaker, a former medical missionary in China and dedicated her life to helping indigent women and children (Reed 1978: 361).

of sterilization or participation in contraceptive programs'. Nevertheless, Pincus and his team (1959a: 1054) conclude that the record of faithful tablet taking 'in rather busy women of low economic status' seemed rather good.

Testing the User

By April 1956 there were at least 100 women taking the pill. Their pioneering bodies provide a vantage point from which the shifting nature of women's biology can be assessed. Steve Woolgar has argued that once a technology is well established and a culture exists about how to use an artefact, then any failures are more likely to be attributed to the user than to the machine. What is striking in the case of the Puerto Rican woman on the pill is the speed with which such a transition took place; a shift which is not paralleled in the American and British field trials thus indicating that it meant different things to go 'on the pill' in different places.

The relationship between the user and the artefact is not straightforward or static. Woolgar (1991) cites the following example to illustrate the dynamic nature of the user/artefact relationship:

'If someone with a passion for underwater music insisted on trying to operate a home stereo in the bathtub and complained that the machine did not work (or received some nasty shocks) then we are more likely to attribute blame to the user than to the machine. This is because we share a culture within which the correct operation of stereos is taken for granted. However, we can imagine cases of encounters with machines in which the necessary user competences have not yet been acquired (eg. children or people from premodern societies). In such cases, it becomes quickly evident that a way of acting with a machine rests upon a set of cultural conventions'.

This is not simply an amusing anecdote but is integral to the way in which the woman on the pill was viewed by the researchers running the trial. Instances of the pill failing in its intended purpose were reframed in terms of 'patient failures'. The pill's efficacy was not doubted, rather the faithfulness of the woman on trial. Most contraceptive devices, such as the diaphragm or the cap, 'fail' because of patient 'misuse'. The Puerto Rican woman was swiftly blamed for any failure, as the pill and its 'delivery systems' were rendered successful⁵⁴.

54. The 'delivery systems' became a problem at a later date.

The laying of blame at the user rather than with the technological artefact is not a straightforward, logical outcome of a device simply 'working or not working'. What was coded as working successfully could also be contradictory. Edris Rice-Wray⁵⁵ (1957) states that out of the 221 women who had taken the tablet by December 31, 1956 there had been 17 pregnancies. Here, the failure of the pill is interpreted as a success. As Reed (1978: 360) points out, the researchers were relieved when 'normal' boys and girls were born to women who had been on the pill. In this instance, the notion of workability is intricately bound up with notions of safety. The safety of the pill was conditional on the production of future healthy generations.

The pregnancies were described as 'patient failures' resulting from a failure to take the medication. It is noted, however, that 8 of these women stopped because of a reaction to the medication. The inclusion of tolerance to side-effects as a factor that lies with the user rather than the technology illustrates the malleability of the user/technology boundary.

The 'machine' (and here read pill) can only be understood in terms of its relationship with other entities of its phenomenal world. The nature of 'the context' and the 'machine' are interdependent in the sense that not only is the meaning of the 'machine' derived from descriptions of 'the machine's context' but that simultaneously, an understanding of 'the context' is derived from a sense of the 'machine' in its context (Woolgar 1991). In other words the production of the artefact as well as the context are inseparable and intimately related. The meaning and production of the woman on the pill is also bound up with the meaning of pregnancy and childbirth, family planning agencies, other forms of contraception, doctors, women, men and children, so that the user, the technology and the context in which it occurs and are interwoven in a 'seamless web'.

Woolgar (1991: 89) argues that user configuration involves boundary work. The inside/outside division is illustrative of the human/nonhuman relationship as the 'user's character and capacity [and] her possible future actions are structured and defined in relation to the machine'. Insiders know the machine (eg. doctors prescribing the pill), whereas users (eg. women on the pill) usually have a

55. Dr Edris Rice-Wray was Medical Director of Public Health Training Center at Rio Piedras, Puerto Rico. She worked full time as a public health officer and after hours for the Planned Parenthood Federation. She agreed to Pincus' request to conduct the first field trials of the pill (Johnson 1977: 78). She left Puerto Rico amidst opposition from the Secretary of Health who insisted that she could not do more than one job at a time. Rice-Wray took up a position in the World Health Organisation in Mexico in December 1956 (Reed 1978: 360).

configured relationship to it, such that only certain forms of access/use are encouraged (eg. pill taken for 21 days a month). Although Woolgar notes that this never guarantees that some users will not find unexpected and uninvited users for the machine he prefaces this by adding that such behaviour would be categorized as bizarre, perhaps typical of mere users. He adds that it is in this light that we might best understand the occurrence of 'atrocities' - tales about the nasty things that users have done to our machines (or even in this case the other way round: what the pill did to its users). Violations of the configured relationships users are encouraged to enter into include users' disregard for instructions.

The woman using the contraceptive technology has, therefore, a configured relationship to the artefact. Positioned as an 'outsider', and carefully maintained as such, she creates a different relationship to the technological artefact than the scientists and doctors. But what happens to the boundary between 'human' and 'technology' when the woman literally ingests and digests the pill? The ease with which boundaries can be blurred and assumptions about user/machine failure become less clear-cut. But, with the Puerto Rican woman, it appears that the blame was going to lie at her feet from the outset. Garcia (1963: 56) makes an illuminating remark about the women who became pregnant. He comments that:

'while one does raise the question, after inspecting the ovaries at many laparotomies, as to whether we are obtaining the correct information from these women, *the fact that they insist that they are speaking the truth has to be considered*' (emphasis added).

The user/technology boundary becomes increasingly blurred as women's bodies (and in this case, a portion of their body removed and inspected), rather than their words, became the arbiters for the establishment of truth.

The degree to which side effects were taken seriously also indicates the marking out of boundaries between the user and the technological artefact. Side effects were put down to the 'emotional super-activity of Puerto Rican women' (cited in Ramírez de Arrellano and Seipp 1983: 116) and a placebo test confirmed, for the scientists at least, that the side effects were psychological in origin. Two groups of 15 women were selected and one group given the medication and the other given a placebo of lactose tablets. Both groups were informed that 'there was to be a 'trial' period in which their ability to use the medication properly was to be determined, and thereafter, if their suitability was approved by the physician in

charge, they could continue on the contraceptive tablet regime alone if they wished' (Pincus 1958: 23). Pincus (1966: 499) argued that since the 'alleged' reactions declined in frequency after the first year, 'women's apprehension occasioned by the use of a new drug (and often unknown drug) might underlie these symptoms'. In this case, although Pincus claimed that the '28 women in Rio Piedras who were asked not to abandon their use of vaginal (diaphragm and jelly) contraceptives for several months' were informed that their consumption of the pill was part of a study to assess whether the pills were 'fit' to use, implicit in the study was the testing of the women. It was the women rather than the pill that was on trial. The degree to which this may have affected the reporting of side effects is not addressed.

The frequency of reported side effects in the trials was found to be highest in the groups at the highest economic levels and lowest in the groups at the lowest economic levels (Pincus et al. 1959b: 83). When questioned about the 'subjective' symptoms experienced by women on the pill, Garcia (1963: 71) admitted that he did not have tabulation of this kind and had placed it in a 'sort of waste-basket category'. Regular visits were made to each subject and the occurrence of 'side reactions' (Pincus et al. 1959b: 81) (and note the inverted commas) as well as the frequency of coitus was recorded as well as the 'so-called side effects' (Pincus 1958: 24).

In a study initiated a year after Pincus', Tyler and Olson (1959) 'disagreed completely' with Pincus et al's (1959c: 222) reference to the psychogenic origin of side effects. Pincus (1959a: 234) defended his assertion suggesting, counter to conventional stereotypes, that the problem is sociological rather than biological: 'It may be that women in continental US are somewhat more temperamental' and that the continuance of Puerto Rican and Haitian women indicated a 'greater stolidity'. Tyler (1959: 222) suggests that maybe the differential drop-out rate is a result of 'fashion'. Grant (N. 1992: 129) also notes that with reference to women in the US in the 1960s, that a decrease in the reports of headaches should not be interpreted as a decrease in occurrence of headaches and other side effects. She suggests that women are shrewd consumers and that women 'stopped talking about their headaches once they learned that their complaints would be met with reassurance and or suspicion'.

The citation of other side effects including gastro-intestinal symptoms, dizziness and nausea were not found to be neutral, objective indicators of the pill. Instead,

the occurrence of side effects told the researchers more about the woman taking it than the pill itself. The Puerto Rican woman is conceived of as being more in need of the pill and consequently more tolerant:

'they don't seem to have much trouble learning how to take the pill. They are very happy taking it, and they take it right along ... even better than the upper-income group. They are more consistent, they may be more desperate' (CMAC: PP/RJH/A11/11)⁵⁶.

Rice-Wray et al (1962: 357-358) conclude that even 'the most humble and ignorant patients make regular monthly visits to the clinic, bringing their carefully marked calendars' and that the side effects are not harmful, 'but simply annoying to the patients'. Szarewski (1991: 10-11) notes that the 'early pill users must have put on large amounts of weight, probably needed bras a couple of sizes larger than before, and had a myriad of other side effects', including changes in skin pigmentation (Satterthwaite and Gamble 1962: 802). And yet, women stayed on it; only five patients discontinued as a result of weight gain (Rice-Wray et al 1962). Indeed, Satterthwaite and Gamble (1962: 801) point out that 'Puerto Rican women in general prefer to be fatter than their sisters in the North'. The pill grew in popularity, such was the need for an effective method of contraception. The desperation of the Puerto Rican woman to prevent conception is apparent in many of the texts. Satterthwaite and Gamble (1962: 799) echo this sentiment, quoting 'a typical comment of one country mother, 35 year old, with 8 children: "The pills make me feel as if I were a couple of months pregnant, but I wouldn't stop for anything because I don't want another child"'. The original pill contained 150 micrograms of oestrogen and 10 milligrams of progesterone, compared to the pill of today that contains 30µg of oestrogen and 1mg of progesterone.

So, although women's need for contraception was great and they were prepared to suffer pain and discomfort many women did choose to withdraw from the trial. Of the original 100 women volunteers, 30 had left by June. By August 1957, there were 141 patients continuing on medication, while 123 women had discontinued the 'therapy'. By the end of the first year of the first trial in San Juan, Puerto Rico, 50% of the women had withdrawn. Of those continuing, 30% withdrew by the end of the second year; leaving only 35% of the original starters (Pincus 1959a). Interestingly, as Pincus discovers through follow up research, 30% of the women who had withdrawn continued to undertake regular use of other forms of contraception. Reasons recorded for discontinuation vary from

56. Rice-Wray in proceedings of a 1963 conference on 'Ovulen' sponsored by Searle - see footnote 8.

pregnancy, sterilization and religion to an interesting group labelled as 'miscellaneous'. This category includes one woman listed as having an 'uncooperative attitude'. Interestingly, in a table produced in Pincus' (1965: 30, table 90) *The Control of Fertility*, the reason of 'uncooperativeness' given for leaving the San Juan trial rises from 0% in 1957-1960 to 17% in 1961. This may suggest that women's resistance was increasing, or, alternatively that women were not being so carefully selected. It may also reflect the emergence of new gender relations. In 1957, three women named as prostitutes were also included as a reason for discontinuing. It remains unclear why that precluded them from participating in the trial.

Pincus (1963: 188), however, appears resigned to the high drop-out rate, but rejects side-effects as a reason: 'this is a very familiar history now. You start with 100 patients, and by the end of the year, particularly in Puerto Rico, you end up somewhere between 60 and 70, and it turns out that half of these who have quit have gone to the US, or have become divorced or have gone to another town, and the other half have just said, "I don't want this method, I want another method"'.

Recurring throughout the early scientific reports of the trials is the importance of 'breakthrough bleeding'. Considered by researchers to be one of the major deterrents to the universal acceptance of the medication it deserves special attention and will be examined later in chapter eight. The early reports express an unfamiliar and perhaps unguarded honesty on the part of the researchers. This may have been due to the intended audience of other scientists and interested parties. It would, for example, be surprising to hear an advocate of a new contraceptive today answering questions so candidly. Dr Nelson asked Dr Rock what would happen if a woman swallowed 'several tablets at once, as villagers might well do?' Dr Rock replied: 'I haven't the slightest idea' (Rock 1959: 235).

The woman on the pill in the early stages of testing was conceived of in a particular way that legitimised the testing of the pill. She was constructed as desperately in need of an effective and easy contraceptive. Indeed, Rice-Wray reported that there were no problems about acceptance as patients were 'crazy to get the pill'. Anne Merrill, an associate of Pincus' and a member of the research team to Puerto Rico, remembers the risks that women were prepared to take. Merrill (cited in Davis 1978: 89) confessed the 'degree of ignorance, and the resultant magnitude of risk, with which the field trials were begun. Any 'occasional nightmare visions of possible catastrophe' were, however, assuaged

by the 'daylight vision of actual human tragedy - the poverty and disease and ugly death directly consequent upon the continuing population explosion'. Prepared to risk even death, Merrill portrays a Puerto Rican woman in such a way that the only viable solution appears to be the pill. She states (in Davis 1978: 89):

'there was certainly no reluctance on the part of Puerto Rican women to take such personal chances as the experiment would involve. As soon as word of the impending trial was spread abroad, they flocked to birth control clinics to volunteer for it. Each woman was then informed of the distinct possibility of highly unpleasant side effects and of the further possibility, real or remote, that a side effect would be permanently damaging, even fatal. Seldom was a woman's eagerness to take part reduced in the slightest by such a warning: her greatest fear in almost every case was that, upon physical examination, she would be judged unfit for the the test and therefore condemned to the agony and potentially fatal danger of further pregnancy and childbirth'.

Nevertheless, the comment made by Edris Rice-Wray (1957) that 'there are many things you have to learn by trial and error, such as how to handle the patients, how you present the project and what you say to them so they take it' indicates that although there may have been 'no shortage of recruits' (Reed 1978: 359) women may not have been as passive and indiscriminate in their swallowing as the reports lead us to believe. Stereotypes were frequently invoked of both male and female behaviour. Such action was routinely prevalent in American and British societies, but the 'vanities of the males' or the 'belief that girls should be protected from information about sex' until they were married (Meier 1958: 30) appeared to be restricted to Latin American populations. As I show in later chapters, the conservativeness and censorship of birth control remained rampant in the UK and US.

I have tried to indicate how the woman on the pill did not remain static throughout the initial testing stages. Not only did she change geographical location, but she shifted in race, class, status, education and religion as well as 'temperament'. The 'successful' testing of the Puerto Rican woman on the pill paved the way for further testing. The large scale field trial 'worked' for the majority of the researchers and the pill was declared 'safe'. This involved management of cultural intelligibility. By 1963 'the initial 'cage of ovulating females' had increased in scale and complexity to become a virtual zoo' (Ramírez de Arrellano and Seipp 1983: 123), and Satterthwaite (1961: 17) confirms that out of the 730 women in the trial only eight remained 3 and a half years later.

There are conflicting accounts about the efficacy of the pill and the health risks incurred by the women involved. Ramírez de Arrellano and Seipp (1983: 119-123) state that there were eight deaths, five of which were due to environmental flooding, and the rest were not autopsied. Enovid was authorized by the FDA largely on the basis of data collected in Puerto Rico. Although this included thousands of 'treatment cycles', only 123 'Enovid treated women' had taken the pill for 12 cycles or longer (Garcia 1963: 50). Nine months after the trials began, Edris-Rice handed in her resignation. She concluded that with a dropout rate exceeding 50%, 'the oral contraceptive seemed to give 100% protection [but] it was unsafe' (Grant 1993: 55).

Djerassi (1992a: 123) asks, in his autobiography, whether the early testing on Puerto Ricans (as well as on women in Mexico City and Los Angeles⁵⁷) is 'another example of the exploitation of the poor'? Djerassi declares that 'the answer is largely no.' He states that because questions of long-term safety can only be studied through epidemiological surveys once a drug is on the market 'the women serving as guinea pigs ... were predominantly affluent WASPS rather than impoverished minorities'. This debate is fraught with difficulties, since (opposing) groups aligned and coalesced politically alongside one technology, the pill. Women in Puerto Rico, and others elsewhere, were desperate for a reliable contraceptive. And yet, it still remains apparent that the Puerto Rican women on whose body the pill was tested continued to serve a 'useful' function for white middle class Western women. There was no assurance of the mode of action of the pill, but what did appear to reassure other family planners and doctors was that there were women who had been swallowing the pill for 7-8 years, and consequently, 'we should have plenty of warning of undesirable side effects should they occur' (British Medical Journal 1963: 550).

Enovid was made available on prescription in the US in 1957 for menstrual disorders. In 1960, the pill was marketed as a contraceptive and was initially available for 2 years continuous use. The pills that were available continued to be on trial. In the usual manufacture of the 19 nor-steroid, 3-methyl ether of ethinyl estradiol appears as a contaminant. As the manufacturers attempted to eliminate as much estrogen as possible, the batches of pills that were disseminated were highly variable. This was found to have repercussions on the amount of breakthrough

57. The Los Angeles trial was seen, at least in Britain, to be conducted with 'more sophisticated ladies' than those of Puerto Rico and Haiti (CMAC: SA/FPA/A5/161/1).

bleeding experienced by the women swallowing the pill and consequently the 'contaminant' became an essential ingredient of the combined oral contraceptive pill. This is a classic example of technological improvement through serendipity.

The Pill as Contraceptive - Contracepting the Woman

The FDA (Food and Drug Administration) gave their approval to the pill in a rapid time scale that would not be repeated today. Moreover, Rock had a part to play in the release of the approval. Rock confessed (in interview with Breo 1980: 3) that

'I was in Washington to see the FDA and an official said "Well, we'll get back to you'. And I stood there and shook my fist in his face and said, "You will not get back to me. You will license this drug and you will license it now. We have waited long enough. It is time to act." And so they did.'

This historic act, as Oakley (1990: 408) notes, was barely remarked on at the time and the New York Times buried the story on page 75. The paper reported that approval was based on the question of safety and cited Assistant Commissioner John Harvey who stated that 'we had no choice as to the morality that might be involved ... our own ideas of morality had nothing to do with the case' (New York Times May 10 1960: 75).

A report in Fortune magazine (Anonymous 1951) on the development of new progestational drugs noted that the marketing policies were highly conservative: 'promotion [was] limited to brief, factual advertising in medical journals, and a professional conference' (Sheehan 1958: 154). This was in spite of the contraceptive market being highly lucrative. Sheehan (1958: 222) noted that in the US in 1958, contraception was 'roughly a \$200m business, the sale of condoms account[ing] for no less than \$150m of this total'. Although the article continues to state that one of the pharmaceutical companies, Ortho failed to 'see in the contraceptive pill, anything yet resembling a commercial bonanza' Searle was putting in place a tightly managed marketing programme.

Searle's marketing powers were unrivalled. A document in the FPA archives (FPA: Oral Contraception File 1961-1979) provides a rare glimpse 'behind the scenes' of the methods and practices of the 'Searlemen'. Detailing the existence of a marketing opportunity that 'seldom, if ever' exists in a company's history,

Enovid 5mg is set up as a glowing opportunity for the drug representatives. The chain of events is set out as follows:

1. January 18 1961. The closed circuit TV Enovid Symposium exposed over 5000 physicians.
2. January 21 1961. (3 days later) a special article in the 'most respected and influential medical publication (JAMA) endorses the use of ENOVID.
3. January 24 1961. (3 days later) a review of Enovid by the most respected and influential lay publication (Readers Digest).
4. February 1 1961. (8 days later) a dramatic 30% price reduction.
5. February 14 1961. (14 days later) Innovation of a 5mg dosage -- bringing the price down from \$10 a month to \$3.50 a month.

Declaring that 'the build-up and introduction of Enovid 5mg is now complete' Searle encouraged its representatives to go out there and find the doctor with the ready-made market (of women). The above list (1-5) reads as a highly manufactured and orchestrated launch of a new drug. I had seen these events (perhaps somewhat naively) as coincidental, the result of a high level of interest (both lay and professional) in the oral contraceptive pill. It serves as a reminder that scientific publications are not isolated from politics and money. Indeed, Mintz urges us not to underestimate the promotional powers of pharmaceutical companies. He (1970: 25-26) states that a 1968 estimate calculated that \$45,000 per physician per year was spent on promoting the pill. Despite the resources invested in the pill (rather than the woman who swallowed it) Langer (1963: 621) commented that 'the stage was clearly set for a great American success story, with producer, consumer, and the doctors and druggists who serve as middle-men happily joining hands while the final curtain rang down on another triumph of the intellect over nature. But the small pill that was to be the hero of the drama did not prove quite equal to the task'.

Noting the falling, but relatively high price of the oral contraceptive, and in spite of the reservations of some parts of the medical profession, Langer (1963: 621) announced that 'the response to the pill has been spectacular. It is impossible to say exactly how many women are using it ... but estimates run as high as 2 million'. Women 'voted with their feet', but Tietze (1962: 10) highlighted that although the number of women being prescribed the pill rose from 400,000 to 1

million after the first 6 months, only half of these women continued with the prescription. Tyler (1959: 231), who had carried out one of the first tests in Los Angeles, also reported a worrying trend among the women who attended the planned parenthood clinic. He declared that as of June 1958 (approximately 2 years after the start of the trial) of the 715 women who were taking the pill for anti-fertility purposes 66% discontinued - 37% because of side effects. These side effects (of 50mg doses of norethindrone) included voice changes and hoarseness which raised fears over masculinization (Tyler 1959). In another report (Tyler et al 1961: 363) it was noted, however, that despite this high dropout rate (239 women dropped out of a total of 579 as of September 1960 over a period of 4 years) there was a waiting list of several hundred patients. Pincus (1959b: 324) defended his work and continued to insist (as I stated earlier) that women in continental America were 'somewhat more temperamental'. Because of these discrepancies, we find Tyler (1959: 231) stating in one report that 'practically every physician to whom I have talked seems to be very cautious about using these compounds' and then another concluding that after 4 years experience, they were 'increasingly impressed with norethindrone as an agent for conception control' (Tyler et al 1961: 366).

The pace of adoption of the pill was rapid; in the 20 months between January of 1961 and August 15 of 1962 well over 35,000 Enovid patients had been registered (Calderone 1962: 169). More women were using oral contraception than any other type of birth control (LaCheen 1986). Ryder and Westoff (1966: 1204) found that 6.4 million women used oral contraception in their survey of American women in 1965. They concluded that the 'young American wife has shown an extraordinary immediate enthusiasm for oral contraception'. By 1965, Maisel was arguing that 'time and research had turned the question upside down'. The pharmaceutical companies and the doctors were now, according to Maisel, asking themselves whether:

'they could any longer deny Enovid's contraceptive power to the thousands of physicians and millions of their patients who had heard of the new contraceptive's existence and were clamouring for a chance to use it'.

The young American wife 'clamouring' for the pill is, as I show in the following chapters, different from the young Puerto Rican wife clamouring for it. The difference is again explicable in terms of cultural intelligibility. There were clearly different reasons why it made sense for the woman to want to go on the pill in these different places that are interdependent of the regulatory fictions that

constituted her. To put it crudely, the Puerto Rican woman 'needed' to go on the pill. Unable to control her fertility and in dire poverty, the pill offered a panacea and a route to 'civilization'. The American woman wanted to be modern, to plan, and consolidate her family. As I indicate in the following section, the British woman on the pill acted in the service of science. In Britain, women and men, from all walks of life, volunteered their services in a courageous and apparently altruistic act that did not smack of desperateness.

The UK Trial

At the same time as US birth controllers were testing the pill in Puerto Rico, British advocates of birth control were exploring the possibility of testing the pill in one of the British 'possessions': in particular the British West Indies. In a clear parallel development to Puerto Rico, Jamaica emerged as 'the best proposition' (CMAC: SA/FPA/A5/162/5-5)⁵⁸, since it had not yet been 'pre-empted by anyone else' (CMAC: SA/FPA/A5/127)⁵⁹. Colonial bodies continued to be the natural site on which to experiment.

The Pincus pill, as it was then being called, had been keenly awaited by British family planners. It was the dream of the family planner. Having carefully monitored the trials in Puerto Rico, Haiti⁶⁰ and the US, the FPA, with its anxieties allayed (Mears 1961) began a cautious trial in Birmingham in 1960. An update on Enovid in the British Medical Journal (BMJ) in 1958 declared that none of the patients in the Puerto Rican trial 'had any untoward effects from the treatment'. It was felt, however, that this type of pill was not suitable for British women. Stating that 'the "pill" in its ideal form is probably still a long way off', the article expressed fears over the duration over which the pill would be taken, 'particularly if children are desired at a later date', and further objections were expressed in terms of cost, repetitiveness, and intolerance.

Three years later, the BMJ (1961: 745) declared that British doctors still did not have sufficient information on the pill in order to declare it safe and effective. Meanwhile, American women as well as women all around the world were routinely swallowing the pill, reflecting that, within the British medical profession at least, 'woman' was not a universal category. Indeed, in information distributed to prospective trial, volunteers were informed that 'the reactions of women vary from one country to another and it seems important to find out which product suits

58. Noted as points of discussion with Captain Oliver Bird on April 5 1957.

59. Note of conversation between Mrs Clifford-Smith and Mrs Houghton on May 16 1958.

60. These trials began in December 1957.

women in this country' (CMAC: SA/FPA/ A5/154). The article in the British Medical Journal goes on to acknowledge that 'patients are arriving in their doctors' surgeries asking for information about these pills and prescriptions for them', but concludes, somewhat ambiguously that, 'it would obviously be wise to hasten slowly'.

Although the first organised 'trial' in the UK began in 1960, it was not the first time that British women had taken the pill. Although it was by far the largest, it was in fact the third trial (Mears 1960). Margaret Jackson (1963), a doctor with the FPA, documented her results of the use of oral contraceptives since June 1958. Initially employed in the treatment of infertility, Jackson (1958) obtained her first supply of Enavid⁶¹ tablets (10mg) from Mrs Sanger, illustrating the close association between American and British population planners. Jackson's own interest arose 'because of the need of an oral substitute for patients who live far from the clinic and from their doctor'. Reporting the results of 40 patients on the progestogen she notes that side-effects were 'not troublesome' (page 127), but, nevertheless, lists among them the usual occurrence of gastro-intestinal disturbances, breakthrough bleeding, dizziness, and sleepiness. The appearance of skin striae, husky voices and personality changes are also recorded.

Jackson was also one of the first to give the pill for contraceptive purposes. Many of the women who were the first to take the pill were 'problem patients of high fertility who had already failed, perhaps several times, with other methods. Their ages range from 19-51 and their parity from 0-13, and they [were] of all sizes and shapes' (Jackson 1963: 164). At this time there was debate over the dosages of the pill required for women of different weights (Nicholson 1967: 71). The pill was also tested on women of high fertility and on those in which no other form of birth control had proved successful. This auxiliary scheme ran under the auspices of Mary Peberdy and is detailed in chapter seven. The pill proved to be applicable to these women who were not expected to be able to count to twenty to take oral contraceptives well' (Mears 1962: 44).

The initial testing stages of the pill in the UK were arranged through a newly established Council for the Investigation of Fertility Control (CIFC) resulting from funds from Captain Oliver Bird⁶². The CIFC was established because, at

61. Enavid was the trade name of Searle's compound in Britain.

62. Bird (1918-1963) had strong links with the Family Planning Association in Birmingham and had donated money to FPA since 1947. Court (1955) recorded that Oliver Bird's generous and never-failing support was a tower of strength. He had a strong dislike of Roman Catholics (Leathard 1980: 102), and

that time, there was no independent drug testing body (Leathard 1980: 102)⁶³. Consequently, access to the pill was more tightly controlled than in the United States. Women who could afford to, however, were able to obtain the pill on private prescription from doctors in private practice, thereby circumventing the CIFIC trials. Moreover, Searle was willing to provide these doctors with free supplies at a time when oral contraceptives were not available at all family planning clinics⁶⁴ (CMAC: SA/FPA/A5/161/2).

The CIFIC took the unusual step of advertising for volunteers for the testing of a range of contraceptive devices and techniques. An advertisement appeared in the personal column of the *New Statesman* on August 23, 1958:

"Social Consciences Required"

The improvement of contraceptive methods is a vital social problem we are doing our best to solve. New methods can only be "proved" by couples willing to risk pregnancy. We urgently want volunteers for our trials. Usual Doctor/ Patient privacy applies to all aspects of the trial. Please offer help to: Medical Secretary, Council for the Investigation of Fertility, 64 Sloane Square, London SW1.

Wright (1959) reported that 'there were 3 replies, one of which was from a man, who, after giving his vital statistics, went on to say that although he would do anything to help us, he had not at present got a girl friend. The same advertisement was then offered to the Daily Telegraph and the Manchester Guardian. After a day's verbal fencing, the former said "the conception is distasteful" and without a moment's hesitation, the latter said "No"'. However, the Times eventually carried the advertisement in its Personal Column. As Simms (1987) notes, this was hardly a surprising outcome since few newspapers mentioned the topic and abortion and birth control were considered awkward and embarrassing subjects. A thousand volunteers were collected (900 of them from an article in *The Sunday Pictorial*) for a chemical contraceptive trial which included a postal trial (Wright 1959).

The first oral contraceptive trial, initiated in March 1960 and sponsored by Searle and Co., began on 14 June 1960. Appeals in the national and local newspapers

in 1957, Bird gave £30,000 to the FPA to be used in search of a simple contraceptive. His slogan was 'dam the cap'.

63. A medical advisory committee of the FPA set up in 1960 to review oral contraception. The committee declared that the pill was safe for use in the way planned (The Times 24 June 1960:7).

64. The steroid hormonal preparations were restricted to medical prescription only in 1960 in the UK.

went out on the 10 February 1960⁶⁵. The aim had been to recruit 100 volunteers, but only 52 enlisted. Of the 52, three withdrew before the start, leaving 48 women⁶⁶. A lower dose pill was used of 2.5mg of norethynodrel. Because norethynodrel had been the most thoroughly tested compound, it was the one used. However, by October, 34 women had been switched to the higher dose pill of 5 mg after 14 women had conceived in 3 months (Eckstein et al 1961).

The use of such a drug on healthy women caused concern and the chair of the committee suggested that the first women to be tested should be in 'medical' need of it. In a letter from Eleanor Mears to Sir Russell Brain (CMAC: SA/FPA/A5/158B)⁶⁷ she notes the concern that Sir Harold Himsworth expressed over the deployment of the ICI compound. She reassured him about the strict medical supervision of the trials, but 'even so he felt strongly that the first tests of the capacity of the ICI stuff to inhibit ovulation in normally cycling women should be carried out in cases where there was some medical justification for inhibiting ovulation, some justification that is, other than contraception'. This indicates the delicate nature of the topic and the potential controversy that the trials could arouse.

A woman wanting to go on the pill had to fulfil a strict set of requirements. These requirements are set out below:

1. Resident within easy access of Birmingham
2. Age under 36 years at time of starting
3. At least one living child of present marriage and not more abortions than children
4. Average frequency of coitus not less than once weekly
5. No other form of contraception to be used
6. Expressed intention of volunteer to continue with trial for a minimum of 6 months
7. Menstrual cycle limit 23 to 32 days in year prior to starting trial
8. No history of illness of husband or wife likely to have altered fertility since birth of last child
9. Maximum weight of volunteer (partly clothed) 11 stones
10. Satisfactory general health of volunteer, determined by history

65. Earlier appeals in the UK press (eg. Woman's Mirror August 22 1958, Sunday Pictorial November 2 1958, Times August 7 1959) had called for volunteers for smaller trials organised in local areas.

66. Report of the CIFIC records that 49 women started the trial (CMAC: SA/ FPA/ A5/154).

67. October 31 1960.

11. Satisfactory findings on examination of breasts, abdomen and pelvic organs
12. Consent form, incorporating husband's consent, to be signed (CMAC: SA/FPA/A5/1554).

A woman's married status was assumed, and did not even need to be spelt out. A letter from Elstone to Burrell (CMAC: SA/FPA/A5/162/1)⁶⁸ indicates that more than the above criteria were employed in order to select the women. The importance of personality again features strongly in the decision making process. On the prescribing of the pill at clinics, Burrell cautioned that:

'we ought to choose the patients very carefully indeed. For instance, I know that every patient would be warned that she might feel sick, but I can picture some of them feeling sick and cursing the Family Planning Clinics to their friends and never admitting that she was warned that the pill might have that effect. Our Clinics cannot afford to get that sort of unpopular reputation'.

Such fears were not unfounded. Similar scare stories peppered the literature, especially in reports documenting the American experience. In particular, Tyler's⁶⁹ (1959) work on women in the Planned Parenthood Centre in Los Angeles implied that women lost confidence in the pill. This was said to be precipitated by neighbourhood gossip, hearsay tales of difficulties encountered, and reports in papers and periodicals emphasising the experimental nature of the pill.

Subsequently, the British family planners were cautious in advising women to go on the pill. Clinic workers remained reticent about advocating the pill despite widespread publicity and nationwide media reports of its arrival. As late as November 1961 (CMAC: SA/FPA/A5/124) workers interviewing patients prior to seeing the doctor at Family Planning Clinics were recommended that:

'the interviewer should not normally mention oral contraceptives but if enquiries are made by the patient, she should be told the cost and then go to see the doctor in the normal way ... The patient already aware of the cost of oral contraceptives, will discuss methods with the Doctor. If it is decided that patient is a suitable candidate for oral contraceptives she will be given a

68. June 12 1961.

69. Tyler was the very first person - before Pincus, Rock and other early pioneers - to have presented in November 1954 clinical results with an orally active 19-nor-steroid, specifically norethindrone, for the treatment of various menstrual disorders and fertility problems' (Djerassi 1992: 58), also confirmed by Diczfalusy (1979: 5)). Tyler (1961) began testing the new synthetic progestins in 1953.

leaflet and asked to attend the clinic again, after discussion with her husband'.

The publicity afforded the first trials did not always promote favourable responses. A Reverend H was reassured that 'the method being tried in Birmingham is not as easy as the rather glib newspaper reports have made it appear and it is only open to couples who are willing to have a baby and who volunteer with full knowledge of what is involved to postpone conception for a few months in the interests of science' (CMAC: SA.FPA/A5/161/1)⁷⁰. Subsequent appeals emphasised that the new method would 'not harm the wife in any way' (The Times August 7 1959: 6). The woman who was to test this new form of birth control was in the words of the secretary of the North Kensington Marriage Welfare Centre perfecting a technique that women in far eastern countries were 'crying out for' (ibid). Medical reaction was also varied. Oliver Jelly's (1960) hostile reaction is typical. Decrying the method of oral contraception as an 'offence against humanity' he declares that it offends because it suppresses normal physiological function, and also because it can be used in secret:

'It is possible that either the man or the woman could see that the pill is taken or given surreptitiously without consent or knowledge of the other, or worse, it could be given by an outside agent whether for public or private purposes'.

The control over contraception and the possibility that women could be contracepting in secret was not a topic that I came across very often. This may have been a result of the clause added to the contract that any woman taking part in an early pill trial was required to sign giving the consent of her spouse.

Interestingly, the efficacy of the pill was already accepted and it appeared that the primary aim of the first UK trial was to establish whether or not 'women, particularly women in our kind of society' (CMAC: SA/FPA/A5/161/1) would tolerate the pill; or rather a 'multitude of pills' (Parkes 1961: 570). Would a 'daily pill' prove acceptable to British women? It was, as I stated earlier, already known that studies in the US had revealed lower rates of perseverance than in Puerto Rico. Clifford Smith (CMAC: SA/FPA/A5/161/1) questions, in a statement reflecting clear ethnocentric and class biases:

70. Letter from Mrs Howard March 7 1960.

'It will be fascinating to see how the most public spirited and enterprising volunteers in the Birmingham trial stand up to the necessity of remembering to take a pill every time they clean their teeth in the morning'.

It was the routine associated with the taking of the pill that appeared to be one of the biggest obstacles inhibiting its uptake in the UK. Jackson (1963: 164) also noted that 'it is not so much the individual side effects which cause women to abandon the "Pill" but a vague feeling of being out of sorts and a revulsion against the whole business of tablet taking and having to be orderly'. The issue of routine and order may reflect not only an underlying distrust of women's commitment and ability to be reliable, but also indicate concerns of disordered woman. A woman out of order, monstrous and out of control, is as Marina Warner (1994) has recently argued, one of the key myths that percolates our culture.

The side effects of the pill were not accorded much importance, apart from breakthrough bleeding. Indeed, a report on 'Today's Drugs' (Anonymous 1963) in the BMJ in 1963 declared that 'there are no known contradictions in normal women to oral contraceptive therapy'. Only after such a disclaimer are a range of symptoms listed including nausea, headache, breast tenderness, tiredness. Many women were said to experience a sense of well-being on the pill and that the side effects which do result from the medication 'disappear spontaneously'. The pill was frequently likened to an aspirin tablet, in both shape and form. Aspirins had been accepted, they were understood to be safe (almost 'harmless') and beneficial (Meier 1958: 30, The Times February 10 1960: 7).

The new 'scientific' contraceptive so neatly contained within a small tablet helped to legitimise a change in public attitude towards birth control, or as it was increasingly being known, family planning. The Lambeth Conference of the Church of England in 1958, is an important signpost in the field of social and sexual relations in Britain. It heralded the acceptance of family planning by the Anglican clergy, and even went one step further, by endorsing the *duty* of responsible parenthood (Leathard 1980: 95).

Testing Men

The idea that the pill was tested on men seems humorous today, even nonsensical, but in the 1950s it was logical that the male sexed body would also be a site on which the oral contraceptive pill should be tested. It is, perhaps, easy to forget that the man was the predominant practitioner of contraception throughout the early-mid twentieth century. The man was the contraceptive: contraception was

largely his responsibility and it was his reproductive potential that could be curbed.

The notion that contraception for the man would not have been surprising should be taken into account when considering claims like Djerassi's (1979: 122) who asserts that during the early history of the pill the testing on men 'never entered into the equation' because the original pill was prompted by concerns of menstrual disorders, infertility and possibly cervical cancer. As Oudshoorn's (1993) study of the development of sex hormones in the early twentieth century clearly indicates (as elaborated in chapter 4), there was nothing new about testing hormones on men⁷¹. Maisel (1965: 83) also documents the testing of male hormones on eunochoids in the 1930s. Nevertheless, Pfeffer (1993: 51) notes that 'British scientists were reluctant to work on the male sex hormone'. Whether or not men were given hormone preparations, is in this case, less important than what purpose they were intended for.

Men's bodies were not therefore absent from the contraceptive field and the search for a male contraceptive pill persisted alongside early experiments on human fertility control. Pincus' (1965: 194) noted, however, that:

'male volunteers for fertility control studies may be numbered in the low hundreds whereas women have volunteered for similar studies by the thousands. Actually the human male with the use of the condom is by far the predominant practitioner of contraception. Apparently, however, he has psychological aversions to experimentation with sexual functions ... Perhaps experimental studies of fertility control in men should be preceded by a thorough investigation of male attitudes'.

Nevertheless, Pincus does qualify the statement by adding that the limited nature of experimental studies with men is due in part to the restricted entry of men in to the arena of reproductive biology. Pincus also notes that 'generally men have come to experimental observation because of sterility problems and major concerns have been with the sperm count and factors affecting it coital frequency, libido, fertility and so on'. Before any accusations of male reluctance to take

71. Djerassi (1994) suggests that I confuse the use of hormones in men in the context of therapeutic indications of the androgens with the question of the use of hormones for birth control. This is an important point. Indeed, I have not drawn any clear distinction between 'therapeutic' and 'contraceptive' use. As with the testing of the pill on women, both the process of 'testing' and its consequences are open to renegotiation. The division between the two is an (artificial and frequently *post facto*) construction.

responsibility for fertility decisions can be made, it must be remembered that Sanger's and McCormick's dream was to provide control of fertility for a woman, and not for a man (Bremmer and de Krester 1975). It was, and indeed remains, an important feminist tenet that a woman should be able to control her own body.

Records of the early testing of the oral contraceptive pill on men are sketchy, and many accounts omit the event altogether. Gunn (1987: 34) mentions that Pincus first tried the pill on a small group of human volunteers in Boston, while Ellen Grant (1986: 19) asserts that Rock and Pincus tried out the first combined pill in the 1950s on a Harvard volunteer group and on some chronic mentally ill patients; an event not mentioned in Rock's own account of the period. Pincus (1957), however, Sai (1976: 23) also mentions that 'a further test was undertaken in the US which included female and male medical students, 'some volunteers' and a few mental institutionalized patients for whom the permission of relatives had been obtained' (including 16 male patients). What is apparent is that both men and women took an early form of Enovid (10mg), which successfully stopped ovulation in the women and halted sperm production in the men. But as Grant (1986: 19) cynically adds 'the men were soon wheeled out of these trials when one of them displayed shrunken testicles, visible proof of something wrong'.

Seaman and Seaman (1978: 271) also document the early experiments carried out on 8 psychotic male mental patients in a Massachusetts State Hospital. Although this 'early form of Enovid had a definite sterilizing effect ... one young man was found at the end of the five and a half months' trial to have shrunken testicles; his scrotum had become "soft and babyish"⁷². Interestingly, in an article written in 1984, on the use of 19-nortestosterone, La Guardia points out that although the drug did shrink the men's testicles, none of the volunteers noticed.

Heller et al (1959: 1057) confirm Pincus' claims and note the reluctance of 'normal men ... willing to have repeated observations made on seminal fluid, urine and testicular biopsy specimens, let alone to take oral or intramuscular medication daily'. This difficulty was obviated by calling for 'volunteers' at the Oregon State Penitentiary⁷³. There were clear advantages to working with such volunteers in that they were 'maintained under uniform circumstances regarding diet, rest, overindulgences and work. They [were] available for observation at

72. Confirmed by Pincus (1957: 116).

73. Oudshoorn (1994) points out that this was not the first time that male prisoners had been used in the development and testing of hormones. Their urine was collected in the Netherlands in the early 1930s in an attempt to obtain male sex hormones.

most times'. Noting the excellent cooperation of the subjects, and flouting conventions arising out of the Nuremburg Trials on experimentations with humans, three commercially available market progestins (including Enovid) were tested.

Contemporary research may offer us some insights into why so many men 'volunteered' for experiments such as these which appear to be so clearly exploitative. Toulmin (1987) has indicated that there is strong competition for a chance to participate in drug research projects. Prisoners are offered the chance to participate in interesting work and the research laboratories are often cheerfully decorated and provide a pleasant environment in comparison to the prison cell. Medical check-ups and monetary payments were other important rare incentives. Indeed, Heller et al (1959: 1064) actually acknowledge the prisoners, and thank the:

'many inmates ... who acted as surgical assistants, nurses, orderlies, laboratory assistants, and especially the two inmates who scheduled interviews, biopsies, supervised seminal fluid and urine collections, as well as administration of medications'.

Over 40 men entered a study on anti-fertility agents at Oregon State Penitentiary. Spermatogenesis was effectively suppressed, but there was a loss of libido and although this was noted to be only a transient one, it was felt that it 'would tend to discourage use of these compounds' (Nelson 1959, Heller et al 1958). All the men gained weight and there was also an 'alarming' decrease in testicular size⁷⁴ (though see La Guardia (1984) above).

A second series of pills was tested on men in the late 1950s. Bis compounds, which were originally developed as amoebicides, were administered to 29 men in prison. One inmate was dropped from the programme when he admitted to having stopped taking his tablets. Volunteers were requested from prison and 'treatment' showed that fairly rapid and severe depression of the sperm content of the ejaculate could be brought about. Equally importantly, full recovery took place on cessation of treatment, when it had been maintained for a year. The only symptomatic effect reported was 'gas', rumbling, growling and bloating. No

74. The reaction to a decrease in testicular size should be compared to the (often painful) 'engorgement' of breasts experienced by many women. This side effect was often regarded by (male) commentators to be a beneficial and welcome occurrence, and tended not to be regarded with the same degree of seriousness.

effects on libido or sexual potentia were reported on the 29 men subjected (Heller et al 1961).

Initial reports thus confirmed that the interest was there and suggested that spermatogenesis was inhibited, with what appeared to be no long-term effects, including, importantly, no decrease in libido (CMAC: SA/FPA A5/161/2)⁷⁵. Nelson, encouraged by this success, then tested 40 non-prison volunteers who used the drug as an oral contraceptive, with success being maintained for a period of 6-8 months. Nelson (1963a: 205) comments that 'I believe all of us would agree that these various 19-nor steroids are effective antifertility compounds in the male, but would hesitate to suggest that they have much chance for an enthusiastic acceptance'. He then continues to recount the success of the bis compounds: 'there is no doubt that these compounds are highly effective as male contraceptives. They have however unfortunate side-effects - an exaggeration of the peripheral effects of alcohol (not serious but unpleasant)'. The effects of combining alcohol with the oral pill had already been detected in prison:

'one of the men was taken to the hospital for a severe case of nausea; his eyes were bloodshot, his face was flushed and his vision affected- he had managed to smuggle some alcohol into the prison ... this type of sterility pill and alcohol are incompatible; a man taking the pill suffers a violent reaction if he had even one drink of an alcoholic beverage' (Havermann 1967: 64).

Pincus (1965: 193) confirms this unfortunate side effect of 'exaggerated response to the peripheral effects of alcohol' when taken in conjunction with the bis compounds. Describing it as 'alarmingly unpleasant, but not serious, reactions make acceptability unlikely', Pincus confirms that the side effects were indeed unacceptable.

Garcia (1963: 46) notes that 'although these effects were readily reversible, without effect on the libido, the side-effects and *potential* toxicity under certain conditions did not warrant wider field trials' (emphasis added). Perhaps it would be unfair to suggest that had women taking the pill experienced 'exaggerated responses to the peripheral effects of alcohol' acceptability may have meant something very different. One only needs to compare these accounts with the minimalising, trivialising and even the discounting of side effects experienced by women on the pill. Indeed, the side effects that the men suffered are attributed an

75. Letter to Dr Harvey from Dr Mears, May 12 1961.

almost disembodied, objective, scientific credence. Women, for example, 'complain' of nausea and are often dismissed:

'these side effects as a rule, are of little consequence, and in most instances persist for no more than a month or two' (Nelson 1963b: 243)

Women are still expected to 'grin and bear it'. The sexually differentiated treatment with regard to alcohol is grimly illustrated by Llewellyn-Jones (1975: 249). He comments on the use of stilboestrol as an oestrogen substitute for contraception. He stated that 'it is not a pleasant method of contraception. The larger doses of stilboestrol make the women very sick; all have severe nausea, and most vomit off and on over the 5 days of treatment. The method has attracted considerable publicity, and has been called the 'morning after' pill. The side-effects of a prolonged severe hangover make the name all the more appropriate'. Seaman and Seaman (1978: 271) also expose the hypocrisy and double standard applied to assessing the different side effects in the sexes. They note that the side effect of the shrunken testicles 'was viewed more seriously ... than the unexplained deaths of three Puerto Rican women'.

In the case of the woman on the pill, it was often her body, rather than the pill, that was on trial. It seems that in the case of the man, the pill itself was on trial, and not his body. It is unclear how cultural beliefs about the inviolable nature of the male body operate in reproductive biology. Draper (1972: 283), for example, claims that 'there is some anxiety and reluctance regarding the possibility and advisability of interfering with male germ cells', a cultural understanding that is not transferable to the female body. Women's bodies, it appears, are legitimate targets for experimentation.

Summary

In the 1960s women were informed about the pill through patient prescription inserts (PPI)⁷⁶. One such booklet entitled 'What You Should Know about Volidan' (CMAC: PP/RJH A1/7) declared that:

'In 1953, two American doctors found a completely different chemical also prevented eggs from being produced. Better still they found that this chemical worked when taken by mouth. They tried it on married

76. For a discussion on these inserts and the opposition to them see Seaman (1970) and Riphagen (1987).

women in Puerto Rico. Just as they had expected, the women did not become pregnant. Thus was born The Pill'.

It is clear that the pill was not 'born' quite so effortlessly or heroically. And however convenient it would be to take the pill as given, the pill does not present itself to the researcher/user already packaged and ready to be employed (ie. meaning fixed and closed), but, rather, the meaning is constructed through the activities of social groups (Crowe 1990). Throughout this chapter I have shown that the pill worked. What it meant for the pill to 'work' was continuously unstable and open to negotiation. Even on a more clinical level it was apparent that many scientists and doctors were ignorant about how the pill worked. The pill's internal mechanisms were inferred from observable characteristics such as basal temperature curves, cervical and vaginal smears, pregnanediol excretion and endometrial biopsies (Smith et al 1959). In 1962, a report in the *Lancet* remarked that although oral contraceptives had been used for 6 years, and that about one million women were swallowing them, 'we do not yet know how they act' (Holmes and Mandl 1962: 1174). The following year, Loraine et al (1963: 902) again report in the *Lancet* that the pills had been taken for seven years and 'yet little is known about their modus'.

The pill was widely applauded across the world, but defectors and opponents persisted. Even amongst the proponents, it was never felt that the pill was *the* solution, and concerns over its safety were constantly raised. Alan Guttmacher concluded in the Searle symposium (Searle 1961: 28) that whilst the pill could be seen as initiating 'a new and important era in American medicine'. It was not the case that anyone wanted to claim that they had 'the perfect answer to physiologic contraception'. Zuckerman (1959: 1260) asserted that the 'miracle pill' remained 'as far beyond the reach of the bulk of humanity as space travel'. Many of the scientists and planners would be surprised to find that the pill swallowed in 1960 was more or less the same in 1990. Indeed, a constant refrain that can be found in the early literature is one about the search for new improved types of contraception, such as a once-a-month pill. As late as 1958, Osborn declared that 'there is no magic pill, nor other means of simple physiological control, and there is no ground for believing that such solutions are just around the corner' (page 56). The pill was brandished for the first time on British television in 1960 and Parkes (1960) stated clearly that the pill was not the ultimate answer, since 'nothing is the ultimate answer in the days of technical progress'.

The diffusion of the pill on a large scale is the subject for the following chapters. I show how, and why, women continued to be 'selected', and how, paradoxically, both 'good' and 'bad' women became appropriate pill candidates. By 1960 the contraceptive pill had been declared 'perfectly safe for use in the way *planned*' (emphasis added) (CMAC: SA/FPA/A5/160/3)⁷⁷. Planning emerged as a central theme in the postwar era. Planned families, planned populations, and planned economies all interlocked to form a tightly meshed web that located the woman on the pill in specific and contingent ways.

77. Statement by Medical Advisory Group of the FPA to the editor of the Sunday Times and the Guardian, September 14 1960.

CHAPTER SIX

PLANNED BODIES

'I cannot speak too highly of the hundreds of women who are helping our work ... We are hoping to find a method of birth control which is simple, effective and acceptable so that young married couples can *plan* their families with scientific accuracy' (emphasis added).

Beric Wright⁷⁸.

The right to plan one's family, a right accorded to the couples of postwar living, was a new one. Women, and men, had been denied knowledge and access to safe and effective methods of contraception, through repressive legislation and public censure. Women, and not all women, were suddenly being offered a new form of control over their bodies: they could simply swallow a pill. The body of the woman on the pill endorsed an ethos of planning that was prevalent in the postwar years. A planned society offered hopes and proffered visions of a new world: a world of harmony, a world different from the one ravaged by war. Aspirations of this new scientific order infused debates, alluding to an ordered society; a society devoid of poverty and replete with prosperity.

The women who went on the pill, in the early 1960s, were carefully selected; their bodies subject to surveillance and control. I argue in this chapter that the emergence of the woman on the pill cannot be isolated from planned parenthood, planned families, or planned populations. Planning emerges as another fiction that structures the woman on the pill and renders her body culturally 'intelligible'. Moreover, her body fitted easily into, and endorsed, the planned society of the US and the UK in the postwar era. How and why her planned body made sense in a way that had not been acceptable for previously contracepted bodies requires exploration. Drawing on Butler's notion of performative genders as well as ideas of interpretative flexibility I show how the woman on the pill was deployed as the solution to a range of problems in the late 1950s.

The 1950s witnessed an unprecedented concern over rising population. Population was presented as a global issue; an issue that threatened the whole world. In the following sections I explore the relationship of the pill with overpopulation, fear of communism and the welfare state. Planned populations

78. November 2 1958 (CMAC: PP/RJH/A17/98).

and planned families are intricately interconnected just as the discourses circulating about family size, for example, become linked to national concerns over security.

A planning ethos saturated the regeneration of postwar Western society. It went further than a description of what *was*, and began to embrace the notion of what things *might be* (Rose H. 1984). It implied a degree of control over present and future aspects of social reality and thus implicated a degree of social control. Governments began to accept a new responsibility, a responsibility to try to improve lived realities such as mass unemployment and ill-health, and 'it was firmly believed that determined action on the part of government could bring about fundamental economic and social change in society' (Page 1991: 444).

The concept of planning for a future society was widely accepted by, and engendered support from, a broad section of the community. The notion that a population could also be planned was not an inevitable extension of planning logic. Whilst it may only be a short leap to conclude that the population could also be planned, planning a population endorsed and required planned children. Planned children required contraceptives. Contraceptives were messy and inconvenient. They were not respectable, nor a topic for public discussion. But, with the advent of the pill, contraception entered the scientific age thereby offering couples a means of birth control appropriate for modern living. Cloaked in scientific language, the oral contraceptive pill appeared to be a miraculous invention. Parkes highlights such sentiments stating that contraceptives were 'a remarkable anachronism' (Parkes 1957: 79) and that 'it is common ground that established methods of birth control are so crude to be a disgrace to science in this age of spectacular technical achievement' (Parkes 1961: 570).

It was a time of unprecedented faith in science and technology. It was also the pre-thalidomide era of the 'wonder-drug optimism of the 1950s' (Berkman 1986: 27). Postwar expansion of science was massive; in Britain, for example, in the 17 years from 1945-6 to 1962-3, government expenditure on science was increased ten-fold (Wilkie 1991: 48). Science, in conjunction with modernization, was believed to be able to solve social and technical problems. The oral contraceptive pill became one such solution. Medical science was held to be responsible, in part, for creating the problem of overpopulation, and it was reasonably expected to take a large share in solving it (Parkes 1961: 569, Jackson L. 1958: 325). In a debate on population pressure in Asia in the House of Lords in 1962 (Hansard Vol. 241 June 6) Lord Casey, in his call for more money to be

spent on contraceptive research, states that the Asian population is 'waiting impatiently for science' (page 605), whilst the Earl of Lytton questioned the power of the pill: 'I do not think we can justify ourselves in preaching to them doctrines of birth control. They come asking us for capital, for bread, and we give them a pill. That does not seem to be right' (page 637).

The right to determine one's family size was not an inherent right common to so many families today, but a new concept that had to be negotiated. Moreover, the notion of reproductive freedom still needs to be continually argued for, and it remains the site of intense disagreement and violence. Reproductive rights are not simply understood to be a private matter, for the sole concern of the woman or a couple, but are a matter for public debate and legislation. They have come to be invested with values and meanings about society, about the way we live our lives, and about the meaning of life and death. Planning the size of one's family has never been solely an individual's or couple's decision, but one that is embedded in a matrix of competing issues all vying for power.

Global Level

Framing the World: 'a geography of hunger'

World issues were increasingly being planned, and negotiated, at a global level in the postwar era. The idea that we all shared the same planet was central to the formulation of 'problems' such as nuclear survival, poverty, and reconstruction. Population was also established as a global crisis: it threatened the whole world. Population size had long been a concern to nation states, reflecting fears and strengths of the body politic (see Osborne 1992, Soloway 1990). But, with newly emerging fears over conservation, communism, and death control⁷⁹ in the Third World, and their rising populations, resonated powerfully with domestic populations around the globe. Overpopulation overtook depopulation as an object of primary concern, both popularly and academically.

The dominant discourse in the 1940s-1950s was concerned with ecological health and survival. Among the first to draw attention to the exploding growth of world population in this period were conservationists, such as Vogt (1949) and Osborn (1958). Conservation measures were, however, deemed futile whilst human

79. The phrase 'death control' is found widely in the literature and counterposed 'birth control'. The easy parallels between the two terms made it difficult to reject (or accept) one without the other.

breeding continued unabated⁸⁰. Vogt (1949: 279), one of the leading protagonists, declared in a section entitled *Outliving the Libido* that 'unless population increases can be stopped, we might as well give up the struggle'. A new contraceptive device was held to be the only way out of the 'ecological trap' and the only means with which to ensure 'national security'. The future of the human race was understood in explicitly environmentally deterministic terms; population planning was posited as the inevitable solution to a burgeoning population and finite resources.

Although constructed as a global problem, the US, financially and theoretically, 'dominated the radical realignment of geopolitics that took place in the postwar, cold war climate, and increasingly they determined what constituted a problem of population in other nations' (Pfeffer 1993: 18). Caldwell and Caldwell (1986: 19) also note that between the end of the 1940s and 1952 'something quite dramatic happened to the West's attitudes to population' as mortality was reduced with an effectiveness that had not been predicted. Reed (1984: 439) cautions against adopting what he sees as a feminist critique of population planners as a monolithic 'vast undifferentiated conspiracy in the service of political repression and American Imperialism'. Nevertheless, the prime movers in the population lobby were groups such as the Rockefellers, American demographers associated with Princeton's Office of Population Research⁸¹, the Population Council⁸² and the Milbank Memorial Fund⁸³ (Reed 1978: 282) and it is their legacy that shaped population policy and helped frame the population 'question'.

The desire to control the 'teeming millions of backward people' (Bishop 1962: 51) was a prime factor in the resurgence of the birth control movement. Making clear apocalyptic analogies with Malthus, Dorn (1952: 744) claimed that

'the number of persons added to the population of the world during the past 100 years exceeds the total

80. Breeding is not a racially neutral term. This point is elaborated by Cohen (1988: 63).

81. This was established in 1936 and funded in part by the Milbank Memorial Fund, the Carnegie Corporation and the Population Council. It was a forerunner of university demographic and training centres.

82. Founded by John D Rockefeller in 1952 with an initial budget of \$220,000, rising to \$1 million in 1959. The Ford Foundation did not sponsor family planning projects (including the Worcester Foundation) until 1959 (Harkavy et al 1968). It was an avowedly professional scientific organisation. It had close links with Frederick Osborn who pursued an interest in eugenics (Population Council 1978).

83. The Milbank Memorial Fund was established by Mrs Elizabeth Milbank Anderson in 1905. It began to formally support work on population in 1928 and was the second fund in the US to do so (after the Scripps Foundation). It also helped to set up and provided the chief initial support of the Office of Population Research at Princeton University (Kiser 1971: 15).

accumulated during the previous history of the human race'.

He warned that we were running out of space. Oblivious, and almost dismissive, of colonial exploitation Dorn (1952: 747) considered that

'the last great frontier of the world is closed. There remain no empty spaces comparable in area or wealth to those open in 1500 to the people of Western European origin'.

Equally pessimistic declarations saturate the literature. Declaring Britain to be 'literally on the verge of starvation', Vogt (1949: 73) posited the world as sick: 'more fundamentally sick than most of its leaders have even begun to understand'. He warned of the 'wiping out' of at least three-quarters of the human race and urged population control as *the* means of ensuring the survival of the earth and a return to 'ecological health'. Huxley (J. 1957: 17) warned of mankind drowning in its own flood. Parkes (1985: 222) also credits 'the thunderings of Boyd Orr's prophesy of doom' as well as Vogt's *Road to Survival* as precipitatory events in his awakenings to the problem of overpopulation. Citing what have now become classic texts by commentators such as Carr-Saunders⁸⁴ (1936) and Sax⁸⁵ (1951) it is easy to trace the growing field of concerned social commentators writing about the population explosion.

No longer a subject restricted to the academic elite or the eugenically committed, Sir Julian Huxley⁸⁶ (1957: 21) noted at the sixth International Planned Parenthood Federation Conference in Delhi that:

'public interest in the problem of population has grown in an astonishing way ... today you can hardly open a newspaper, from the august and respectable Times to the most sensational organ of mass circulation, without seeing some reference to population pressure and even the once unmentionable subject of birth control public opinion all over the globe has suddenly and dramatically become aware that population is the most urgent problem now besetting the human species'.

84. Carr-Saunders wrote introductory book on eugenics (1926) which is infused with deeply racist ideology. He remained concerned with differential rates of fertility between social classes and a potential 'sifting of the population' (p219). He was chairman of the Eugenics society and served as one of the 18 members of the Population Investigation Committee.

85. Sax's *Standing Room Only* (1951) was a bestseller and influenced many family planners (eg. Bird). He reclaims Malthusian principles and warns of the poor becoming 'restless'.

86. Julian Huxley (1887-1975) was a zoologist and strong advocate of conservation. He was Director of UNESCO (1946-48) and later became President of the Eugenics Society.

Population planning attracted a new faithful as the language of postwar planning superseded that of pre-war eugenics (Lewis 1992). Now imbued with a responsibility and a duty, Whelpton⁸⁷ (1959: 49) declared at an IPPF conference that 'people like us, concerned with the future welfare of the world, can't afford to sit back and wait for the pill'. This urgency seemed to dominate the debates over the 'population problem' and is particularly remarkable given that only a decade earlier, depopulation mania was at its peak.

The optimism generated, and the faith placed in technological fixes and scientific discoveries by postwar planners, agronomists and nutritionists, began to lose credibility as food production failed to keep pace with increasing population and as conservationists predicted widespread famines. Epstein and Kupperman (1962: 216) clearly state that the search to find 'simple, inexpensive, and reliable methods of birth control' was driven by the 'urgent need to keep the world population within the limits of the food supply'. Birth control was sanitized. It no longer referred to private sex lives, but to the survival of the planet. The woman on the pill entered the political arena as defined by traditional (male) politics.

It was the 'race between soil fertility and race fertility (Lord Macdonald Hansard (Lords) 28 April 1954: 129) that seemed to propel the search for new sources of food. Alternative food sources such as chlorophyll and algae (Sax 1951: 21) or wood and plankton (Lord Boyd-Orr⁸⁸ Hansard (Lords) April 28 1954: 135) pepper the texts of these early protagonists. The groundnut scheme in East Africa was launched in 1946 and soon attained an infamous status. It had been invested with high hopes: hopes that it would not only reduce the UK deficit of oils and fats but also decrease African unemployment. By 1949, however, at a cost to the taxpayer of £36,500, the scheme had come to nothing (Sked and Cook 1979: 91). Commenting on his own recognition of the population problem, Parkes (1985: 222) highlights the failure of the East African groundnut scheme. With the faith placed in an agricultural tech-fix shattered, Parkes appeared to transfer his hopes onto another tech-fix: this time of a contraceptive type. The pill was positioned as helping 'resolve the planners' quandaries' (Meier 1958: 30) since it was possible

87. Whelpton was director of the Scripps Foundation for Research on Population Problems, Oxford University, Ohio.

88. Boyd-Orr was an agriculturalist and published widely on diet and health. He was Director of UN Food and Agricultural Organisation (1945-1948) and was awarded the Nobel Peace Prize in 1949.

to introduce the pill before 'any major extension of the educational system or any notable improvement in economic opportunity'.

Warren Thompson's essay (1952) appears as a lone voice questioning the reality of 'one world'. It challenged the unified world approach which was allied to a postwar world striving for peace and harmony. It is also important to think how such an approach was implicated in constituting men and women. It was clearly not the case that women, for example, were understood to be the same the world over⁸⁹. Woman was not a universal category, but historically and geographically specific.

Also opposing the one world view, Thompson (1952: 733 and 738) argued that:

'it is a dangerous over-simplification to think of "one world" population problem ... Since I believe that the real problems of population with which we are concerned arise in particular countries and under particular conditions'.

Thompson clearly identifies a geography to the population crisis, with some countries acquiring greater significance than others. The notion that we lived in one interdependent world attained currency and infused policy decisions across the world, with particular relevance to the Third world.

The Third World

Certain key regions or 'hot spots' were highlighted on the map of the population controller. Asia's 'teeming millions' were identified as one 'hotspot' which prompted the US Senate Special Committee on the Foreign Aid Program as well as The Stanford Report and the Draper Committee of the need for research to find a satisfactory oral contraceptive⁹⁰. Funds were required for 'the large-scale human testing of devices' in underdeveloped countries. A debate on the US government involvement in family planning ensued, in which Roman Catholics

89. Note, however, Boyd-Orr's speech at Cheltenham in 1948. He insisted that all races, colours and creeds had to be treated as equals: 'we have to think of the world as a whole'.

90. President Eisenhower appointed General William Draper, a New York investment banker and a key figure in the postwar reconstruction of Europe, to study foreign aid. The committee of the Draper Fund, together with the Population Council, developed an ideological link between population growth in the Third World and the USA's ability to govern world affairs (Ross 1993: 151). Birth control was not normally discussed; indeed Piotrow (1973: 40) notes that many of its members were opposed to it and a secretary refused to type a research paper that discussed contraceptives. The Report concluded in 1959 that 'unless the relationship between the present trends of population growth and food production is reversed, the already difficult task of economic development will become a practical impossibility'.

were strongly opposed to the spending of state money on contraception. The debate attained presidential dimensions, entering into the election contests. Eisenhower declared in 1959, in response to the Draper Report, that 'I cannot imagine anything more emphatically a subject that is not a proper political or governmental activity or function or responsibility' (Morris 1959)⁹¹. He went on to say that 'as long as I am here this government will not have a positive political doctrine on birth control'. Later in 1968 Eisenhower changed his mind and stated that 'I have come to believe that the population explosion is the world's most critical problem' (cited in Symonds and Carder 1973: 133). It took Eisenhower 10 years to deem birth control an appropriate political concern, but in those ten years, the values embodied by the women using birth control shifted rapidly.

Even in the early literature on the population problem, Puerto Rico is frequently cited as a place deserving special attention. It is no surprise then, that it was chosen for the first large-scale field trials of the oral contraceptive pill. Described in de Castro's (1952: 108) *Geography of Hunger* as 'a very black spot in the map of universal hunger' and as 'the Hong Kong of the Americas' (page 112), latent fears of communism and of populations running rife are clearly at work. Although questions of colonialism and exploitation are clearly levelled at the US in the case of Puerto Rico by many writers, the solution remains the same: contraception. 'Like white blood cells around an infection', Cook⁹² (1951: 27) describes the commissions and committees drawn to investigate the island's problems, but concludes that 'they are a waste of time and effort unless they lead to effective action': action that can only be conceived of in terms of correcting the 'horrificing crisis of excess fertility'.

The planning of populations was evidently not universally applied, but focussed upon specific regions and justified in moral as well as practical terms. And yet, in spite of the clear racist, eugenicist, and colonialist concerns over populations, Stycos (1958: 128) argues that Western governments hesitated over the implementation of population planning: 'a powerful deterrent to social programming and even investigations in the area of human fertility is the fear on the part of leaders, especially in colonial areas, that attention to fertility control may be interpreted by the populace as efforts on the parts of whites to curtail

91. Interestingly, on the same day, Sir Charles Darwin, grandson of Darwin, concluded that 'birth control was the world's best hope' when he addressed the American Association of Geographers (New York Times December 3 1959: 21).

92. Robert Cook was president of the Population Reference Bureau as well as Director of the American Eugenics Society.

population growth of people of colour - or more sensationally stated, mass sterilization of the Negro'. Symonds and Carder (1973: 9) also note that British attitudes towards birth control in India were 'profoundly influenced by memories of the Indian mutiny(sic) of 1857 and it was feared that the promotion of birth control would provoke accusations of genocide'.

Concerns over population were not restricted to First world countries. The legacy of global birth control organisations, particularly those from the less developed countries, was essential to the growth of the international family planning movement (see Suitters 1973, Huston 1992 and Annual Reports of the IPPF conferences held around the world during the 1950s). Associations of birth control with genocide are not, therefore, solely restricted to discourses of colonialism and imperialism. Indeed, another clear thread linking atomic and population explosions, as well as the threat of communism, is found in a wide range of postwar discourses.

The Atomic Threat

Apocalyptic visions of 'population explosions'⁹³ run through the literature. The planned contracepting body, a body that facilitated successful and happy families, children and communities as well as planned populations, was closely allied to visions of harmony and peace. The concerns circulating about overpopulation at a local and global level appeared to converge around the topic of atomic threat:

'Next to the atom bomb, the most ominous force in the world today is uncontrolled fertility. Unbalanced and unchecked fertility is ravaging many lands like a hurricane or a tidal wave'

Cook (1951: 15)

'we are all uneasily aware of the mushroom cloud that first sprouted over Hiroshima, we are astonishingly unaware of the mushrooming global population'

Maury (1963: vii).

93. The phrase population explosion is closely linked to the use of the phrase 'population bomb'. This phrase is often traced to Hugh Moore, an anti-communist, self-made business man inspired by Vogt (Chase 1980) and to a pamphlet bearing the same name published in 1951. Mass (1976: 40) notes, however, that it was a book by T. O. Greissiner that bore the title and it was simply distributed by the Hugh Moore Fund. Stycos (1977) states that Moore sent his pamphlet, *The Population Bomb*, to all persons listed in Who's Who in 1958/9 (see Chase 1980). Moore went on to mobilize public awareness in the early 1950s on the issue of overpopulation through the use of newspaper advertisements (Bachrach and Bergman 1973: 47). Moore also sent a telegram to the Draper Commission the day after the committee was established arguing that population issues had to be considered (Piotrow 1973: 36).

The fears and anxieties generated by both the population and atomic explosions are frequently linked as is the urgency with which both need to be tackled. Stycos' (1962: 231) prediction that 'along with atomic energy, Nikita Krushchev, and automation, the rate of world population increase will be listed by future historians as one of the outstanding phenomena of our contemporary period' appears somewhat inflated. In 1963 Bertrand Russell outlined two antithetical dangers facing the world's viability: the use of H-bombs and the increase of the human population. Russell (1963: 1) warned that 'nothing is more likely to lead to an H-bomb war than the threat of universal destruction through over-population'.

In a more optimistic light, Julian Huxley (1957: 41) envisioned a new order resulting from a revaluation of both atomic and overpopulation threats: 'Just as the portentous threat of atomic warfare has brought humanity to its senses and seems likely to lead to the abandonment of all-out war as an instrument of national policy, so I would predict that the threat of overpopulation will prompt a reconsideration of values and lead eventually to a new value system for human living'. Moreover, Dr John Rock (New York Times May 7 1954: 26) predicted at the 34th meeting of the Planned Parenthood Federation of America that if 'something close to a birth control pill' was 'discovered in time, the hydrogen bomb [would] never fall'.

In 1959, Aldous Huxley bemoaned the state of contraceptive practice and knowledge in the age of Sputnik. He went on to predict that in the *Age of Overpopulation*, the world's overpopulated, underdeveloped countries would soon be under the rule of the Communist Party. American fear of the breeding grounds of communism initiated a serious consideration of birth control. The Rockefellers became one of the principal financial supporters of the Population Council as corporate leaders became increasingly concerned that Asia, Africa, and South America, impoverished through overpopulation, would succumb to the Communists (Notestein 1968). Eugenic preoccupations also reemerged in the 1950s in studies warning that the white nations could be submerged by the yellow and the black (McLaren 1990: 239). Haller (1963: 183) has also suggested that the explosion of an atomic bomb over Hiroshima may have precipitated widespread interest and debate concerning the danger of increased mutations from nuclear fall-out and the role of eugenics.

Elaine Tyler May (1988, 1989) has developed an incisive thesis that links the fears arising out of the cold war and the atomic age with the intimacies of private life in the US. The family becomes located in, and not outside, the larger political culture as domesticity is embraced in the face of unknown threats. She proposes that a house full of children created a feeling of warmth and security against the cold forces of disruption and alienation. Children were also perceived to be a connection to the future and a means of replenishing a world depleted by war deaths.

The housewife was seen as the ballast of the American way of life: 'she could shore up the family against liberalism, socialism and communism' (Ogden 1986: 171). From her anthology of men and women's lives in the Fifties Eisler (1986: 111) echoes the uncertainty evoked by May: 'it was an unsteady world out there, over which we could look forward to having no control'. The nuclear family was reinforced as the norm, and 'the American home of the 1950 was a hothouse in which the thermostat was fixed permanently on family happiness' (Ogden 1986: 164).

The cultural influences of the atomic bomb should not be underestimated. In 1946 readers of the *Ladies Home Journal* were told that 'over and above all else you do ... the thought you should wake up to, go to sleep with and carry with you all day' should be how to prevent the atomic war (Boyer 1985: 30). In the US, federal defence plans flooded the country as the nation's consciousness became obsessed with the fear of social decay; a theme that is found recurrently throughout the decade of the 1950s. The key to survival was understood to be preparation. By the end of the 1940s, the cultural discourse shifted and Americans seemed not only ready to 'accept the bomb, but to support any measures necessary to maintain atomic supremacy'. As late as 1959, 64% of Americans listed nuclear war as the nation's most urgent problem. By 1964, the figure had dropped to 10% (Boyer 1985).

Planning evolved as a central theme around which much of the US domestic policy was structured. Attempts were made to convince people that they could survive an atomic war if they *planned* for it, and had made the right sort of preparations, and women were integral to these plans (Oakley 1990: 46, Winkler 1993).

May (1988: 105) has shown how female domesticity in the US took on a new form to fit the cold war environment. 'Grandma's pantry campaign' was a civil defence strategy that incorporated women using their time-honoured skills to help fortify the home as a place of security. In virtually all the civil defence publicity, safety was reproduced in the form of the family. Although, ultimately, bomb shelters were not nearly as widespread as expected (with only 5% of the population having shelters by the end of the decade after a federal government budget of \$490 million spent on civil defense and a Gallup Poll of 1961 showing that over 90% of population had made no effort to acquire fall-out shelter or stockpile food (Oakley 1990: 367)), the particular form of family life they symbolically contained was eagerly recreated. Breinnes (1992: 7) recalls how memories of 'school air raid drills, of hiding under one's desk, dog tags in case of incarceration, and fall-out shelters populate American young people's memories of the 1950s'.

The concerns of the Cold war and anxieties about communism and atomic threat also appear to figure large in the family planning ethic. The rebuilding of moral family life in the UK and US was thus part of the Cold War struggle against communism (Wilson 1980). The bolstering of the family was closely allied to fears over what/who did not conform to what had been recognised as the norm: a white, middle class, heterosexual married couple with children. Family planning thus became a principal actor in tense scenes circulating around Britain and the US in the postwar years; playing out the fears and concerns of an unstable society.

Chafe and Sitkoff (1983: 75) warn us not to view the decades of the Fifties and Sixties as distinct and separate. They dispute the traditional view of the 1950s as an era of stability, peace and prosperity and the 1960s as marked by conflict and activism and suggest instead that 'the struggles that brought about the reform in the 1960s were already emerging throughout the "quiet years of the 1950s"'. Breinnes (1992: 127) details the groups that rebelled; including the (angry) women and men, the juvenile delinquents, the communists and the blacks. Indeed, as Oakley (1990: 435) notes with reference to the US, it was a time of unprecedented prosperity and great poverty and contradictory messages:

The Fifties were not a placid and sterile decade - how could it have been when it experienced the continuing paranoiac fear of being blown up by the Russians, the Korean War, the McCarthy hysteria, the Montgomery bus boycott, riots over integration of Little Rock and Clinton and other southern cities, the birth of the hydrogen bomb, ban-the-bomb movements, the birth of the space age, the appearance of a teenage subculture,

the rise of the Beatniks, the suburban and baby booms, the spread of television to 90% of the nation's population, the birth of the pill, and other developments?'

The population of the Fifties was not homogeneous; rather the dominant ideology, and one in which family planning was increasingly complicit, was one that sought to protect the majority of the nation against such cultural, moral and political invasions.

Sexual Containment

It was not just nuclear energy that had to be contained, but the social and sexual fall-out of the atomic age itself. Fears surrounding sexual chaos were omnipresent. Non-marital sexual behaviour, in all its forms, became a national obsession after the war. A persistent link was made between communism and sexual depravity; moral weakness was associated with sexual degeneracy which allegedly led to communism (May 1988, 1989). Faderman (1991: 140) adds that 'if political conformity was essential to national security, sexual conformity came to be considered, by some mystifying twist of logic by those in authority, no less essential'. This section reflects the shifting embodiments of the woman on the pill. Her body conformed to appropriate gender norms and consolidated specific sexual, gender, racial and class standards.

Sexual morality in the postwar era was slowly redefined. Family planning promoted marital adjustment and sexual compatibility: 'from an issue that had once seemed to epitomize the question for female autonomy, birth control had become a matter of insuring family stability' (D'Emilio and Freedman 1988: 248). Voluntary parenthood became the ideal to which all loving, responsible couples were expected to aspire. Changing from an elite and chastised practice, birth control figured heavily in rhetoric about the promotion, and the future of the family. In the late 1950s and early 1960s, the couple not employing some means of birth control were seen as deviant, feckless, contributing thoughtlessly to the already overburdened world. Moreover, by the 1960s, a woman not having a baby had become the measure of the effectiveness of family planning services (Pfeffer 1993: 25).

By 1957, social commentators had successfully reconceived what birth control meant. Methods of birth control were now judged 'by their effect on the happiness and healthiness of parents and children' (McGregor 1957: 123). The

woman on the pill carried with her connotations of good mother and wife, ensuring and embodying the recipe to marital and family happiness. This reconceptualization of what the woman on the pill 'meant' reflects wider social trends and illustrates the flexibility of embodied corporeal meanings.

The family unit was pivotal to the planning programme in the UK. Upheld as the building block of society, the maintenance of the family became the frame around which much of the welfare planning was based (Bruce 1972): the 'family was *the* central unit in society' in the 1950s (Birmingham Feminist History Group 1979: 484). The introduction of Family Allowances in 1945, for example, indicated a clear acceptance of government responsibility to support all families (Land 1985). Concerned with combatting the falling birth rate, the costs of a dependency society, as well as eugenic fears over the quality of the British Race, the government established Family Allowances. These became one way of supporting the maintenance of the family (Harper 1989).

For the first time the housewife, and the 'vital unpaid service she rendered in the home' was recognised in the Beveridge Report of 1948. Wilson (1977) notes, however, that Beveridge never formulated the notion of a society in which women were treated as equals. The clear moral bias with which women were accorded is evident in the Report. Not only was it questioned whether unmarried mothers should receive maternity benefits, but women were encouraged to return to the home, to carry on their vital work 'in ensuring the continuance of the British Race and of British ideals in the world' (Beveridge Report 1942: 53). Somewhat paradoxically, family planning was also advocated as a means of maintaining and preserving the family. The acceptance of 'planned parenthood' appears all the more surprising given the legacy of 'depopulation mania'.

Prior to the Second World War, the decline of the British population was hailed as an urgent matter portending doom and gloom. The country's population was thought to be on the point of 'diminishing until there [was] no one left' (Advertising Service Guild 1945: 7). Alarmed by the shifts in family sizes and household composition Mass Observation joined forces with the Advertising Service Guild and 'those who [did] not want the English people to disappear' in order to investigate why the family was in decline.

As no evidence for a physical cause was found to suggest that the stresses and strains of modern living were responsible for the reduction in reproductive

capacity, the Royal Commission on Population (1949: 31-32) was forced to acknowledge that 'it follows that some non-biological force, presumably deliberate limitation, must be powerfully at work'. The Royal Commission on Population which reported in 1949⁹⁴ recognised the need for family planning. It is ironic that by the time the Commission was ready to publish its findings, fertility levels were rising steadily (Teitelbaum and Winter 1985: 66). Nevertheless, the nagging fear that a physical, environmental cause lay at the root of fertility decline continued to recur throughout contemporary literature. As late as 1963 the 'modern living' theme was resonating as a legitimate underlying cause of fertility decline. Parkes (1963: 41), in answer to a question on the effect of tension as a means of artificially reducing conception, suggested that an 'unexpectedly low number of conceptions in the summer of 1956' could have been related to the Suez crisis.

As fears over depopulation were allayed, new concerns evolved over the dysgenic shifts in the population. From the early 1950s there was an almost unqualified acknowledgement that couples were indeed using contraception to limit the size of their families. Surveys after questionnaires (e.g. Lewis-Fanning 1949, Report of Royal College of Obstetricians and Gynaecologists 1949, Rowntree and Pierce 1961) indicated that there was an overwhelming, and almost shocking, prevalence of deliberate family limitation; 'in more than half of Britain's homes there was no child under 16 (Myrdal and Klein 1956: 23). The reason for why families were adopting birth control measures clearly needed explaining. Reed (1978: 239) also makes clear that Americans had been employing contraceptive techniques in vast numbers for decades⁹⁵.

Speculating about the subfertility of 'successful families'⁹⁶, Jackson (1945) posits reasons for the dwindling family. Voluntary limitation became linked with a 'desire to "get on in the world"' as children became 'millstones' around the necks of women. Women, especially those with careers, were increasingly positioned

94. The Commission was set up in 1944 amidst fears of a declining population. It commissioned reports from a range of social, medical and biological experts.

95. Reed (1978: 239) notes that 'it was a \$250 million a year business'. The clandestine nature of the industry allowed manufacturers to charge exorbitant prices: 'in 1937, Americans spent \$88 on condoms and \$200m on 'feminine hygiene' whilst a gross of condoms that cost the manufacturer \$4.80 and the druggist \$6 retailed for \$24, a markup of 400%.

96. Fears over the dysgenic effects of contraception and family planning were gradually alleviated. Reports such as Hubback's (1957) *Wives Who Went to College* reassured planners that educated women were not abdicating from their role as mothers. In a broadsheet published by the Eugenics Society (Carter nd) attention is also drawn to the number of 'promising families' and ways of increasing their fertility in the national interest is considered.

as being selfish and egotistical and suppressing their maternal instincts. It was popularly felt that 'women today are not prepared to accept, as most women in Victorian times accepted, a married life of continuous preoccupation with housework and care of children' (Report of the Royal Commission on Population 1949: 148). Although the Commission endorsed a view that the ideals of the community as a whole were not compatible with repeated and excessive childbearing, it was recorded that 'many women positively dread having another child' (page 147). Such a sentiment supported the rhetoric that women were opting out of motherhood and implicitly suggested that women of the 1940s were not as fit and tough as those of their foremothers, and not prepared to withstand the pain of childbearing.

Further investigations on family limitation, however, appeared to refute such popular accounts. Rejecting the frequently voiced accounts of woman's selfishness and cowardice, family limitation was shown to be a strategy employed by women independently and couples unable to cope with their material circumstances. According to their findings, of the 1,815 women who had at some time used birth control, not more than 6% suggested that maternal ties and loss of freedom were a matter of concern. Only 1% associated their practice of contraception with difficulty of getting domestic help and only 3% mentioned the importance of a career and only 4 women referred to fear resulting from an earlier pregnancy. In spite of the fact that it was specified in the (interviewers') list of expected replies, only one woman stated that her use of birth control was bound up with her view of the world as an unsuitable place in to which to bring more children. Contrary to popular opinion, contraception was used primarily because couples could not afford (more) children and because of housing difficulties.

The Report on Family Limitation for the Royal Commission was, however, favourably received by population and family planners. Indeed, in the 25th anniversary issue of the *British Family Planning Journal*, Margaret Pyke (1956a: 7) notes that 1949 'was the great year. The Royal Commission on Population published its Report in June and we saw at once that we could not have written it better ourselves'. The attitude of the British press shifted almost overnight, when Ian McCloud, the Minister of Health, visited the FPA in 1955. This visit marked the first official government visit and was taken to symbolize a change in policy and attitude towards birth control (Pyke 1956b: 151, Florence 1956: 22). An editorial in *The Times* (November 30 1955: 11) notes the (new) distinction between the Family Planning Association and the 'militant Malthusians'.

By 1956 the FPA was opening 'new clinics at the rate of one every 11 days' with 250,000 women and men visiting in 1955 (Pyke 1956b) and 340,000 attending them in 1959 (The Times September 23 1959: 5). Learthard (1980 :101) notes that by 1960 the FPA had established 276 branches in Britain, and in that year alone saw 495,903 patients, representing more than a 50% expansion in 5 years. Even the British Broadcasting Commission (BBC) consented to the appeal on behalf of the FPA as part of their *Good Cause* series. The debate in the House of Commons that this event initiated reflects the controversial place which the FPA continued to occupy within British society. Teeling (Hansard (Commons) Vol. 608 July 1 1959: 451), strongly opposing the broadcasting of the programme, claimed that the FPA was not a *good* cause, and that it advised married women to use birth control 'without the knowledge or permission of their husbands'. The parallel debate in the House of Lords (Hansard Vol. 218 21 July 1959: 357-372) indicates that although Lord Morris declares that 'it would be difficult to find a topic to air over the air more controversial than this matter of birth control', the majority view was that the value of family planning is almost universally recognised (page 357). The broadcast went ahead on 23 August 1959, but did not contain the words 'birth control' or 'contraception'.

As Macintosh noted in 1957, 'planning' does not always mean the restriction of births. The FPA clinics devoted more and more of their time to subfertility problems in the early 1950s. The needs of involuntarily childless women were invoked in political rhetoric around the depopulation scare as women became 'the objects rather than the architects of campaigns waged and policies introduced in their name' (Pfeffer 1993: 99). Sterility thus became a legitimate object of concern. This may also have been related to the contemporary concern over the ageing effects of the British population and associated eugenicist concerns (Thane 1990).

The glorification of family life in the 1950s had strong repercussions for gender. Motherhood and children were central to the identification of both husbands and wives. But, as is often the case, the rhetoric and reality of their lives was often markedly divergent. Not only were women going out to work in unprecedented numbers, but the bonds of marriage were frequently broken. Family planning, as the name implies, continued to be strictly reserved for families. The theme of healthy, happy families was constantly reiterated throughout much of the literature advocating family planning in the mid-to-late fifties, and yet, it was becoming

increasingly apparent that the family was in trouble. The Kinsey Reports announced amidst a blaze of publicity that American men and women were having pre- and extra-marital sex. His findings indicated that large numbers of couples were violating the sexual-social standards of the 1950s. Kinsey mapped and surveyed the sexual landscape as sexual experience was laid open to public view in an unprecedented manner (Morantz 1977). The Kinsey Reports rapidly altered the nature of public discussion of sexuality (Brecher 1972). *Sexual Behaviour in the Human Female* (1952) was published in a repressive time for women, and Kinsey located women as sexual agents and separated the concept of sexual pleasure from reproduction (Irvine 1990: 63). Rather than seeing family planning as something quite clearly at odds with what was actually occurring, it perhaps should be understood as an attempt at preserving the family, at maintaining the status quo.

Family planning became an actor in the battle against liberality and a promoter of stability and conformity. Its aim was to improve sexual harmony within marriage and enhance the stability of family life. Like labour-saving appliances, birth control devices could contribute to enjoyment at home and heighten the standards of domestic conduct without disrupting the ideologies of motherhood. Maternal health also acted as a persistent stimulus for action. Concerns over child and maternal health were rife in the postwar years, because death through childbirth was common. As Pfeffer (1993: 95) notes, 'in 1918 one mother died for every 264 babies born alive, by 1932, this figure had risen to one maternal death for every 238 live births'. She goes on to note that 'by the late 1930s antinatalism was in danger of seeming unpatriotic' (Pfeffer 1993: 103). Consequently, the FPA began to promote family welfare through privileging maternal health. The contracepted body of a woman began to modify sexual relations. She was safer, healthier, and happier. Just as The Royal Commission on Population reported its findings at a time of unprecedented fertility, so too did concerns over maternal health have an (unpublicised) hollow base: maternal mortality fell so steeply that the 1950 rate was only a fifth of the rate in 1935 (Loudon 1992: 254).

Preserving the Family

By enabling couples to marry young, postpone childbearing and space their children, contraception fostered the modernization and professionalization of domestic roles. It was generally accepted that the best way to contain sex was through early marriage (May 1988). In the US almost 70% of males and 67% of

females over 15 were married in 1950 (Gilbert 1986: 58). Landis (1958: np) writes with concern about the marriage preparation given to the young people that marry early. He claimed that 'half of American girls are married before they reach their 21st birthday and half of men before 23'. Youths marrying while still at high school (ages 14-18) began to create problems for school administrators. By 1965, Duvall (reprinted in 1970: 79) writes about the 100,000 plus students a year enrolling in a marriage course in the United States.

Early marriage became an ideal and the postwar practice of 'going steady' was established. Adult reactions to the practice were overwhelmingly negative. Some parents and authorities were confused and others condemned it, believing that it led to an increase in pre-marital sex. Bailey (1988: 52) indeed suggests that 'as going steady was a simulated marriage, sexual relationships could and did develop'.

Dating

Dating became a new ritual, involving the proliferation of strict 'do's and don'ts' of dating. Experts repeatedly explained that it was up to young women to 'draw the line' and exercise moral restraint, thereby safeguarding the stability of their future families. Beth Bailey's (1988) history of courtship in America illustrates the shift from a private act (in a predominantly female sphere) to one conducted in the public world (dominated and controlled by men and their money). As 'dating' increasingly took place in public places removed, by distance and by anonymity, from the sheltering and controlling contexts of the home and local community, new actors evolved in these new spaces.

As postwar conventions of courtship shifted, from women asking men to call, to men asking women 'out' on dates, control in the relationship was also transferred from the woman to the man. As women outnumbered men, tensions soon arose around marriage and marriageability. D'Emilio and Freedman (1988: 258) point out that the new system of dating 'did not extend to all youth. Its adoption depended upon surplus income for clothes and entertainment, access to automobiles outside major cities, school attendance to enforce peer-based norms, a sufficient population density to sustain a range of commercialized amusements. Its contours thus mark it as a ritual of white middle class youth in the cities and suburbs'.

The etiquette of masculinity and femininity dominated American manners from the 1930s-60s and can be read as another means by which sex was contained. There were clear rules instructing men 'how' to be men and women 'how' to be women. This was a key time for the re-negotiation of sexual rules and gender roles. What changed were not sexual acts so much as what those acts meant.

Homosexuality

Cold War policy instituted a system of sexual surveillance in which any deviation from the heterosexual couple, married with children, was perceived as a threat to national security. Berube and D'Emillio (1984) have documented the repercussions of the 'homosexual scare' in the US Military. By the end of the 1940s, the military was discharging about 1000 men and women per year on charges of homosexuality. But as the campaign against the 'homosexual menace' intensified in the 1950s, the numbers discharged rose to over 2000 a year.

John D'Emilio (1983: 24) also suggests that the after effects of the war created a new 'erotic situation'; a situation 'conducive to both the articulation of a homosexual identity and to the more rapid evolution of a gay subculture'. Nevertheless, in the baby boom years in which the nuclear family was firmly and virtuously upheld, 'the man or the woman choosing to pursue same-sex intimacy was more than ever going against the grain'. Labelled as sexual and moral perverts, gays and lesbians were not only seen as flawed individuals, but as dangerous and threatening moral and sexual perverts. Ironically, as D'Emilio notes (1983: 52), the vicious attacks and scapegoating of gay men actually 'hastened the articulation of homosexual identity' and spread the knowledge that they existed in large numbers.

White masculinity and male heterosexuality

It was not only male homosexuality that appeared to threaten the social and moral order, but new forms of white male heterosexuality were also beginning to cause concern. As Carolyn Johnston (1992: 222) suggests, there was more an 'organization man mystique than a feminine mystique'⁹⁷ as the man of the household began to 'lose' his power, both in the workplace and in the home.

97. The *Organization Man* was a best seller by W. Whyte (1956) and it made a big impact on the cultural life of postwar American families. It was taken to indicate a shift in man's roles; a man who worked indoors, in an office, was said to be drawing on and nurturing his feminine skills. Another example of this type literature which achieved popular status is S. Wilson's (1956) *Man in a Grey Flannel Suit*.

Men were believed to be in a dehumanizing situation, caught in a mass, impersonal white-collar world in which 'feminine' behaviour was increasingly valued. To continue to provide well for his family, many feared a man would have to act like a woman. New skills, such as teamwork, had to be learnt as the importance of individual endeavour and competition declined (Gatlin 1987: 9).

May (1988) agrees that the loss of autonomy was real, with men losing control of their own work standards and undergoing the effects of automization, but as Van Horn (1988: 57) notes, 'new occupations replaced obsolete jobs as a matter of course'. Interestingly, I found two examples illustrating this sense of disorientation and alienation amongst a collection of letters written to Betty Friedan on the publication of her book *The Feminine Mystique* (Friedan 1976: 25): 'Don't our husbands work every dreary day, as cogs in that big, workday world, just to support us at home?' and another, 'my husband, in a sense, offered his life to me when we married. He's the one who has to go to the same job at the same time every day forever, just to feed and clothe me and his 3 children. He's the one who should feel trapped, but he doesn't'. The notion of men being 'trapped', perhaps attained greater currency at home than at work as cold war propaganda spread the misogyny of the maternal dominance theme and the mother took on mythic proportions (Breinnes 1992).

Ehrenreich and English (1979) also situate the obsession with the diminution of the American male, a theme popularised in mass culture, in the context of the increased power attributed to women in the consumer society. During the Fifties, observers considered homemakers to be emancipated and men to be oppressed. Women had taken on a new role by the end of the second World War. A crisis over masculinity arose when returning GI veterans found that 'the American housewife, (as so many GIs noted with disappointment on their return), was no geisha girl or French coquette' (Ehrenreich and English 1979: 216). Ogden (1986: 163) also points out that 'GIs returned home with European and Oriental brides because they considered these women feminine, complaining that American women no longer knew their place'. May (1988) argues that this crisis was closely allied to an increasing suspicion of single men and women 'as the authority of men at home and at work seemed to be threatened'. America 'unself-consciously worried about men' in its attempts to resist the feminizing of the man and the desmasculinizing of the husband (Breinnes 1992).

America was deluged with articles claiming that boys and men, as never before in history, were 'confused at what they should and should not do to fulfil their masculine roles' (Bailey 1988). Responsibility for the crisis was firmly rooted at the feet of women. It was women who curbed masculinity. Women were made to feel anxious about over-protection and castrating 'momism' (Coontz 1992: 33).

The problem of masculinity became framed in the context of the loss of separate worlds. Popularly, the answer appeared to lie in the development of a separate, masculine world, in which men were not 'smothered by the togetherness of women' (Bailey 1988). As sex roles converged men began to find ways of reasserting their authority. Gatlin (1987) suggests that 'men turned to sports and revived the Wild West in fiction, film and television searching for the pure models of competition, aggressiveness and skill absent in the bureaucratic world of corporations and professions'. Spigel (1992) notes however, in her cultural study of television in the 1950s, that although the deep anxiety about masculinity after the second World War was closely linked with fears of female strength, sex roles were not converging. Indeed, they could not have been more different. Indeed 'gender distinction reached its zenith ... Never again would the contrast between feminine and masculine bodies, qualities, and activities be so vividly emphasised' (Van Horn 1988: 120). Consequently, the woman on the pill entered into the debates about the diminishing of sexual differences. The pill was said to reduce the most fundamental of differences between the sexes: that of pregnancy.

In an attempt to contextualise the changing conceptions of the body, and to locate them within a material setting, Shuttleworth (1990) has suggested that the establishment of woman as dominated by her biology and man as stable and in control, is associated with the emerging industrial economy and the new social division of labour. From the late eighteenth century onwards we find the traditional, rather undefined associations between woman and the body are strengthened, particularised and codified in medical science. Shuttleworth argues that the obsession with the uterine economy needs to be viewed in light of the ideological project of laissez-faire economics. Women, like the external economy, needed to be regulated and controlled, since both were believed to be at the mercy of outside forces. It is ironic to note that these 'outside' forces in the case of the woman, were exerted by her 'insides'. Such a conception of the female body was contrasted with that of man's body: man was not vulnerable to the whims of a changing biology. The evolution of man in control of his body helped to alleviate fears that men were becoming mindless automatons; cogs in the social machinery.

Once again, the sexed body helped legitimise, and was itself coded by, the new social order. Challenging the conventional belief that Victorian ideology was designed to suppress and treat a disordered female sexuality, Shuttleworth tentatively proposes that the impetus behind such draconian measures, such as the removal of the ovaries, did not come from the need to control women, but rather, from the problems involved in assimilating men to the new condition of the labour market.

A parallel argument could clearly be made for men and women in the US in the 1950s. The mid-century masculinity crisis was, of course, not unrelated to a crisis over women and femininity. Can Shuttleworth's thesis be extended? Did the issue of women working, or more specifically, of a new type of woman going out to (paid) work require a concomitant reorganisation of women's internal biological rules? The phenomenon of the woman who went out to work was not new, but the way in which women were integrated into the economy of both Britain and America was unprecedented. Men and women were expected to be both producers and reproducers, but the bodies of the women who worked were planned *not* to be pregnant.

Women Working

In 1948 a quarter of all American mothers with school age children had worked outside the home. By 1958 the percentage of working mothers had risen to 80% (Ogden 1986: 187). In 1960 twice as many women were at work as in 1940, 40% of all women over 16 held a job as female employment increased at a rate 4 times faster than that of men (Chafe 1972: 218). In the UK 'virtually all single women worked in the 1950s and 1960s' (Soloway 1990: 2134) with the percentage remaining at 92% (Myrdal and Klein 1956: 54). Despite an overall comparability in total figures on the number of women working in both the US and in Britain, there is one marked difference. In the US, the percentage of married women still living with their husbands and employed in paid work outside the home was 50% of the total, much higher than the rates of married women working in Britain. This is in part explained by the ever-decreasing age of marriages.

The marked increase in working women obscures the subtleties of the processes involved in women negotiating new roles and new spaces. Whilst it is clear that women have always worked, both paid and unpaid, in and out of the home, an

acceptance of their entry into the labour force was neither smooth nor consistent as the type of work that women did underwent a qualitative shift.

Women's wartime working had made an 'indelible mark on the workplace' (Gilbert 1986: 15). Factory buildings were altered, tools adapted and over 3000 child care centres established (for a detailed and contextualized history see Riley 1983). Women took on a more active life, and were often employed in jobs previously reserved for men. While the popularisations of women war workers, eg. Rosie the Riveter, may have obscured the reality of the work experienced by many women, especially black women, such images were powerful in shifting the image of femininity (Kesselman 1990, Dabakis 1993).

Women's entry into the wartime labour force was not secure, but nor was it temporary. As Ruth Milkman (1987: 100) notes in her study of women workers, 'a permanent shift had occurred for women as a social group'. The notion that women were forced back into the home remains a persistent and popular myth; the female labour force actually increased in large numbers (Wilson 1980). Indeed, Chafe (1972: 218) remarks somewhat surprisingly that 'the most striking feature of the 1950's(sic) was the degree to which women continued to enter the job market and expand their sphere. The pace of female employment quickened rather than slowed during the postwar years'.

After the end of the war, many women wanted to return to a 'normal' life, get married and raise a family. 'Going home was to be expected' (Van Horn 1988: 103) since women had not given up the home as an institution of worth and value. Other women, whether out of necessity or desire for fulfilment, wanted to keep on working. There was no cultural consensus about the fate of women workers and Kesselman (1990) notes that the US was in fact deeply divided. This confusion over the 'proper place' for women was reflected in women's magazines and other popular messages. The ambivalence and contradictions in the postwar discourse on women reveals a tension between women as workers and women as mothers: 'it did not simply exhort women to stay at home' (Meyerowitz 1993: 1465).

Surveys have indicated that the majority of women wanted to continue working for wages and the postwar concern became not one of whether women war workers would continue in the workforce but whether those who were doing 'male' jobs would continue doing them. Women, however, no longer saw themselves as substitutes for men. An American survey carried out in 1946 in ten

major war production areas revealed that 'most female workers hoped to stay on the job, even after the troops came home. About 73% of the interviewees intended to continue working and, of these, about 86% wanted to retain their current positions' (Gilbert 1986: 15). Myrdal and Klein (1956: 53) confirm these sentiments in a British survey carried out by Amalgamated Engineering Union in 228 factories in 1945. This showed that about two thirds of the 2000 women interviewed planned to go on working, especially the older women. Women were thus planning their futures, their families and their careers.

Whilst the popular myth of women being pushed back into the home by a resurgence of an ideology of domesticity is a false one (Riley 1983), women clearly did not remain in their wartime locations (Milkman 1987: 100). Reconversion after the war wrought massive changes in the structure of the workforce. Johnston (1992: 198) points out that in the US although 80% of wartime women were still employed in 1946, their average weekly wage had dropped from \$50 to \$37 and 'only half of them occupied their wartime position'. Women were removed from their 'male' jobs and hired elsewhere. Incidentally, there was no parallel expectation that black men should be removed from their jobs to make way for the returning soldiers. Black women's experiences of postwar working were also radically different from white women. By 1950, 60% of all black women in the US were working as opposed to 16% of white women, and 40% of all employed white women had clerical or sales jobs as opposed to only 5% of black working women (Johnston 1992: 223).

Some women did leave the workplace, but those that did not were not simply 'forced back into the home'. They were not simply passive victims of a patriarchal policy. Contention surrounds the process by which women negotiated their removal from, as well as their persistence in, the work place. Kesselman (1990: 107) asserts that women resisted the process by which they were being forced to re-enter the low-paid, female ghetto in the job market. This should not be interpreted as a graceful return to the home. The refusal of women to be manipulated in and out of the work force by government agencies is reiterated by Thomas (M. 1987) who also notes that the effects of war were not uniform; some women benefited while others clearly did not. The campaigns encouraging women 'back into the home' were not universally aimed at all women, but at young, middle class, white housewives. This highly specific targeting is one example of the reconstruction of both femininity and masculinity in the postwar era.

The immediate postwar labour shortage confused matters. Women (and not all of them) were being pursued back into the home at the same time as the economy expanded and the market for consumer goods and services grew. In the UK, the Atlee government was attempting 'a weird juggling feat', trying to promote ideals of family life while simultaneously desperately in need of labour for the work of peacetime reconstruction (Wilson 1980: 43). Women were welcomed into the labour force in a circumscribed way; as temporary workers at a period of crisis, as part-time, and as not disturbing the traditional division of labour in industry. Women's work could be seen as advantageous for both the economy at large and for the family in particular. It was essential that women should not be seen to be depriving jobs 'for the men' and perhaps it almost goes without saying, the importance of full employment should not be underestimated when considering the structuring of female employment. The explanations are all closely connected with the performance of the British economy, rather than solely with attitudes to women.

In 1956 Myrdal and Klein point out that although 'the fact that has impressed itself surprisingly little on the consciousness of the public, every fourth married woman in Britain has a job outside her home' (page 54). Women were working, but as Myrdal and Klein imply, no one needed to know about it. There was also a strong cultural imperative for women to 'remain' in their place, in the home, with the children (see Bowlby 1951⁹⁸), although as Riley (1983: 108) points out this was never a coherent or consistent policy. As I have been suggesting the ideological representations were 'never so clear-cut as to exhort an unconditional confinement to the home for all married women. But marriage, home and family remain[ed] the privileged sphere (Birmingham Feminist History Group 1979: 51).

Cate Haste (1992) suggests that in spite of, or even because of, increased numbers of women working, femininity was being recoded as something else. The housewife and homemaker were recast as 'careers' for women and attempts to recast women in their 'proper place' in the home were evident. This view is further endorsed by Wilson (1980: 22) who asserts that the theme of 'the housewife's home is her factory' was part of a broader theme of homemaking as a career popular after the War, in part instigated as a result of a failure of the government to reinstate domestic service as a job.

98. John Bowlby (1907-1990) was an influential British child psychiatrist. He is famous for his work on maternal deprivation and attachment theory.

Laden with maternal imagery, the home has been reified as the setting for good women, virtuous wives and mothers. Palmer (1989) has, however, highlighted a paradox within this conceptualisation, which re-emerged once domestic servants had vanished. The work carried on in the home is unconsciously identified with dirt and decay, which threatens to taint the woman who does it. Drawing analogies between the close association of dirt and sex, Palmer speculates that white, middle class women had to find new ways of transcending these associations. In order to continue their assertion of sexual purity and pristineness, middle class housewives had to devise a new method of separating the 'good' from the 'bad'.

Palmer argues that once domesticity was no longer enforceable in the ways that it had once been, with womanhood split into two groups, those who cleaned and were dirty and others who were pure, the split between good and bad women became increasingly internalized. Women became engaged in heightened efforts to control and to deny the power and dirt of their bodies. As women became more directly linked to the dirty work of home, they spent more time purifying their own bodies and eradicating their physical shame. The associations with bodily processes, such as menstruation, or the fitting of a diaphragm should perhaps be assessed in light of this evolving context. It perhaps infuses the desire for an aesthetically pleasing 'no mess' contraceptive. What could have been better than a single pill to swallow?

Changes in women's working patterns had a radical impact on consumption. Not only were women able to contribute financially to the purchase of consumer durables, and this included the pill (which was by no means cheap), but also women 'needed' labour-saving appliances (although they may not have been labour/time saving, they were believed to be). May (1988: 167) notes that Americans felt a great deal of ambivalence toward women's employment: 'it was unfortunate if a wife had to hold a job, but it was considered far worse if the family was unable to purchase what were believed to be necessities for the home'. Spigel (1992: 42) suggests that the domestic bliss that all postwar couples were held to aspire to was 'an expensive and often unattainable luxury. In part, for this reason, the glorification of middle class family life seems to have had the *unplanned*, paradoxical effect of sending married women into the labor force in order to obtain the money to live up to the ideal' (emphasis added). Indeed, the

dual-earning family was to be one of the most enduring agents of change in the postwar period (Haste 1992: 154).

So, women were working and having families, or rather they were having families and *then* working. Families were supposed to be planned. The issue of women planning their families around their working lives rarely appeared to enter the equation. Women, it appeared, stopped working when they had children. Moreover, women in certain sectors (eg. post office, banking) were forced to withdraw from the labour market on marriage. Myrdal and Klein's study in 1956 was one of the few to admit the problem of the dual role of the working mother (Wilson 1977: 63). They concluded that 'a deliberate effort should be made to devise adjustments [and these were not in men] that would render it easier for women to combine motherhood and the care of a home with outside activities' (Myrdal and Klein 1956: 160). They documented the problems facing women who did not 'plan' for the future:

'modern mothers who make no plans outside the family for their future will not only play havoc with their own lives but will make nervous wrecks of their unprecedented children and of their husbands'.

They concluded, that as important a job as looking after children is, it took up a 'relatively short and transient phase in a woman's life'.

By 1963, the working woman and her husband were being explicitly courted. The woman is informed that she is 'one of over 60 million women in the US who works outside her home'. Her femaleness is constantly reaffirmed along with its presumed association with reproduction:

'Being a woman as well as a worker, you have certain important roles in life to perform, one of them being the function of childbearing' (Bogue and Heiskanen 1963: 25).

Her husband is however appealed to in a different way. Interestingly, birth control is not promoted primarily as providing a means by which the wife will be available for devoting more time to the husband or the children, instead:

'Will Family Planning help my finance? Yes. Fewer children to feed means more money per person. Less worries in the home means more efficiency at work, therefore more profits, quicker promotion, bigger salary. Fewer babies means your wife can also help to earn' (Bogue and Heiskanen 1963: 35).

Birth control also allowed a woman to preserve her health 'keep her youthful looking, and give her time to devote to her husband' (Frank and Tietze 1963: 49).

Work and family were still seen as alternatives, with two types of women filling two different roles. The woman on the pill did not appear to be a new body, shedding the manacles of reproduction and ready to enter the world of work on equal terms to a man. Instead, the woman on the pill consolidated the family order.

The Unwanted Child

The unwanted pregnancy was frequently recognised as a source of misery and humiliation in all classes (Hawkes 1957: 114)⁹⁹. It represented the child that was not planned. Not only did it create the problem of abortion, abhorred by all, but in the case of unmarried mothers it contributed to the growing numbers of illegitimate children. The pill facilitated an increasing awareness, if not acceptance, of wanted and unwanted children. Unwanted children soon became synonymous with those who were unplanned, particularly children born into an already established 'family'. The avowal of the use of family planning in a progressive society therefore allowed opportunities for women to admit, and be told, that they had 'unwanted children'. The Family Limitation survey in 1949 indicated that about 11% admitted to having had an unwanted child. By 1958 Blacker was warning of the degradation to family life and the ruination of the mother by 'unwanted pregnancies that are too numerous and insufficiently spaced'. Linda Gordon (1989: 198) suggests 'the possibility of unwanted children assumes, of course, the existence of birth control and a 'planned parenthood' sensibility. Noting that prior to 1960, 'most women assumed that children came as part of the nature of heterosexual relationships. This does not mean that they did not try to limit their reproduction mainly by avoiding sex or with abortion - or that they did not complain and grieve at repeated conceptions. But the idea that some particular children were wanted before birth, others unwanted, would have been unfamiliar'.

The unwanted child was the subject of anxiety neuroses, serious emotional disturbances, psychosomatics and nervous disorders (Maury 1963: 207, Malleson 1952). They became juvenile delinquents, often 'grossly neglected even

⁹⁹. The figure of the 'unwanted child' features heavily in the promotional and educational film 'Birthright' made for the FPA in 1959. The 'birth right' of every child, it argues, is to be wanted.

abandoned', destined to turn into criminals and to perpetuate the cycle of illegitimacy and poverty (Vogt 1963: 25). This period also witnessed the emergence of the 'battered child syndrome', in which mothers physically abused their own children (Maury 1963: 207). A financial, emotional and medical burden for the individual family as well as for society as a whole the unwanted child was always regretted. In the early fifties, 'the National Assistance Board in the UK was paying dependency allowances for 300,000 children under 16 in the early 1950s and for more than 400,000 a decade later ... In 1955, the National Assistance Board was supporting 50,000 separated, deserted or divorced mothers who were responsible for an average of 2 children each, and by 1964 the number had nearly doubled' (Vincent 1991: 141-142). Family planning was once again seen as the solution to the problem, as 'birth control therapy' became 'an integral part of medical care' (Campbell 1963: 176).

The designation of unwanted pregnancy, and its allied measures of birth control, as a medical rather than a moral problem had several 'knock-on' implications. Not only were the 'appropriate agents of social control' changed from moral to medical authorities, but the places in which the deviance was identified also shifted from 'the home, the courts, or the pulpit to the family planning clinic' (Nathanson 1991: 171). The way in which birth control was recodified in terms of a medical framework also redefined the woman's relationship with the pill. Placed in a patient-doctor relationship, the woman 'is exempted from responsibility for her condition and is, in turn expected to trust the provider and to comply with his or her advice' (Nathanson 1991: 168). The doctor thus takes responsibility for the patient, creating a situation which Colodny (1987) defines as one of informed consent. She contrasts this with one of informed choice in which women are assumed to be the experts of their own experience and in which 'questions and comments from patients are welcomed, rather than being seen as a sign of un-cooperativeness'.

The advent of the pill facilitated a tech-fix for the socially unwelcome pregnancies, outcomes of socially inappropriate behaviour, which the medical profession attempted to curtail. With the distribution of the pill, doctors not only felt responsible for the health and welfare of their patients, but also for society. Ann Oakley (1993: 24) highlights one of the hidden contradictions and complexities of the woman on the pill. For a woman to 'do' her gender correctly, as a mother, she needed to put the needs of her children (and her husband) before her own. With the advent of the pill, the woman on the pill was framed in a such a way that

she continued to put the needs of her (unborn) child before her own. She was not regarded as 'selfish', an accusation that was frequently levelled at women who identified their own interests first.

By 1968, in what was regarded as a 'Physiologic Emergency' a pregnant, puerperal or lactating woman who had already 'demonstrated her fertility, and [who] without some sort of preventative measure' was understood as in danger of conceiving again (Population Committee Joint Report 1968). This was not any woman, and this concern was closely allied with eugenic/dysgenic aims. This section of the text is worth quoting in full, since the immediacy of the 'emergency' is perhaps hard to appreciate today:

'.. the build up of information and education from antenatal to "lying-in" period and the days immediately after delivery should be used to sharpen the woman's interest in child spacing and give her some sense of urgency. The point should be firmly implanted in her mind that a decision about family planning must be made before the time of a predictable first ovulation'.

She is a woman 'at risk', and interestingly, it is in her mind, and not her body, that family planning must be implanted!

Summary

Illustrated in Dr Allan Guttmacher's (CMAC: PP/RJH/A11/2) statement are just some of the problems to which planned parenthood was seen as the solution:

'In the United States, the twentieth century is the century of the individual. He(sic) feels he has the right to shape his own destiny, to obtain a college education if he desires, to follow a career of his choice, and included in his freedom of choice is the ethical right of voluntary parentage and the necessity to make every child a wanted child. If these goals could be achieved many of our social ills, such as divorce, illegitimacy, abortion, dependence upon government for relief, juvenile crime, would be ameliorated in some instances, almost eliminated'.

The pill thus offered a solution to social ills from divorce, welfare payments to juvenile delinquency. Couples had proved that they wanted it, and social planners had begun to see the virtues of contraception. Interestingly, the recognition of planned parenthood and family planning allowed a more progressive discussion of abortion and 'reproductive wastage'. Planned parenthood also facilitated a strategic distancing from the practice of abortion (as I show in chapter seven).

Contraception was a reward for the virtuous, while abortion was the punishment for the immoral. Abortion was understood to be a threat to the family ideal (May 1988: 153). But, as Coontz (1992: 25) reminds us the 'traditional family of the 1950s was a qualitatively new phenomenon' and was something that had to be reinstated and negotiated.

In this chapter I have focussed on the notion that family planning and the wanted child was a 'reward', offering the promise of a better, happier life, central to the success of the companionate marriage (see chapter eight). But it was not only married mothers for whom the pill, or contraception offered a 'solution'. Promiscuous women and single unmarried mothers all became risks to the security of the nation. Inside and outside the home, women who challenged the traditional roles and restraints placed the security of the nation at risk. It was not only women who worked who threatened the security of the nation, but women's increasingly assertive/ed sexuality that had to be contained as well (May 1989: 157).

Several commentators have used the idea of 'containment' to help explain the often paradoxical situation around sex, gender, sexuality, race and class that prevailed during the 1950s and early 1960s. A postwar culture of containment evolved in which black people, women, homosexuals and communists were its objects to be contained. Breinnes (1992), drawing heavily on the work of Elaine Tyler May, has suggested that anxiety over loss of spheres and the integration of the sexes and races was articulated in the celebration of whiteness and traditional domestic femininity. Graebner (1990: 29) extends this argument to the control of juvenile delinquents. Delinquency was not thought to be something that could be eradicated, but merely something that could be contained - kept 'from spreading to the middle class'.

Contraception was therefore important in the promotion of a nationalist discourse: natalism and the nation are interlinked. There was, as I have shown here, also a powerful, and not unconnected, international discourse which generated debate and propelled action. By the late 1950s family planning in general, and the pill in particular, had been redefined as the solution to a range of ills manifest in society; both global and local. The woman swallowing the oral contraceptive pill was now not only maintaining the health and happiness of her family, but also the future of the whole world. By highlighting the redefinition of the 'need' and acceptability

of family planning, the embodied meanings of the woman on the pill become highly specified and contingent on time and place.

Planning for good healthy families was now acceptable. In the next chapter I begin to show that not all children were desirable. Single, black and working class women were attributed with a different type of sexuality and reproductivity from the white middle class married mother. Their fertility needed to be contained. I illustrate how this was negotiated at a time when single women were not accredited with having any sexuality, nor indeed having sex, and black and working class married women were often overdetermined by sexuality and childbearing.

CHAPTER SEVEN

CONTROLLING BODIES

'When a woman requests the pill, one of the things we ask her is the date of her last menstrual period. If she snaps a little calender out of her pocketbook and gives you the exact date, then at least you know that she is the well-organised sort who is likely to remember to take the pill as scheduled. But if she starts scratching her head and says "let's see, when was it now that Charly got married?" you know that in terms of her own personality *she is not a very good pill candidate*' (emphasis added)

Doctor at Johns Hopkins University Family Planning Clinic (cited in Seaman 1970: 36).

It did not take ten years for the 'good' and 'bad' pill candidate to emerge; she was there in 1960. Not all women were deemed to be in 'need' of the pill, some women were more suitable than others, their bodies more appropriate for modification and medication. In this chapter I want to explore who these women were and how they were selected for contraception. During the 1950s the notion of good and bad women attained great currency. I am interested in assessing whether perceptions of good and bad women, as dictated by their sexuality, corresponded to the good and bad candidates for the pill.

In the previous chapter I focussed on the 'good' women who deserved the pill. The white, middle class mother, or would-be mother, had earned the right to safe and effective contraception. What happened to the others who also 'needed' the pill? The 'promiscuous' single woman, the black woman and the working class woman were all deemed at different times and places, and in different degrees, to be in need of the pill. Paradoxically the 'bad' women were also 'good pill candidates'. It was on their, sometimes pregnant, bodies that morality contests were fought. This tale of constructed female bodies in need of the pill draws on Butler's thesis. It is not a story of which women, where, had access to the pill, but is instead a story of constraint. The body of the woman on the pill was doing her race and her gender in specific ways, ways that were always already specified and not chosen. The unmarried, working class white woman was already overdetermined. She repeatedly 'did' her subject position, but that is not to say that it was either voluntary or fixed.

Adding in sexuality and sex

In the 1950s everyone thought they knew who the good and the bad women were. And no one knew more acutely, or more painfully, than the women themselves. Women were held to be responsible for attracting a man, but also for refusing his sexual advances: 'white adolescent girls and young women's lives revolved around the fear of 'going all the way' or, worse, of *appearing* to have' (Breinnes 1992: 8). They had to be both seductive *and* innocent. Trapped in this double morality with different standards for men and for women, the reputation of women and young girls depended on their sexual etiquette, both real and apparent.

Autobiographical evidence confirms the confusing and contradictory messages circulating about sex. Eisler (1986: 110) noted that in the 1950s sex seemed to be everywhere: 'postwar America was a society with Stop-Go lights flashing everywhere we looked. Sex, and its magic spell everywhere, was accompanied by the stern warning; Don't do it!'. Caryl Rivers' (1991: 26) comment on sexuality and youth in 1950s sums up what was, for many young women in particular, a contradictory culture: 'it was all very confusing to me ... It was very hard to figure out how to be a madonna and a whore at the same time'. The notion of good and bad girls was implicit in teen-culture and its advice columns, books, magazines and television programmes were full of advice on 'how far to go'. Although girls and women, (as well as men) reacted differently to the pervasive cultural and sexual/moral ideology it was clear that there was a strict and clearly demarcated dichotomy between the 'good girl' and the 'bad girl' (Breinnes 1992: 102). Cossey¹⁰⁰ (1987) remembers how women in postwar Britain were labelled as either 'nice' or 'nasty' girls:

'nice girls don't, but it's all right if you're swept off your feet, you know you forget yourself, um then it's all right somehow because it doesn't - because if it looks as though you've thought ahead um then you're plotting and - you know you wanted sex and you can't be a nice girl if you want sex'.

A nice (single) girl could not be seen to 'plot', she could not *plan* for sex, and nor could she plan to prevent having babies. Women were expected to be passive in sex, not to get carried away, and not to acknowledge that it was something that she might want (Hayman 1987). Such a view was not constant, however. The

100. Cossey later became the chair of UK Family Planning Association in the 1980s.

assertion of female sexual pleasure gained credence and credibility. As noted in the previous chapter the publication of the Kinsey Reports on the sexual behaviour of the human male (1948) and the human female (1952) sparked off a huge debate on sexual morality. Women were surrounded by highly contradictory messages about sex. It seemed that only married women were supposed, or allowed, to plan. They were planning families, not sex lives. There was a pretence about sex. Sex was not only talked about, hinted at and accepted, but also denied and suppressed. It infused and saturated youth culture, and yet women were supposed to carry on being innocent and pure. Indeed, a woman's reputation depended on it. Female chastity continued (even continues) to be important in defining femininity as well as women. Breinnes (1992: 87) is, however, careful to point out that virginity and chastity were (and continue to be) highly racialized. It was the white, middle class girl who was expected to be a virgin. The bodies of women engaging in heterosexual sex in the 1950s and early 1960s were clearly sexualised and racialized.

Birth control and sexuality?

In the 1950s birth control was not primarily about the recognition of female sexuality and a woman's right to sexual pleasure. Publicly, and promotionally, birth control was more often than not, separated from sex altogether. It was, in a sense, desexualised. Some of the patients attending the early family planning clinics 'weren't a bit interested in sex ... that was really never discussed' (Raphael 1987). Instead, birth control, and the pill in particular, were tied up in preserving the health of the nation as well as the welfare of mothers and children.

Whatever the rhetoric, Linda Gordon (1976: 100) asserts that 'modern birth control ideas rest on a full acceptance, at least quantitatively, of female sexuality'. Does this mean that it would make no sense for non-reproductive sex to be condoned without recognition of female sexuality? Or does it mean that the type of modern birth control that we live with now is nonsensical if female sexuality is not acknowledged? I am ambivalent about Gordon's somewhat broad, and sweeping, statement. What did modern birth control ideas 'do' for female sexuality? While non-reproductive coitus became increasingly acceptable it did not pave the way for an acceptance of homosexuality (although Faderman (1991: 201) suggests that it may have helped). Nor did modern birth control de-privilege sexual intercourse as the definition of sexual pleasure (only now coming in with notions of safer sex and AIDS/HIV).

Stycos (1977: 287) has examined the legacy of Western attitudes to sex and reproduction. He argues that the blending of 'remnants of Victorian views of sexual morality with the results of modern compromises made by the [birth control] movement in order to achieve legitimacy' dominates contemporary international family planning movements. Stycos presents a movement that has been desexualised; 'there seems to be an intense effort to conceal the major benefit [of sexual enjoyment] and to concentrate on the *side effects* - better health or more wealth'.

Whilst I agree with Stycos' argument, and whatever the public projection of the issue, the contracepted body was, nevertheless, one available for sex and not for reproduction. It should not, however, be assumed that an acceptance of birth control is accompanied by a paralleled acceptance of female sexuality. Linda Gordon's (1976, 1984) work on the historical legacy of voluntary motherhood as an ideology intended to encourage sexual purity lies ambiguously with the promotion of birth control. The demand for effective birth control was not integral to earlier campaigns for voluntary motherhood. Legal and effective birth control would have been seen to increase 'men's sexual freedom to indulge in extra-marital sex without greatly increasing women's freedom to do so' (1984: 111). And yet, despite the reluctance to acknowledge the issue of female sexuality, it remained a highly critical object of containment. I argue in a later section that it was the medical profession that was doing the containing in the 1950s/1960s.

As Alexander (1990: 49) importantly highlights:

'when women's struggles for reproductive freedoms get narrowly defined as an individual's right to control her body or "choice", we ignore what is fundamentally at stake: a major struggle to redefine women's sexuality by all the institutions (the state, culture, law and the economy and religion, among others) that historically have had an interest in defining and enforcing ideologies of womanhood'.

The 'ideologies of womanhood' within which women negotiated their femaleness and their femininity were not constructs which women could opt in and out of. Just as women can not *choose* to 'do' their gender, I argue that women can not simply choose to contracept themselves. I am not, however, saying that women were unable to make decisions about their reproductive and sexual lives, but that contraception cannot be isolated from the performative act of doing one's gender.

Moreover, many women did not see birth control as a right and choice to which they were entitled¹⁰¹. Rather, it was seen more in terms of a palliative to poor health or overcrowding, or a way of raising one's standard of living' (Birmingham Feminist History Group 1979).

Not all women were allowed access to the pill, and those that were were strictly monitored and contained by the medical profession. Contraceptive information is a particularly interesting category of sexual information (Stycos 1977). And it has always been subject to social control. Its use is often unimpeded by state intervention or prohibition. It is one of the areas in which the demarcation between the state and the individual or possibly the couple, becomes undefined and clearly blurred. The invasion of the state into our bedrooms always arouses heated debate and vigorous denial. It is too simplistic to assert or to assume that the use of contraception is merely the desire on the part of the woman or the man to control their fertility. Fertility is a complex arena in which issues of race, class, disability and gender are but a few of the tensions that get debated over this life-saving question. Just as childbirth should not simply be understood as the direct consequence of failed contraception, nor can it be assumed that childlessness is a direct, consequence of voluntary use of birth control. If children are understood to be an outcome of a set of highly complex interrelationships, then the outcome of contraception is nothing. But, perhaps that is too stark an evaluation, and one that implicitly values child over a non-child.

I have tried to show in this chapter, and in chapter 6, how the contracepted body, and in particular the body of the woman on the pill, provided a 'solution' to a range of 'problems'. The woman on the pill is also an outcome of society, science and politics. Her orally contracepted body did not produce children. Her body was deemed a 'success', but not by all. Her body is not homogeneous, nor is it monolithic. To put it crudely, she does not mean the same thing to all people in all places. It is her 'interpretative flexibility' (see chapter 2) that forms one of the central tenets of this thesis. One has to look instead at arenas such as the acceptability of childlessness, smaller families, the change in acceptance of casual sex, changing sexual mores, women's roles, femininity, single women, and the divorce of sexuality from reproduction (something that has historically been more acceptable for men than for women) in order to find some of the reasons as to *why* the woman on the pill emerged.

101. It was not until 1968 that the United Nations declared that family planning constituted a basic human right.

Fertility control has never been perfectly correlated with the availability of contraceptive appliances. Demographic history clearly shows that family limitation occurred prior to efficient contraception. Indeed, contemporary figures on the numbers of teenage pregnancies in Britain clearly illustrate that there is no direct link between the availability of contraceptive technology and the number of conceptions. Both fertility and contraception are mediated by social values. The medical profession is one such key mediator.

Doctors and Contraception

The incorporation of the medical profession into the birth control arena in the late 1950s was something of a landmark. Although the designation of family planning as a health issue, appropriate for medical concern, may not appear surprising in the late 20th century, the alliance between the medical establishment and the birth control movement is new and requires an explanation.

Throughout the first half of the 20th century, the medical profession had largely attempted to distance itself from the sinful topic of birth control: an idea detrimental to one's (female) health. As McCann (1931: 94-6) explained, 'it is hardly surprising that all known methods of contraception are harmful to the female' since the reproductive system dominated the individual and thus contraception had 'widespread ramifications throughout the body'. McCann also postulated that a woman was made bereft of the harmonic value of the seminal fluid by contraceptive practices. Peel (1964: 136) also notes that other physical effects of contraception included 'galloping cancer, sterility, nymphomania in women¹⁰², and mental decay, amnesia and cardiac palpitations in men, [and] in both sexes the practice was likely to produce mania leading to suicide'. In 1930 the British Medical Journal would not accept advertisements for contraception (Bartrip 1990: 233) and as late as 1960 the British Medical Association (BMA) refused to accept an advertisement from the Family Planning Association for their popular publications of *Getting Married* and *Family Doctor*¹⁰³. The medical schools were no different. Few incorporated any mention of contraception in the curriculum. Indeed, in 1930, the Newcastle Student Medical Society invited a medical officer of the local birth control clinic to speak. The meeting was

102. Ironically, Carruthers (1960) recommends the use of the pill in the treatment of nymphomania!

103. This decision was rescinded a year later and the Times rebuked the BMA for bowing to Catholic pressure (The Times December 12 1959: 7 and The Times November 23 1959: 12).

cancelled when the society's committee was warned that any student attending this lecture would run the risk of failure in his(sic) final examination (Peel 1964: 144). The professional medical bodies opposed all clinics designated specifically for contraception.

Prior to the arrival of the pill, the few doctors and nurses who had been engaged in the promotion of birth control were marginalised and, in America, frequently imprisoned (see Kennedy 1970, Reed 1978, Noonan 1965). In spite of the endorsement of birth control by the American Medical Association in 1937, Ray and Gosling (1985: 405) note that poor women were prevented from securing contraceptive freedom. Clinicians working in the Planned Parenthood Federation centres were mostly 'part-timers who volunteered their services for humanitarian or eugenic reasons, or those doctors many of them female or foreign who had difficulty in establishing private practices'. Consequently, they were often afraid of offending the medical establishment. Private, fee-paying, even single patients were able to obtain contraceptive advice and materials.

Reed (1978: 372) has suggested that the status of the medical profession depended on them upholding the highest moral standards and consequently at a time when

'most social scientists, politicians and the general public agreed that the country needed four children from every fertile woman in order to keep the economy growing and to show the world that democracy was virile, then support of contraception from physicians would be cautious'.

Alternatively, at a time when public statesmen were decrying the lack of responsibility in preventing the impending population explosion, doctors were able to step in, advocate birth control, and retain their position. Most doctors only became involved when a 'clear and present danger to the moral and economic order that it served' appeared to be threatened (Reed 1984: 136). The involvement of doctors with infertile men and women is a useful indicator of the relationship between the medical profession and sexual health. The British medical profession was more reluctant than American physicians since no professional battle over who could give advice was being waged.

Seen in this light, the oral contraceptive pill was not a morally neutral technology for preventing unwanted pregnancy, 'but a vehicle for teaching personal and moral responsibility' (Nathanson 1991: 169) as well as a means of consolidating

the position of the medical profession. The introduction of the pill was not the first time that a new technology had facilitated a negotiation in gender relations and women's health. Obstetric forceps as well as obstetric atlases enabled English male-midwives to consolidate their position and acquire much of the lucrative practice formerly open to women only in the 18th century (Roberts and Tomlinson 1992: 447). In an analogous way the pill enabled male doctors to enter the primarily feminised field of family planning. It was not until the arrival, and acceptance, of a 'scientific', modern contraceptive that the professional medical bodies began to endorse birth control.

This reflects the impact of the pill as an actor. The pill was able to redefine the terms of debate, altering the definition of contraception itself. Nancy Raphael (1987), an early worker in family planning, points out that 'birth control ... were really dirty words', but that everything 'changed with the pill'. The pill facilitated the medical profession's redefinition of themselves vis-à-vis the birth control movement. The pill not only helped to legitimise the need for the inclusion of the medical profession, but was also legitimised by the prestige of the medical professionals themselves, in what appeared to be a mutually beneficial relationship.

This redefinition of the interested groups vis-à-vis birth control is an interesting example of an integrated network. Not only was birth control becoming redefined (as family planning), but also the groups that it was enroled to serve were changing. As new groups were enroled into the pill network, the artefact, the woman swallowing it and those that surrounded her were also redefined. The incorporation of the medical profession facilitated a new relationship with women wanting contraception. Whether this alliance was beneficial to women wanting effective and safe contraception is another matter. In 1959, Sanger continued to state that birth control information should be 'advocated and guided by the medical profession'. She went on to say that 'not all of them are suitable to give the kind of information, the sympathy, the understanding to the shy, simple woman who comes to them, asking them for information' (page 11).

Helen Brooks¹⁰⁴ (1987) recounted not only the hostility to the work, but also its gendered nature:

104. Helen Brooks later set up the Brooks clinics for young people.

'it was only women doctors, married women doctors, who worked in our clinics and they did it to keep their hand in while they were bringing up their own families. The males hadn't thought of it as a career and certainly wouldn't have done it without being given a great deal more money than available ... in fact I think the women doctors were really rather despised you know. Pin money they used to say these jolly male doctors. It wasn't until the sixties when ... the pill came in and all that sort of thing, and men began jumping on the bandwagon the way they've been there ever since, you know making money like the GPs do and all that sort of thing. No it - was a real struggle for women, women doctors also'.

Pam Sheridan (1987) also remembers the way in which the health visitors disapproved of their work on family planning. The health visitors 'disgusted by anything so immoral as birth control' used to 'confiscate' the light bulbs from the Welfare Centre and refuse to tell the mothers about the clinic on their postnatal visits. The Family Planning Committee of the Medical Women's Federation (1952) prepared a memorandum in 1952 stating that family planning facilities were totally inadequate and that the 'public turns naturally to the medical profession for advice in this matter' and that if they were not forthcoming then they would turn to other unsatisfactory sources. The report concludes that 'the failure of contraception is a serious factor in leading women to criminal abortion and in addition family instability is increased when attempts to space pregnancies fail'. Correspondence following the publication of this statement clearly illustrates that the British medical establishment were far from monolithic in their views on birth control (see for example Jones B. 1952, Sadler 1952, Waddy 1952). When the provision of the pill was becoming a reality, Jelly (1960: 492), in a letter to the *Lancet*, urged doctors to 'refuse to handle it, before it is too late.'

Interestingly, in contrast to what we are led to believe was the conservative opinion within the medical professions, Guttmacher (1952: 778) found in his survey that of the 3400 American physicians who replied to his survey of 15000 physicians, only 74 of them 'stated that they did not approve of contraception for any medical condition' and 72% approved it as an aid in 'marital adjustment' and 79% for economic reasons. This seems somewhat surprising given the level of opposition to the provision of contraceptive information and devices. But as Spivack (1964: 152) points out this represents a response rate of only 22%). In reply to Guttmacher, Dr Sophia Kleegman (1952) rejects the suggestion that every woman be given contraceptive advice upon request. Kleegman argues that 'a

woman who rejects maternity "forever" is emotionally ill, unless there is a serious genetic or medical reason for not having children'.

Opposition at state/institutional level in the US is firmly indicated by the fact that as late as 1964, 77 states regulated or prohibited the advertising of contraceptives or their sale by vending machines; 8 states prohibited the sale of contraceptives except by licensed physicians or pharmacists; 2 states (New York and Minnesota) prohibited their sales, but permitted the sale of medical works describing contraceptive methods. While Massachusetts prohibited the sale of books about contraception, and contraceptive appliances, absolutely (Guttmacher 1952: 778).

No longer required 'to touch genitalia or to fumble with "messy little gadgets"' (Reed 1984: 124) doctors became increasingly interested in the field of birth control with the advent of the pill:

'The pill was a medicine, not an appliance. Neat, clean, scientific, effective, and even inexpensive, the pill reflected the character on a broader scale of American society itself. Physicians found that the pill could be supplied to their patients by the stroke of a pen, unlike the diaphragm, which required skill, patience, and empathy with women, or the condom, which took contraception out of medical hands altogether' (Johnson 1977: 75).

The desexualisation of modern birth control appealed to many doctors, allowing them to 'contain' the topic within the clinical domain of menstrual calendars and pills. By the early 1960s, birth control had become defined as 'an integral part of medical care' (Campbell L. 1963: 182). Not only was it defined as an appropriate topic for medicine, but the medical profession appropriated the term and defined its meaning. The incorporation of the medical body into the field of birth control gave doctors a new role, and access to a new 'target' sector of the population: healthy, fertile women. As the body of the woman on the pill became increasingly medicalised, the meaning of contraception shifted. Access to safe and effective contraception was renegotiated as women began to form a new type of relationship with their doctors. Women choosing to go on the pill became patients. Their healthy, (mostly) fertile bodies were subject to a powerful new drug and consequently scrutinised and monitored.

Brandt (1985) has made a parallel argument with respect to venereal disease in twentieth century America. The refusal and reluctance to endorse the condom in

the early-mid twentieth century was related to a fear of uncontrolled sexuality. If unwanted pregnancy and venereal disease were removed as potential consequences of sex, a breakdown of family stability was felt to inevitably ensue:

'Rather than accepting the fundamental changes that had occurred in American sexual life toward a more permissive premarital sexuality, many still hoped to turn back the clock. In this respect, prophylaxis was considered in much the same light as birth control; unwanted pregnancy and venereal disease had been used for some time as the principal means of controlling sexuality. To take the fear of these potential consequences out of sex was to many social critics to risk a breakdown of restraints on family and society' (Brandt 1985: 168).

Moral education, and not prophylaxis, was held to be the answer. Brandt also points out that women were seen to be the 'keepers of sexual mores', and the implications of women being in control of birth control had therefore important moral implications. It was women who led to a deformation of (entrenched double standard) morals. With birth control too, it was women who were invested as keepers and bearers of moral values, and who, if they 'failed' or 'fell', got harshly judged.

Before a woman saw the doctor at a UK family planning clinic in the 1950s/1960s, she was usually interviewed by a lay worker/volunteer. The volunteers played an important role in the functioning of the clinic, particularly with reference to sexual containment. Women attending family planning clinics were questioned on a range of topics to do with their sexual behaviour. Women were asked about the number of children and miscarriages, their religion, education, and details on income and how they spent their money. The volunteers asked women in a pre-doctor interview about intimate sexual matters. Women were asked how many times a week they had sexual intercourse and whether they used contraceptives¹⁰⁵.

It is difficult not to be struck by the disparity, and what would now be considered inappropriateness, of using these volunteers, but it is also important to remember the daring and courage with which these women promoted the cause of family planning. The volunteers were largely middle class women with families (Ponsonby 1987). They were, however, popularly regarded as 'scarlet women'

105. 'J' (1954) noted after working in five different family planning clinics in Britain that questions on sexual activity were not required. This provoked a number of letters in the subsequent edition of *Family Planning* (1954 Vol. 3 No. 2).

and their work imbued with scandal. Indeed, Freda Parker (1987) remembers, 'some politician said "dreadful women who work for the FPA with um, lipstick and cigarettes sticking out of these lipsticked mouths"'. Both of the following extracts from London volunteers at FPA clinics elaborate on the difficulties and unease provoked by aspects of their work:

'Well the thing is that I'd never used the word condom for instance so that was rather difficult word to get used to. I'd also never asked anybody about their private lives before um you know that was fairly - I mean to have to do it and look as though it was *natural* was fairly difficult to begin with' (Brooks 1987)

'...extraordinary questions which I don't think we should have been asking. About how happy they were with their husbands and whether their sex lives were satisfactory - honestly they didn't know how to answer; they'd never talked about these things, and they often didn't understand the words we were using' (Raphael 1987).

The women were then asked the questions again, by the doctor. This repetition was supposed to put women at ease, and although it is rarely mentioned, women often took this opportunity to ask about sexual problems, prompting the initiation of sexual counselling, for both men and women. It is perhaps moments such as these, moments that often get unreported and glossed over, that are important in the making of the woman on the pill. Clearly it was not easy for women to talk about sex and contraception, and yet the possibility of attending a family planning clinic provided opportunities for 'becoming' a contracepted body. It may also have offered an opportunity to be a sexual, and not simply a sexualised, body. As Pam Sheridan (1987), another volunteer in London, recorded:

'people were very scared of doctors but they weren't scared of us, because we were women like themselves and we hadn't got anything special and you got onto the question of um how tiresome the kids are from time to time and things like that ... you could pick up something that was probably worrying them ... The doctors were able to pick up specific sexual problems that they couldn't do, that the women didn't talk to their own GPs about, and that would just flow naturally out of the situation they were in. I think that was a great plus for many many people...'

Although Aitken-Swan (1977: 12) declared that 'not so long ago contraception was almost entirely a matter for the couple themselves', methods such as condoms, diaphragms, caps and douching, as well as abortion involved a wider

network of actors, from manufacturers to chemists, and often included other women (see Jane 1990). With the advent of the pill women had to enter the medical arena. Nevertheless, some women and men clearly resisted the incorporation. Leathard (1980: 118-9) highlights one such anomaly between contraceptive use and clinic attendance. A survey in 1960 showed that the FPA was consulted by 1 in every 9 married couples in 1960, but surveys indicated that almost three quarters of couples married in the 1950s were birth control users. Unlikely to have been pill users, these 'couples' resisted, or may have been ignorant of, the family planning services on offer. There were a few women, however, who successfully navigated their way around the intricacies of prescribed pills. Just as women had lent out their diaphragms to other women (Brooks 1987), so women on the pill were prepared to have a short menstrual cycle and bootleg their pills to an ineligible friend (Goldzieher et al 1962: 360). Other women obtained pill prescriptions from pregnant sisters or friends (Busfield and Paddon 1977: 245).

The entry of the woman who wished to obtain the pill into the health/family planning services implicated in her a medical framework as the pill became increasingly 'black boxed'. Gunn (1987: 43) states that 'the pill became an illness associated routine' in which women had to 'submit' to health monitoring as well as 'admit' their loss of virginity. The public announcement that a woman attending a family planning clinic was 'indulging' in heterosexual intercourse was often humiliating and embarrassing. One patient's view of this experience while waiting for a diaphragm in the family planning clinic in 1963 is summarized below:

'When I got there they told me to take off my belt and knickers and roll down my stockings. And when I had done that they said sit there. And there were ever so many of us sitting there on our bare bottoms in our petties with our stockings rolled down. We all looked at one another in silence because we all knew that we were going to have the same thing done to us. It seemed sort of funny us all sitting there showing one another publicly that we done sex with our husbands and all that' (Tylden 1963: 43).

Women wanting to go on the pill (and note it was a passive, and not an active act) may have had to 'confess', often in public, that they were having sex. One particular clinic, remembered by Freda Parker (1987), had doctors who, if they found that the patient said that they were having sex 'more than twice a week' refused to give her advice until the woman had brought her husband so that he

could be taught to behave himself'. Medical practitioners clearly exerted a varying degree of control over the making of contracepted bodies. There remained a right and a wrong way to use contraception.

The pill promoted a new, scientific method of birth control that could preserve a woman's sense of modesty. The pill replaced the diaphragm and the cap, which many women simply could not bring themselves to use (Florence 1956, Havermann 1967). Both Leone Guttmacher (L. 1963) and Eleonor Mears (1962) note the ignorance and fear that women had about touching their own bodies: 'a surprising number of patients complained that they felt sick or dizzy when trying to insert or remove the cap' (Mears 1962: 209). Guttmacher (1963: 45) reported that women were afraid of 'spoiling their nature' or of losing their 'woman-ness' if they used such invasive contraception. The pill provided a new way for women to conceptualise their bodies. They no longer needed to know about the cervix or the vagina, but were provided instead with clinical diagrams of travelling hormonal pathways and menstrual calendars. Women on the pill regulated, and controlled, their own menstrual cycles.

Knowledge about their bodies and the 'messing about down there' (Florence 1956) is also related to the good/bad women dichotomy. A modest and pure woman would not 'touch herself', only bad girls, saturated in sex, knew about their bodies. Taylor (1955: 2), a doctor working at family planning clinics, notes with surprise that although the women from the poorer social strata had little privacy and shared bedrooms and bathrooms:

'this early over-exposure to the intimate side of life produces the effect opposite to the one we might expect. These women grow up with an intense prudishness and shyness about all sexual matters and a much greater sense of guilt about sexual pleasure than her better-off sisters'.

Working class women, as I go on to show, were ambiguously positioned as being unable to control their own husbands, as engaging in more sex, and somewhat perversely, being more repressed than their middle class equivalents.

The pill may have helped to redefine the relations between knowledge of female biology and sexual morality. Dr Sylvia Dawkins (1987) suggested that family planning clinics gave women 'permission to know their anatomy and physiology'. This was, however, 'terrifying' to patients, since 'mother always said don't

touch. Here we were saying you must touch'. The pill removed knowledge of the body and in some sense withdrew the need for and the 'permission to touch her body'. Doctors working in postwar British family planning placed great importance on women knowing their own bodies. Premarital patients were not considered to be suitable pill candidates. A leaflet intended for lay workers in December 1961 outlines the reasons:

'It is questionable whether oral contraception will be the best method for those about to be married. Starting to use the pill might not be wise for a woman going abroad on her honeymoon. In any case there is a great value in teaching a woman about to be married to accept her genital organs and to help replace the phantasies about her own body with reality before marriage (CMAC: SA/FPA/A5/124).

As the medical profession became increasingly responsible for the distribution of the pill and the monitoring of women on the pill, doctors began to assume responsibility for proscribing a woman's sexual behaviour along with the prescribing of her pills. Women's sexuality was a hotly contested topic in the 1950s/1960s and there was a clear division between 'good' and 'bad' women. Interestingly, both these two groups were eligible as 'good' pill candidates, but for different reasons. This dichotomy was not simply an abstract notion by which women were defined, but directly impinged on women's bodies. The bodies of 'bad' women needed to be controlled: they embodied a power of fertility that threatened the aims and aspirations of many.

In the remaining part of this chapter I detail the woman on the pill who was thought to be in *need* of the pill. She is working class and/or black. I outlined in chapter 5 how the woman from developing countries was also constructed as in need of the pill. The following sections detail the woman on the pill in the UK and US. Like the Puerto Rican woman on the pill she is located ambiguously on a terrain of awareness crossed with exploitation: she desired an oral contraceptive pill, but how far was she aware of the potential hazards?

I begin, however, with a category that is not isolated, and indeed overlaps rather than overdetermines the other categories within which women in need were defined: the single woman. The debate that coalesced around her body reflects the deeply held beliefs about sexuality and morality. It also reveals the contradictory nature of the debate: some single girls needed the protection of the pill, others needed to be protected from it.

Single Women

One of the clearest divisions between good and bad women was that of marital status. 'Good' pill candidates were married. It was 'wives' who were sought for in advertisements in 1958 for the first trials of the pill¹⁰⁶. Moreover, women attending the family planning clinics in the UK had to be married, or prove that they were about to be married. Premarital patients were not seen less than six weeks, or even in some clinics, two weeks before their wedding. A certificate from the vicar, a printed invitation to the wedding, or in some cases an engagement ring, or even in exceptional circumstances, a receipt for a wedding cake was required before they were seen (Dawkins 1987) (although Pam Sheridan (1987) notes that London was more 'advanced' than other parts of the UK). As Hilary Thomas (1985: 49) points out, it was only in their role as mothers that women were able to call upon the medical profession for assistance.

It was felt, however, that any immoral use, even by those married, would be minuscule since the use of the pill was under strict medical supervision. A letter from Dr Mears (CMAC: SA/FPA/A5/161/2)¹⁰⁷ illustrates this sentiment, confirming the controlling nature of the medical/patient relationship: 'there is no question of our being responsible for their [the pills'] immoral use as only married people or those immediately pre-marital are given advice in our clinics. In any case since these pills are only available on medical prescription, renewed three-monthly - I think it is highly unlikely that they will ever be used extra-maritally to any great extent'¹⁰⁸.

Sex in the postwar period was sanctioned only within marriage. Women's magazines were a pervasive influence on the lives of young women in the 1950s. As Caryl Rivers notes (1991: 35):

'marriage, as the magazines presented it to me, was not simply a relationship with another person. It was a condition. Being Married. How to be Marriageable'.

106. The People, for example, called for 'A thousand wives for "no babies"' on August 24 1958.

107. From Miss Walter 23.7.63.

108. The pill was (and remains) available only on prescription. This control over access to the pill was challenged in 1976 (FPA 1976). A recent editorial in the Lancet (1993: 565) again raised the possibility that the pill could be taken off prescription. Interestingly, the Lancet article notes that for millions of (American) women who lack health insurance, getting a prescription is a way to enter the health care system.

And, to be sure, one way of not being marriageable for a woman was to admit to having had pre-marital sex. Pre-marital sex was strictly taboo in women's magazines (Ferguson 1983, White 1970). I illustrated in chapter six that sexual behaviour was 'contained', and yet, as Kinsey and other surveys indicated, single women were having heterosexual intercourse in large numbers. Nevertheless, single women were, in the 1950s, 'expected to be sexually inactive' (Spensky 1992). They were an embarrassing anomaly: a problem (Spensky 1992, Ehrenreich and English 1979: 258). Young (1954) cites numerous reasons for a woman's (dysfunctional) psychological development leading to an out-of-wedlock child. Young (1954: 36) concluded that a 'girl's wish to have a baby without a husband is neither an adult nor a normal desire'. Indeed, as late as 1977, it still 'made sense' for Busfield and Padon (1977: 119) to note that 'those who do not marry and have children tend to be seen as not properly female'.

Paradoxically, although the pill was aimed at married women wanting to plan their families, the rise of single pregnancy initiated a change of course. The single mothers became a prioritised group, thought to be in 'need' of birth control. They also became good pill candidates. Sexual habits were changing in the post war years. The single mother and the illegitimate child became the focus of an increasing amount of attention. Their presence, explicit evidence that birth control should perhaps not be limited to the married, generated a range of opinion, from outright castigation to empathy.

Nathanson (1991: 4) wrote: 'pregnancy makes sex visible; it converts private behaviour into public behaviour'. Consequently, sex that remains invisible, through the effective use of contraception for example, needs to be controlled. Single young women pose a particular threat and are often symbolised as forms of dangerous sexuality and managed and monitored within a moral-medical framework. Not only was sex invisible for single women in the 1950s and early 1960s, but so too was contraception. New fears began to emerge over the discreet and invisible nature of the pill. The diaphragm, condom and cap could all be seen and felt. The pill could be consumed alone and in secret. It produced a contracepted body that could not easily be detected by an ignorant partner.

The level of single pregnancy could hardly be a more visible signifier of women engaging in premarital heterosexual intercourse. Figures of venereal disease also exposed a steep rise in pre-marital/teenage sex. A report in *Time Magazine* (Anonymous 1961: 34) stated that 'venereal disease is spreading menacingly in

the US' with rates of syphilis doubling during the five year period of 1956-1961. Venereal disease was one of the few markers that signified a sexually active male body. Pregnancy, however, remained the key identifier that made heterosexual intercourse visible. Estimated abortion figures of one pregnancy in four as well as approximately 224,000 babies being born out of wedlock in 1960 in the US (Maloy and Patterson 1992: 54, Klemer 1954) offered irrefutable evidence of women and men engaging in premarital sex. Not only had the US illegitimacy rate tripled between 1940 and 1957 (Solinger 1992: 13) but the rates of births to adolescents shot up dramatically (Harari and Vinouskis 1993: 34). In the UK, Bransby and Elliot noted in 1959 that, excluding the war and immediate postwar years, the number of illegitimate births calculated per 1000 unmarried women of childbearing age was higher than at any time since the turn of the century (page 18). They also noted (Bransby and Elliot 1959: 17) a corresponding change in public attitudes towards illegitimacy.

Despite what appear to be sympathetic and progressive decisions from the Ministry of Health, British unmarried mothers in the 1950s were treated as the delinquents of gender relations. Up until the Second World War, unmarried motherhood was considered as being the result of the seduction of an over ardent girl, who was particularly weak in character, ignorant or mentally defective (Spensky 1992: 106). It is with no surprise, then, that even as late as 1969, Peel and Potts should caution their readers that it is misleading to imagine 'that every unmarried person [read woman] who seeks contraceptive advice may be emotionally disturbed'.

Solinger's (1990) work on the treatment and perception of single unwed mothers highlights the way fears over security were embedded in the bodies of women. Unmarried mothers were considered mentally ill, and frequently cited as evidence that family life had gone awry in the postwar years. Professional opinion focussed on the danger to the fabric of American life of those women who failed to readjust. Women who were not 'homeward bound' were thus considered sick. Single mothers of whatever race had no rights, and 'according to the dominant culture, [had] no right to be a mother' (Solinger 1992: 3). The treatment of unwed mothers reflected 'society's disapproval of women who violated female norms of sexual purity and obedience' (Solinger 1992: 148).

Solinger (1992) illustrates the mutability of motherhood with regard to race. She posits two histories of single pregnancy in postwar America: one for black women

and one for white. Racially distinct ideas about the value of the illegitimate baby infused policy decisions as well as exposing the plasticity of the social construction of 'unwed mothers' in the US (Solinger 1992: 3).

For the first time in American history white women were urged to give up their babies for adoption. Considered morally and mentally deficient, the product of a mentally defective mother, the 'child of sin' was unwanted. However, with non-marital sex increasing in the postwar years pregnancy became harder to punish. The white single mother became the symptom of a treatable neurosis. Just as she became transformed from a genetically tainted unfortunate into a maladjusted woman who could be cured, her child was reclassified accordingly. The innocence of the illegitimate child was restored and consequently its adoptability established. Rehabilitation of mother depended on the relinquishing of the child. For the first time it took more than a baby to make a white girl or woman into a mother: a white woman now needed to be married. Nationally by 1955, 90,000 babies born out of wedlock were adopted. The new postwar definition of a mother now appeared as one not achievable without a husband; yet even this new definition was racially specific (Solinger 1992: 16).

Black single mothers and their babies, however, still carried a moral taint, and were therefore considered to be unadoptable. They were depicted as an economic burden on the state, calculating and scheming in order to get more money from the state. Notions of black hypersexuality gained currency amongst policy makers as black single pregnancy appeared as unmediated, natural and biological, obliterating any historical and social contingencies of black childbearing (Solinger 1992: 4). It was soon observed by white professionals that women could obtain legitimacy within the black community without marriage. A black unwed mother was not 'redeemed' by relinquishing her child in the same manner a white mother was redeemed. Her behaviour, and her body, understood in terms of white culture, was seen as deviant and unstable. Black communities organised themselves to accommodate the single mother and child while the white community refused to do so and policies ignored the needs of the black community.

Motherhood - not so black and white

Black and white single mothers were therefore treated differently, as were their children. What was 'natural' for one was clearly deviant and unnatural for the other. Black and white reproduction meant, and continues to mean, different things. Nathanson's (1991: 45) comprehensive account of teenage pregnancy as a social problem in the US, highlights that:

'deviant sexuality was perceived as a white middle class problem, essentially divorced from reproduction ...[whilst] deviant reproduction was a black, lower class problem'.

The prevailing anti-natalist policy that emerged during the 1950s was racially specific. Black unwed mothers were increasingly cast as the 'triggering device affixed to the Population Bomb' (Solinger 1992: 206). Black women's bodies were targeted with what appeared to be the palliative pill¹⁰⁹.

The metaphor of the population bomb shifted concern from unrestrained sexuality to unwanted babies as single mothers, and black women in particular, became the 'key symbol of destructiveness. Men appeared to be relieved of responsibility as women and girls became bearers of social pathology and social breakdown' (Solinger 1992: 213).

As fertility became increasingly racialized, and black reproduction in particular was pathologised, contraception took on new associations. Debates over reproductive rights continue to be always already racialized. From concerns over race suicide to fears of overpopulation, race has been a principal actor in debates advocating and suppressing information about birth control. Not only were racialized notions of family planning important for the advocates of birth control, but birth control acquired a tainted label through its use in slavery, racism and eugenics.

Angela Davis (1990) argues that the difference between women hinges around the concept of 'choice'. Under conditions of slavery 'abortion and infanticides were acts of desperation, motivated not by the biological birth process but by the oppressive conditions of slavery. Most of these women, no doubt, would have expressed their deepest resentment had someone hailed their abortions as a

109. Note that by 1963 Guttmacher was arguing that the only way the fuse can be removed from the world 'population bomb' is by an injection once every several months, or by a single oral dose which will work its magic for year to come' (page 206).

stepping stone toward freedom'. The differential impact of birth control and population policies on black and white women hide racist fears and action. Birth control was never a value-free technology and for black women 'the rhetoric promoting their efficacy often had more in common with public justifications of sterilization of black women than it did with a discussion of reproductive rights' (Solinger 1992: 211).

Rodriq (1991), however, challenges the conventional interpretation of the dramatic decline in black fertility from the late nineteenth century to 1945 in the US. This decline is rarely attributed to contraceptive use. The analysis of birth rates of the black populations have frequently employed questionable and unfounded assumptions about sexuality and health. Rodriq argues that contrary to demographers' popular belief, the black population was well aware of contraception and abortion. The black population in the US was frequently excluded from many studies of fertility and only became the intense focus of social planners from 1960 onwards (McFalls and Masnick 1981: 90). The links between birth control and racial progress and equality have always been pertinent for both individuals and as a community and retrospective interpretations of the birth control movement as racist and elitist ignore any recognition that the 'black community had its own agenda in the creation of programs to include and reach wide segments of the black population'. Loretta Ross (1993: 146) is also keen to denounce the unidimensional perception that the birth control movement 'was thrust upon reluctant African-Americans by a population control establishment anxious to control Black fertility'. Not wanting to dismiss racism, Ross is reluctant to relegate African-American women to passive victims of medical, commercial and state policies of reproductive control. This debate illustrates the complexities of trying to categorize the pill as 'good' or 'bad', or as aiding and abetting either 'oppression' or 'liberation'.

Not only were black families reported to be increasing at a rate faster than white families (Littlewood 1977), but immigration was also heavily racialised in the 1950s. The context of the 1950s into which the woman on the pill emerged/evolved should not be seen as a backdrop to an emerging debate, but as central and in itself constitutive. In the US, race was a deeply politicised issue. The Brown ruling against segregationist education and schooling in 1954 and the Montgomery bus boycott in 1956 are two key events that typify the contested nature of racial discourse in the US. In the UK, political issues around race were

coalescing around the issue of immigration. The 1950s witnessed the 'race riots' of Nottingham, Notting Hill Gate and Camden.

The immigrant body that had once been so eligible for pill-testing soon became one that needed to be controlled. The Puerto Rican woman in New York and the West Indian in London required different treatment from the white woman. Their fertility needed to be controlled and contained.

As I outlined earlier, it was not a coincidence that Britain considered Jamaica for the first testing of the pill and that the US used Puerto Rico for their first large scale field trial. The immigration of Puerto Ricans to the US and West Indians to the UK punctuated debates on welfare and social/political/economic issues in the 1950s. Even Patterson's (1963) now classic study of West Indians in Brixton in 1955 makes analogies to Puerto Ricans in New York. Senior¹¹⁰ notes, as early as 1961, that a wave of exaggeration swept the newspaper headlines on the topic of Puerto Rican immigration to New York. Sensationalist headlines and inflated figures mixed with stereotypes of high delinquency rates and perpetuated prejudice and racism¹¹¹.

Although migration and race were contested issues, and areas of intense debate, long before large numbers of black colonial migrants entered postwar Britain the issue only became heavily racialised in the mid-late 1950s (Solomos 1989: 44). From 1952, the McCarran-Walter Act restricted migration to the United States of America (Miles and Phizacklea 1984: 138) and British companies (such as London Transport, British Hotels and Restaurant Association, National Health Service) began to recruit directly from the West Indies.

When the S.S. Empire Windrush arrived in Britain in June 1948 there was one woman out of the 494 West Indians on board. By 1953 women began arriving from the West Indies in equal numbers to men (Dodgson 1984: 61)¹¹². The gendered nature of immigration was both encouraged and any contradictions

110. Senior was the chief of the migration division, Department of Labor, Commonwealth of Puerto Rico, New York.

111. Senior (1961: 23) noted that references to Puerto Ricans in New York were often over inflated and exaggerated: 'the figure of 710,000 Puerto Ricans in New York City was used by another paper in 1948 (when the total was about 180,000) and a few years later, still another paper estimated 2 million Puerto Ricans in 1953, there were around 448,000 if 100,000 children born in New York City of Puerto Rican parentage were included'.

112. Dodgson (1984: 8) notes that in 1951 some 15,000 persons born in the West Indies were resident in the U.K. Of the total, 37% were women. The 1961 census return showed a total of 172,379 British West Indian born people residing in the UK. Of these 96,070 were male and 76,309 were female.

inherent in encouraging women to work were keenly suppressed. Despite the public acceptance of Bowlby's work, West Indian migrant women, many of whom were wives and mothers, were expected to work (Dodgson 1984: 37).

With a move that confirms the importance of racialized notions of femininity and sexuality, as well as highlighting the importance of immigrant labour, Brooks (1987) details the impetus behind the change of policy in seeing unmarried women:

'They [London Transport] er decided to er bring to London a whole lot of workers to run the er buses and the underground and all that sort of thing. For some reason or other we hadn't enough people then.¹¹³ And so they came crowding over and they had houses in Bayswater and - and um all over the place, and they brought with them you know women and who had left their children behind. Well in the West Indies you didn't get married and you - your mother, the grandmother brought up the families. So these women had their children there, they didn't have husbands. So the problem was how to give them - how to help them with family planning? ... saw Philip Rogers [at Colonial Office] and he then sent me off to across the road and to see the um High Commissioner for the West Indies, and we had a lot of talk about er as er the West Indian problems and ... the FPA in conjunction with the West Indian people it was allowed that we should see the West Indian women in our clinics, although they were not married, so long as they were in a stable relationship'.

The body of the contracepted woman is therefore saturated with notions of race and of sex as well as implicated in ideas surrounding purity and sexuality. Eugenic concerns surrounding the unchecked fertility of West Indian women may have prompted birth control advice being offered to unmarried West Indian women, and yet, both this example as well as the promotion of birth control to poor, working class women, carry implicit eugenic concerns, it should not be forgotten that women themselves were 'crying out' for birth control.

Black fertility exposed the shifting political attachments to the natural. For white commentators, West Indian women in Britain were clearly becoming more

113. Interestingly the debate about depopulation is not evident.

sophisticated, less natural, in their desire to restrict their childbearing¹¹⁴. In her study of West Indians to Brixton Patterson (1963: 292) notes that:

'some women - particularly those who have already borne more than one illegitimate child in this country, have actually gone so far as to ask almoners and welfare workers for information about birth control. Such a step reflects a great change in attitudes, in view of the almost universal desire for children felt by West Indians, and of the woman's usual view that child-bearing is her natural function and that any attempts at prevention are unnatural, unhealthy and wrong'.

The critical exposure of the sex lives of the West Indians in Britain reveals an explicitness that is quite uncharacteristic of other writings on the subject. White women's (and men's) sexual habits were not subject to interrogation in this manner. Black sexuality remained deviant and overdetermining: 'sexual intercourse remains, as it was in rural Jamaica, the main recreation for a large number of migrants' (Patterson 1963: 292).

Prevailing in the literature surrounding the success of the pill is its ability to penetrate communities that were hitherto unapproachable. The pill enabled population planners to reach people who had never been reached before. Mexican and Puerto Rican women became the target group for American population planners and birth controllers. Mary Calderone (1962: 7), medical director of Planned Parenthood Federation, reported that the pill was perceived to be the method that enabled access to that group:

'I think, for instance, of the more than 200 women in one of our centers, women of Mexican background, who speak very little English, who right from the beginning, came trooping in who come back every single month, faithfully, and plunk down their \$2, their very very hard earned dollars ... We could never have reached this group with any other method'.¹¹⁵

114. Interestingly, a West Indian woman with three small children is featured in the FPA film *Birthingright* (1959). She is 'sent' by the local authorities' because she wants to space her children.

115. In the US, the pill was initially priced at 50¢ or 55¢ each, which at one a day for 20 days meant that a month's supply of pills cost approximately \$10 a month. In February 1961, Searle cut its price by 30% and put on sale a 5 mg pill, making the net cost to the consumer \$3.50 -\$4 a month (Times Vol. 77 February 17 1961: 33). Moreover, the report in *Newsweek* announcing the arrival of the Pill cites Dr Ralph Smith, director of FDA's new drug branch, stating that the pill is 'cheaper than having a baby!' (*Newsweek* May 23, 1960: 107).

The other major group that had not been 'reached' before was lower class women. The pill was seen, by some, to be a way in.

The Working Class Woman

'It is likely that for the next ten years, different methods will have to be advocated for different classes of people'

Helena Wright (CMAC: SA/FPA/A5/154)¹¹⁶.

Poor, (and often assumed feckless), women also made 'good' pill candidates. It had been recognised (in reference to spermicides) that 'for the next 10 years, different methods will have to be advocated for different classes of people' (A5/154 24). Eugenic concerns were still rife, and the differential fertility rates of postwar British and American populations remained a preoccupation of social commentators. It became the particular duty of the women whose 'homes are ill-kept whose children are dirty and ragged and whose husbands find more order and decency in the pub than at home' to prevent pregnancy 'in the best interests of the nation' (Florence 1956). Motherhood remained tied to the health of the state, only now 'responsible parenthood' (Baird 1969: ix) became the watchword overlying the eugenic imperative.

The motivation of working class women was frequently questioned (Stocks 1957a: 7). The pill was seen as ideal therapy for women who were 'burdened by unreasonable consorts and who must always "be prepared"' and who refused, or whose husbands refused, to use contraceptives (DeCosta 1962: 125). Although their lives and health were deemed to be ruined by perpetual pregnancy, working class women were rarely accredited with a desire to limit their own families. Birth control was something that was provided, and not demanded. Referring to the lower classes Florence (1963) states:

'If they could swallow a simple pill once a month to prevent pregnancy they might just rise to that'.

116. Draft Programme for Discussion at CIFIC July 24 1958.

These women had to be helped. Indeed, it was found that women of the working classes did in fact 'rise' to take the pill, and they took it even better than women of the middle and upper classes. Sylvia Ponsonby¹¹⁷ (1987) confirms this view: 'once the pill arrived and the - the coil, working class people began coming to clinics. That was quite striking'.

Ponsonby goes on to recount the very first pill patient seen in the Battersea clinic in 1962. The day that the pill was going to be available in the clinic had been advertised in the local press and Sylvia Ponsonby found:

'a Roman Catholic priest standing outside the door with a woman who looked about fifty. And he said could he come in, so I took him in and he said that um, this member of his congregation had had 10 children and half of them only were still living that she had pneumonia every winter, that she'd got bad legs, that she'd deserted her family twice and please could she have the pill? It was very brave of him I think, a really courageous act of a priest, a Roman Catholic priest to bring one of his congregation to the clinic. And he left her with us and went away'.

This woman was a 'very good' pill patient, her eligibility being qualified by returning regularly and never 'failing'. Women were found to take (to) the pill with enthusiasm. Pincus (1965: 305) found that successful swallowing increased with poverty. Categorising women from 'dire poverty' to 'well-to-do' Pincus shows that the percentage drop out rate of the poorest was only 18.5% (out of 249 patients) and 50% amongst the wealthiest patients (out of a total of 20). Pincus concluded that the pill was an important and appropriate method of birth control for the poor. By 1963, the British Medical Journal (August 31, page 550) could happily report that although the pill was initially thought to be suitable only for 'intelligent conscientious women' many 'feckless' women who had been quite inconsistent with other contraceptive measures had 'never missed a tablet'.

As the pill became an increasingly suitable method for the working class woman, family planners went out to them. The work of Mary Peberdy was one of the first of the domiciliary enterprises and her work in Newcastle appears to have been influential in the family planning field. Peberdy's study started in January 1959 with patients who 'all belonged to the labouring or unemployed classes and had high parity rates¹¹⁸ and a high record of anti-social behaviour' (CMAC:

117. A volunteer in a London FPA clinic.

118. Parity rates refer to the number of children to which a woman has given birth.

SA/FPA/A5/158B)¹¹⁹. The pill was offered as an alternative to a rising burden on the welfare state. Peberdy argued that the 'cost of giving adequate contraceptive advice and supplies to even the worst of any of our families would never exceed £2 a month, allowing for supplies at retail cost and payment of staff at professional rates'. The worst of these families included a mother of 39 years with 17 children, and another 'where the mother is deaf and dumb and partially blind and has 4 children under 5, all living with her in one room. The man with whom she co-habits is unemployed' (CMAC: SA/FPA/A5/154).

Local authorities (eg. York, Newcastle, Wandsworth) were persuaded of the benefits of such a provision and sponsored a special team of a doctor and a nurse 'who would go round to women who were either too frightened to come to a clinic or poor things, were so overwhelmed by pregnancies and babies that they didn't organise going to a clinic next week, they couldn't organise going to the shops tomorrow' (Sheridan 1987). When the woman actually managed to attend the clinic, rather than be visited, she was regarded as a 'success'. As Sheridan notes, the pill had a revolutionary effect on the lives of these women:

'because for once in their lives they had control over their lives and their future and everything else, and they had a year, 2 years without a pregnancy and a baby to relax in ... Women who looked older than - than their own mothers really and after 2 years of freedom from unwanted births, and they'd come to the clinic, you'd hardly recognise them. Young, well dressed, sprightly happy, because their whole lives and their sex lives, everything had just changed completely. Well that was marvellous work'.

Dotted throughout the journal of the FPA are references to the class of the woman that attended the clinics. Numerous reports indicate that family planning was getting through to the working class woman. Sheridan (1987) notes however that women were not asked about their own wages, only the income of their husbands.

Ideas and practices of birth control are often understood to filter down the classes. By 1960 family limitation was no longer the prerogative of the middle and/or upper classes. Hannah Gavron (1980), however, highlighted the fact that family planning did not always mean the same thing. In her survey of young women

119. From a paper written by Eleanor Mears for a symposium at Middlesex Hospital Medical School 24 MArch 1964. Peberdy's study also recorded in a report on the Newcastle Project on May 4 1962 (CMAC: SA/FPA/A5/154).

with children in London, Gavron (1980: 70) recorded that although middle and working class women were using birth control, 'far fewer working class mothers regarded their families as planned, in fact 71% said they were not. They indicated that birth control would be used to prevent any more children once the required number had been reached'. Contraception was therefore used as a means of limiting rather than spacing births (Rowntree and Pierce 1961).

The sugar-coating on the pill was both a reward for the virtuous and a temptation to women who had not consistently used contraceptive measures. The pill could offer a solution to the 'menace' to human quality (Stocks 1957b: 61). It was offered during a period in which eugenic concerns were still prevalent and the ease with which a pill could be swallowed helped to alleviate fears that birth controllers predominated among the higher social classes.

Abortion

Diczfalusy (1978: 98) has suggested that the context in which the pill was being tested was one in which, by and large, facilities available for legal abortion were severely limited. Hence:

'contraceptive steroids had to be used in safe enough doses, that is in large excess, in order to minimize the occurrence of unwanted pregnancies ... It took almost 20 years to gradually diminish the dose and to realize that as little as 2-3% of the originally used steroid provided adequate protection'.

It seemed imperative to the researchers (and women) that abortion be avoided. It would not have been welcome for the pill to be associated with abortion.

The issue of abortion attracted media and public attention increasingly throughout the 1950s. Moving from a taboo topic to one of moral and social concern, abortion began to signify something both evil and preventable. Statistical estimates, such as 1.2 million abortions in the US in 1955 or one pregnancy in 4 (Calderone 1955) and 148 criminal abortions every day in the UK (Hodson 1957: 183), although assumed to be inaccurate, confirmed that abortion was an issue getting out of control.

Abortion, acknowledged to be consistently under-reported, was thus considered to be a 'grave social ill'. The deaths resulting from botched abortions were a

matter of increasing concern and, as early as 1945, a PEP report on Mothers and Children notes that some voluntary hospitals would not admit women with septic abortions (nor would they admit unmarried pregnant mothers). The PEP report on world population in 1954 addressed concerns over the 'wastage of infant life, maternal death and impaired fecundity'. It maintained that abortion in particular should be reduced through 'spreading knowledge of effective methods of contraception'. What seems worth pointing out now in the 1990s is that the woman undergoing an abortion in the 1950s was likely to have been married. It was wives in their numbers who were having abortions (Loudon 1992). Kinsey disclosed the shocking statistic that between one in 5 and one in 4 women who had ever been married had aborted a pregnancy, and that almost 90% of the premarital pregnancies were aborted.

As recently as 20 years ago, although abortion existed as a real private dilemma, as a public phenomenon it was of interest only to a few scattered reformers, theologians, and public health physicians. Until the late 1950s any debate about abortion was primarily a technical one among physicians (Luker 1984). This seems hard to believe given the level of public debate over the pro-life/ pro-choice issue in the final decades of the twentieth century. Abortion is (or rather has become) a loaded word. It evokes feelings about life, death, women's roles in society and population policy. It is interesting that 'on every level, to talk of abortion is to speak of power' (Smith-Rosenberg 1985: 217) and yet, the same is not popularly, nor politically, true for contraception. The moral distinction between contraception and abortion is a relatively recent one and has a specific legacy to early twentieth century birth controllers.

The body of the woman who had had an abortion was gradually, but persistently, held up as the counterpoint to the woman on the pill. One was clearly good, and the other bad. Abortion was held to be immoral and damaging for the health of the individual and the nation. And yet, such a dichotomy obscured the reality of women's lives in which abortion was merely one part of a continuum of reproductive choices (Gordon 1976). Both Gordon and McLaren (1990) note the propaganda-aiding conflation of abortion with contraception. In women's experience the continuity between the two techniques of birth control was real. In Woodside's (1963) revealing interview with 44 women, imprisoned for their role in performing illegal abortion on married women, she found that few held a distinction between 'bringing a period on' and 'destroying life'. These women, including grandmothers, used Higginson's syringe, which was a customary

possession in many working class homes and used for personal cleanliness and douching. This is not to say that women did not know the difference between douching and abortion, but that abortion did not carry the same symbolic weight that it does now.

The historical legacy of this strategic separation, between abortion and contraception, is bound up with the introduction of the medical profession into the field of birth control (see Petchesky 1986). Jensen (1981) has shown in her analysis of Sanger's early pamphlets on Family Limitation that feminist and socialist struggles are gradually deleted throughout the period 1914-1925 as responsibility for the prevention of pregnancy were shifted from women to (male) doctors. In conjunction with this shift to the right, abortion is no longer defended and was marked as 'bad'. The distinction between abortion and contraception not only allowed abortion to collect all the sinful and unnatural vestiges associated with birth control, but also enabled contraception to become the solution, the cure-all that would eradicate the need for abortion¹²⁰. The importance of this rhetorical and strategic distancing of contraception from abortion is also illustrated in Catholic writings on birth control. Monsignor Kelly (1964: 55), for example, warned his readers not to be 'deluded into separating contraception from sterilization of abortion'.

Although abortion was being labelled as an evil, Olasky (1988) notes, about the US, that within this categorisation there were 'good' and 'bad' abortionists. There were doctors and backstreet quacks who profited from others' misery and there were doctors who performed abortion through a sense of altruism. Abortion was not always 'bad'. The high number of maternal deaths as a result of abortion was shocking and in part, was responsible for the introduction of new legislation on abortion. Olasky (1988: 82) points out that the rapid reduction in maternal deaths as a result of the introduction of penicillin was 'missed in the press' and went unreported. The pro-abortion lobby was extraordinarily successful and the list of medical indications for abortion was broadened throughout the 1950s.

The acceptance of the contracepted body depended on the isolation of the aborted body as different and, importantly, as unnatural. In the next chapter I show how the contracepted body was naturalised. As Maloy and Patterson (1992: 15)

120. Indeed, Enovid was initially marketed as a therapeutic aid in the prevention of natural 'habitual and threatened abortion' (CMAC: SA/FPA/A1/7).

suggest, 'nothing defines what is natural so clearly as something that is not'. By countering the naturalised contracepted body of the woman on the pill with the 'unnatural' body of the woman having an abortion, I hope to show how that there is nothing inevitable about the un/naturalness of our bodies.

Summary

Throughout this chapter I have tried to argue that women were constructed as either appropriate or inappropriate candidates for the pill. In the 1950s the dichotomy of good and bad women was a powerful and pervasive notion that constrained many women's lives. I have tried to illustrate how this framing of women informed the selection of suitable pill candidates.

The women who were deemed in need of the pill, rather than deserving its reward, were regarded as mothers, both actual and potential. They entered the pill-world as 'mothers' rather than as workers, daughters, free sexual agents or as political actors. The context within which the women on the pill were positioned was predominantly heterosexual and was both liberating and oppressive. Women on the pill embodied a series of contradictions, and none more so than the 'bad' women in this chapter. The context within which working class, black, and single women were given the pill may be regarded as fuelled by suspect and objectionable motivations.

But it cannot be denied that women were desperately seeking control over their bodies in the form of birth control. The intention of the woman on the pill is rarely acknowledged and the notion of choice and self-determination is lacking. In 1958, Jackson asserted that even when a cheap, reliable and harmless pill was available, the problems of 'apathy' and 'an unbridled maternal impulse' would continue to hinder the motivation of women taking it (page 328). Women continued to be the product of outside forces, over which they had little control.

In the following chapter I outline the ways in which the pill was 'sold' to the general public and to health professionals. The pill, an unnatural artificial ingestion of synthetic hormones, was naturalised and successfully marketed around the world. I show how the redefinition of the natural female body was implicated in this process.

CHAPTER EIGHT

NATURAL BODIES

'I would hesitate to have myself hormonised.

I want to be myself, to remain what I am'

Dr Hertha Riese 1930.

The woman swallowing the pill chemically altered her body. The ingestion of powerful synthetic steroids disrupted the ovulatory cycle, and yet, through the deployment of rhetorical tropes of the 'natural', the body of the woman on the pill was legitimised and naturalised. How a pill, a product from a sterile laboratory, became so acceptable is a feat worth tracing. It is worth tracing because the exposure of nature as artifice undermines any ideological claims of correctness based on biology (e.g. woman's role and place in society). The active production of the natural body reminds us of the cultural and historical specificity within which nature must always be understood.

The promoters of the pill had to work hard to redefine the pill as 'natural'. It is this strategic turn that I focus on in this chapter in an attempt to trace the construction of a new 'natural' body of the woman on the pill. This chapter not only draws on the fictions that have run throughout this story of the making of the woman on the pill, but also confirms one of its overriding themes: the insistence on there being no naturally female body ready and waiting to take the pill.

Whilst it has become banal to declare that nature is a social construction, we are only just beginning to explore ways in which nature's contingency can be unwoven (after Latour and Haraway). Appropriating Harding's (1991: 12) discussion of nature, I cannot strip the woman on the pill bare to reveal her secrets for 'no matter how long the striptease continues or how rigorous its choreography, we will always find under each "veil" only [the woman]-as-conceptualised-within cultural projects; we will always (but not only) find more veils'. Both Haraway and Latour have employed the metaphor of onion layers to express the same point. There is nothing at the centre of an onion once the layers are removed. There is nothing beneath the veil, and as a corollary, there is no fundamental female body underneath the woman on the pill.

The natural remains one of the most important means of enrolling interested actors into a new arena. Nature continues to stand in for what is right and benign. Moreover, part of its potential to convince lies in the fact that it appears natural, normal and largely unassumed. The natural, by definition, does not stand out, but lies with ease in its context, hidden and unquestioned.

It is this hidden nature that ensures that its power is rarely spotted and only articulated with difficulty. Consequently, I have found it difficult to identify the ways in which the pill and the piller body have been naturalised. Once immersed in the literature, I easily lost sense of what was a 'constructed reality' and what simply 'was'. It was at those moments that I found Emily Martin's work useful. Martin (1987) documents the difficulty of recognising the contradictions of the culture with which you are familiar. Her work on the discourses and understandings of the body exposes the myths implicit in our language and the ideologies encoded and inscribed within our discourse. She recounts the 'sort of leaden disappointment that all those interviews [with women who were pregnant or who had recently given birth] had turned up views of the body that reflected no more than actual fact' (page 10). Realizing the difficulties of working in one own's society she notes her surprise on realizing:

'that statements about uterine contractions being involuntary are not brute, final, unquestionable facts but rather cultural organizations of experience ... The length of time it took me to make this shift stands as vivid testimony to how solidly entrenched our own cultural presuppositions are and how difficult it is to dig them up for inspection' (page 11).

The texts that I came across were often scientific and used a discourse that concealed culture and politics. Perhaps I was in a better position than others better versed in medical nomenclature and technical terms, for the ideas and vocabulary were largely unfamiliar and gave me the 'distance' with which to regard them anew. Nevertheless, I am embedded within a society that values and privileges scientific rationality (Woolgar 1988b: 86) and I am sure that some of the encoded and glaringly obvious examples of the way in which culture and politics are subsumed within a medical-scientific dialogue have continued to elude my readings of the texts.

In this, and other chapters, I have tried to indicate how the scientific and medical literature, as well as the more popular books and pamphlets on family planning and sex education, are full of assumptions about class, sex, race, sexuality and

gender. What continued to surprise me was how something as unnatural and as powerful as a chemical pill that was swallowed every day, could become so natural. Contraception, even of the most uninvasive type (e.g. rhythm method¹²¹) has, by its very definition, been upheld as unnatural: perverting the course of nature. Indeed, contraception was not only held to be sinful, but also harmful to the health of both men and women, precipitating diseases of the mind such as neurasthenia (see Lewis 1967). It was also deemed to be dangerous to the health of the body of both the individual and the state; condemned by the medical profession, the clergy, and the state as immoral (Symonds and Carder 1973: 20).

In spite of the pervasive promotion of contraception as unnatural, people have continued to use it. With the advent of the pill, birth control attained renewed respectability, and the promoters worked hard to redefine the pill, and the woman swallowing it as 'natural'. As Johnson (1977) importantly points out, the timing of the pill vis-à-vis the thalidomide tragedy should not be underestimated. The importance of the naturalness of the pill and its close relationship to the body's own hormones may have acquired greater emphasis after 1961, in an attempt to differentiate it from the 'artificial', and damaging, drug thalidomide.

The presentation of the pill as natural provides a fascinating opportunity in which the construction of the natural body can be explored. I outline how the drug companies and doctors promoted the pill in ways that emphasised and constituted a new naturalness of sex, reproduction, children and the body. Not all doctors were in favour of the pill, and the fears over its consumption were indeed played out in the pages of the medical press. Scientists, politicians, family planners, and doctors continued to be concerned over the safety of the pill. In particular, concern was voiced repeatedly over woman as mother and as bearer of the next generation. I remained surprised, however, at the muted level at which criticisms and fears about the pill remained. Opponents of the pill were unable to enrol supporters. However valid their objections to the pill were it appears the context was not conducive to success. As I have tried to illustrate throughout these chapters, the degree to which any idea or artefact such as the pill is accepted and promulgated depends on the context into which it is introduced. In the case of the pill, the timing appears to have been right for its success. The opponents were

121 In his address to Italian Midwives in October 1951 and in that to National Congress of the Family Front and the Association of Large Families in November, Pope Pius XII sanctioned that the rhythm method could be used as a method of contraception in serious cases. The dispute over contraception and birth control thus became one of method and not one of morals.

unable to play the new rules of the contraceptive game, now that the old Russian roulette style of birth control was over.

The drug companies promoted the pill as natural and their powerful marketing strategies were not without effects. Yet women's own experiences and knowledge of the pill continued to deviate from those promulgated by the pharmaceutical companies. Moreover, the effect of such rhetorical devices should not be overestimated, since many continued to regard the pill as thoroughly unnatural and powerful, while persisting with its consumption. The woman on the pill controlled her reproductive and sexual life, a freedom that had hitherto alluded thousands of women. Did women really need the increasingly sophisticated defences of the naturalness of the pill to persuade them to ingest it? As I have pointed out throughout, the woman on the pill was risking her life. Some women knew some of the risks that they were taking. Others did not. In many cases, women's desire for an effective contraceptive overrode their concern for safety. Indeed, such action demands a redefinition of 'safety': a definition that is dependent on context and contingencies.

A woman in the UK, India or Puerto Rico, swallowing the pill may have been risking her life. She put on large amounts of weight, felt nauseated, and depressed, and yet she continued to consume large quantities of synthetic hormones. I have not wanted to portray the woman on the pill as a helpless victim of male power and control, nor have I wanted to portray her as a hapless cultural dupe. The woman on the pill was not devoid of agency, but it is too easy and simplistic to suggest that increased knowledge about the hazards of the pill has a direct effect on swallowing patterns.

Kathy Davis' (1991) work on cosmetic surgery details the difficulties of theorising women's compliance in their own oppression:

'It is important to uncover how women reproduce cultural discourses of beauty and femininity while displaying awareness of the oppressiveness of these very same discourses' (page 35).

Her work offers unlikely, but ultimately useful, parallels for understanding the woman who (knowingly) swallowed a pill that could harm her. She argues that most feminist theory that deals with women's complicity in their own oppression denies women the possibility that their actions might be the 'best possible solution to their problem under the circumstances'. Or alternatively, Davis suggests that

other feminist approaches reinforce dualistic concepts of mind and body at the same time as cosmetic surgery becomes a 'strangely disembodied phenomenon, devoid of women's experiences'. Women on the pill are transforming their own bodies. I am not suggesting that they had, or have, full or adequate knowledge on which to base their decisions, nor that there were always feasible alternatives available, but what I want to put forward is that women's agency cannot be discounted; it cannot be written out.

The effectiveness and acceptability of the pill is reflected by the sharp contrast of references to it by its opponents and critics. Seaman and Seaman (1978: xi), for example, state in their preface that 'every woman who takes these products is walking around in an altered biochemical state' while Germaine Greer (1984: 144) talks of 'steroid munching'. Although women and their partners, as well as doctors and theologians, used information about the pill in different ways, the dominant message being promoted was of the pill as *natural*. In the following sections I explore how the pill was constructed as natural through a series of tropes. I hope to expose some of what usually remains hidden, unexposed, and 'natural'.

Pill as Copy of Natural

The pill induced the, hitherto unnatural, phenomenon of the cessation of ovulation. This artificially induced cessation of ovulation and the disruption of the menstrual cycle became redefined as analogous to a state corresponding to a 'normal accompaniment of pregnancy' (CMAC: SA/FPA/A5/161/3). Importantly, ova were 'suppressed', not 'eliminated' (DeCosta 1962:122). Searle (GDSA) declared that Enovid 'simulated' a state of early pregnancy 'except that there [was] no placenta or fetus'. The pill was deemed to be natural since it resembled a woman's own hormonal balance. Paralleling this logic, physicians were encouraged to treat it differently to other powerful drugs. Jaynes (1964: 512), supporting its use, notes that physicians who 'would not hesitate to use digitalis, strychnine, or morphine' were reluctant to prescribe the pill, although such drugs had 'no function in normal physiology'. One of the major critics of the pill, Barbara Seaman (1970: 69), suggested that it was dishonest to name the compounds that made up the pill 'hormones' claiming instead that they should have been given 'chemical names like they use in the petroleum industry'.

The pill became assimilated into a woman's natural rhythm, 'fooling' (Cherfas and Gribben 1984: 156) and 'deceiving' (Cooper and Smith 1984: 5) the body into thinking it is already pregnant, or 'misleading' a small gland into thinking that ovulation had occurred (CMAC: SA/FPA/A5/161/4). The pill appears as a cunning little device, its ingenuity lying in the hands and minds of the scientists, not in the marvels of the female body. In contrast, in her criticism of the pill, Grant (1986: 21) asserts that the 'pill causes medical castration' (see also Klopfer 1965). The phrase 'induced sterility' (eg. Katsh 1959: 246) is another that is found with decreasing occurrence as the body of the woman on the pill is increasingly promoted as natural. The degree to which the woman on the pill was naturalised is illustrated in the apparent alarmist statement from Monsignor George Kelly (1964: 55). He urged his readers 'not be deluded into separating contraception from sterilization or abortion and predicted that the use of contraception resulted in the 'elimination of the sick and the aged, for one follows the other as the night follows day'.

Dr John Rock continued to be a major protagonist and promoter of the pill and, because of his Catholicism, was an important player in the national and international contraceptive field. In a moral and religious justification of the pill, Rock (1963) argued that the pill induced a natural 'safe period' and thereby satisfied the same criteria as the rhythm method which, in turn, had been recently sanctioned by the church. Declaring that 'with the pill there isn't any ovum', Rock (1965: 142) goes on to ask, 'what possible immorality can there be in artificially limiting the output of these glands when it can be of no service anyway? No one objects to the prevention of the otherwise more useful but sometimes anaesthetic output of axillary sweat glands'.

The pill was held to merely 'duplicate' the secretion of progesterone, initiating a 'pill-established safe period' which carried the same moral implications. Subverting the 'biological', Rock contended that the pill allowed ova to be 'conserved' rather than allowing them to mature 'to a condition where they must die if they are not fertilised'. The ova were said to rest in the ovary, or even be 'put to rest' (GDSA)¹²². Rock (1965) was keen to insist upon 'resting' ova, which were conserved until the right time when nature could call them forth on cessation of medication. Interestingly, Rock's argument rested on the importance of the woman using her intelligence to control her own reproduction, and so it is not surprising that we find Searle assuring women that 'if at any time, you wish

122. 'How to Keep Well' by T. van Dellen reprinted in The Searleman.

your ovaries to again produce ova, it is only necessary to stop taking the tablets' (Searle 1961). Women could stop and start their biological clock.

The Naturalisation of Side Effects

The side effects were said to be analogous to those experienced in pregnancy, and the state of pill-induced anovulation was named 'psuedo-pregnancy' or even 'mini-pregnancy' (IPPF 1979). Not only were gastro-intestinal disturbances said to resemble the morning sickness of pregnancy (Nelson 1963b: 243) but premenstrual tension, dysmenorrhea, and other *naturally* occurring side effects of the menstrual cycle could now to be relieved by the ingestion of the pill (emphasis added) (British Medical Journal 1963: 550).

By 1966 an FDA report acknowledged that no drug was free of risk, and concluded that 'most of the adverse effects of the pill occur naturally'. What is meant by safe is highly contingent on whose terms it is being decided. For the woman swallowing the pill, 'safe' could mean free from conception or free from side effects including potentially fatal ones. 'Safe' for the family planning associations could imply a careful selection of women, thereby preventing false accusations being made. It could mean safety from passing damaging effects in to the next generation. Safety for the doctors and scientists supplying the pill may mean the selection of a good pill candidate so that she does not forget to take the pill. The notion of safety and efficacy is not fixed. Bodewitz et al (1990) note that curiously the contraceptive pill is 'described by Spanish Pharmacopoeia as effective in regulating menstrual cycles, but as having the serious side effect of preventing pregnancy'. They suggest that 'rather than science defining how trust in medicines is to be achieved' the existing social system determines the way in which medical technology such as contraception is assessed. The assessment of risk and safety of the pill was frequently (if erroneously) discussed in terms of pregnancy. Risk of death during pregnancy and childbirth was held to be far higher than that of risk of swallowing a pill and the side effects of pregnancy were categorised as ranging from nausea to death (Djerassi 1969: 470). In later analyses, and as the maternal death rate dropped drastically, other indices were used such as risk of dying from cancer, or from a motor accident (CMAC: SA/FPA/A5/160/2).

Natural Menstruation

The most visible and noticeable outward sign of the ingestion of the pill on a woman's reproductive biology is the change in the menstrual cycle. Menstruation, particularly its regularity, has been important in defining female health. Historically, menstruation has been associated with a woman's place in society, her roles and her behaviour (see Ussher 1989, Laws 1990). The conflation of the natural and the normal is not restricted to misogynist discourses. The natural has been drawn upon as a reserve by feminists wanting to reclaim menstruation. Emily Culpepper (1979: 136) attempted to articulate an alternative vision of female biology. She starts off her chapter on menstruation within a feminist biological framework with the statement that 'menstruation is a normal, frequent occurrence for nearly one half of most women's lives, and menopause marks its equally normal cessation'. She goes on to document all the cultural taboos associated with menstruation, but she also legitimises and accentuates the need to ground her belief in the natural. Susan Bell (1994) rewrites her own earlier work in *Our Bodies Ourselves* and redefines menstruation in an interesting reworking of women's natural cycles. Menstruation becomes in this case a mark of success in preventing pregnancy.

But, menstruation does not simply exist as a natural, biological function common to, and defining, femaleness. I illustrated earlier, in chapter two, that, at times, menstruation was thought to occur in both sexes. It is not a reproductive function with a fixed meaning. Rather, it is continually invested with a host of shifting meanings which confound any attempts to attribute the biological with essence. Located on the borders of the unnatural/natural, menstruation may act as a highlighter of cultural trends and can be used to illustrate how the rhetoric of the natural is employed in contexts of legitimation. It is for this reason that the discourse surrounding the modification of the menstrual cycle by the pill offers opportunities for investigating not only how menstruation was perceived in the 1960s, but also ways of understanding how a new cycle, or even the possibility of no cycle, was naturalised.

Although the complexities of female (and male) reproductive biology eluded the doctors and scientists of the period, a 'healthy' woman was deemed to be one with a natural, regular menstrual cycle of 28 days. In order to legitimise the pill, and its subsequent 'artificial' cycles, menstrual periods themselves became unnatural in what appears as a remarkable twist of naturalising logic. Periods became 'not what nature intended' (Guillebaud 1980: 37).

With the introduction of the pill, the natural female state became one in which menstruation was suspended for long periods of time. The natural body, as opposed to the 'civilised' body, became analogous to a natural state in which periods were suspended as a result of prolonged pregnancy and lactation. The natural female body thus became one in which periods were not eliminated, merely absent. This absence could be enforced through application of the pill or induced through pregnancy. In response to a letter to the BMJ by Arthur Hill (1962) protesting about the 'interference' with normal physiology by a 'biochemical trick', Farber (1962) argued that since 'primitive' women never experienced a 'normal' rhythmic cycle of ovulation, doctors were simply 'correct[ing] a civilization-induced aberration from normal physiology' through the administration of a continuous course of progestational steroids.

Searle (GDSA) clearly had difficulties in deciding what was normal and what was not. In a question and answer style leaflet for patients in which normality is clearly defined *for* women, Searle writes:

Q: Do women menstruate normally while they are taking the pills?

A: Doctors may not agree whether the menstruation is "normal" since it is brought about by the pills instead of by your own gland products. However, it is normal as far as you are concerned. Some women have a somewhat lesser flow and a few have a greater flow while they are taking the pills'.

What remains interesting is the continued insistence of the withdrawal bleed, or what many women understand to be their menstrual period.

Vance (1961: 302) suggested that although 'women for ages have spoken of their period of menstruation as a curse', when women were actually being offered the possibility of eliminating menstrual periods many were unhappy at the prospect:

'they feel a strong emotional need for the monthly purging ... for many women it seems important to their sense of well-being'.

Writing in 1984, Cooper and Smith remain confused by the persistence of this routine of monthly bleeding state and suggest that 'if we could be offered a complete absence of periods ... we are sure that any woman would jump at the chance and be glad to be free from the monthly bleed' (page 18). Nevertheless, as I indicated in chapter five, even from the initial trials with Pincus and Rock,

women who failed to have any form of menstrual bleed became upset and became concerned that they were pregnant. The regimen was modified so that 'normal' menstruation was mimicked, thereby confirming that a woman was normal. This adaptation also confirmed that a woman's natural role is one of reproduction and childbearing. Hormonal withdrawal bleeding became a device which helped confirm that a woman was not pregnant and reassured her about her future fertility (Peel and Potts 1969: 103). In order to countenance rumour and superstition, 'country women' in Puerto Rican trials were forewarned that the decrease in menstruation was not a result of pills destroying the blood (Satterthwaite and Gamble 1962: 801).

Whatever was deemed to be 'natural' in terms of the presence/absence of menstrual cycles, the importance of regularity was never questioned. A legacy of Victorian attitudes, irregular periods and menstrual disorders were held to be pathological. One of the first advertised uses of the pill, in 1957, was for the 'adjustment of the menses'. The regularity of the menses remained an important aspect of the pill-induced cycle. In an explicit avowal of this, an advertisement for Serial 35 (CMAC: PP/RJH/A1/5) clearly demonstrates the linkages between a woman's regular menstrual cycle and her health:

'There is some connection between a young woman's nature - soma and psyche - and the hormonal pattern of her normal menstrual cycle. It is certainly difficult to imagine a healthy young woman being completely herself when her cycle does not follow the normal pattern. Consequently, many doctors believe that effective oral contraception should not be at the expense of the young woman's characteristic cycle - not if she is to remain herself'.

The woman's behaviour and mental and physical health is clearly dependent on her menstrual health. Regularity is essential for good health. The pill was quickly marketed as a reguliser of periods. Irregular periods 'get in the way', but what, it must be asked, do they get in the way of? The advertisement for Norlestrin (CMAC: PP/RJH/A7/5) suggests that irregular periods get in the way of the family:

'Many women have a regular and orderly existence. The pattern of their lives is governed by the demand of their families - meal times, domestic chores, shopping, to name a few. A woman's biological rhythm is not always so regular or orderly. It may be interrupted by irregular hormonal control or pregnancy'.

By 1960 it had become possible for patients to take 'time out' from 'catamenial inconvenience'. The pill allowed women to postpone their menstrual period for 'special social, business or professional events' as well as 'other times, such as weddings' in which 'delaying the period may prevent serious mental distress' (Searle 1960). By 1965 Maisel (page 193) was declaring that medical and social reasons for postponement included avoiding 'an enforced postponement of the date of a marriage; in instances where vacations would otherwise be marred, to permit girl athletes to participate, theatrical performers, opera singers, and ballet dancers'. Guttmacher (A. 1963: 203) was also advising women who wanted to enjoy their honeymoon, vacation or athletic event to take two tablets a day. By 1977 research findings found that although some women still found the absence or unexpected presence of menstruation abnormal and alarming, many women welcomed the 'opportunity to manipulate their menstrual patterns' (Loudon et al 1977: 489).

The 'companionate marriage' (outlined in a later section), although firmly inside the separate but equal line of sexual equality, encouraged a new ethos of 'togetherness'. The husband and the wife were now seen to both be enjoying and participating in family activities. Advertisements for the pill clearly demarcate a family arena in which the woman on the pill 'can plan with certainty and join in the family's weekend leisure activities without any of the constraints that her period brings' (CMAC: PP/RJH A10/1).

Natural Sex

The contracepted body was therefore naturalised and the woman on the pill helped to redefine what made a 'natural' sexual relationship. Not only was non-reproductive sex defined as natural, but spontaneous non-reproductive sex was skilfully and swiftly (re)created as naturalness itself. Spontaneity, available with the use of the pill, as opposed to the diaphragm, soon began appearing as synonymous with nature: 'it is the only really aesthetic method because it permits completely *natural* intercourse' (emphasis added, Bishop 1962: 51). The woman on the pill was thus constructed as sexually active and sexually available. Whilst the pill did indeed 'liberate' many women from the fear of pregnancy, the notion of natural, spontaneous sex was clearly defined by pharmaceutical companies and family planners.

A natural sexual relationship became predicated on (uninterrupted) enjoyment, rather than on procreation, as passion was 'no longer dampened by messy fumbling' (Reed 1978: 311). As the advertisement addressed to married women for Volidan implied:

'Once the Volidan habit becomes routine, you and your husband are free to enjoy a completely *natural* sexual relationship at any time without having to worry about unwanted pregnancy. In this way Volidan makes a definite contribution to happy married life' (emphasis added) (CMAC: PP/RJH/A1/7).

The oral contraceptive pill increased the mental and physical well-being of both the wife and her husband and so aided marital happiness. The pill was swiftly incorporated into a medical definition of natural sexuality. As the companionate marriage, complete with sexual satisfaction for both partners, became increasingly idealized and viewed as normative, non-reproductive heterosexual sex became naturalised. Moreover, a good sexual relationship (strictly between husband and wife) became premised on the ability to control reproduction. How, it was argued, could a woman enjoy sex when she feared pregnancy? As Jaquetta Hawkes (1957) suggested, the 'new successful marriage' was 'supported on a foundation of renewed bodily love without fear of endless childbearing'.

Marriage as Natural State

Another manner in which the woman on the pill was constructed as natural was through her role in the family. The pill was upheld as the saviour of a happy marriage. The pill gave a couple 'Marital Confidence' (CMAC: PP/RJH/A6/2). Not only did it allow for 'natural', spontaneous sexual relations, but it also improved harmony between a husband and wife. Even the language employed to describe the pill is one of familial relations with the synthetic steroid becoming a 'close relative', or 'cousin' (Time February 17 1961: 33) of the natural hormone progesterone, with subsequent 'generations' of pills following on from the first.

In 1949, the Royal Commission of Population recommended that contraceptive advice should be available to married women. The importance of the sexual relationship within marriage won general approval and the 'companionate' marriage was accepted as an ideal. The new ethic of companionship and togetherness first captured by Ben Lindsay reflected a class-bound conception of compatibility and egalitarianism (D'Emilio and Freedman 1988: 265).

In Lindsay's (Lindsay and Evans 1928) candid book companionate marriage was offered to the Americans as legal marriage, with legalized birth control, and with the right to divorce by mutual consent for childless couples, usually without payment of alimony. A couple could progress from companionate to family (procreative) marriage. Access to contraceptive information was one of the cornerstones of companionate marriage, indeed, Lindsay (Lindsay and Evans 1928: 242) stated clearly that he knew 'of no worse tyranny than a censorship on [birth control] knowledge'. In Britain, although promoted in the interwar years by Marie Stopes, the notion of companionate marriage did not really take hold in the nation's consciousness until the Fifties. The shift from marriage as an institution to marriage as a companionate, sexually satisfying partnership is closely allied with shifts in pro-natalist ideology (Hall L. 1991). Fears over the declining birth rate promoted moves towards improving material conditions of motherhood in order to promote it (Finch and Summerfield 1991).

Marital happiness was seen to be dependent on sexual pleasure, and it was acknowledged that fears of pregnancy affected a woman's sexual pleasure. Contraception and family planning thus became central to concerns over marital stability as planning became strangely naturalised (Finch and Summerfield 1991). Birth control, and later, the pill in particular, were marketed as objects that could inspire and improve marital confidence. According to the promotion, the pill brought peace of mind and better physical and mental well-being (CMAC: PP/RJH A6/1) as well as a 'better-adjusted home life' (CMAC: PP/RJH A4/2).

Companionate marriage occupied an elevated role in creating a stable society. Contraception and family planning were slowly envisioned as a means of improving and consolidating marital relations in the postwar years. Divorce and marital breakdowns had reached a postwar peak in 1951, (with a Royal Commission on Divorce set up to investigate) and concern was rife over the future of marriage (McGregor 1957).

Sheila Jeffreys' (1990) review of the sexology literature of the 1950s attempts to show how sexual prescription (what and how a woman should be enjoying/performing sex) was employed in contexts of legitimation - the legitimation of subordinate yet complementary roles for women. A woman's (hetero)sexual role in the late 1950s was explicitly tied to gender norms; norms that Butler terms 'regulatory fictions'. The woman on the pill was constituted amidst the

renegotiation of heterosexuality, race and gender as new patterns of female sexuality and sexual needs emerged. Sexual equality was premised on different, but 'equal' roles for men and women. Women and men were said to have entirely different roles in society because they were held to be physically and mentally different.

Equality for women was redefined as equality of sexual enjoyment between the sexes. Marriage manuals of the decade shared a basic assumption: that sex is the cornerstone of a happy marriage. Failure in this area was therefore no private affair, but deemed to be an important national and public problem. Sexual inadequacy became constituted as a threat to social order (Eisler 1986: 143). Hall (L. 1991: 82), however, criticises Jeffreys' account of the use of orgasmic marital sex to bind woman back into conventional domesticity. Instead, she argues that 'there were far more plausible reasons than the brainwashing by sex-manuals for the increasing numbers of women marrying even when they could be out earning their own livings'; women, as I hope I illustrated in previous chapters, were not cultural dupes.

After the war women felt they had a right to sexual fulfilment as well as employment. A more explicit attitude to sex may have evolved as a result of the government and services campaigns against eg. venereal disease (Haste 1992: 138). Wilson (1980: 84) also argues that women not only wanted a more active sexuality, they also wanted glamour. The 'New Look' propounded a femininity in which 'sex appeal and work had to be combined and the divisions between "tart" and "nice" women and those between the celibate career woman and the little wife broke down'. Women's equality was redefined in terms of complementarity and companionship. Emancipation became increasingly related to moral decay. In 1956, the Report of the Morton Commission on Marriage and Divorce¹²³ stated firmly that the emancipation of women had been the major cause of new stresses in the home, and that an 'over-emphasis' on a satisfying sexual relationship in marriage had resulted in a 'tendency to take the duties and responsibilities of marriage less seriously than formerly' (cited in Wilson 1980: 72).

123. The Commission, appointed in 1951, can be understood as a product of postwar anxieties about the family (Lewis 1992: 50).

Family Treatments

The family and marriage were a constant source of concern in the postwar years despite their popularity. Divorce rates were high and dysfunctional families with their juvenile delinquents and extra-marital affairs frequently made media headlines. The answer seemed to lie with treating the woman. She was the ballast anchoring the family to the home and the hearth. The pill provided one such treatment. When I first read the following advertisement for Prevision (CMAC: PP/RJH/A9/1) I was struck by the image of the woman that it was trying to construct:

These are the women who already have children, but fear another pregnancy. This insidious fear can undermine the patient's confidence, building up resentment between herself and her husband and sometimes denying her children the patient, resourceful attention they need ... For women who live in fear of an unwanted pregnancy PREVISION offers a truly complete treatment. By a simple routine the woman gains absolute assurance of protection from pregnancy. The source of tension and anxiety is therefore removed completely and for as long as she wishes. Aesthetically ideal, since the treatment is disassociated in time from the act of intercourse, PREVISION generates confidence and provides a reliable basis for spaced pregnancy. PREVISION, by removing the basic cause of fear treats the whole patient'.

The woman on the pill is firmly located within a medical framework. Her body is medicalised and offers a body that can be 'treated'. The varying contradictions embodied by the woman on the pill, and the themes that I have drawn out in previous chapters, are also clearly exhibited within this one quote. Her body is both naturalised *and* planned. She can plan her pregnancies and prevent an unwanted child. Interestingly, this woman has a family already and thus appears to be using the pill to prevent further conception, although as the advertisement notes, the woman on the pill is 'spacing' pregnancies. She is naturalised and the ease and aesthetic idealization of her body are clearly apparent.

The advertisement was aimed at the general practitioner¹²⁴ and described a woman who resonated strongly with a woman that could have walked straight out of Betty Friedan's (1963) classic book *The Feminine Mystique*. Friedan's description of women's lives struck a chord with many American women, and gave a voice to

124. Most of the promotional literature produced was aimed at doctors. A different type of information was made available to women later through patient package inserts.

'the problem with no name'. A problem that lay 'buried unspoken for many years in the minds of American women. It was a strange stirring, a sense of dissatisfaction, a yearning that women suffered in the middle of the twentieth century in the United States' (Friedan 1963: 13). This woman is also captured (in the UK) in Hannah Gavron's (1980) *Captive Wife* that I mentioned in the previous chapter. Ironically, the woman described here seems to epitomise the experience of the 'problem with no name' so accurately identified by Betty Friedan in her bestseller. The woman depicted in this advertisement, presenting herself at the (male) doctor's surgery, could hardly provide a better description of this problem. She is suffering from a 'mountain of vague complaints' which 'may reveal no more than a generalized discontent, a failure to meet life as it is'. For this woman there appears to be no quick technical fix for the doctor to prescribe¹²⁵. There was, however, one group of women for whom the doctor could restore happiness. Family stability is ensured through the 'treatment' of the whole woman as her body becomes clearly medicalised. She emerges a free, happy woman, able to cope with family life, and devote her time to her children and husband.

Contraception here appears as a tech-fix for a range of individual and social ills. Note, however, that the woman on the pill is not an active social agent. She is not understood to be free, in terms of her own reproductive ability, in control of her body. Rather, she 'gains' protection as the 'source of tension and anxiety' is 'removed' from her body. Interestingly, Rock (1963: 122) emphasises the agency of the woman. With the benefit of science, 'in a perfectly natural way she would, by virtue of her intellect and available agent, "regularize" nature, to the benefit of her marriage and her family, much as the "pills" do by a reverse process'.

Redefining Pregnancy

The pill undoubtedly aided the development and acceptance of a body that was 'available' for the pleasures of sex without the risk of conception. Yet, what remained natural for a white woman in the late 1950s and early 1960s was most definitely one of fulfilling her role as mother. Motherhood remained a mainstay of

125. During this same period, tranquillisers were developed and prescribed for thousands of Western women. Coontz (1992: 36) notes that physicians identified tranquillisers as an explicitly female need. The swiftness with which physicians latched onto this particular tech-fix is reflected in the market sales. From a virtually nonexistent consumption in 1955, tranquilliser consumption reached '£462,000 in 1958 and soared to £1.15 million merely a year later'.

contemporary doctrine, and women who either could not, or did not, have children were pitied and regarded as deviant. How, then, was a pill that enabled a woman not to have children accepted?

Whilst the body of the woman on the pill was capable of enjoying non-reproductive sex, this is not to understand it as acceptable for her to forego childbearing (unless, of course, for eugenic or health reasons). As I illustrated in chapter six, the pill was not for women who wanted to opt out of motherhood. It was for those who had had children, or were wanting to wait. It was for those who wanted to plan their families. The pill was also given to women who were having difficulty conceiving. The pill, by adjusting menstrual disorders, appeared to boost idiopathic infertility. It was not intended as a means with which women could abdicate by choice from the responsibility of motherhood. As Barnes (K. 1962: 53-4) reminded 'boys and young men':

'A normal girl who has not been wrongly stirred up physically, or has not been involved in too much excitement in a trivial-minded group, will closely relate the act of making love with the possibility - a delightful one to her - of having a baby. Do men think this way? No ... In a sense, sex is a woman's whole life. Often in marriage a woman's whole life is adjusted to her husband, his needs, and the thought of a family. Seen in this pattern, the sex act is not for her something that has a definite beginning and an end; it is continuous with her whole activity; it links up with everything she does in the home; the pleasure she takes in it is one with the activities of the rest of her day. But for the man it can be, and usually is, an incident. The impulse takes him and is gratified; he can quickly switch his thought from it to something else within a few minutes, sexual activity is something he can fit in between having his supper and going to sleep, between tinkering with the car and arguing about politics. In spite of the obsessive way men often seem to talk about sex, it plays a far smaller part in their lives than it does in the lives of women'.

Once again women are dominated by their sex in a way that men are not: sex continues to be destiny. In this case it is because sex is linked to motherhood. A woman's role as wife and mother remains tied to her sexual self. Again, a man's body remains unproblematised. The role of sex in determining maleness and masculinity in the lives of men in the 1950s/1960s should not be underestimated. Men 'do' their gender in an analogous way to women. They are subject to different rules of performance, but sex is undoubtedly one of the more pervasive

and influential factors, and its rules are no less compulsory than femininity or femaleness.

The apparent paradox embodied by the woman on the pill never really surfaced as a contradiction. The simultaneous production of two opposing, but natural, bodies, (the impregnable and the unimpregnable), appeared to be easily reconcilable within a culture that was rapidly adapting to new socio-economic demands. The woman on the pill was, as I also illustrated in chapter six, a *good* woman who wanted children, at the right time and place, and in the right number. Moreover, the contracepted body affirmed the potential for reproduction. Contained within a pro-natalist (though not consistent) socio-cultural setting, the body of the woman on the pill did nothing to challenge it. The planned body of the woman on the pill, whose reproductive potential needed to be curbed, could also be defined as natural. This ambivalent status accorded to the natural woman on the pill is embodied in a statement made by Rainwater (1960: 166). He writes that:

'given the personalities of many lower-lower class women and the difficulties they have in consistently planning and following routine, that do not seem "natural" it is unlikely that many of them would be successful in following the regimen necessary if the method is to be effective ... while clinics that provide new patients with support and encouragement in using such a technique may succeed in imbuing them with a sense of regularity, it seems likely that when the pill is sold more causally and routinely, working class women will backslide fairly quickly'.

Rainwater went on to add that he advocated a monthly, rather than a daily pill since 'these people find it difficult to plan consistently or to follow routines that do not seem 'natural' (page 177). The natural woman has no fixed meaning, and even with a specific construction of the woman on the pill, the meanings of the natural are highly mobile and capable of adopting overlapping, and contradictory meanings.

Haraway refuses to reduce nature, but recognises the contradictions in her statements. In an interview she (1990) argues that we have to accept two, simultaneous, apparently incompatible truths. Nature, she argues is both historically contingent as well as having an inescapable material, reality. Haraway (1992a) goes on to note that despite its legacy as Other, in the 'histories of colonialism, racism, sexism and class domination', nature continues to be

'something which we cannot do without, but can never "have"'. Finding common ground with Bruno Latour, Haraway goes on to suggest that we still 'need' nature, but that instead of reifying, possessing and appropriating it, as well as investing nostalgically in it, we need to build a new relationship to it: to find a place from which to build culture.

The pill endorsed the contracepted body as well as the pregnant body. Both the temporarily infertile woman on the pill as well as the childbearing woman were naturalised. It sounds almost nonsensical to suggest that we have naturalised pregnancy because, quite simply, it *is* natural. It is at junctures like this where one encounters such 'commonsense' notions like pregnancy being natural that it is often difficult to stand back and see the facts as 'themselves in need of explanation' (Martin 1987: 10).

Instead of understanding it as a culturally defined linguistic category, pregnancy becomes something that simply *is*. As I noted in chapter two, that while it is often accepted that the meaning of pregnancy and childbirth is socially defined, we persist in the perception that there remains a biological base of truth over which the social lies (Treichler 1990: 117). This is an important point which deserves greater interrogation than it has currently received. I have been arguing throughout the thesis that there is no pre-social, natural body on which culture, or the pill, goes to work. Rather, it is about the relationship between representation and experience, and whether something as physical, and supposedly universal, as pregnancy, or contraception, could be understood and experienced differently (see Duden 1993).

Pregnancy and conception can be denaturalised. How often are pregnancy mortality statistics described as natural, or described as a disease requiring medical treatment? How often are 'virgin births' or donated ova said to be natural? There is a politics behind the nomenclature of the natural. I am arguing that the making of the woman on the pill provided one moment in which the naturalness of pregnancy was contested. As late as 1965 Searle (GDSA) were clearly having difficulties in defining what was natural. Forced into using contradictory language, Searle suggests that pregnancy should be 'excluded as not entirely "normal"'. Seccombe (1992: 80) points out that medical discourse made it increasingly difficult to regard the maladies associated with childbirth as natural. Indeed, the entry of the pill into the medical arena further accentuated the division between what was natural and what was not.

Redefining pregnancy as an abnormal state is, however, not a notion that has achieved much credibility. Instead, the unquestioning acceptance of pregnancy as 'normal' remains insidious and penetrating within our society. Childlessness continues to be considered deviant with infertile wives describing themselves as not only having imperfect bodies but also 'spoiled identities' (Greil 1991: 53). Pregnancy remained at the heart of definitions of femininity and femaleness, but the notion that women did not 'need' to be mothers at all times and all places began to spread. Suzanne Mackenzie (1989: 65), for example, found that for some women in the postwar period fertility and birth were no longer seen as wholly 'natural' processes but as a 'part of their lives which, like other aspects, could be planned and which had to be "fitted in"'. This was a novel way of conceiving pregnancy.

The idea that one could be a woman and not be a mother continues to jar in contemporary western culture, especially if the woman is married. Of course, being a woman and being a person with the biological capacity to bear children is not the same thing (Mackenzie S. 1989: 65). In the 1950s-1960s, not all women were mothers, but they were expected to be, and it was the norm (as indicated in earlier sections on infertility and babyboom). Childbirth is more than a biological event in women's lives, and being a mother has been historically and culturally linked to the social definition of womanhood (Leavitt 1986: 14).

As Eisenstein (1988: 80) has suggested a 'woman's "potentially" pregnant body is significant in defining her as a woman *qua* mother in a patriarchal and phallocratic society'. And although this does not define her completely, it grounds and centres many discourses and subject positionings within which a woman is situated. Strathern (1992: 28) also notes that 'the concept of heterosexuality is sustained by a specific gender imagery which classifies a mother's body as axiomatically female'. Giminez (1980) suggests that feminist critiques and demands for the right of women to control their bodies have not provided opportunities for women to opt out of motherhood altogether¹²⁶. The provision of the pill falls neatly into such an ideology. The pill was never meant to enable women to opt completely out of motherhood. Lindsey (1980: 248) highlights this through her assessment of women wanting sterilization. She argues that abortion and other forms of contraception still allow room for the myth of woman's destiny, whereas

126. Although ironically, perhaps more so then, with stronger eugenic beliefs about who should qualify as a fit parent.

sterilization of the childless woman is about birth prevention, not birth control: 'childless women who opt for sterilization are making it clear that they, and not society, will determine their "roles"'.

The institution of motherhood has come under increasing critique from feminists such as Rich (1979), Wittig (1992) and Trebilcot (1983). These feminists have drawn on lesbian feminist theories to explore the subject of motherhood within patriarchy and heterosexuality. Richardson (1993: xi) wrote that 'women should have babies and provide childcare is generally regarded as the norm in our society'. It is "what women do". The fact that she can still write that with such conviction suggests that the 'doing' of one's female gender remains firmly anchored to motherhood. The mark of motherhood still firmly and unquestionably designates women (Allen J. 1983). Perry (1992: 116) has also suggested that the 'desexualisation of women was accompanied, in part, by redefining them as maternal rather than sexual beings'. The pill has a contradictory role to play in the redefining of the mother. It did not disturb conventions of motherhood, but at the same time it did provide opportunities for a reassertion of (white) female sexuality and female sexual pleasure.

Alongside the growing acceptance of contraception came the concomitant ideas about planned families, unwanted children, female sexuality, and fatherhood. The pill may have also inadvertently allowed women to think about their sex and sexuality in different ways. But for those who promulgated and produced and disseminated the pill in the early days, the pill was to endorse the social order of the day, not challenge it. Nevertheless, the opportunity to accept contraception as an intrinsically good thing should not be undermined. One only has to assess the current political situation with regard to reproductive biology and choice over a woman's reproductive freedom to see that it is clearly not an individual choice, but one that is intimately tied up with politics, culture, religion, race and disability as well as issues of health, age and science.

Using Butler's work about doing one's gender, it remains clear that a woman on the pill was still doing a gender of 'woman' that implicated a doing of motherhood: motherhood was still integral to womanhood. The woman on the pill was practising family planning. She was not practising birth prevention, nor was she being 'sterilised' (a phrase that was swiftly edited out of the birth control discourse).

The success of the advocates of the pill is indicated by the lack of coherent and sustained objection to the pill. The notion that the pill was harmful never really gained much credence in the early 1960s. Concern over the 'frustration' of the endocrine system (Parkes 1961: 570) or the idea that we were 'tinkering with our body, upsetting the natural hormonal cycle', was, once voiced, often quickly re-framed and naturalised by the defence that the pill produced 'a balance of hormones that ordinarily would occur after pregnancy had begun' (Havermann 1967: 46). Indeed, Baroness Summerskill (see Hansard (Lords) June 6 1963 Vol. 241: 615) appears as a lone critic: 'I doubt whether any doctor would prescribe the pill for his own wife and subject her delicate pituitary gland to the bombardment of this compound'. Many individual women as well as their doctors were hesitant, however, and refused to take or prescribe the pill. It was not, however, until the revival of the feminist health movement, and the Senate hearings on the safety of oral contraceptives in the early 1970s that any collective and sustained critique was heard (see Seaman and Seaman 1978).

Amongst the opponents of the pill, the most vociferous were the leaders of the Catholic church. Even here, though, the degree to which critics of the pill were able to sustain a coherent and persuasive argument was clearly curtailed by their inability to determine the terms of debate. Noonan (1965) notes that even apparently fundamental biological tenets were now shifting ground. What constituted a 'normal cycle' began to be debated by theologians as an irregular cycle was increasingly deemed to be pathological. The pill became increasingly medicalised as the debate became one of technicalities rather than one of morals and ethics.

Summary

By the early 1960s not only had Enovid become a 'feminine molecule' but its tablet dispenser 'Con-pac' was also being marketed as highly feminine: 'attractive yet inconspicuous in appearance, the Con-pac conveys a feeling of femininity' (GDSA)¹²⁷. Discourses of the natural and in particular those that emphasised the feminine and de-emphasised the masculine were central to the selling of the pill. I have drawn on a wide array of sources to show the complex and often contradictory ways in which the natural was deployed to legitimate, or oppose, the use of the pill.

127. By 1967, another dispenser, Dialpak, was being promoted that 'appealed to a woman's femininity and "remembered" for her (CMAC: PP/RJH/A6/3). Femininity is clearly equated with passivity.

At the beginning of this chapter I suggested that, for decades, contraception had not been associated with the natural; indeed contraception and the *unnatural* was the favoured coupling. The pill undoubtedly played an important role in redefining those who used contraception and contraceptive practices themselves, as well as redefining what was *natural*. I have suggested that the steroids swallowed in the form of the oral contraceptive pill were as artificial as those taken for body building, but the female body ingesting the pill was not constructed as artificial, nor monstrous. In a sustained and largely successful twist the woman on the pill emerges as natural and the woman *not* on the pill is left as the uncivilised and unnatural breeding body that requires treatment. Throughout this thesis I have been exploring whether such a transformation also occurred with the natural female body. Was the woman on the pill embodying a new way of thinking about the female body, a body that was natural?

'It takes an intellectual heroism of sorts to assume that one can continue to discuss what is natural or normal about human sexual differences. But such heroes and heroines of the natural order we have around us' (Harding 1987: 187).

Nature is rarely called upon to arbitrate in more disputes than in the arena of sexual difference, and in particular a woman's natural place and role as mother. How the woman on the pill, not only going against her own nature, suppressing her maternal instincts, but going against nature as a whole, came to be regarded as natural is integral to any understanding of the acceptance of this new, contracepted, body. In this chapter I have traced some of the ways in which nature has been appropriated, and the rhetorical devices employed to legitimise the woman on the pill. It is through the exposure of the artifice of the natural that we can begin to rebuild it, and articulate a new world with new actors, and a new way of understanding the body of the woman on the pill.

CHAPTER NINE

THE END OF THE BODY?

'After all, when the Pill has been discovered, tested,
and proved reliable there will be no need for more and
more research'

Oliver Bird 1957.

I have shown how the pill (and the woman swallowing it) was discovered, tested and accepted. By tracing the production of the body of the woman on the pill I have indicated that there was not one conception of the body, but competing, contemporaneous ways of understanding and interpreting it. Not only did she change geographical location, but she shifted in race, class, status, education and religion. Women's bodies became a battleground on which reproductive rights were fought over as well as a site for the constitution of gender, race and subjectivity. I have been interested in the 'doing' of the woman on the pill. I wanted to know how her performative gender, race, class, and sexuality helped to constitute her embodied identity.

There is no idealized woman on the pill that I have been using as a standard, but rather when I talk of the woman on the pill I am referring to a myth. It is a myth of homogenized and consolidated bodies, identities and places that I use as a vehicle with which to traverse the socially differentiated, and fluid, landscapes of gender, desire, race and class. Her singular body acts as a coherent and easily understood concept, made up of categories that are unquestioned and appear fixed and immutable. Her body made sense in the 1950s; it was intelligible. If we want to understand how and why the body of the woman on the pill made sense we need to understand the context in which we emerged. We also need to understand the social and political relations which she helped to legitimise and which, in turn, legitimised her.

Drawing on feminist theory and on sociology of science and technology, I have shown that a study of the woman on the pill cannot start with the pill, nor with the woman who took it. I have argued that the woman on the pill was a product of socio-technical worlds. As Morton Mintz (1970: 115) stated, the pill is a 'phenomenon complexly entwining the pharmaceutical industry, the social

structure, foreign and domestic policy commitments, and the mystique of sexuality'. The pill cannot be isolated from its context. I have drawn out a tale that weaves together the apparently disparate strands of place, policy and politics. But I set out to do more than simply show that we live, and indeed, have always lived, in a complex and heterogeneous web of natural/cultural and human/nonhuman actors. I set out to explore the making of the body of the woman on the pill. I wanted to know whether she embodies a new way of thinking about the female body.

Nelly Oudshoorn's (1994) work on the historical development of hormones, and in particular the production of hormones by a Dutch pharmaceutical company, Organon, provides an incisive network analysis of the production and reproduction of hormones. She concludes that we have a fundamentally new way of understanding the body - as a hormonal body. Oudshoorn argues that our hormonal understandings of sex, sexuality and the body are so pervasive that the hormonal body appears natural.

In chapter eight, I too argued that the introduction of the pill modified not only the notion of the body, but of menstruation, ovulation, contraception and sexual relations. I showed how the rhetoric of the natural was deployed in inventive ways in order to legitimise the ingestion of powerful drugs. This work also undermines any notion of there already existing a natural woman *not* on the pill.

The idea that there is no natural female body runs throughout all the chapters in this thesis. I showed in chapter three how our understandings of the male and female body have shifted. Moreover, I also illustrated the ways in which our contraceptive and reproductive knowledge are constantly renegotiated. The continued exposure of the constructed nature of the body, of sex, of race and of conception provides opportunities for exploring and undermining our biological, natural foundations which continue to serve us as truths.

The pill was not developed in a vacuum, and in chapter four, I begin to show the ways in which the myth of technological determinism can be broken down. I try to get inside the black box of the pill, remove the sugar-coating, and locate its development in a context. It is this context that helps counter any suggestion that the pill succeeded simply because it 'worked'. In chapter five I expose the fragility of 'common sense' notions that the testing of a scientific/technological 'discovery' only proceeds when its purpose and workings are pre-established.

Indeed, in chapter five I suggest that it was not the pill that was put on trial, but the woman taking the pill.

The woman on the pill, in different places and at different times, was made culturally intelligible by a series of different discourses and cultural codes that ranged between nationalism, development, racism and eugenics. I found that planning, in particular, emerged as a key theme around which the woman on the pill was centred. The women who went on the pill, in the early 1960s, were carefully selected; their bodies subject to surveillance and control. I argue in chapter six that the emergence of the woman on the pill cannot be isolated from planned parenthood, planned families, or planned populations. Planning emerges as another fiction that structures the woman on the pill and renders her body culturally 'intelligible' in an era that was saturated with fears over the Cold war and the instability of domestic life. I illustrate how a cultural intelligibility which parallels reconceptualizations of what the woman on the pill 'meant' reflects the flexibility of embodied corporeal meanings.

In chapter seven the contradictions embodied by the woman on the pill begin to surface. How, and why, a pill, an agent of family planning, came to be offered to women who were not supposed to be starting, let alone planning a family needed to be accounted for. White single, working class and indigent women and mothers, and all black women became targets for the pill. Their bodies were appropriate for medication and modification as well as control.

I have then laid the groundwork for understanding the intelligibility of the woman on the pill. But I also wanted to know if there were ways of making her unintelligible, ways of destabilizing the categories that grounded her, of fixing her to the site of sexually active, reproductively fertile females. I therefore use the woman on the pill as a fictive reference, a marker highlighting what investments were made in her, and by whom. Simultaneously, however, I also try to unpack her embodiment and assess whether she is capable of being retheorized. I try to find ways in which the woman on the pill can be 'done' differently.

Haraway hints that destabilization alone cannot sustain a cyborg politics. We need a way of reconstructing bodies and selves, in ways that are currently thought to be unintelligible. We need to be able to do more than merely demonstrate that the body and sex are produced as material effects of regulatory norms. By assessing how culturally intelligible bodies are constituted, who sets the cultural norms, and

how, it is possible to begin to think about new gendered bodies. I have drawn on several writers to indicate how the woman on the pill could be refigured: Judith Butler, Sandy Stone and Sharon Marcus. They have all employed the notion of performative gender.

Judith Butler (1990) uses the politics of **drag**, where gender is freed from sex, to indicate the possibilities of refiguring bodies. With masculine and feminine no longer restricted to 'male' and 'female' our notions of what makes a sexed and gendered body intelligible become disrupted and destabilized. Drawing on the deployment of butch/femme identities in a 'female' body, Butler indicates that this may provide a site at which new dissonance can occur, producing new intelligibly sexed/gendered bodies.

In a later discussion of the subversive effects of parody, Butler (1993: 231) is at pains to emphasise that 'drag is not unproblematically subversive' and that there is no necessary relation between drag and subversion (see Bell et al 1994). Noting that 'many readers understood *Gender Trouble* (1990) to be arguing for the proliferation of drag performances as a way of subverting dominant gender norms', Butler (1993: 125) again reiterates the contingency of subversion. As Bordo's (1993: 292) comments on Butler's work indicate: 'this is ingenious and exciting, and it sounds right - in theory'.

Indeed, Bordo is right to stress the importance of context, of location, to give some flesh to 'the body'. Bordo also highlights the possibility of different responses of various readers and the various anxieties that might complicate their readings. Nevertheless, the importance of understanding gender-as-drag should not be undermined. The radicalism of drag is maintained through its potential to call into question the norms of heterosexuality and denaturalize the categories of gender. Whilst Butler (1993:125) questions whether 'parodying the dominant norms is enough to displace them; indeed, whether the denaturalization of gender cannot be the very vehicle for a reconsolidation of hegemonic norms', I argue that the possibility of exposing as an effect what appears to be natural is a lead worth pursuing. The 'doing' of gender differently still retains the potential of formulating a 'project that preserves gender practices as sites of critical agency' (Butler 1993: x).

Also employing the notion of performative genders, and inspired by the work of Donna Haraway, Sandy Stone (1991) begins to suggest that **transsexuals** can

lay the foundation for refiguring gender, sex, and the body. A transsexual 'is a person who identifies his or her gender identity with that of the "opposite" gender' (Stone 1991:281). A transsexual body is culturally intelligible only within a binary heterosexual matrix. Their bodies make sense because they are 'wrong'.

Using published autobiographical accounts of male-to-female transsexuals, Stone demonstrates the complicity of some transsexuals in a 'Western white male definition of performative gender' which reinforces a binary, oppositional mode of gender identification (page 286). Demonstrating a clear understanding of why some transsexuals deny the mixture in their lives, she notes how 'each of these adventurers passes directly from one pole of sexual experience to the other. If there is any intervening space in the continuum of sexuality, it is invisible' (page 289).

Stone calls for the articulation of a counter-discourse, a discourse which would 'generate new and unpredictable dissonances'. By claiming a position that is nowhere, a location that is currently 'outside the binary oppositions of gendered discourse' transsexuals are able to disrupt conventional gender practices. But, she notes with some irony, 'it is difficult to generate a counter-discourse if one is programmed to disappear' (page 295). A transsexual, by definition, want to 'pass', to erase his/her past history. Stone goes on to argue that the refusal of a transsexual to 'pass' as either a 'man' or a 'woman', a refusal to eradicate one's past life as a member of the opposite' sex, is to 'fragment and reconstitute the elements of gender in new and unexpected geometries' (page 296), thereby reworking our notion of culturally intelligible genders. By redefining what counts as a culturally intelligible body, we can begin to undermine and disturb the myth that states that 'only one body per gendered subject is "right"' and that 'all other bodies are wrong' (page 297).

Sharon Marcus (1992) draws on the idea of performative gender to reassess the commonsense notion that women are always either already raped or already rapable. By using a concept of **rape** as 'scripted interaction which takes place in language' enabled by narratives, rape becomes a process which we can disrupt, rework, and ultimately eradicate. This is not to say that the violence to, and violation of, women through rape can be reduced to text, but rather, the way that we understand rape and the treatment of rapists, and women who are raped is a process that occurs in and through language.

Marcus' use of the notion of performative gender is more contentious than the other examples. The mark of gender in this case is the (potential) act of rape: 'rape does not happen to preconstituted victims; it momentarily makes victims' (page 391). The rape script, for Marcus, thus becomes one of the 'regulatory fictions' that Butler discusses. There is no subject 'waiting' to be raped. The rape script pre-exists instances of rape but the script for the rape act does not result from or create immutable identities of rapist and raped. Hence, it is at this point, this 'gap', that interventions can be made. The citation of the subject that can be raped, or the subject that is capable of raping another, can be disrupted and 'done' differently.

Marcus offers ways of beginning to refuse the social script, of refusing to be positioned as sexualised, passive, vulnerable, violable and penetrable. By ceasing to become 'legible as rape targets', she provides another way in which genders can be made or unmade intelligible. Marcus argues that 'the horror of rape is not that it steals something from us but that it makes us into things to be taken' (page 399). Her essay is a powerful reminder that our bodies can be constituted differently, and that there is nothing natural about the ability of men to rape or of women being raped. Through the redefinition of our bodies so that 'we do not need to defend our 'real' bodies from invasion but to rework this elaboration of our bodies altogether', Marcus provides a practical and theoretical analysis of how important the notion of performative genders can be in constituting our social values, institutions and practices. She asserts that 'new cultural productions and reinscriptions of our bodies and our geographies can help us begin to revise the grammar of violence and to represent ourselves in militant new ways' (page 400).

By indicating where and how the **woman on the pill** was made intelligible, I hope to have laid the groundwork for rendering her not only as constructed/performed, but as unintelligible within the oppressive frameworks of gender that exist today - of finding ways to do the woman on the pill differently.

The woman on the pill could be a site at which the stability and unquestioned binary, phallocratic logic is disrupted and destabilized. Can she do this by refusing to pass, as Stone implies? Or, by publicly announcing the use of contraception, is a woman challenging western taboos on sex and sexuality? Or, as Marcus suggests, is it about reworking the body so that her body is not rendered capable of already reproducing or potentially contraceptive or impregnable? Were the women who refused to take the pill in Puerto Rico, or

those who refused to undergo the arduous physical examinations necessary for inclusion in a trial, refusing to render their bodies culturally intelligible to medicine and science? Were the women who pretended to be married, or those that forgot to take the pill and then conceived, challenging patriarchal restrictions on female sexuality?

I am not sure. I have suggested that there is nothing natural or inevitable about millions of women around the world taking a pill 21 days out of every 28. I have suggested that the gendered performance of the woman on the pill offers opportunities for reworking our bodies and our social values. But, what I am unsure about is how important the intentions of the 'doer' are. Do I have the right to reinterpret a gender performance? What makes a gender unintelligible? Is it up to the woman swallowing the pill and up to the people who participate in structuring the context in which such gender performances occur, or is it up to me to provide ways of reinscribing the performance, offering a way of understanding differently? This is not about whether a woman can 'choose' to swallow differently: she is always already gendered, sexualised, racialized and categorized. It is the reiteration of these norms that mark the subject, that constitute and give materiality to her body. It is these fictive practices of gender, race, class, disability, heterosexuality and colonialism that need to be disrupted and practised differently, thereby constituting different subjects. Gender performances, such as the doing of the woman on the pill, are highly dynamic and interactional, offering ways of redoing both gender and the contexts in which the performances are interpreted.

The time seems ripe for re-thinking corporeality. The idea that the woman on the pill gave rise to a new way of thinking about the body is consistent with work currently emerging on the body. Zita (1993: 59), referring to the postmenopausal woman, boldly claims that 'a new female body inhabits the West'. She lives longer and breeds less and has a remarkably different (reproductive and menstrual) life than her pre-modern foremother.

Duden (1993: 2) also asserts that we experience our flesh differently now as technology has transformed the process of pregnancy. She argues that: 'pregnant women today experience their bodies in a historically unprecedented way' (page 51). Duden suggests that in the course of one generation, the experience of pregnancy has been transformed. Her historical study is infused with a radical edge. Duden provides women with the knowledge that things have been

different, and thus enables women to 'avoid giving embodied reality to managed constructs' (page 4).

In another assessment of the surge of interest in the body, Martin (1992b: 134) states that it is not because we are at the *end* of the body but are instead experiencing a 'transformation of embodiment'. Martin (1992b:121) suggests that people in the United States and elsewhere are undergoing a shift in bodily perception and practice:

'from bodies suited for and conceived in terms of the era of Fordist mass production to bodies suited for and conceived in terms of the era of flexible accumulation'.

These new bodies are not merely of academic interest, but inform wider debates as well as individual experiences. The revaluation of woman's reproductive system is not an isolated affair, and I have tried to outline the way in which new models of the body are employed in contexts of legitimation. The woman on the pill emerged in the 1950s/1960s. As I showed in chapters five, six and seven the context was not incidental to her acceptance, but essential to her constitution.

My focus has been on particular bodies in particular places and at a particular time. But the woman on the pill has not remained static: not only has she been redefined, but the context in which she lives and acts has also shifted vis-à-vis the pill. Sanger, Pincus and McCormick all died between 1966 and 1968, before the publication of the Papal encyclical, *Humanae vitae*, before the Nelson hearings of 1970¹²⁸, and before the rise of the women's health and environmental movements significantly affected the way in which the pill was conceptualized (Johnson 1977, Djerassi 1992a). The contracepted body means something different, and so too does the body that does not use any contraceptive measures. The consumption of the pill does not proscribe a particular behaviour or attitude, and just as Solinger illustrated with her work on black and white single pregnancy and its repercussions for reproductive politics in the late 1980s, the legacy of the pill lingers on.

The woman on the pill has re-defined the nature of reproductive 'choice'. Childlessness, for example, is often taken as proof that a woman is in control; it is

128. A series of Commissions and reports were established in the US to look into the safety of oral contraceptives, in particular the link between the pill and thromboembolic deaths. By December 1962, the FDA had received reports of thromboembolism in 272 women on the pill (see Katz (1972) for a fascinating debate).

interpreted as a voluntary, temporary, reversible condition that is both desired and self-imposed (Pfeffer 1993: 3). The woman who aborts, the woman who 'forgets' to take the pill, and the woman who has a 'large' family have all taken on new meanings in a re-defined arena in which the pill remains a major actor in women's (and men's and children's) lives. The cyclic nature of many of the debates is easily traced to the development of the woman on the pill in the 1950s/1960s. Debates circulating around the new contraceptive implant, Norplant, for example, invoke those of the 1950s. Norplant has been sold as a means to overcome the problem of women forgetting to take the pill, and a way of reducing the number of teenage pregnancies. It has also been tied to conditions of welfare receipt and access to children (Hunt 1993).

Perhaps one of the most significant legacies of the development of the pill is the successful separation of contraception from abortion. They are not understood to be the same thing; contraception and abortion refer to different actions and carry with them very different sets of morals, ethics and politics. Interestingly, it is new pills, such as those used for emergency contraception, that become sites of controversy. It is these pills that remain markers of a fragile and unstable distinction between fertilization and conception.

The woman on the pill remains symbolic of reproductive, and sexual freedom. The pill continues to be invested with the means of enabling woman to 'escape from the confines of [her] own reproductive systems' (Editorial, *The Lancet* Vol. 342 1993: 565). How far the pill has achieved this remains to be seen and explored. I have not 'proved' that the woman on the pill offers a new way of thinking about the female body. I have, however, laid (new) foundations for further research on how specific embodied women felt, and continue to feel, about their consumption of the pill. The pill has not remained static, fixed in meaning or investments. The group of women (self)selected as appropriate candidates for the pill has been enlarged, and age has become an increasingly important factor in debates surrounding the pill¹²⁹.

Revisionist accounts have questioned the degree of freedom accorded to the woman on the pill, and/or castigated its dissemination and branded its use as immoral. Throughout, my aim has not been to 'rewrite' a better history of the body of the woman on the pill, but to begin to trace its evolution in order to

129. Women over 35 are increasingly seen as 'at risk'. Young women under the age of 16 have also been defined as 'at risk'. Victoria Gillick challenged the age at which English doctors could prescribe the pill to girls under the age of sixteen without the knowledge of their parents (see Gillick 1989).

construct a different future. As Bartky (1990: 82) reminds us, 'we women cannot begin the re-vision of our own bodies until we learn to read the cultural messages we inscribe upon them daily'. The woman on the pill provides an opportunity to begin to do genders, races, and desires differently. She offers a way of interrogating what being a 'woman', being 'female/male', 'healthy/sick', 'middle/working class', 'black/white' and being 'heterosexual/homosexual' means, and have the potential to mean. It is this possible revising of future bodies and contexts, rather than of histories and past geographies, that I have been interested in elucidating.

I have been trying to find ways in which future bodies and future geographies might *not* make sense. I have been trying to find ways in which the body of the woman on the pill may be rendered unintelligible. One way of doing this is by altering the contexts and cultural codes within which the body makes sense. The woman on the pill, located in different places and at different times, is able to legitimise different fictions. By removing the bedrock of the natural on which our corporeal foundations are based, the 'intelligibility' of the body can be negotiated.

I have, then, situated the unintelligible body as a key agent in exposing the masculinist, imperialist and racist ways in which our bodies have been constituted. Perhaps we also need to make our geographies less intelligible. It might appear an odd place to end - with a plea for unintelligibility - but it is about making our disciplines and our disciplined bodies mean different things. Perhaps only then will we be able to talk about populations, about contraception, and about female and male bodies in ways that do not endorse heterosexism, colonialism and racism.

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