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# FUTURE KINSHIP AND THE STUDY OF CULTURE

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**Throughout the 20th century, body and machine have provided distinctive parallel metaphors for the concept of culture. But now these metaphors are merging as human lives are increasingly engineered through technonatural processes. In one imagined future, biotechnology will give us the means to determine our own genealogy and the potential to play a role in the 'culturing' of the future, as the natural and unpredictable transmission of human characteristics is transformed into a predictable process arising from the manipulation of the gene pool. New procreative possibilities—fertilization *in vitro*, gamete donation, maternal surrogacy etc—challenge us to reconstrue notions of identity and kinship; the article speculates on the implications of this for possible cultural futures.**

On the eve of the last quarter of the 20th century, a British volume devoted to *The Future of the Cities*[1] included a speculation on 'Life in the year 2000'. It projects a future culture. The vision of a standard of living increased four times over seems in retrospect sheer hallucination, as does the idea of a global agreement to equalize income or of custom-built submersibles for vacations in undersea resorts. But the final paragraph that deals with the health of the individual could be reprinted today without much of a blush. It also strikes the only negative note in an otherwise bright-voiced piece:

> Artificial cyborg limbs and sensory organs will be freely available; and natural transplants and synthetic implants will be commonplace. More effective contraception will be practised; and extra-uterine gestation may be chosen by some. Genetic engineering will have begun to eliminate known hereditary defects. The sex of an unborn child may be chosen . . . Some of the possible developments listed above may cause us to question the basic notion of individual personality; some raise the matter of medical ethics; some would require a definite revision of social attitudes for their implementation. All we know is that they are probably going to become technologically possible. And socially, too?[2]

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The English-language concept of culture as the artefacts and artifice of, and thus created by, human enterprise developed in Britain at the time of the industrial revolution. Concepts do not exist in isolation. I describe a concatenation of ideas that have since extended the connection between artifice and creativity and others that have come to challenge it. In thinking about possible cultures for the future we might also think about whether or not this particular concept of culture will have a future.

In industrial society[3] human enterprise was seen to work against the givens of the natural world. At the same time, enterprise was held to evince the very creativity that was distinctive to human nature. To call something 'artificial' carried a double meaning, conveying at once this intrinsic sense of human ingenuity and the further sense that human ingenuity could extend beyond the natural limits of human nature itself.

The artificial referred, then, to more than the adornment of humankind's natural state. Indeed it came to carry connotations derived from its latter-day creation through planned production. For the planning now required in manufacture transformed the meaning of 'industry' from that of personal effort to that of the organized utilization of labour in a central production process. The centralization of productive work in turn lent new resonance to other centres of human creativity such as the city. Although factories were also built in the countryside, and although industrialization meant that places of manufacture came to be segregated from residence,[4] towns and cities became associated in popular thinking with industrialization. If the town were artificial, it was not simply for the parade of manners or displays of the arts, but because its planning, timekeeping and functioning took on factory-like tenor. In Europe, Britain led the way in municipal control over public services such as gas and electricity.[5] Speaking of French ideas at the turn of the century, Rabinow[6] writes: 'What nature and history had produced, man could bring to perfection'. And what represented that process in 'visible, palpable, bounded form' was urbanism.

Such an association between the urban and the industrial extended an older one: for Europeans the city had long represented the epitome of artifice in human life. In 1973 Williams drew attention to the almost-as-long-lived fantasy, cities of the future: 'Glittering cities have been imagined, on a thousand planets, with every kind of technical wonder'.[7] Future countrysides have also been imagined, evolved beyond urban epochs where artifice no longer intrudes. Yet in the 1990s the visions of only 20 years ago seems irretrievably locked into the past. Whether the projections were of megalopolises or of de-citified 'urban fields', a creative future was projected against a stable natural environment.[8]

We look back on the centralization of industrial process and city life from the vantage point of one perspective. In the late 20th century, Europeans (and their North American counterparts) can talk of de-industrialization and de-urbanization in the same breath. On the one hand, what appears to take the place of industry is technology. Technology in turn takes on a new character. Where industry produced, technology enables; where industry recalled the same autonomous organization to be found in the functioning urban centre, technology carries the connotations of service. Meanwhile, 'service industry' exists as a kind of hybrid, rather less persuasive than the 'manufacturing industry' which still evokes nostalgia for the real thing.[9] On the other hand emerges suburbia, a kind of domestic counterpart to technology. Miyaji[10] emphasizes that among the futures projected for us lie relationships conceived as de-urbanized networks facilitated through a

communications technology that can be run as well from the suburban house as from the city centre.

It might seem obvious that urbanization should have once trailed a concatenation of ideas associated with industrialization, organization, the centralization of living spaces, and so forth. What may seem less obvious is what has followed. For it means that the contemporary folk model of de-industrialization[11] does not present an isolated challenge. One concept is not turned on its head alone. It carries conviction precisely because it connects with others—even alliteratively in the case of de-urbanization. The question of interest for anthropologists might well be what is happening to ideas about culture amid such devolution.

I both ask the question in a general way and explore one area of innovation—that nowadays known as reproductive technology. It is an interesting area because of the way, in Britain at least, people's attitudes mobilize the twin concepts of the artificial and the natural. Now the connection between de-urbanization and de-industrialization implies that those two concepts exist in mutual relationship. In the case of the contrast between the artificial and the natural, however, the effect is not of mutual reinforcement but of encroachment. The one appears to overtake or encompass the other. If childbirth was always considered a 'natural' event, late 20th-century advances in reproductive medicines are emphatically 'artificial', and in a manner that outstrips the perceived artificiality of ordinary hospitalization or medical intervention. Artifice always encroached; I try to show how the concept of it does too.

Perhaps a contrast between the artificial and natural will not work in Japanese in quite the way it does for English-speakers.[12] As we have seen, for the latter the epithet 'artificial' tends to be applied not to how people comport themselves but to what they make ('artefacts'). In the recent past, this would have meant above all one kind of artefact, namely machines. Indeed, a distinction between machine and body has for long held that between the artificial and the natural. Technology does not sustain the same distinction at all.

## A concept of culture

I have introduced an emphasis of my own in the European designation of culture, that culture also consists in the way people draw analogies between different domains of their worlds. Whether as connections or contrasts, one set of ideas can always be developed to 'represent' others. Europeans regard this as itself an artificial or conventional process. I refer to 'European' to indicate the specificity of the cultural constructs under examination here, to be found in educated, middle-class circles across Northern Europe and North America.

Two observations are in order. First, if the distinction between the artificial and the natural inheres in the very idea of having a culture, it is also replicated over and again in domains themselves regarded as distinct from one another. Second, in drawing analogies, people draw attention to such (pre-existing) distinctions, and indeed in positing similarities must also posit differences. Body and machine afford an example. One basis for the distinction is that bodies have life, machines work; the one described a natural phenomenon, the other an artificial one. However, each may in turn be used as a metaphor for the other—the body can be conceptualized as a 'machine', the machine as a 'body'.[13]

Throughout the 20th century body and machine have provided parallel metaphors for the concept of culture. Europeans could think of culture as an organic

body composed of parts, even personifying it as an agent with a will and ability to act, so it was given human motivation to avoid contradiction or to impose itself on others; this was conceptualized as its natural life. Europeans were equally happy with mechanical metaphors, and could conceive of culture as a built structure with ratchet-like effects between its components; its conventions could be shown to work. These distinctions also worked at what were called different 'levels'. While at one level, a contrast between the natural and the artificial might distinguish different views of culture, it might equally distinguish culture itself, as intrinsically artificial, from nature, the source of all that was natural. Cultures, in this European view, were artificial creations natural to the human condition.

In the context of late 19th-century industrialization, the epoch when 'man made himself',[14] culture implied the acquisition of civilization. The European study of culture attended to the evolutionary unfolding of this self-production. In the early 20th century, anthropology underwent the metamorphosis which has given the subject its present-day shape: from the study of culture to the study of cultures.[15] Evolutionary interest in the acquisition of civilization was displaced by an understanding of cultures as diverse manifestations of human enterprise.[16] Each culture was conceived as being founded on its own principles and values, and thus having an independent logical status. Without this premise it is unlikely there would have been the mid-20th-century explosion of ethnographic, field-based studies that have since been the hallmark of anthropological enterprise. The early 21st century is likely to present a very different intellectual map.

The idea that cultures were autonomous meant that one could understand their life and working from the inside, as though one were dissecting an organic body or revealing the mechanism of a machine. On formal grounds they could be treated as self-contained systems. Yet almost from the start, anthropologists were taken to task for claiming their cultures were substantively isolated, unchanging and untouched. In British anthropology, this produced numerous critiques all based on the same point—that one had to consider historical process and human creativity, whether in terms of world systems or individual decision making. On the organic analogy, metaphors of a functioning body were both extended and displaced by etiological ones that emphasized growth and change through time. On the mechanical analogy, metaphors of structure gave way to cybernetic and topological ones producing models of information flows and processed systems. These were dominant in the 1960s and 1970s.

A similar devolution of images was already evident in society at large. The totalizing impetus of British 19th-century factory owners, with their 'complete societies' brought under one roof (from organizing every part of the working day to supervising all aspects of their workers' lives), was supplemented by a communications model of the relationships between different parts of the industrial sector. This was accompanied by an increasing compartmentalization of people's lives through parallel civic organizations (schools, hospitals, local government offices). If the new professionalism implied in these developments gave services something of an industrial space in the early 20th century, then in Britain these were also the decades when towns and cities began acquiring a new character in their suburbs. The town expanding against the borders of the countryside produced a new phenomenon—the semi-urban housing estate 'in' the semi-countryside.

Over the century, the growth of the service sector and the expansion of suburban living has contributed to the double sense of de-industrialization and de-urbanization. But while de-urbanization is recognized in the decentring of city

amenities, the contemporary spread of suburbia has another aspect to it. It remains city-like in that it encroaches on the countryside, and thus also appears as a manifestation of creeping, global urbanization. The late 20th-century world seems as much hyper-urbanized (we all have an urban identity now) as it is de-urbanized (there are no centres any more). Yet if we are all in some sense urbanized, then there is no distinctive quality to be attached to urbanization that can be separated from life as such. There is more to this than a shift in location; we also live a conceptual shift. In retrospect, it seems that the countryside only ever seemed rural from an urban perspective. The very distinction between rural and urban has been exposed for the urban construct it is.[17] We might call this collapse of distinction a kind of suburbanization.

Along with such a shift goes a reinterpretation of cultural change, that we live in a world simultaneously more diversified and homogenized than before. There is both 'more' culture and 'less' culture. Indeed, for the anthropologist, the spread of Western culture worldwide can seem like a de-centring process. Local identities are either hypertrophied (cultural pluralism) or atrophied (global culture is no culture). I suggest that such perceptions are an effect, among other things, of what appears as encroaching artifice: now there seems nothing that is not the result of, or at least shows the encroachment of, human enterprise on it. The point is not to be proved or disproved by measuring the quantity of enterprise: it is revealed instead in the encroachment of concepts on one another.

## Metropolis and suburb

These new perceptions extend former habits of European thinking. The past tense must also be an ethnographic present insofar as the older connotations endure.

I have drawn an analogy of my own between the city as an organization, bringing together people who have to submit to its planning as a functioning body or machine, and the model of autonomous cultures and societies that emerged in anthropological thought early in the 20th century. The analogy is brought up to date in Hannerz's[18] comment on the fact that the major cities of the world can be considered unique 'cultures' in their own right. But Hannerz also introduces us to other images of the city. Planning and organization suggested artifice; this second set suggests instead what was natural to the city, namely its teeming life. Here the plenitude of persons indicated less the enhanced opportunities afforded for sociability,[19] than the simple experience of diversity.

The city thus became an imaginative locus for extending the concept of culture in its own way. For the city provided a facility for the intermixing of cultural forms. The 'natural' city was a cultural marketplace, an amalgam of negotiable values, as in the 'world of the city [contained in] . . . the vast flea market of Paris, where one could rediscover the artifacts of culture, scrambled and rearranged'.[20] In encapsulating the world, it was itself a cosmos. Cities thus manifested world culture; the metropolis was naturally cosmopolitan. In Hannerz's phrase, cosmopolitanism today entails an involvement with a plurality of cultures on their own terms.

Cosmopolitanism thus drew on the possibility of capturing the world in a microcosm. It might be located in the person of the individual who literally constructed a life of travel and might also be located in the way the city drew travellers to itself. It became the perpetual locus of diversity. To qualify as a city in the popular mind there had to be a cross-section of institutional enterprises (the church, the arts, commerce, government), and national divisions (class, age,

occupation) as well as international ones (even if only in the collection of the world's eating places). What was 'artificial' about the city was that it encompassed cultural representatives who were regarded as torn out of context insofar as their natural origins lay elsewhere. The city thus gained its excitement from juxtapositions that were unnatural; diversity was sustained by the continued promotion of styles from distinctive sources. What appeared 'natural' were the communications and interchanges, the meeting of differences, like meetings between persons.

Culture was also imagined as a kind of person itself. This invited the thought of what happened when one culture 'met' another—the picture of culture contact. But here interchange was often imagined as one-way traffic—from the gloomy prognostications of the early 20th century that foreign cultures were merely survivals of such encounters to the mid-century concern with colonization, as though it were a matter of one culture imposing its will on another. Where encroachment seemed to be two-way, then the weak metaphor of a meeting was often replaced by the stronger metaphor of interbreeding. The resultant mixing of cultures could be likened to the intermarrying of different races.

Whereas the cosmopolitan who experienced the diversity of life presented an 'artificial' figure, the creole was a 'natural' embodiment of diversity in the language he/she spoke. Creolization is also a concept that Hannerz[21] has applied to culture. The image of creolization had come from the rural Caribbean, where all race was mixed race, all language the product of the coalescences and reinventions of others. To think of cultures as creolized was to think of a kind of *lingua franca* that was also a local dialect, of the way that the same transcultural elements were to be found everywhere yet at each individual place recombined in quite novel patterns. Insofar as the outcome of miscegenation was the reproduction of an entity that resembled neither of its parents, this suggested a naturally regenerative process. The new cultural body could be imagined as a unique hybrid. Novel combinations enabled the unexpected to happen; what emerged would have a life of its own.

Cosmopolitanism has an exaggerated profile in late 20th-century perceptions of cities and cultures. Indeed it may subsume creolization or hybridization as a condition of cultural life. That life is envisaged as a process productive of unforeseen and thus hopeful outcomes. If we think of present-day cultures as the 'offspring' of past ones, we see new combinations forever being put together out of old cultural elements. Indeed, as the century has progressed, the idea has taken a hold over anthropological approaches to culture in the argument that it is not just present-day cultural forms that are cultural hybrids but that all cultures everywhere have been so. Clifford deploys it to refer to the possibility of inventive 'intercultures'.

Suspending possible differences between North America and Europe,[22] note the way that Clifford transplants the term into a seemingly urban context: 'More and more people "dwell" with the help of mass transit, automobiles, airplanes. In cities on six continents foreign populations have come to stay—mixing in but often in partial, specific patterns'.[23] What may have always been true of cultural mixing becomes hypertrophied in the late 20th century. But the city is no longer the natural facilitator. In truth, this latter-day vision of an intercultural future is a suburban image, Clifford's cosmopolitans inhabiting the never-never land of transit lounges, artifice no longer contained within the bounded city but envisaged as a diffuse condition of life. Perhaps some of the current late 20th-century interest in intercultures, cultural hybrids or whatever does indeed come from imagining not the city but suburbia. Yet what suburbia 'represents' is highly problematic. As di Leonardo[24] shows for the idea of non-manufacturing industries in the USA, the very

concept of the suburb seems a parasitic one.

Suburbia is neither urban nor rural. It may represent both; but when it is reproduced *as* suburbia comes to represent neither. Rather it is evidence of the encroachment of these concepts on one another. The rural, and thus the distinction between urban and rural, is recreated as a figment of the urban imagination; not as a mix of forms but as the absorption of the distinction between them. Disneyland, observes Yoshimoto,[25] does not represent the USA, it simulates it. It produces the imaginary distinction between the real and the imaginary. And Disneyland transported from Los Angeles to Tokyo, in turn, is neither imitation nor reproduction but an original—a real, simulated Disneyland. In the Tokyo Disneyland, he says, the distinction between the real and imaginary is exposed and thus revealed for the imaginary construction it is. Or, he might have said, between the natural and the artificial.

## Continuity and change

Although it is I, as Malinowski in turn might have said, who have brought them together, these analogies for the creation of culture belong(ed) to a set of connections that an English-speaker would probably recognize. I now add a less familiar set from ideas about the creation of kinship. They provide a further dimension to the relationship between what is natural and what is artificial about the world.

This dimension concerns the European anthropologist's understanding of culture in relation to the lives of individual persons. Set against nature, culture evoked a relationship between given constraints and individual autonomy, between shared meanings and personal interpretations. This was a central preoccupation of mid-20th-century anthropology. In the way these concepts were played off against each other,[26] we can also see between them an oscillation between focusing on what is fixed or immutable in social life and what is open to change and innovation. A sense of change was seen against a sense of constraint, future possibility against what was assumed to be given. This interplay was characteristic both of the way anthropological models of culture developed over the past few decades, and also of middle-class folk models of the nature of human relations evinced in their constructions of kinship.

As in the case of the distinction between the natural and the artificial, this contrast operated at different 'levels'. Thus kinship as a whole could be represented as a (natural) domain based on immutable relations as against the rest of society; or, in the way that kin arranged their relationships, we might discern within the domain of kinship both what could not be changed (a natural element) and what could be (an artificial one). The English could draw on the family as a metaphor for thinking about continuity and change alike. For families might either appear as autonomous entities with their own traditions, as constellations of unique properties (and property) transmitted between generations, based on a line of natural ancestry; or they might appear as constellations of individuals who worked together or who moved away from one another, and who in any case diversified their interests, renegotiated their obligations and chose with whom they associated. Indeed, these two images of the family formed a pair: the relationships given by immutable blood ties were set against the potential mobility of individual members. The one image both covered and revealed the other. For what was not open to change (the given ties of blood) could be either valued or ignored in the choice people had to conduct their own lives. Thus the individual interpreted for him-/herself the claims of 'tradition'. This

was very similar to the conventional mid-century anthropological understanding of culture as a traditional body of 'shared' values and attitudes that individuals constantly reinterpreted or realized or challenged in their own lives.

If this latter view of culture is becoming increasingly hard to sustain,[27] should we be drawing instead on the idea of the cosmopolitanized and always plural culture, or even perhaps the creolized language? Despite the apparently exotic origins of these constructs, they too resonate with English ideas about procreation. There was a sense in which all breeding was miscegenation and all offspring hybrids. The sense was, of course, a metaphoric one.

Children were, in the English view, genetic hybrids by nature: they were regarded as constellations of elements derived from each parent but mixed in such a way as to make them into unique entities with a future that repeated the past of neither mother nor father. The uniqueness of the person as an individual was thus replicated in the supposed genetic constitution. Moreover, this spontaneous hybridization has, in the recent past, been regarded as a source of hope for the future—it is what made every generation of children 'new' children. An important factor was the element of chance built into the process. One knew what the parents were like but could only make partial predictions from them about the children. Between parents and children, parents were fixed, immutable points of reference, children unpredictable, their future lying ahead. What the latter would be like depended in part on the chance outcome of the moment of conception. Out of human control, that lay with nature.

At the same time, the sheer multiplication of the generations meant that with the passage of time there were more persons who had lived in the world and more evidence of human enterprise upon it. The sphere of human control was thought to be continually expanding. Just as the city seemed to be a source of cultural change, so it seemed natural for the artificial to encroach on the natural, a kind of covert evolutionism that assumed the future would be characterized by more change not less, by cultures increasingly rather than decreasingly creolized, by tradition becoming fainter. Out of this set of ideas has come the late 20th-century perception of an ever more crowded human population on the earth, and of the natural world as more than ever subject to artificial management, or accident for that matter: there seems nothing now that is not amenable to legislation, protection and conservation, or prey to exploitation and bungling. What is 'given' shrinks under the onslaught of what human beings can 'create'. Nature becomes a department of human enterprise, and we discover that it was never autonomous. The distinction between the natural and the cultural is revealed for the cultural construction it always was.

The natural world, including the facts of human biology, is in the late 20th century no longer taken for granted. However culture is redefined, its distinctive characteristic as human enterprise working against the givens of nature seems already to belong to the past. As far as the interests of anthropologists are concerned, recent issues in the conceptualization of kinship will certainly affect the future way in which one is to think about the relationship between what is given and what is open to human enterprise, and thus of the ambiguous connection between creativity and artifice. The issues are quite overtly spoken of as artificial intervention in a supremely natural process. They also comprise a phenomenon that belongs definitively to the last quarter of the 20th century.

## Natural and artificial procreation

On the face of it, nothing today seems further from erosion than the concept of

nature. Against a background of concern about the natural environment, constant reference is made to what is also natural in human behaviour, and nowhere is it more emphasized than in the debates over the new reproductive technologies.[28] Here technology appears not as a service to industrial production, making machines work,[29] but as a service to human reproduction, making bodies live. In its benign aspect, it enables people to fulfil their desires.

These particular technologies thus intervene in the very area that has in the past provided Europeans with analogies for the vigorous hybrid creativity of the future—whether on the unique individual or the born-again culture—namely human procreation. Human beings were regarded as naturally fertile, and the acts of procreation were normally regarded as natural acts. Today, if couples 'fail' to have children by such methods, then it is becoming increasingly possible for them to seek assistance. A medical booklet put out by Serono Laboratories (UK) Ltd, to advertise drugs for the stimulation of ovulation, has the title 'If nature can't deliver'. It may be the gametes themselves, or the process of fertilization or of implantation in the womb that has to be supplemented. Consequently, the intervention—artificial insemination by donor, egg donation, *in vitro* fertilization (IVF), maternal surrogacy—is of a remedial nature. Such intervention is 'artificial', but far from creating an autonomous domain of enterprise (as in industrial production), it is presented as directly responsive to fundamental natural process. Its power is bio-power, replicating the (ideal) potencies of the body.[30] There is always *some* portion of the reproductive process that is marked as demonstrably natural.

Thus IVF may enable the natural parents to have children of their own genetic endowment; or the gamete material of one or other parent may be supplemented by that of another person but brought to term by the mother-to-be, and so forth. At its most evident, what remains as the natural element may simply be the desire to have children by some form of childbirth as distinct from adoption. Assisting conception thus emerges as the most prominent target of medical research, of the setting up of clinics, and of public interest.

As long as some element of the entire process of childbirth can be claimed as 'natural', technological intervention appears enabling. But I suggest there is a subtle shift from regarding naturalness as part of the workings of physiology to attributing it to parental desire. On the one hand, desire becomes translated into the choice whether or not to adopt certain procedures, and choice is thereby exercised as choice between different artificial possibilities; in this sense it is limited. But, on the other hand, as a natural dimension to human creativity, desire itself is supposedly without limits.

Two versions of a booklet prepared by Organon, a research-oriented pharmaceutical company, lay the groundwork. The booklet is designed to allay fears about IVF. Both versions assert that a natural element remains in the process. One puts it thus:

> *You have a natural desire* for children and may have been trying for some time without success. Don't despair, there is still hope; thanks to major advances in medical science, many couples who were previously considered infertile can now produce healthy babies.

The second:

> This booket focuses attention upon one technique, in particular, in vitro fertilization (fertilization that takes place outside the human body). It must be stressed that although fertilization occurs outside the body, the development and formation of a child takes place, *naturally, inside the womb.*

The one emphasizes the naturalness of the womb, the other the naturalness of parental desire. Desire appears as natural as the womb. In either case, both state the nature of the assistance: 'Nature sometimes needs a helping hand'.

Nature assisted compromises the definition of nature as those conditions of life from which intervention is absent; what is given is no longer given by nature itself but is visibly circumscribed by technological capability. That in turn will force certain choices on people in the future. (In 1987 it was reported that some 3000 frozen embryos were stored in Britain,[31] perhaps 10 000 worldwide; two years later the figure suggested for Europe alone is 20 000.[32] Decisions have to be taken on their future life.) At the same time, the enabling capacity of technology appears to give it a further sinister edge. Questions are raised about the moral or ethical status of the desires it enables people to realize. Thus does 'assisting nature' slide into 'assisting human desire'. The *Sunday Express*[33] published an alarmist story on the lack of regulation in access to AID:

> Single women who want to have babies without the emotional ties of a husband are using artificial insemination clinics in growing numbers. The revelation comes amid growing alarm over the lack of legislative control covering Britain's rapidly increasing donor sperm business. The British Pregnancy Advisory Service, which has insemination clinics around the country, reports a 'remarkable and still escalating' number of women coming to them who are unmarried and not in a stable relationship.

Quite clearly the newspaper felt that the choices being made by these unmarried women should involve public adjudication; not all desires should be assisted.

Whether positively or negatively, the new technology is seen as enlarging the spheres open to human choice: procedures of sex selection are intended to help couples at risk of giving birth to children with sex-linked diseases; embryonic removal and inspection is done with the intention that only healthy embryos will be reimplanted, and so forth. These particular examples come from newspaper reports,[34] for such technological developments are an endless source of more or less sensational copy.

And the sensationalism comes from the future orientation of the debate.[35] The fear that the Organon booklet tries to allay is an anticipatory emotion. Wilson refers to the pervasive future orientation of research on home technology and networking, 'assessed, analyzed, and written about in anticipation of its future introduction',[36] but he is wrong in supposing it has few parallels. Speculation on the future of reproductive practices is in the same position and there are similar results. Such studies cannot attend to the 'specific economic, political and social conditions as a way of interpreting their meaning for society',[37] for these conditions also lie in the future. The result is that the parameters of the technology seem self-determining. An ideological consensus, in Wilson's terms, is created in terms of the technological potential, which is then seen simply as human potential. Those who do not see the potential do not understand that technology can make life work! The opposing view, that the new reproductive technologies are failed technologies, has a struggle to find a voice.[38] That is partly because of the current connotations of technology. Insofar as they are enabling, medical practices perceived as technologies assist persons to realize their desires. They cannot 'fail' to assist, even where the desire itself is not in the end realized.

What is taken for granted is that technology is about the future. 'Children of the future' is the headline to a *Daily Mail*[39] report of one of the first cases of surrogacy following *in vitro* fertilization. Technological encroachment is exactly what 20th-century Europeans see as the future. Hence the readiness to project; what is

projected are the kinds of choices that might be made possible by the new technologies. Thus people may talk in the same breath of cloning as they do of IVF, and there are fears that 'scientists' will promote certain procedures simply in order to produce human genetic material on which they can experiment. Indeed, an editorial in the *New Scientist*,[40] reporting on the first appearance of the UK White Paper *Human Fertilization and Embryology*, regretted that the White Paper regarded it necessary to propose 'an outright ban on research aimed at creating human clones, ape–human hybrids, or genetically engineered babies'. The White Paper, the editorial argued, had done irreparable damage by its futurist projection, depriving itself of its own regulative intent in evoking the damaging image of maverick scientists interested in borderline research. They noted that all the national newspapers but one began their report on the White Paper with the ban on cloning. But, then, an article in the *Wall Street Journal*[41] commenting on the award of custody of seven frozen embryos in a Tennessee court to their 'biological mother' (against the wishes of her ex-husband), concluded with the following paragraph:

> Science and technology have far outpaced the law and traditional ethics. There are even more stunning prospects for the future: cloning; growing human embryos in the laboratory as a source of organs for transplant surgery; women giving birth to their own brothers and sisters or grandchildren; widespread womb-leasing and surrogacy; animal–human and human–robot hybrids; the use of artificial, animal or dead women's wombs to incubate human embryos; and genetic engineering.

Yet for the student of culture, the point is surely that law and traditional ethics will never catch up. If there are seemingly no barriers to what is open to artificial intervention, then there are seemingly no givens either, and nowhere else for law and traditional ethics to exist. Certainly, we cannot rely on nature to impose its own limits. The principal reason, I suggest, is the manner in which we reveal to ourselves the fact that we see we cannot rely on human nature.

Europeans in the late 20th century know that *they* do not want human–animal hybrids, that spare part surgery should be kept within medical limits, and that if it is no real confusion of kin relations to have sisters donate eggs to one another, there is certainly something awry about mother–daughter substitutions. But they cannot count on future generations not wishing for these things. The prospects of future enterprise lead to as much fear as hope—not that the artificial might be less than the real thing, but for the real things it might in fact make. Artifice: new choices are opened up, new possibilities for the realization of human desires. Creativity: new possibilities create desires that from our present vantage point do not seem human at all.

For the European anthropologist, the concept of culture is already problematized. It is not at all clear what is or is not an artefact. The point is not that the boundaries between bodies and machines are theoretically troublesome,[42] but that we now live in a world that makes explicit to itself the *ability* to breach the difference. The new reproductive technologies are but one area where the body (that lives) and the machine (that works) are imagined in new conjunctions.

This particular pair (body, machine) were formerly connected and contrasted by analogy, in that they provided metaphors for different aspects of human nature. It is their metaphorical status that now seems subject to encroachment. Technology literally helps 'life' to 'work'. No doubt people will go on talking about assisting nature in the same way as they talk of releasing engineered life-forms 'into' an environment that they have already altered. Yet insofar as they cannot evoke distinctive domains of life, bodies and machines can no longer serve as metaphors

for one another. It follows that the relation between them will become a poor analogy for contrasting what is given in the world with what is artificial, the basis on which the anthropological concept of culture has rested throughout the 20th century. It is not the challenge to the substantive concept that must be of most interest to anthropology, but the challenge to the conventional facility to draw analogies.

Whatever is said about the blurring of the idea of the city, about being unable to pin down an identity that is urban or post-urban, hyper-urban or de-urbanized, or whatever is said about the miscegenation of cultures turning into replications of the same differences, I suspect that such conceptions also constitute a response to other shifts in the conceptualization of human relationships. Technological innovation invites us to think innovatively about how persons are born and the relatives to whom they are born. Yet instead of the potential of unexpected combinations, the creation of unique individuals and unplanned effects, the future seems increasingly trapped by present choice. It is as though creativity were trapped by artifice. Europeans can look to future kinship to provide them neither with metaphors for the natural givens of human existence nor with metaphors for regeneration through the spontaneous effects of procreation.

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