Why Gender?
Towards an Integrated Model of Sexual Differentiation in Human Beings

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Abstract

Behind all research into Gender lies a persistent question about why it is that the social construction of sexual differentiation amongst human beings seems to entail an almost universal inequality and subordination. Arguably, however, that question, 'Why?', is misconceived. This paper argues that we should not be searching for a general answer for the existence of something that is not a single entity or set of processes, whether we are talking about 'gender', or 'sex'. What we need instead is to replace that dichotomy with a model that integrates these two areas of investigation.

Keywords: Contingency, Gender, Knowledge, Plasticiy, Sex.

Recibido: 23/11/2011 • Aceptado: 2/02/2012

El Género: ¿Por qué?
Hacia un modelo integrado de la diferenciación sexual en los seres humanos

Resumen

Detrás de toda investigación sobre género hay una pregunta persistente: ¿por qué la construcción social de la diferenciación sexual en los seres humanos parece producir una ausencia de igualdad y una subordinación prácticamente universal? Se puede decir, todavía, que la pregunta "¿Por qué?" es una idea mal planteada. Este artículo propone que no hay que buscar una repuesta general a la existencia de algo que no es una cosa o una serie de procesos singulares, ni en el caso del género ni del sexo. Lo que necesitamos es remplazar esta dicotomía por un modelo que integre estas dos formas de investigación.

Palabras clave: conocimiento, contingencia, género, plasticidad, sexo.

Introduction

The question 'Why Gender?' is one of the most compelling there is, and is arguably overdue for a decent answer. Not only does it address one of the fundamental mysteries all of us face very early on as children – 'why are there boys and girls?' – but as a 'why?' question it goes to the very heart of human curiosity. These are the types of question with which children plague their parents and the types of question that lie behind most of the great religions and metaphysical systems in the world.

In the case of gender, though, there is an added twist to the question 'Why?' because, in inventing the concept of 'gender', we were trying to point towards the fact that, apparently uniquely, human beings have to 'learn' to become sexually differentiated creatures and that there are a whole series of political and social imperatives that drive this process. Not only is this learned behaviour, but it carries with it the notion that the relationships and patterns of behaviour established by this means are marked by inequality and oppression. So the question 'Why Gender?' starts to have an additional sting in its tail, and that is in the search for a rationale for subordination: why is it that the social and cultural differentiation between the sexes should automatically seem to be accompanied by social, political and psychological subordination? It is as if the answer to such a question might finally take us to the sorts of depths needed to discover an intelligible reason and a logic for the existence of gender, and in particular for gender –as– subordination, and allow for fundamental change.

In asking the question 'Why Gender?', though, we are already seduced into looking for a general answer for the existence of something that is not a single entity or set of processes. Both 'sex' and 'gender' disaggregate into a whole series of processes, which have no necessary coherence, even if they have links with one another. Furthermore, the processes we identify under the 'two' headings of 'sex' and 'gender' are nevertheless intricately connected with one another, and need to be considered to be of a piece. As I argued (with my colleague John Hood–Williams) in *Beyond Sex and Gender* (2002), dealing with them separately gets us into all sorts of trouble.

My starting point, then, is that science cannot answer, nor should it try to answer 'Why?' questions of this kind. It is not merely that it may be 'incapable' of answering what are fundamentally metaphysical questions, but also that they are the wrong questions to be posing. That doesn't mean to say that I don't think there are absolutely specifiable historical, social, political, cultural and psychical answers to questions about specific instances of gender subordination at particular times and in particular places.

But the rather more global 'Why?' questions, like 'Why Gender?', imply that there might be a rationale to whatever it is we are asking the question about, as if the whole thing, i.e. gender, was designed to serve a purpose, was brought into being for a reason. That is to say that the question is modelled on human behaviour and, specifically, on intentionality. Logically enough, because we tend to think that everything 'we' do has some sort of purpose, we spontaneously assume that everything we see around us operates on the same basis, in other words, it fulfils an objective: it serves a function, it obeys a rationale, it has a use, it meets a goal. In short, there is a point to it. What this paper proposes to do instead of answering such a global question is to provide a model, a different, integrated picture of what we have traditionally referred to in a dichotomous way as 'sex' and 'gender'. So 'Why Gender?' becomes in some senses 'How Gender?' – i.e. how does it all hang together?

This paper begins with what seems to be the more recalcitrant end of the spectrum, 'sex' to show that, in many ways both it, and our knowledge of it, is open to the impact of cultural forms. It then gradually moves towards consideration of some of the relationships between body, discourse and behaviour to demonstrate some of the ways in which human biology is inevitably open to the impact of history, discourse and power, and human behaviour and social relationships automatically entail body and brain. What the paper suggests is that not only have we yet to get to grips adequately with the plasticity of body and brain, but arguably, we haven't really properly addressed what it means to say that our knowledge, of body, brain or social

relationships, is historically and culturally specific. We continue to find ourselves veering between an absolute and unsustainable relativism and an appeal to truths whose timelessness we don't quite believe in, but which make possible the very technological world we live in.

This comment, about the historical specificity of our knowledges, applies as much to the social as to the natural sciences, and as much to our knowledges of 'gender' as to our knowledges of 'sex', but it in no way entails the idea that all discourses are equivalent and that we cannot arrive at the truth.[1]

I've divided this paper into three sections: I am going to spend the first part talking a little bit more about 'Why? questions to try to illustrate the difference between these, and the "Just So Stories" they tend to prompt, and the kinds of questions that I think we need to be asking instead.

The second section is about the way in which assumptions about the nature and, indeed, the existence of that large–scale entity I have just referred to as 'gender' or its twin, 'sex', has affected and continues to affect the way in which we talk about the body. I have entitled this one 'The Haunting of the Body's Sexuality' after a statement by Maurice Godelier that "society haunts the body's sexuality" (Laqueur, 1990: p.11).

Through that discussion, I will gradually work my way towards what we conventionally talk about in terms of 'gender' but do so in a way that suggests that the body is –as Althusserian Marxists used to say three decades ago– always already implicated in gendered, and indeed every other sort of behaviour, so I have entitled that section 'Body and Soul'.

1 All too often, inappropriate appeals are made to such things as quantum mechanics, as if it implied that it is ultimately impossible to know anything with any certainty, which forgets how much of what we rely on every day, from mobile phones to sat–navs, depends upon the fact that it can be used not merely to predict but also to construct aspects of our world.

Life, the Universe and Everything

The big 'Why?' questions are all of the order of the one posed in Douglas Adams' *The Hitchhiker's Guide to the Galaxy*[2] about 'life, the Universe and everything', to which the very logical answer given was '42'. Yet, however unanswerable, all great scientists appear to be tacitly driven by 'Why?' questions – Stephen Hawking talks about the ultimate question and gaining an insight into the mind of God; Einstein reflects on the laws of physics in terms of the idea that God doesn't play dice, and even Dawkins (whom I don't necessarily include in the pantheon, although he has a nice turn of phrase), that fundamental anti–religious thinker, produces answers about the logic to Darwinian evolution in terms of the idea of 'the selfish gene' – a description of purpose if ever I saw one.

However compelling the question, what I want to do is actually to change the nature of that 'Why?' question back to a different set of questions, into 'How?' questions. Ultimately, I want to produce the types of answers to the 'How?' questions that dispel the need for us to ask the 'Why?' question because all of the potential parts of it have been addressed, and more importantly, so have the psychical needs that drive it–in other words, to produce answers that satisfy. This will not be achievable within the compass of one paper, but an outline of what it might entail can begin to be sketched. In the long run, if the 'How?' questions are answered properly, we shall dispel the need for the big 'Why?' question.

Just So Stories

I want to begin by taking a brief digression –although in a sense it isn't really a digression, so much as the background to this discussion– through the question of Darwinian evolution to demonstrate the impact of different kinds of questions, and to move us away from the temptation to tell ourselves "Just So Stories" about gender. "Just

2 Cfr. http://www.youtube.com/watch?v=aboZctrHfK8

So Stories", you may remember, were the stories devised by Rudyard Kipling, with titles like "How the Camel Got his Hump" or "The Beginning of the Armadillos", which tells how the hedgehog and the turtle were transformed into the first armadillos. These are not just origin myths; they are also stories that provide fictional explanations for things, for 'why' they exist.

Something which isn't always appreciated about Darwinian evolution, even from within allegedly Darwinian explanations, is the fact that the Darwinian conception of evolution is about contingency rather than *telos* or purpose. Developments that lead to the advent of new species are not driven by any purpose, but by accidental mutations that offer advantages within particular environments. There is no "design" in play here.

This is not a matter of belief or otherwise; it is the result of identifying the nature of the processes that produce the effects we identify, the very ones that prompt us to think that there "must" be some design –intelligent or otherwise– at work here. Those evolutionary processes have the quality of contingency and promiscuity about them. In teenage parlance, it's totally random! A whole host of mutations arise, and some of them enhance an organism's survival and others kill it off. The elegance of the result, however, and our own position in the scheme of things makes it difficult to resist the temptation to think that the whole thing operates according to a pre–determined logic. Richard Dawkins makes this point in *The Ancestor's Tale*, when he says that we all too easily assume that evolution has a pre–specified direction and represent ourselves as its culminating point, as if other creatures were unfinished business en route to *Homo sapiens*:

> To build on a fancy of Steven Pinker, if elephants could write history they might portray tapirs, elephant shrews, elephant seals and proboscis monkeys as tentative beginners along the main trunk road of evolution, taking the first fumbling steps but each–for some reason–never quite making it: so near yet so far. Elephant astronomers might wonder whether, on some other world, there exist alien life forms that have crossed the

nasal rubicon and taken the final leap into full proboscitude (2004:11).

When I started researching the origin of sexual reproduction and differentiation, I was struck by the ease with which it was possible to slither, in the blink of an eye, from an account of the evolutionary advantage of sexual reproduction towards the idea that there was a purpose to it, for example the notion that sexual reproduction developed *because*, for example, it increased the amount of genetic variation in a population and therefore the potential of the species to adapt to its environment. In other words, it was as *if* sexual reproduction had developed in order to increase the adaptability of the species.

Such an explanation would be upside–down. Sexual reproduction did not develop *in order to* confer advantages; it developed from other essentially accidental changes and then conferred evolutionary advantages on particular populations and species that had it, in *particular environmental settings*, in other words, not everywhere, and not always. There are several examples of theories that attempt to identify what those advantages might be, but these are really explanations for why sexual reproduction persists, in spite of some acknowledged costs, rather than explanations of why, or even *how,* it came into being in the first place.

One typical explanation, popularized by Graham Bell of McGill University, is modelled on a quote from Darwin's *On the Origin of Species*, known as 'The (En)tangled Bank', where he reflects on the diversity of species occupying a diversity of ecological niches. On this model, sexual reproduction provides an opportunity to produce siblings with a range of genetic characteristics, able to exploit a series of ecological micro–niches, which lessens the competition between them. This maximizes the possibility of survival of the offspring because the parent organisms have not —if this isn't a metaphor even more entangled than the entangled bank!— put all of their genetic eggs in one basket.

There are several reasons why this theory might not hold water, but the important thing is that it is not meant to be an explanation

that says that sexual reproduction came about *because*.... even though it seems to suggest, very compellingly, that sexual reproduction might be functional. Even this explanation, though, seems to be asking a general sort of question: 'what is sexual reproduction (in general) *for?'* My sense —for what it's worth— is that the more properly Darwinian set of questions and answers would be of a different kind.

I mentioned that, like every evolutionary development, sexual reproduction would have conferred advantages in particular environments, but of necessity not always and not everywhere. Beautiful animals like starfish, sea urchins or sponges, for example, can reproduce sexually or asexually, by different methods, and at different times. Some of them even have more than one way of doing this. Sponges can bud, producing new sponges, and starfish can re–grow a whole starfish from bits of themselves –in fact, the story is told that when fishermen tried to protect their abalone fields from predating starfish by cutting up the starfish and throwing them back into the water, they inadvertently increased the number of starfish dramatically. High salinity can prompt a sea urchin egg to divide, producing young through parthenogenesis, and under certain conditions, the larval forms can also clone themselves. So sea urchins seem to be able to do it asexually in two different ways, under different conditions.

There is clearly an opportunity here to look at these creatures and evaluate when and how they are led to reproduce sexually or asexually and identify what advantages each of these strategies confers under particular environmental conditions. The starfish's capabilities, for example, look like a protective device for the individual, rather than a deliberate attempt to increase the numbers of starfish. If, however, we start to look at theories as to how sexual reproduction and differentiation came into *being*, the explanations take on a very different form from the one about the entangled bank. Needless to say, these explanations are highly speculative —it is a little like trying to infer the nature of the big bang— but what is striking about them is that they all have the feeling of contingency about them. In that sense they are very obviously Darwinian.

One of the most interesting, and perhaps compelling, because we can see the parallels with processes we already know about, is that sexual reproduction arose from the incorporation by a virus of genetic material from two early bacterial forms. This resulted in the production of a cell with a nucleus and the potential for meiosis, in other words the splitting of that genetic material in half. But this, if you like, is an accidental by–product. I doubt the virus was doing much more than being itself; it certainly wasn't setting out to bring about sexual reproduction.

I think you can already see that answers to this question about 'how sexual reproduction came into being' will be of a very different order from answers to the question about 'what advantages sexual reproduction might confer', and both of these are quite different to any question or answers about 'why sexual reproduction might exist in the first place'. Whether there is any rhyme or reason for the development of sexual differentiation and reproduction is of the same order of as whether there is any rhyme or reason to evolution itself, or the big bang, or the relationship between sub–atomic particles.

It might be equally tempting to suggest that the social configuration of sexual differentiation in human beings which we call 'gender' offered some strategic advantages to human beings as organisms, or that there was some reason for its development, but I don't think that is really the case. Rather, it seems to me to be an accidental by–product of the development of a creature with a large pre–frontal cortex, with the capacity for symbolic representation, language use and complex learning, which means that a whole range of aspects of behaviour that would be more pre–determined in other species are not so in human beings. Once this capacity is there, cultural forms can be developed which can be as fantastical as we can make them and behaviours show correspondingly much more plasticity than would be anticipated with most species. This includes everything associated with sexual differentiation and reproduction.

This plasticity of human beings as a species is essentially why it became possible for us to develop a concept of 'gender', as distinct from 'sex', to try to capture that whole area of the social

configuration of behaviour related to sexual differentiation. But I think the time has come to move on from a sharp distinction between biological and social, and 'sex' and 'gender', and to build a model that clearly links biological and social into a coherent whole in accordance with the type of species that we, as human beings, are.

In fact, though, we shouldn't overestimate the extent to which behaviours are pre–determined in species other than our own. Stephen Suomi, who is a comparative ethologist working in the USA, has recently provided compelling evidence of gene–environment interactions involving early attachment relationships, showing that rhesus monkeys carrying a particular version of the serotonin transporter gene showed developmental problems such as poor control of aggression and low serotonin metabolism, and even excessive alcohol consumption, if they did not form secure relationships in infancy. I am not sure how the monkeys got hold of the alcohol, but the important thing is the argument that the monkeys were protected from the potential impact of this form of the gene through what Suomi describes as the buffering effect of secure attachments, in other words: social relationships.

Suomi's research is not specifically gender–related, but it does open up the possibility of ceasing to think about biology and social relationships as discrete areas of investigation, or worse still of only thinking about biology in terms of reducing social relationships to some sort of biological substrate, or, alternatively, of trying to find ways of arguing the biological components out of existence, because the very sniff of the biological is assumed to imply determinism. What we should consider instead is the idea of gender as an integral and crucial component of sexual differentiation in human beings, rather than something built on top of a biological substrate and, as Christine Delphy put it, 'set on anatomical sex like the beret on the head of the legendary Frenchman' (1984: pp.24–5).

There are two different but interrelated components to this proposal: the first is the one I have just mentioned, which is to look afresh at the interface between biological and social. The second is to develop a more sophisticated understanding of the ways in which our knowledges —be it of the biological or of the social— are shaped by

social and political agendas about sexual difference. It doesn't matter whether these are the conventional agendas about women and men or newer feminist agendas. I am arguing that social and political agendas affect the way we read something we can loosely refer to as empirical realities, and I am enough of an epistemological traditionalist to believe that this colours the ways in which we see them. Not only do I believe that it is possible to identify what is at stake in various discourses but I also believe it is possible and necessary to differentiate this, in other words human purposes and imperatives, from what represents genuine knowledge of something we can refer to as an empirical reality. It can be extremely hard to do so, but I think it is both crucial and do–able.

The Haunting of the Body's Sexuality

I am going to begin with the end of the spectrum traditionally defined as 'sex' and gradually work towards the one traditionally defined as 'gender'. The problem, when the 'sex'/'gender' distinction came into being, was that the concept of 'sex' was, to a certain extent, taken for granted. Since then, of course, there have been a whole series of attempts to call that concept into question, but too many of those have had to face the apparent self–evidence of sexual differentiation, what Simone de Beauvoir referred to when she said, a little over sixty years ago, that there will always be those who rush to make the claim that women simply *are not* men. Bob Connell described this as the 'doctrine of natural difference', the idea that there is a fundamental and foundational biological difference for gender which, for many people, forms 'a limit *beyond which thought cannot go*' (emphasis added).

The idea that something is incontrovertible, and that thought cannot or ought not to go there because it is absolutely undeniable, I take as a challenge. I am nevertheless not interested in re–defining sex as a discriminatory marker used by an oppressive social system, in the way that Christine Delphy (1984) did, nor in re–writing it as a norm that materializes a body, in the way that Judith Butler (1993)

does, not that these approaches don't have their merits. Both, to some extent, assume that there is some–*thing* there to be talked about and re–configured, and don't specifically address the biological underpinnings that it is assumed to have, those things spoken about by the biological sciences and by medicine, and investigated in the laboratory. As long as these are not addressed, 'sex' remains, like the ghost at the feast, forever ready to drag us back to the old assumptions about women and men. However much we attempt to dispel, re–work or re–configure the notion of 'sex', sometimes absorbing the vast bulk of it into 'gender' and leaving just a rump of biology behind, there is always some residual portion of it that refuses to go away.

So, first of all, I want to dig beneath the surface of what we label 'sex' into where some of the biological material takes us, and one of the interesting things that emerge is that biologists, no less than the rest of us, are seduced by this idea of a *thing* called 'sex' —*A* difference, which we are all called upon to explain. This will be the first problem we encounter, since this constrains our capacity to think about biological realities appropriately.

One of the most compelling accounts to tackle the idea of sex, and to attempt to historicize it, came in 1990 in Thomas Laqueur's luminous book *Making Sex: Body and Gender from the Greeks to Freud,* where he dislocates our idea of 'sex' and its relationship to 'gender'. Put briefly, what Laqueur argues is that 'sex' is a concept which was invented at a particular point in time in our culture. 'Sex' as a biological entity was 'made' rather than simply discovered, and brought into being for reasons other than the scientific.

Not only did the idea of 'sex' not always exist, but in the past –before about 1800 in Europe– bodies were seen in radically different ways from those we take for granted. Far from our ancestors living in a world in which sex was a fundamental reality given by biology, the primary reality for them was a divine order, an order in which bodies were oddly insubstantial things. Women's and men's bodies in pre–Enlightenment accounts are indices of a metaphysical reality —literally a reality beyond the physical— a reality more profound and more fundamental than the presence and disposition of organs,

like penis or uterus. Indeed the disposition of organs shows a mutability which would simply provoke incredulity in us: a girl chasing her swine suddenly springs an external penis and scrotum (for vaginas were assumed to be internal ones –penises turned outside in); men associating too much with women lose the more perfect hardness of their bodies and regress towards effeminacy (Laqueur, 1990: p.7). As Caroline Walker Bynum (1989) has pointed out in another context, bodies do strange and remarkable things –male bodies lactate; the bodies of female saints are miraculously preserved after death– but these phenomena are related to a completely different understanding of what bodies *are*. As Laqueur puts it, rather than bodily morphology providing evidence of an underlying biological reality, instead it merely 'makes vivid and more palpable a hierarchy of heat and perfection that is in itself not available to the senses' (1990: p.27).

Prior to the Enlightenment, what Laqueur calls the 'one–sex model' described woman as a lesser version of man, in whom a lack of 'vital heat' caused her to retain inside her body structures that in men would have been on the outside: 'women are but men turned outside in', as early nineteenth–century doggerel would have it (1990: p.4). Men themselves would, in Christian theology, have been placed below the diverse orders of the angels, but above the whole of the animal kingdom. What emerges, after the Enlightenment, to replace this view is the notion, familiar to us, of a fundamental polarity between the sexes based upon discoverable biological differences:

> No longer would those who think about such matters regard woman as a lesser version of man along a vertical axis of infinite gradations but rather as an altogether different creature along a horizontal axis whose middle ground was largely empty (1990: p.148).

So important is this sense of an empty middle ground between the sexes, of a no–(wo)man's land that separates them and that no human being should occupy, that surgery carried out on the genitalia

of intersexed infants effectively sets out to create it. Suzanne Kessler (1998: p.43) points out that there are published guidelines for clitoral and penile size, which are devised so as to leave a clear 1.5 cm. gap between the two sets of measurements. The result is that clitoral lengths above the stipulated maximum will tend to be surgically reduced, while penises below the required dimensions could even lead to the reassignment of the child to a gender deemed more appropriate to the size of his genital.

The temptation, of course, would be simply to say that our ancestors got it wrong, that scientific advances have revealed the ideas behind the 'one–sex model' to be a myth. But Laqueur does not allow us such comforting rationalizations. The historical evidence reveals that the reconsideration of the nature of women and men which is the basis of our understanding occurs roughly 100 years before the scientific discoveries that are brought to bear to support it: "In place of what, in certain situations, strikes the modern imagination as an almost perverse insistence on understanding sexual difference as a matter of degree, gradations of one basic male type, there arose a shrill call to articulate sharp corporeal distinctions" (Laqueur, 1990: p.5). What is also marked after 1800 is that bodies are being thought of in a different way, as the foundation and guarantor of particular sorts of social arrangements (1990: p.29). As Laqueur puts it, "no one was much interested in looking for evidence of two distinct sexes until such differences became politically important" (1990: p.10).

What Laqueur's book suggests, then, is that 'sex' is a motivated invention, born, if you like, of gender. In that sense, he might seem to agree with Delphy that sex is simply a discriminatory mechanism. He demonstrates very clearly the inextricable link between the ways in which bodies are imagined and what we would now recognize as the political and cultural imperatives of gender.

But where this takes him, is where it took much of post–structuralist theory as well, which is towards the idea that meaning is dominant and all–encompassing, and this is something he absolutely wants to resist. What he suggests is that the body does not automatically give itself to be interpreted in this or that particular way: "Two sexes are not the necessary, natural consequence of corporeal

difference. Nor, for that matter, is one sex" (1990: p.243). This contention is in part an issue about the body itself, as something which is not as unambiguous as it first appears, and in part a point about human knowledge. Talking of the anthropological literature, he has a wonderful description of the way in which human purposes, symbolism, frameworks of interpretation, and even fantasy can act to transform things that appear to have an unassailable reality into something rich and strange:

> The cassowary, a large, flightless, ostrich–like, and, to the anthropologist, epicene bird, becomes to the male Sambian tribesman a temperamental, wild, masculinised female who gives birth through the anus and whose feces have procreative powers; the bird becomes powerfully bisexual. Why, asks the ethnographer Gilbert Herdt, do people as astute as the Sambia 'believe' in anal birth? Because anything one says, outside of very specific contexts, about the biology of sex, even among the brute beasts, is already informed by a theory of sameness and difference (1990: 19).

Laqueur's point is that human beings impose their own symbolic order onto what he calls a world of continuous shades of difference and similarity. Particular symbolic configurations make little sense to an outsider, and the same object may well appear in widely differing ways within different systems of meaning. Quoting Claude Lévi–Strauss's example about the sagebrush, *Artemisia*, and the variable parts it plays in association with other plants in a Native American ritual, Laqueur says: "No principle of opposition could be subtler than the tiny differences in leaf serrations that come to carry such enormous symbolic weight" (1990: p.19). In short, carving out what is empirical reality from human purpose is no straightforward matter.

Laqueur faces a particular difficulty, though, because, he clearly wants to resist what he describes as the erosion of the 'body's priority over language'.[3] He identifies what he calls a powerful tendency

3 There is clearly a sense in which such an idea, however conventional, is nonsense.

among feminists to empty sex of its content by arguing that natural differences are really cultural. He also says, however, quoting Maurice Godelier, that 'society haunts the body's sexuality'. He describes his own work and much feminist scholarship in general as caught in the tensions of this contradictory formulation, "between nature and culture; between *biological sex* and the endless social and political markers of difference". The analytical distinction between sex and gender, he suggests, "gives voice to these alternatives and has always been precarious". "We remain poised –he goes on– between the body as that extraordinary fragile, feeling and transient mass of flesh with which we are all familiar –too familiar– and the body that is so hopelessly bound to its cultural meanings as to elude unmediated access" (1990: pp.11–12). So, on the one hand, he quite clearly believes that scientific advances *have* taken place, talking of certain beliefs about sex as 'patently absurd', while on the other, he argues that the whole science of difference is misconceived (1990: pp.21–2). There is simply no discussion of biological realities that does not have its admixture of value, desire, and social and political exigency:

> Sex, like being human, is contextual. Attempts to isolate it from its discursive, socially determined milieu are as doomed to failure as the philosophe's search for a truly wild child or the modern anthropologist's efforts to filter out the cultural so as to leave a residue of essential humanity. And I would go further and add that the private enclosed stable body that seems to lie at the basis of modern notions of sexual difference is also the product of particular, historical, cultural moments. It too, like opposite sexes, comes into and out of focus (Laqueur, 1990: p.16).

I think he is right about that, but perhaps not for the reasons he thinks. It isn't that we are caught in the tensions of an impossible formulation, between the arbitrariness of meaning and the realities

Language, and the social relationships it informs, are the collective product of those human bodies that produce them. This form of materialism, which prioritises what, for want of a better word, one might call 'stuff' is really now outdated, and part of the purpose of this paper is to begin to replace it.

of the body and its sex, which the biological sciences are making advances in understanding; it is that the whole problem lies in posing the question about something called 'sex'. As the biologist John Lillie put it, as early as 1932, 'sex', rather than being an entity, is just a label which covers our total impression of the differences between women and men. This view is confirmed by contemporary biological research, which has increasingly broken down what we label 'sex' into its component parts, so that we would now say that it takes a number of quite complex processes to come together and cohere in order to produce what we would spontaneously identify as a male or female animal. So when Laqueur says that 'the whole science of difference is thus misconceived', he is right, but the key to how we should consider things lies in what he says when he states:

> Attempts to isolate it [sex] from its discursive, socially determined milieu are as doomed to failure as the philosophe's search for a truly wild child or the modern anthropologist's efforts to filter out the cultural so as to leave a residue of essential humanity (Laqueur,1990: p.16).

Where he goes from there is unduly pessimistic, though. We might not be able to isolate the biological realities from their socially determined discursive milieu, but we can certainly attempt to identify where different components of the discourses about sexual differentiation come from and assign them some value.

Some of the most interesting recent work, such as that of feminist biologists like Anne Fausto–Sterling (1989; 1992; 2000), has been invaluable in uncovering the gendered assumptions embedded in the supposedly cool neutrality of biological research on 'sex'. The places in which such gendered assumptions are to be found can be quite subtle and surprising. In an article written as early as 1989, entitled "Life in the XY Corral", Fausto–Sterling identified the complex ways in which gendered assumptions entered into such obscurely technical issues as the role of the cell nucleus and gene activity in embryological development. She makes the case that these assumptions downplay other vital contributory factors, not least of which

is the part played by the cytoplasm of the egg cell. Her more general point is "not that political philosophies cause bad theory choice, but that there are often several fairly good accounts of existing data available. Which theory predominates depends on much more than just how well the data and the facts fit together" (1989: p.324). In other words, where gendered assumptions enter into basic research is both much more specific and perfectly identifiable.

We therefore don't need to remain poised over a precarious analytical distinction between 'sex' and 'gender', in which the former at least comes into and out of focus, nor do we need simply to obliterate what is designated by the term 'sex' by bringing it under the heading of 'gender', as if the whole scientific endeavour was contaminated. We need to be able to, and to learn to, recognize when and where unwarranted assumptions that relate rather more to gendered assumptions about the nature of women and men than to observational realities are making their presence felt. In fact, we also need to remember that observational realities themselves have conceptual frameworks built into them, and these too can have their admixture of what Laqueur calls 'value, desire and social and political exigency'.

Of course, this is all so much easier to do if you look to the past. But I should already issue a warning here: just because something is historically specific or comes into being at a particular time and place or has ignoble origins doesn't mean to say that it is wrong... but it might be. The important thing is to look at the questions it is seeking to answer and the way the discourse you are analysing arranges itself.

Michel Foucault's (1980) case history of *Herculine Barbin*, the hermaphrodite who was brought up as a girl but was subsequently reassigned to the male sex, a reassignment that resulted in her suicide, is useful here. It is with Herculine that we first see doctors assuming that underneath her indeterminate anatomy was hidden what she *really* was and striving to decipher "the true sex that was hidden beneath ambiguous appearances" (1980: p.viii). As Foucault points out, it is the moment in history when hermaphrodites stop being people in whom a combination of sexual characteristics can

be found (and who might therefore be allowed to choose what they wished to be) and become those whose bodies deceptively hide their real identities, their *true* sex, which the expertise of the doctors can detect. At that point in time, our world becomes one in which, Foucault says, sexual irregularities are henceforth to be seen to belong to the realm of chimeras, those fictions which represent errors in the most classically philosophical sense; in other words, "a manner of acting which is not *adequate to reality*" (1980: p.x, emphasis added).

Hermaphrodites, or what we would now call the intersexed, become –in a notion which is entirely familiar to us– 'errors' of nature, a way in which reality is not adequate to itself. This is the point at which we could say that 'sex' as an ontological category, as something that defines us in the depths of our being, is born. Herculine had the misfortune to live on the cusp of this new world, in which the intersexed are no longer able to be themselves (providing they did not behave in a licentious manner and take advantage of their ambiguity by having sex with both women and men alike), but had to be redefined as 'really' something else, a man or a woman.

With Herculine's case history, we can also watch the doctors strive to identify what might be the *real* markers of sex. Despite concluding that Herculine had both vagina and clitoris, the clinching element for them is the presence of testes and spermatic cords (even though there are no sperm), which leads them to conclude that, upbringing notwithstanding, Herculine is really a man. There is, in other words, an alignment of the recognised sexual components of the body in such a way as to tidy up the picture, to produce a clear binary divide when the empirical evidence provided by Herculine's body defied all attempts to place it categorically on one side or the other of that sexual divide. In that determination, certain markers are also dominant. It represents the moment when a conviction is born that, even if the elements that make up a sexed creature do not line up, they *ought to*, and that this implies that we can ascertain what someone was really *meant* to be.

Fausto–Sterling's research indicates just how persistent is the notion that all of the processes necessary to the creation of a sexed being automatically fall into place, or that if they do not do so, they

ought to, to produce a clear binary divide in the population. This assumption then leads to another, that there is, therefore, a single 'key' that locks the whole thing into place. Criticizing the work of David Page *et al*. (1987) who set out to look for a master 'sex–determining locus' in the Y chromosome of male mammals, Fausto–Sterling points out just how many different items we might regard as key to identifying sex: for example, given that there are both XX males and XY females, what does the notion of a sex–determining gene mean? Is maleness decided on the basis of external genital structure? Often not, since sometimes physicians decide that an individual with female genitalia is really a male and surgically correct the external structures so that they match the chromosomal and hormonal sex. Is it the presence of an ovary or testis that decides the matter? If so, oughtn't the gonad to have germs cells in it to 'count'? Or is it enough to be in the right place and to have the right superficial histological structure?

There are no good answers to these questions because the point is that, even biologically speaking, sex is not such an either/or construct. Page and his co–workers chose to leave some of the messy facts out of their account, which makes the story look much cleaner than it actually is (1989: pp.328–9). Page *et al*.'s work is not as crudely gendered as the romances of the egg and the sperm identified by Emily Martin in her 1991 article, but maybe, then, egg and sperm are not as obvious as they might at first appear to be? If Fausto–Sterling is right, can we any longer be sure that, even if we can see them under the microscope, our interpretations of egg and sperm are really correct? What mechanism can we use to separate them clearly from the admixture of social and cultural concerns with which we imbue them?

Even if we are led to doubt the correctness of our interpretations, though, awareness of this kind does not lead us to obliterate their existence merely because our understanding of them is bound up with the imperatives of the world in which we live. The key lies in recognizing that entities like egg and sperm, even if they seem pristinely biological, do not come into being in that pristine a way for us: we only come to know them in what are very precisely definable

social contexts. The strength of their capacity to exist independently, and therefore in some sense their scientific longevity, is marked by the extent to which they can continue to exist and their existence be confirmed in other, quite different contexts. Put very simply, if recognition of egg and sperm allow *in vitro* fertilization to take place successfully, we can be fairly sure that they are what we assume them to be.

Take the notion of sex hormones, which are not only a consistent feature of our world, but, as pharmaceutical preparations, some of the most widely consumed of all drugs (not least in the form of the contraceptive pill). Should the idea that they are social constructs necessarily imply that this is all that they are, or that their social meaning in some sense cancels their biological reality? Nelly Oudshoorn's 1994 book *Beyond the Natural Body: An Archaeology of Sex Hormones* would suggest not. The hormones do, nevertheless, emerge from their history as constructs, quite literally things that were built. But they are built of a combination of things, both 'natural' and 'social': the concepts that inform their discovery, the investigative context in which that discovery takes place, the professional rivalries and relationships that shape how they come to be described, the manner in which the substances are isolated chemically, the uses to which they are put, the clinical settings in which they are deployed. The sense that emerges from Oudshoorn's book is that hormones can be both socially constructed and historically specific and yet also what we would recognize conventionally as 'material objects' that have a defined effect on the world around them, in this case on the bodies of those that ingest them.

One obvious way in which they can be regarded as socially constructed is to be found in the very name given to them as 'sex' hormones. As Oudshoorn points out, part of the ideas that surrounded their discovery was that, like the portion of the Y chromosome researched by Page *et al*. (0.2 per cent of it!), they might just provide the key to what made women women and men men, something which is reflected in their subsequent extensive clinical uses in the restoration of 'femininity' to post–menopausal women. The expectation that they might provide the key to sex was, however,

belied by the discovery not only that women, for example, secrete testosterone (the allegedly 'male' hormone) but also by the fact that oestrogen was first isolated in the urine of, not mares, but stallions.

The social construction of the 'sex hormones', then, is about much more than words and social meanings –although it is about those, too. In a more profound sense, they are socially constructed through the wide range of elements that contributed to their birth and maintain and sustain their existence thereafter. Oudshoorn makes the point that science encompasses much more than theories and facts: it involves laboratories, investigative techniques, relationships between scientists, commercial settings, complex instrumentation, a whole social reality that also entails a range of what she calls 'material conditions' and 'material effects' (1994: p.13). Therefore, when we look at such seemingly simple ideas as that of 'egg' and 'sperm', we need to be alive not only to the ways in which the facts and the theories have been put together but to the whole context in which the objects they identify exist, a complex combination of 'social' and 'natural' elements. And when we focus in on the concepts of 'egg' and 'sperm' themselves, we have to remember the differences that are wrought in those concepts by the assumptions with which we imbue them. Thinking of the egg as a large mass that simply waits passively for the arrival of an aggressive little sperm provides for a very different picture from the idea of an egg cell whose outer membrane draws the sperm in or whose cytoplasm plays a key role in embryological cell differentiation (Fausto–Sterling, 1989: p.322).

Body and Soul

There is, nevertheless, another way that we can think about the complexity of the processes that need to combine in order to produce what we spontaneously recognize as male or female animal. One of the major insights of Kessler and McKenna's early (1978) work on gender was that when we make a judgement that someone is male or female, what we use in doing so is all of a piece. For that reason and because that process obeys some key social rules, they

describe it not as the attribution of 'sex' but as 'gender attribution'. In that sense, they also refuse to differentiate between the processes employed by biologists in categorizing people into one sex or another and the processes used by the rest of us. And there is a kind of wisdom in this.

What we are seeing when we make the instantaneous gesture of classifying someone as female or male is a seamless combination of the biology of the body and the social and cultural context in which that body exists. In spite of the early tussles between feminists and anti–feminists over whether or not a particular feature belonged more properly to 'gender' or to 'sex', in practice the two are indistinguishable from one another. There will never be any natural experiment in which we might find out what the sexed body entails entirely outside the ways in which it, and the person whose body it is, has been gendered. Seeing 'sex' and the body as socially constructed, therefore, could also mean looking at the ways in which the body might itself be shaped by a social and cultural context. Connell, in keeping with Marx's notion that human beings transform the material world they encounter, including themselves and their own lives, talks of the practical transformation of the human body in its encounter with culture. "In the reality of practice" he says, "the body is never outside history and history is never free of bodily presence and effects on the body" (1987: p.87). As an example, he describes the way in which particular combinations of force and skill become strongly cathected aspects of an adolescent boy's life. These owe as much to fantasy as they do to activity, and together they produce a model of bodily action and bodily conformation whose result is, as Connell puts it, "a statement embedded in the body":

> The social definition of men as holders of power is translated not only into mental body–images and fantasies, but into muscle tensions, posture, the feel and texture of the body. This is one of the main ways in which the power of men becomes 'naturalized', *i.e.* seen as part of the order of nature (1987: p.85).

In fact, of course, one needs to go beyond the generality of men as a social grouping, not merely in terms of the inflections produced by class or culture, but towards the kind of cultural detail provided by, say, Loïc Wacquant in *Body & Soul: Notebooks of an Apprentice Boxer* (2003). The journal *Body & Society* has specialised in producing studies of specific gendered configurations of the body, such as those of female body builders or bull fighters. In his book, Wacquant –who, incidentally, proposes the idea of a somatic sociology– charts his own training as, and transformation into, a boxer, describing the notion of the pugilist's honour, which requires that the boxer develop the mental resolve to fight on, regardless of pain or discomfort and possible, or even actual injury. In other words, the process of becoming a boxer involves not only the creation of a particular kind of body but also the shaping of a whole moral and psychological universe inhabited by the boxer.

An analogous point can be made about developing the body of a classical ballet dancer, who, in a much more systematic way than the general incorporation of masculinity into the body of the adolescent boy, learns quite precisely what the body of a dancer should *feel* like and the appropriate mental attitudes to accompany and foster success as a dancer. In that process, the body itself is literally reshaped –it becomes a particular kind of object, with distinctive musculature and capabilities– but so too, as the title of Wacquant's book indicates, does the soul. Body and mind –musculature and skill, fantasy and conceptualization– are indivisible here. Furthermore, this melding has to be understood to go much further than mere morphology; it has to be taken right through to the biochemistry of body and brain. What is happening here is quite literally an in–corporation, the creation of a particular way of incarnating masculinity, femininity, or even a transgendered status, in the body. We shape ourselves at the very moment in which we are shaped.

Although these forms of incorporation describe very well the way in which gender goes considerably beyond questions of minds and relationships, understanding of these processes tends to be limited to the *sociology* of the body. What is lacking here is much recognition or investigation into the potential for transformation of

the human body from within biology. There is ample attention paid within the pages of the journal *Body & Society*, for example, to both the symbolic aspects and the lived experience of such forms of incorporation as those of, say, women body builders, but a relative lack of engagement within the biological sciences with the ways in which social, psychological, and cultural elements interface with the physiology of the body. The general way in which transformation of the body is conceptualized is limited by an assumption, familiar to us from athletic competition and the controversy over the use of banned substances (now not even describable as drugs), that the body sets limitations to this process. There is, apparently, only so much transformation any body can take. If anything, this assumption is strengthened where sexual difference is concerned, as if it were there to form a counterweight to the disturbance caused by the contemporary blurring of gender boundaries and the fact that we are routinely witness to transsexual reassignments that are so effective they would be undetectable without prior knowledge.

There is some evidence that we have barely begun to understand the potential malleability of the body, malleability of the kind that was so graphically illustrated sixty years ago by W. B. Cannon's investigation into what he called 'voodoo death', the situation in which someone with no apparent physiological abnormalities dies following a curse by a witch doctor (Cannon, 1942; Sternberg, 2002). There have been some attempts to get to grips with these kinds of phenomena from within the social sciences, but relatively little attention paid to them within biology beyond tantalizing glimpses into placebo and nocebo effects. Even in the social sciences, such startling effects as are described in Vicky Kirby's *Telling Flesh* don't seem to attract a great deal of curiosity. Kirby talks about having been inspired by the Hindu ritual festival of *thaipusam*, where participants literally skewer themselves with long metal spikes but appear not to suffer pain or bleeding, even though they look to be impaled on an elaborate metal scaffolding. As she says:

> To be skewered by any one of these metal prongs would prove at least painful for most of us, and conceivably lethal. Bleeding,

> scarring and internal injury would be the inevitable results of what, in a different context, could be read as abuse. (Kirby, 1997: p.3)

Like Kirby, I have always found it surprising that phenomena such as these attract so little surprise and still less investigation; instead, they are the province of showmanship like that of Derren Brown. As she points out, these capabilities are not extended to tourists, nor to members of the same community who witness the ritual, but because of the conception of the body held by both social scientists and others as what she calls "that universal, biological stuff of human matter" (Kirby, 1997: p.3) there tends not to be a problematization of what the body *is* and, as she puts it, researchers stop short of asking how it is that the cultural context that surrounds the body can also come to inhabit it (Kirby, 1997: p.4).

However, confirmation of this type of phenomenon is now appearing in one of the most surprising new disciplines to emerge in recent years: neuropsychoanalysis. Through empirical neuroscientific work and clinical psychoanalytic practice, those working in the discipline endeavour to develop a new body of research findings there are even Lacanian neuroscientists. One of the observations they are regularly able to make is that patients suffering from organic deficits caused, for example, by having suffered a stroke or other cerebral damage can experience changes in their physiological condition through the impact of psychotherapy. What is assumed to be unavoidably organic, and furthermore, profoundly disabling, *changes* as a result of social and psychical intervention by a clinician.

When it comes to the revived rhetoric of sexual difference currently in circulation, though, there is an injunction to accept that there might be fundamental genetic, hormonal, physiological, and psychological differences between the sexes with which we must all come to terms, and barring conditions deemed to be abnormalities, we seem to be particularly enjoined to deny any malleability in the distinction between women and men. Our current behaviours and ways of being are believed to reveal our natural boundaries. Erving Goffman describes this rather complacent approach to human

behaviour in *Gender Advertisements* (1979), when he identifies the little bit of folk wisdom that underpins the ways in which we consider ourselves and naturalize our own behaviours:

> There is a wide agreement that fishes live in the sea because they cannot breathe on land, and that we live on land because we cannot breathe in the sea. This proximate, everyday account can be spelled out in ever increasing physiological detail, and exceptional cases and circumstances uncovered, but the general answer will ordinarily suffice, namely an appeal to the nature of the beast, to the givens and conditions of his existence, and a guileless use of the term 'because'. Note, in this happy bit of folk wisdom –as sound and scientific surely as it needs to be– the land and the sea can be taken as there prior to fishes and men, and not, contrary to genesis –put there so that fishes and men, when they arrived, would find a suitable place awaiting them (1979: p.6).

This little parable about the fishes draws attention to the fact that we tend to explain what happens and how we behave by dint of an appeal to 'the very conditions of our being'. There is a deeply held belief in our culture, which we apply to ourselves in relation to what Goffman calls 'gender displays', that objects are passively informing about themselves through the imprints they leave on the surrounding environment, that they give off unintended signs of what it is that they are: "they cast a shadow, heat up the surround, strew indications, leave an imprint; they impress a part picture of themselves" (1979: p.6). As human beings, says Goffman, we learn not only how to convey and express who we are to others, but also to abide by our own conceptions of expressivity, to convey that characterological expression as if it were natural and unavoidable. In terms of gender, we not only learn to be a particular kind of object, but to be "the kind of object to which the doctrine of natural expression applies… We are socialized to confirm our own hypotheses about our natures" (1979: p.7). We learn how to behave and then, like learning to ride a bicycle, we forget that we once wobbled and found the whole thing

improbable and impossible, and it all comes naturally. The lack of conscious intentionality in a large part of our performance then supplies its 'naturalness'.

One thing that is usually crucially overlooked in relation to Goffman's work is that he framed it as a contribution to ethology. He is often seen as the quintessential sociologist, who provides us with a dramaturgical account of human behaviours. But this account is about much more than identifying the latent reflexive capacity in human behaviour, of human beings as actors. It is not merely that we have the capacity to be self–conscious about particular encounters and our behaviours within them, or indeed about the whole repertoire we have at our disposal, it is that these behaviours are the behaviours of whole bodies in social settings, and it is for this reason that Goffman begins by considering gender displays under the heading of ethology.

The application of ethology to human beings, however, is often interpreted to mean a reduction and simplification of human behaviours to some allegedly more primitive state of affairs (take Desmond Morris's *The Naked Ape* as a caricatural example), which belies and bypasses the sophistication of the cultures within which human beings operate and negotiate their being. Thus, the gender displays we supply to others to provide background information about our sex and our selves are no different in kind from the 'background information' that an eighteenth–century slave owner might employ in addressing his slaves, or a twenty–first–century motorist in responding to a police officer. They represent our own staging of something which quite literally *embodies* discourse and conceptualization, fantasy, social and psychological knowledge, psychical investment and so on, and it is there to set the terms of the engagement. Anyone who has ever watched a parent dealing with a child in a way which is markedly different from the way one would deal with one's own child is testament to these processes: the tone of voice that is rather too loud for someone standing a mere two feet away, the slowed–down speech patterns that imply some notion of the essential idiocy of children –all of these attest to a common way of conceptualizing the status and capabilities of the child, some of

which they share with those defined as 'elderly' and, for the British it seems, with foreigners who, perversely, refuse to speak English.

In a more complex vein, in *Counting Girls Out*, Valerie Walkerdine and her co–authors give some enlightening descriptions of the ways in which the respective behaviours of middle–class and working–class mothers towards their children reveal assumptions about what a 'good mother' is and how she should conduct herself in relation to her child –the middle–class–mother–as–educator, for example, for whom "every possible permutation of events, actions and conversations becomes a 'not–to–be–missed' opportunity for a valuable lesson" (Walkerdine et al., 1989: p.46). The fact of such a staging also being a 'statement in the body' naturalizes the performance, for what could be more 'natural' than the body? The overloud tone of voice used with children, 'the elderly', or foreigners is clearly simply that which is deemed necessary. From the point of view of either the actor or the recipient of any such performance, it is all a matter of knowing who one is dealing with. The marked particularity of persons, or for that matter the specification of objects in the natural world (dangerous or benign snakes, for example), is there merely to allow one to know how to respond appropriately, safely, and in a way that allows for some prediction of the outcome.

It would certainly be *naïve* therefore to downplay the way in which, and the complexity with which, human beings actively negotiate and shape such processes, including the representation of their sex, within the whole panoply of what we could identify as gendered behaviours. The biological and psychical underpinnings of these behaviours are not the impoverished *reductio ad absurdum* given to us by much contemporary evolutionary psychology, but the potential province of a new and dynamic feminist biology – a socio–biology in the true sense. Until and unless we recognize the unity of these processes, of the complex human biological apparatus and the sophisticated psychological and social engagements created by that apparatus, which in its turn shape its creator, we shall be condemned to miss the point in terms of 'sex' and 'gender' and the relationship between them.

So if there is any general answer to be had to 'Why Gender?', it is to be found in the characteristics of ourselves as a species that uniquely on this planet, has developed the capacity to occupy a range of environmental niches, but more importantly, actively to transform its environment and itself to maximize its own survival and well–being, sometimes, as we know, at great cost to other life–forms. We have barely begun to explore the plasticity of human beings, and the broad area of sexual differentiation is as good a place as any to start.

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