CUTTING THE NETWORK

MARILYN STRATHERN

University of Cambridge

New technologies have stimulated the rehearsal of old debates about what is new and what is old in descriptions of social life. This article considers some of the current uses to which the concepts of 'hybrids' and 'networks' are being put. It could be seen as following Latour’s call for a symmetrical anthropology that gathers together modern and nonmodern forms of knowledge. In the process, the article reflects on the power of analytical narratives to extend endlessly, and on the interesting place that property ownership holds in a world that sometimes appears limitless.

The owner of the Shell petrol distribution licence for West Cameroon lives for part of the year in London, has children taking courses in Britain, France and the United States, and keeps houses in both capital and country (Rowlands 1995). The extent of his network is shown in a sumptuous lifestyle. The business on which it is based is run along hierarchical principles; unmarried youths are sent to work for him in the hopes that he will set them up on their own. Rowlands finds an apt description in an image the Bamileke people offered to Warnier: ‘A notable [chef de famille] is a living piggy bank for the whole descent group: in him is contained the plenitude of blood received since the creation, through a chain of ancestors’ (translated by Rowlands 1995: 33, after Warnier 1993: 126). Blood is a metonym for transmissible life essence, but only when channelled through those who take the title of ‘father’, ensuring that the contents of the bank are not dissipated. An heir undergoes an ‘installation ritual [that] transforms his body into the piggy bank of the descent group, containing its blood and semen, which together with camwood and oil, also his possession, forms the corporate estate of the lineage’ (Rowlands 1995: 33). He must guard that container. The businessman emphasizes the importance of containment to his commercial operations, for this allows him to refuse the claims of close kin while retaining their support, since it is from him that future prosperity will flow. Consider Rowlands’s deliberate phrasing: it is the man’s body which is transformed into the piggy bank.

When Hageners, from the Highlands of Papua New Guinea, remarked that women were like tradestores (M. Strathern 1972: 99, 120), the analogy was with the flow of money through the store: as the repository of nurture from her kin which she contains, a bride is also a ‘store’ or ‘bank’ of the wealth due her kin in return. Elsewhere Melanesians translate terms for bridewealth into the English idioms of buying and selling (cf. Thomas 1991: 194-6). Indeed monetary metaphors would seem to flow like money itself, and like money act as condensed symbols of power. In turn, these persons imagined as repositories,
Cameroonian businessman and Highlands bride alike, would seem both to carry the flow and to stop it.1 That is, they hold it within themselves.

The monetary idioms through which Melanesians speak of transactions such as bridewealth are often taken as a sign of commodity relations, whether of an indigenous kind (Gell 1992) or as the effect of exposure to wage labour and the world economy (Carrier 1995: 95). It is not buying and selling as such, of course, that are at the heart of anthropological understandings of commoditization, but the quality of relationships. The Hagen husband who speaks of his wife as a purchase, like something from a tradestore, awards himself new freedoms. But in some formulations, the bride is also the tradestore itself. If so, then she is a store of wealth for others who benefit from their relations through her, and it seems to be the person of the bride who, like the Cameroonian notable, contains the possibility of converting the fertile essence or nurture of others into wealth. Twentieth-century Euro-Americans,2 by contrast, do not like to imagine themselves as commoditizing people and do not, at least in the English vernacular, talk of bodies as piggy banks. Persons may have property, be propertied, but are not property themselves. On the contrary, recognizing the agency of the owner,3 and thus keeping ‘persons’ separate from what may be owned as ‘property’, was a hard-won project of their modernism. It was until recently, that is.

Some of the transactions in persons that characterize Papua New Guinea societies offer interesting theoretical resources for thinking about recent Euro-American experiments with relationships. One issue is the incursion of commodities, especially money, into kin relations, as in anxieties voiced over commercializing surrogacy agreements (see, for instance, Wolfram 1989; Ragoné 1994: 124). The reverse is also pertinent, although not pursued here. Euro-American debates over transactions in human tissue (see, for instance, Nuffield Council on Bioethics 1995) offer interesting theoretical resources for thinking about recent Melanesian experiments with commodities. In the 1960s and 1970s New Guinea Highlanders were forever commenting on money. By all accounts ‘money’ (shell valuables) had been present for a long time, but at that period ‘money’ (pounds and dollars) had also come on them as a new thing, an object of overt speculation about social change, an omen of a new era. Outsiders also worried about the incursion of kinship into commodity relations, how those tradestores would actually be run, since notions about obligations to kin supposedly interfered with the development of commerce.

Parallels cannot be taken too far. The Cameroonian piggy bank and the tradestore bride suggest mixes of person and property that Euro-Americans find unacceptable. Indeed, anthropologists have traditionally dissipated such strong images by talking of bundles of rights, or by referring to ‘bridewealth’ rather than ‘brideprice’, and analysing the ownership of persons in terms of governance. Thus was the authority system of the Maasai of Kenya translated by Llewelyn-Davies (1981). However, she makes it perfectly clear that Maasai ownership also involved rights of alienation, exercised over human and nonhuman resources alike, and that it was therefore appropriate to refer to property in women. Jolly (1994) reports that on South Pentecost, Vanuatu, women have a ‘price’ (for which there is an indigenous term) just as goods in tradestores do; men nowadays prefer to pay this in cash rather than with the traditional
valuables they reserve for transactions among themselves (such as the purchase of rank).

Now the benefits and evils of money (Bloch & Parry 1989) have been supplemented by a further subject for Euro-American anxiety and speculation: technology. By all accounts ‘technology’ (the machine age) has been present for a long time, but in the 1980s and 1990s ‘technology’ (hitech and micro) seems to strike people anew. It is ubiquitous, threatening, enabling, empowering, an omen of a new era. And if Hagen anxieties were about how to control the flow of money (A.J. Strathern 1979), these Euro-American anxieties are about where to put limits on technological inventions that promise to run away with all the old categorical divisions (Warnock 1985). These include the division between human and nonhuman. That division was ordinarily upheld (rendered durable) by a host of others, including distinctions between person and property, and between kinship and commerce. Across diverse areas of life, they seemingly threaten to fold in on one another, and notions about humanity and visions of technological development threaten newly to interfere with each other.

This mutual interference is more interesting than it might seem; I shall suggest that it bears comparison with gathering, stopping or containing flows of wealth or fertility. More generally, if increasing awareness of the role of technology in human affairs newly links human and nonhuman phenomena, does it invite us to re-think the kinds of flows of persons and things anthropologists have described elsewhere?

Mixed narratives

At the same time as anthropologists have made explicit the artificial or ethnocentric nature of many of their analytical divisions, they find themselves living in a cultural world increasingly tolerant of narratives that display a mixed nature. I refer to the combination of human and nonhuman phenomena that, in the 1980s and early 1990s, produced the imagery of cyborgs and hybrids. This imagery has been fed by the late twentieth-century Euro-American discovery of science as a source of cultural discourse (Franklin 1995). Neither culture nor science is outside the other.

In the case of the hybrid, combinations have been pressed into interpretative service to the point of surfeit. Narayan (1993: 29) was moved to identify an ‘enactment of hybridity’ in anthropological writings, citing nine works appearing between 1987-92. What is true inside anthropology is also true outside. Cultures are everywhere interpreted as hybrid amalgams, whether of an indigenous kind or as the effect of exposure to one another: ‘almost every discussion on cultural identity is now an evocation of the hybrid state’ (Papastergiadis 1995: 9). The Cameroonian businessman’s biography seems another example. However, Rowland’s source on the Bamileké, Warnier, draws attention to a very particular kind of hybrid object, using the term hybrid in the sense given it by Latour (1993) and to which I shall return. The object was the heterogeneous knowledge created by a research team investigating a company’s business networks (Warnier 1995: 107). The research team comprised a network of different competences. Their knowledge, a mix of technique cum social relationship,
could be used to throw light on actual business operations, although Warnier doubted its legitimacy in the eyes of experts. They were likely to be proprietary over certain components of this knowledge to whose pure form they could lay claim as 'pure technicalities'.

Warnier's comment takes the tension between pure and hybrid forms to be part of the construction of claims between different experts. The interpretation of cultures has led to similar competition; in the hands of the hybridizers, however, the very concept of the hybrid signals a critique of separations, of categorical divisions, encompassing that between the pure and the hybrid itself. 'Hybridity' is invoked as a force in the world. This applies to the world created by certain forms of critical narrative in which the target is interpretation as such, and the concept of the hybrid a political move to make some kinds of representations impossible (Bhabha 1994). Now, imagining the impossibility of representation is often rendered concrete through the excoriation of boundaries (artificial divides) or the celebration of margins (deterritorialized, decentralized spaces). Such conceptualizations have in turn been criticized as re-enacting the old inversions of an us/them divide when one should be attending the processes of mutual translation (Papastergiadis 1995: 15; Purdom 1995). The huge critical onslaught against how to think the way different 'identities' impact on one another has yielded a multitude of hybridizing concepts such as amalgamation, co-optation and conjuncture.

Yet despite the surfeit of terms, there are constant appeals to what this or that writer leaves out; most regularly, appeals to power relations. It is as though the politics that lies within the image of hybridity does not do sufficient analytical work – politics is re-created as though it were also 'outside' the analysis of representations. Hence, too, the frequent appeals to categories such as race and gender which are presented, uninflected, prior to the work that the concept of the hybrid is supposed to do in undermining them ('power must be thought in the hybridity of race and sexuality' [Bhabha 1994: 251]). One reason may be that the language of boundaries and cultural translation raises inappropriate expectations of social analysis. Such expectations are both superfluous and insufficient: the complexity of people's interactions as they might be apprehended sociologically does not find a simple substitute in the subtlety with which categorical boundaries may be re-thought. For a start, the concept of boundary is one of the least subtle in the social science repertoire.

It is therefore interesting to consider a recent sociological approach which hybridizes its tools of social analysis, and devises a new term: network. This is of course an old term newly inflected. 'Networks' (conventional network analysis) have long been present, but now we have 'networks' (in actor-network theory) of a new kind. I deployed the latter in referring to the mix of technical and social competences in Warnier's research team, while juxtaposing the older usage in regard to the company's range of contacts. But what do the new networks convey about hybrids?

Actor-network theorists set up narrational fields in order to show how effects are produced out of alliances between human and nonhuman entities. The body, as a 'network' of materials, is one such narrative for it gives off diverse signals, revealing skill, charisma and pathology (Law 1994: 183). Thus Pasteur's discovery of the microbe for anthrax depended on a whole series of statistical,
rhetorical and operational factors that had to be held together in order to sustain, within a continuous network of effects, the crucially demonstrative links between bacillus, disease, laboratory, field experiment and the life and death of individual animals (Latour 1988: 84-92). The concept of network summons the tracery of heterogeneous elements that constitute such an object or event, or string of circumstances, held together by social interactions: it is, in short, a hybrid imagined in a socially extended state. The concept of network gives analytical purchase on those interactions. Latour (1993: 10-11) is explicit: the networking activity of interpretations that ‘link in one continuous chain’ representations, politics and the world of the scientific discovery creates mixed narratives. The theorist’s interpretations are as much networks as any other combination of elements.

For Latour, the rhetorical power of the hybrid rests on its critique of pure form, of which the archetype is the critique of the separation of technology from society, culture from nature, and human from nonhuman. And this is indeed critique: in his terms, the work of ‘translation’ depends on the work of purification, and vice versa. At the same time, the hybridized form appeals to a reality that pure forms would conceal. Euro-Americans have always mixed their categories. It is (modernist) academic disciplines that have tried to pretend otherwise, and Latour castigates anthropology as condemned to territories and unable to follow networks (1993: 116). Now, anthropologists are perfectly capable of following such networks, that is, of tracking between the Achuar and Arapesh (his examples) and, in the organization of knowledge, between science and technology. Indeed, in the spirit of his account (Euro-Americans have always had hybrids), anthropologists have always done so in their ‘translations’ of ‘other cultures’. As students of comparative inquiry, however, they will not necessarily end up with a critique of the same pure forms that bother Euro-Americans, such as technology and society. That is, their accounts will not necessarily look like anything that could be applied to the social analysis of science and technology. In fact, we know that anthropologists are often diverted by kinship, and may attend instead to matters such as the flow of substance or the application of marriage rules.

In anthropologizing some of these issues, however, I do not make appeals to other cultural realities simply because I wish to dismiss the power of the Euro-American concepts of hybrid and network. The point is, rather, to extend them with social imagination. That includes seeing how they are put to work in their indigenous context, as well as how they might work in an exogenous one. It also includes attention to the way they become operationalized as manipulable or usable artefacts in people’s pursuit of interests and their construction of relationships. In the home culture, part of their power will lie in their analogizing effect, in their resonance with other concepts and other people’s usages; outside the home culture, anthropologists must make their own interpretative decisions as to their utility. I propose to utilize one characteristic of the hybrid, its apparent ubiquity, and to consider how this is supplemented by the concept of network.
Can networks have lengths?

Latour refers to the modern proliferation of hybrids as an outcome of purificatory practice. The more hybrids are suppressed — the more categorical divisions are made — the more they secretly breed. Their present visibility is just that: the outcome of present awareness of this process. Yet the capacity of hybrids to proliferate is also contained within them. For the very concept of the hybrid lends itself to endless narratives of (about, containing) mixture, including the constant splicing of cultural data in what a geneticist might call recombinant culturology. In fact, the concept can conjoin anything, a ubiquity consonant with the perceived ubiquity of culture itself. I see the apprehension of surfeit, then, as a moment of interpretative pause. Interpretation must hold objects of reflection stable long enough to be of use. That holding stable may be imagined as stopping a flow or cutting into an expanse, and perhaps some of the Euro-Americans’ voiced concern over limits re-runs Derrida’s question of how to ‘stop’ interpretation. How are we to bring to rest expandable narratives, not to speak of the cultural anthropologist’s endless production of cultural meanings (Munro in press)? ‘Cutting’ is used as a metaphor by Derrida himself (1992, as cited by Fitzpatrick in press.) for the way one phenomenon stops the flow of others. Thus the force of ‘law’ cuts into a limitless expanse of ‘justice’, reducing it and rendering it expressible, creating in the legal judgment a manipulable object of use; justice is operationalized so as to produce social effects.

If I see in the network of some actor-network theorists a socially expanded hybrid, it is because they have captured a concept with similar properties of auto-limitlessness; that is, a concept which works indigenously as a metaphor for the endless extension and intermeshing of phenomena.

A network is an apt image for describing the way one can link or enumerate disparate entities without making assumptions about level or hierarchy. Points in a narrative can be of any material or form, and network seems a neutral phrase for interconnectedness. Latour’s own symmetrical vision brings together not only human and nonhuman in the ordering of social life, but also insights from both modern and premodern societies. And that is the purpose of his democratizing negative, We have never been modern (1993). Moderns divide society from technology, culture from nature, human from nonhuman, except that they do not — Euro-American moderns are like anyone else in the hybrids they make, even though they are rarely as explicit. Before he castigates anthropology for not going far enough, he praises the discipline both for creating hybrid accounts (mixing natural and supernatural in their ethnographies, politics and economics, demons and ecology) and for uncovering the thinking of those who make such hybrids explicit (in dwelling on them, he says, such people in fact keep them in check). The divides of modern people’s thinking do not correspond to the methods they actually deploy, and this is what people such as Papua New Guineans can tell them. There are similarities, he implies, in the way everyone puts hybrids together: ‘Is Boyle’s air pump any less strange than the Arapesh spirit houses?’ (1993: 115).

For Euro-Americans, technological development offers a vision of the mixed forms implied by technique (nonhuman materials modified by human ingenuity, or human disposition moulded by tools). Network imagery offers a vision of a social analysis that will treat social and technological items alike; any entity
or material can qualify for attention. Thus instead of asking questions about the relationship of 'science' and 'society' in Pasteur's development of the anthrax vaccine, Latour (1988: 91) suggests we follow what Pasteur did and what his invention depended on. However, the power of such analytical networks is also their problem:10 theoretically, they are without limit. If diverse elements make up a description, they seem as extensible or involuted as the analysis is extensible or involuted. Analysis appears able to take into account, and thus create, any number of new forms. And one can always discover networks within networks; this is the fractal logic that renders any length a multiple of other lengths, or a link in a chain a chain of further links. Yet analysis, like interpretation, must have a point; it must be enacted as a stopping place.

Now if networks had lengths they would stop themselves. One kind of length is imagined by Latour: networks in action are longer the more powerful the 'allies' or technological mediators that can be drawn in. (Technology has a lengthening effect and, in his view, premoderns tend to have limited networks.) We may also say that a network is as long as its different elements can be enumerated. This presupposes a summation; that is, enumeration coming to rest in an identifiable object (the sum). In coming to rest, the network would be 'cut' at a point, 'stopped' from further extension. How might that be done? It is worth consulting some of the actors who put such images to use in their dealings with one another.

Cutting networks

Actor-network theorists, and their allies and critics, are interested in the diverse props, to use Law's (1994) phrasing, that sustain people's actions and in the way the props are held in place long enough to do so. Networks rendered contingent on people's interactions turn out to have a fragile temporality. They do not last for ever; on the contrary, the question becomes how they are sustained and made durable. They may seem to depend on continuities of identity (that is, on homogeneity). But heterogeneous networks also have their limits. I shall argue that if we take certain kinds of networks as socially expanded hybrids then we can take hybrids as condensed networks. That condensation works as a summation or stop. The Euro-American hybrid, as an image of dissolved boundaries, indeed displaces the image of boundary when it takes boundary's place.

I give two very brief illustrations, the first an instance in which the actors involved might well have recognized themselves as a network in the conventional social sense, and the second a case in which the social scientist might think of the chain of elements as a 'network' in Latour's sense and of the resultant artefact as a hybrid. The perceivable network in the first, and the analytical hybrid in the second, both bring potential extensions to a halt. In both cases these images of network or hybrid serve the furtherance of claims to ownership.

In 1987 a Californian corporation discovered the hepatitis C virus.11 The virus was a discovery in the sense of an unearthing of fresh knowledge about the world. But the means of detecting the virus led to the invention of a blood test for which the corporation applied for, and was granted, a patent. Patents are claims to inventions; that is, to applications of someone's inventiveness which others technically could, but are forbidden to, utilize without acknowledgement. This test met all the modern criteria for a patent. It was novel,
produced by human intervention and, in the interests of simultaneously pro-
tecting and promoting competition, capable of industrial application.\textsuperscript{12} As a
result, the British National Health Service will reportedly be paying more than
£2 for every hepatitis C test it administers – some 3 million a year. Apparently,
the technology for the blood test is standard. What the inventors added was the
genetic sequence of the virus, making identification of the DNA an integral part
of the test.

Hepatitis C had been under investigation for twelve years before the virus was
isolated. The patent counsel for the company that developed the test was re-
ported as saying: 'We don't claim we did all the research, but we did the
research that solved the problem' (\textit{The Independent}, Dec 1 1994). Any one inven-
tion is only made possible by the field of knowledge which defines a scientific
community. The social networks here are long; patenting truncates them. So it
matters very much over \textit{which} segment or fragment of a network rights of
ownership can be exercised. In another case, forty names to a scientific article
became six names to a patent application; the rest did not join in. The long
network of scientists that was formerly such an aid to knowledge becomes
hastily cut. Ownership thereby curtails relations between persons; owners ex-
clude those who do not belong.

Scientists working with reference to one another would no doubt recognize
themselves as a social network, along the lines of conventional social analysis
('network analysis'). In this sense, the interests linking the several investigators
of the virus were comparable: at the outset, any one of them was a potential
claimant. The network as string of obligations, a chain of colleagues, a history
of co-operation, would be sustained by continuities of identity. However di-
verse their roles, participants replicated one another in the fact of their
participation.\textsuperscript{13} The patent introduced the question over what area the network
spread; who participated in the final spurt.

The extent of a homogeneous network, such as this one, appears to be
bounded by the definition of who belongs to it. However, the divide, created
for the purposes of the patent, between those who did and those who did not
belong, was established not by some cessation of the flow of continuity but by
a quite extraneous factor: the commercial potential of the work that turned a
discovery into a patentable invention. We could say that the prospect of owner-
ship cut into the network. The claim to have done the research that solved 'the
problem' justified a deliberate act of hybridization: co-operative or competitive,
the scientists' prior work could now be evaluated by criteria from a different
world altogether: that of commerce.

Now, while we might expect our (not quite hypothetical) scientists to talk of
networks, we would be surprised if they talked of hybrids. However, an actor-
network theorist might well observe that the act of hybridization was doubly
accomplished in this instance, for it also involved a classic form of Latourian
hybrid: the invention. An invention implies by definition that culture has been
added to nature. The ingenuity of the inventor is held to change the character
of an entity; intellectual activity confers property in it, as does the application of
skill or labour which gives people (the possibility of) property in products.\textsuperscript{14}
Hence a person from whom the original tissue comes finds it difficult to claim
ownership of cell lines subsequently produced in the laboratory. Property rights
cannot be claimed over an unaltered nature; they apply only to an altered one. The inventor's claim is that human tissue has been demonstrably modified by ingenuity, including ingenuity embodied in technological process. An American commentary on immortal cell lines, that is, cells infinitely reproducible in the laboratory, is explicit. 'Many human cells have already been granted patents in the US on the basis that they would not exist but for the intervention of the “inventor”, who extracted and manipulated them' (New Scientist, January 12, 1991).

In the famous Moore litigation, the man who tried to claim property rights in cells developed from tissue removed from his body during an operation lost the case. It was the claim to the heterogeneous hybrid, the fact that these cells had been immortalized through human ingenuity, that was upheld. In fact Moore was castigated by one judge (see Rabinow 1992) for his commercial motives, unseemly in relation to one's body but appropriate for those developing technology with commercial application in mind. Between Moore and his opponents, the claims could be constructed as of different orders; one claimed a body part as part of his person, the other an intellectual product as a result of certain activities. The hybrid object, then, the modified cell, gathered a network into itself; that is, it condensed into a single item diverse elements from technology, science and society, enumerated together as an invention and available for ownership as property. In fact there is a good case for seeing property as a hybridizing artefact in itself, although I do not develop the point here.

Ownership cuts both kinds of network, homogeneous and heterogeneous. First, it can truncate a chain of several claimants, otherwise identifiable through their social relationships with one another, dividing those who belong from those who do not. Belonging is thus given a boundary. Second, it can bring together a network of disparate elements summed in an artefact (such as the invention) that holds or contains them all. If it is the perceived addition of human enterprise that bestows property rights, the human element added to the nonhuman one, then the proof of that hybridity curtails other interests. As at once the thing that has become the object of a right, and the right of a person in it, property is, so to speak, a network in manipulable form.

The structure of these entailments and curtailments holds an interest beyond the specific applications noted here. It is thus necessary to spell out the fact that there is a cultural predisposition among Euro-Americans to imagine that social relationships concern commonalities of identity before they concern difference, and that heterogeneity is inevitable in combining the human with the nonhuman. I turn now to networks that are homogeneous in so far as they presuppose a continuity of identities between human and nonhuman forms, and heterogeneous in so far as persons are distinguished from one another by their social relationships.

II

Stopping flow
Coppet's account of 'Are'are of the Solomon Islands shows the power of making objects which can be manipulated. 'Are'are divide living creatures into three kinds. Cultivated plants have body, domesticated pigs have both body and breath, while human beings also hold a name or 'image'. At death, the once living person is disaggregated or decomposed into these different elements: the
body, a product of nurture received from others, is eaten as taro and vegetable food; breath is taken away in the breath of slaughtered pigs, while the image becomes an ancestor (Copet 1994: 42, 53, referring, it would seem, primarily to men). This ancestral image is revealed as an enduring entity, as the person is stripped of body, breath and relations with all other persons bar ancestors and descendants. Interpersonal debts are settled (Copett 1994: 53), as elsewhere the memory of the deceased is ‘finished’ (Battaglia 1992).

The living human being thus appears to be a hybrid. But we would be mistaken to see this in the ‘addition’ of breath to body or in the ‘modification’ of breathing body by ancestral image. Each of the three components has its own manifestation, and if the amalgamated human being is a person, so too we may think of each component as a person (a person is made up of persons), in continuities facilitated by flows of money. I use the term ‘person’ since the human being is also conceived as an aggregation of relations; it can take the form of an object available for consumption by those others who compose it. In these acts of consumption, the person is, so to speak, hybridized, dispersed among a network of others.

Nonhuman substitutes exist, then, for each of the forms (body, breath and image) that the human person takes. Through body and breath persons are interchangeable with taro and pigs, both of which are living beings like themselves; in the case of their distinctive image, however, they become interchangeable with non-living things. Ancestral image appears in the form of money; that is, strings of shell beads of varying lengths. The image is composed of strands presented at earlier funeral feasts and destined for future ones. Shell money travels from one funeral platform to another, gathering and dispersing as one might imagine a shadowy throng of ancestors doing; the fragmentation and recombination of different strands in the dealings of everyday life, Coppet notes, anticipate the money’s appearance as an entirety at death. Every transaction assists the circulation of fragments or segments of an image. This image is the deceased made present as an ancestor; for shell money is, in effect, an ‘ancestor-image’ (1994: 42), one of a person’s persons, so to speak, in nonhuman form.

What is this money? Money is divisible into standarized portions, measured by the fathom containing twenty-four units of fifty shells. It thus ‘serves as a measuring rod, situating on a single scale events as different as the purchase of ten taros or of a canoe, a marriage or a murder, the amount of a funeral presentation, the payment for a ritual service or for an ensemble of musicians’ (Copet 1994: 40). Marking an event in monetary terms gives it an official seal. It also builds up the person as a composite of past transactions with diverse others. There is a further dimension to money. This stimulator of flows can stop flow. Shell money has circulatory power precisely because other entities, events and products can be converted into it: past encounters and relationships circulate in condensed form in its ‘body’ (my metaphor). Now, at death there is a finalizing sequence of exchanges in which the living being’s two other components become money; in one sequence taro is converted into money, in another pigs (Copet 1994: 53–4). The ancestor-image encompasses both, and the sequences stop at that point. Money thus becomes the repository or container of prior interchanges. It is as an anticipation of the final cessation of flow at death that
money at other points in life can stop other flows, most significantly in homicide payments (Coppet 1994: 10-11). Where there has been a series of deaths, money alone stems the flow of revenge.

'Are'are are explicit about this finalizing sequence: they refer to it as a 'stop' or 'break', imagined as a fall, as at sunset, or as the sinking of a stone. Such stops can only be effected by means of shell money. In other types of exchange, by contrast, money is merely a contributory element; these include tied exchanges ('linked succession') which connect events leading inexorably from one to another so that the giver's repayment of a debt constitutes a new debt for the recipient. Any one prestation is also composed of 'returns', the smallest sequence in a cycle of exchanges; exchanges are thus made up of exchanges. Together, these activities bring about networks of different lengths: 'Are'are measure the length of debt in an enlarging series of acts, from 'return' to 'linked succession' to 'stop', the last gathering up all preceding flows into one moment.16 Like strands of shell money itself, these flows are simultaneously divisible and indivisible. In short, networks are composed of both human and nonhuman entities; they differ in how they are absorbed or consumed.

The mortuary ceremony that makes the deceased's networks visible also blocks their future effect. Old networks are cut by being gathered up at a point (in the deceased), whose socially hybrid form is dispersed and thereby brings new networks into play. The relationships that once sustained the deceased become recombined in the persons of others.

*Bringing flow back*

If the 'Are'are person emerges from such transactions as hybrid, then its heterogeneity comes from the way differences are sustained between the social relations that sustain it; the hybrid is an amalgam of social relations. In this Melanesian case, it is made visible as a network via funerary, bridewealth and similar prestations, transactions that lay out the person in terms of the claims diverse others have. And vice versa: the same transactions condense claims into socially manipulable objects of consumption (things). What are, in a manner of speaking, homogeneous, implying continuities of identity, are the forms – human and nonhuman – that these objects of consumption take (the body is the taro). With reference to similar transactions on Tanga, Foster (1995: 166 sqq.) reminds us that it is an illusion to imagine that differences of value lie in the intrinsic nature of things: values are the outcome of relational practices. Thus 'identical' products may have 'different' values (cf Piot 1991).

Coppet analyses exchanges in terms of a hierarchy of encompassment: from the tiniest interchange that carries an expectation of a return, to the ritual compulsion by which people are linked through making payments requiring further payments, to the capacity to gather such exchanges up in a mortuary prestation that caps them all. Here they are condensed into money. Money can, in turn, be spread out and disaggregated. What is true of a man's death is also true of a woman's marriage. Bride-givers bestow on the husband's kin the potential for growth in their sister whom they have grown, and they receive back, and thus consume, evidence of growth already accomplished in the form of valuables. Here are objects with different values: reproductive wealth (a future wife) in return for a non-reproductive sister. Now a non-returnable
portion of money (‘money to stop the woman’) is said to stop the woman’s image; her kinsmen’s identity will no longer flow through her. In addition, her kin receive further money which they return to the husband’s side in separate lots as money, taro and pigs. Her kin thereby re-create, as separate components, the body, breath and image of the woman from the single gift of money.

‘Are’are ancestor-money is thus a condensed objectification of the person who can be disaggregated into various manifestations of relations with others. The (homogeneous) network of elements that make up the person – human and nonhuman – is also a (heterogeneous) network of social relationships. In turn, the person acts as both container and channel, blocking flow and bodying it forth.

Kinship systems, as anthropologists model them, have long provided analogies to this kind of process. Consider those curtailments of claims that come with exogamy, sister-exchange or cross-cousin marriage. If we imagine these protocols as creating networks of varying lengths, then they have different capacities for sustaining flow or stopping it. Many kinship systems certainly presuppose measurements for tracing the extent of substance. Indeed we may take this as diagnostic of ‘lineal’ modes of kinship reckoning. Extensiveness of claims may be reckoned in terms of continuity of identity, as when a descent group whose members share common substance truncates claims over its members at the exogamic boundary; making new relations through marriage stops the flow. Or old relations may have to be cancelled before new ones are produced. Or, again, the kind of marriage rule that invites persons to think of themselves as marrying cousins or exchanging siblings invites them to think of substance as turning back on itself Here networks are stopped in the persons of relatives who become the turning point for directing the flow of fertility back.17

On South Pentecost, shortly after the birth of a child, Sa-speakers make a payment to the mother’s kin for the loss of blood (Jolly 1994: 146). This is among those called lo sal, ‘inside the road, or path’ (1994: 109). Perhaps this particular payment can be read as given both for the blood spilt at intercourse and birth (the reason Sa people give) and for the blood dammed up, no longer flowing with their fertility; father’s semen blocks mother’s flow of blood (Jolly 1994: 143). The child embodies maternal blood but cannot pass it on; instead, lifelong payments are due to the maternal kin. When the mother’s brother receives a boar in recognition of the blood which, while contributing to the child, has no forward effect, he is forbidden from tying it up. Instead that role is performed by the mother’s mother’s brother, who in turn is forbidden from eating it. The latter has already eaten pigs given him earlier by the mother’s brother (Jolly 1994: 111-12); he is thus made present but cannot benefit from the flow of fertility beyond one generation. A sister’s substance, then, is not passed on to her grandchildren but is stopped in her children. The grandchildren of cross-sex siblings, preferred marriage partners, subsequently remake the ‘road’ (Sa for ‘marriage’): a man marries into the place from which his father’s mother came.

While these Melanesian chains – of persons, and of the wealth that flows along with them - are followed outwards to a certain extent, some may turn around at key points and return. This may be accomplished over time: previous generations are reborn, persons making up other persons. In terms of social
process, alternating socialities come to be effected by, among other means, the sustained difference between flow that spreads and growth that gathers or stops the flow. To energize procreative substance either to disperse or return, it must be made different in the way its network is spread out. 'Are'are bridewealth money fixes the woman's ancestral identity, while taro and pig effect the transfer of her body and breath between kin groups. Each side retains, so to speak, its version of her.

Whether or not accompanied by marriage rules, such procreative relationships tend to share one general characteristic: transactions construct networks of restricted length. Networks become measurable. They are measured by people's indebtedness to one another through the flow of objects, human and nonhuman; those who give or receive wealth, or the people they stand for, become links in a specifiable chain. Claims can be conceptualized as simultaneously resulting from ties of bodily substance and from previous transactions. So brides or ancestors act as objects that may flow either with or against the flow of other objects (Wagner 1977). Links appear in the chain when it becomes possible to exchange 'different' objects for social consumption. By the same token, chains come to rest in these objects, human or nonhuman, at the point when actions can be taken with them. Bridewealth lays out who shall receive at a woman's marriage, and anticipates the next generation of transactions at her future daughter's marriage.

J. Weiner (1993a: 292) remarks that in a relationally based world 'the task confronting humans is not to sustain human relationships ... [but] to place a limit on relationship'. Giving and receiving shell valuables at marriage controls the flow of relationship between affinal groups. So does the movement of persons. The paternal inheritance of the Hagen bride terminates with her; she is like the Vanuatu mother whose blood is blocked at pregnancy, or the 'Are'are ancestor in whom all reciprocities are finished. At the point at which claims cease or turn back, they become truncated by their intersection with other claims, signified by a hybrid figure (human being or wealth item or ritual substance) who gathers them within, so that they are seen to stop in his or her person.

III

One class of kinship systems in the anthropological repertoire is notorious for having no internal stops. Bilateral or cognatic (nonunilineal) kinship reckoning allows that substance flows, and evinces itself, in individual persons but it does not stop in them or turn back. Indeed, indigenes may tell themselves that they are all related — trace far enough back and everyone shares substance with everyone else. As a response to such systems, there was, in the 1950s and 1960s, much anthropological debate about cutting networks. These debates addressed the problem of potentially endless networks of relations that seemingly did not cut themselves. One could trace forever outwards. From this came the presumption that there was no measure beyond the dictates of contingency: bilateral kinship appeared to have no inbuilt boundaries of its own. It was argued that in order to create groups, for example, ramifying kin ties had to be cut through other principles of social organization.
I would argue that what was applied to analysing group formation in such societies were the very mechanisms that do in fact give bilateral kin networks of the English kind a self-limiting character (Edwards & Strathern n.d.). One kind of reckoning never operates alone; it *always operates in conjunction with* factors of a different order. From the anthropologist's comparative viewpoint, 'kinship' has to lie in the combination.

Here we have the Euro-American hybrid: not just an expanse 'cut into' by other phenomena but a specific abridgement of nature and culture. Social relations depend on multitudinous factors that truncate the potential of forever-ramifying biological relations. Biological relatedness—'blood ties'—can thus be cut by failure to accord social recognition (someone is forgotten), just as social relationships can be cut by appeal to biological principles (dividing 'real' kin from others). So in practice one does not trace connexions for ever; conversely the most intimate group is also open to discovering contacts they never knew existed. Factors from diverse domains can affect the reach of an otherwise homogeneous network based on 'blood' or 'family'.

What is interesting about English bilateralism, then, is that the basis on which everyone might say they are related (biological and genetic connexion) can be reckoned separately from the traffic of social relations. This gives us both continuities and discontinuities of identity. In so far as biology and society are taken as distinct domains, we can see why the users of English culture presume an identity of interests in social relations and why they presume heterogeneity in mixes of human and nonhuman. In Melanesian terms I might want to say that these Euro-Americans imagine a boundary to the person that makes internal flows of substance radically different from external ones (interactions with others). That also gives a tenacity to their ideas about race and sexuality: continuities are somehow within and discontinuities somehow outside.

While my arguments have been pitched very generally, I would assert that such generalizations lie 'within' the specificities of social life as well as 'outside' them. Consider Steve, in Simpson's account of the 'unclear family' constituted through parental divorce.20

Steve's narration of his 'family life' places him at the centre of a network of relationships which carry varying loads in terms of affect and commitment. For example, he sees himself as a 'father' to six children. However, the way in which fatherhood is expressed and experienced by Steve in relation to each of his children is variable. The label 'father' condenses and conceals varying levels of financial and emotional commitment, different residential arrangements and variable quantities of contact (1994: 834).

Steve is at once a (singular) father and contains within his fatherhood a range of elements. They comprise connexions with persons, different social practices, resources and materials, heterogeneous elements from which, in this passage, Simpson has selected a few.

Disaggregated into its components, it would seem that the figure of the father expands to bring in a range of reference points; yet it also contracts in so far as only a small set of components is singled out: what Steve means by 'father' is likely to encompass more than can ever be specified.21 When the specification is reduced to distinguishable elements, as in commitments defined as both financial and emotional, then we can refer to the resultant construct, the father who shows both, as a hybrid. As a kinsperson, then, this figure constitutes a
condensed image whose dispersed, network version is distributed between separable orders of fact (money, emotion).

English and other Euro-American bilateral systems of kinship join together disparate reasons for relatedness. They are premised on conserving ontological difference between domains: on imagining that the affective relations of kinship are materially different from the flux of economic life, or that the transmission of substance operates under laws of biology separate from social laws, or that individual persons are natural beings modified by society. Here the earlier examples of invention have a particular point in my narrative. The inventor is a kind of enhanced agent. All human agents are inventors (creators) in a modern, Euro-American sense: the person is substance plus the animating self-inventiveness of agency, a combination of distinct elements. The elements may be regarded as 'added' together, 'modifying' one another in the same way as culture modifies nature. If, in Melanesian terms, Euro-Americans sometimes seek to sustain a difference between internal and external flows (body and intellect versus biology and culture, and so forth), it is because each can be presented as having its own impetus or logic. For they can be turned to use separately as well as in conjunction, as I have indicated in respect of concepts of ownership. Belonging marks relations based on continuities of identity, and thus the separation of pure forms, while property presupposes discontinuity, and the conjunction of human enterprise with nonhuman resources.

I have wilfully mixed old and new – the old networks of network analysis and kinship theory, and the new ones of actor network theory. It has led me to think about an indigenous, Euro-American mechanism for cutting: 'ownership'. Ownership is powerful because of its double effect, as simultaneously a matter of belonging and of property. Euro-Americans will not have to look far in order to determine network length; they have always known that belonging divides and property disowns. So where technology might enlarge networks, proprietorship can be guaranteed to cut them down to size.

Perhaps, in this, the 'Are'are notion of 'stop' as a prestation that is a resting place, repository or turning point bears comparison with, though by no means assimilation to, the notions of ownership I have sketched here. These notions challenge the interpretive possibility of limitlessness: the kinds of interests, social or personal, that invite extension also truncate it, and hybrids that appear able to mix anything can serve as boundaries to claims.

NOTES

This article is in memory of Jeffrey Clark, and his account (1991) of pearlshells that flow and pearlshe lls that grow. Alan Macfarlane has contributed invaluable comments on ideas of property, and I am further grateful to the several comments of the ESRC seminar on Technology as Skilled Practice convened by Penny Harvey at the University of Manchester which heard a version of this article. Comments from Annelise Riles, Simon Harrison and the Journal's anonymous readers have been much to its improvement. Thanks to those who have given me permission to cite as yet unpublished works: Peter Fitzpatrick, Iris Jean-Klein, Christopher Taylor, Nicholas Thomas.

1 Taylor (n.d.) focuses on 'flow' and 'blockage' in certain Central and East African understandings of channels of potency. A. Weiner (1992) and Godelier (1995) have commented on similar issues to different theoretical ends, as has J. Weiner (1995a; 1995b).

2 I personify a discourse for expositional convenience.
One of the Journal's readers commented on the role of legal thinking in such separations. Indeed, one might take the development of the law as historically crucial to that modernist commonplace, the distinction between subject and object. If the eighteenth-century development of copyright law, for instance, turned on claiming authors' paternity in relation to products, through the concept of commercial profit it also rendered authors' works separable from their persons.

The distinctions do not preclude but make more powerful the attachment of persons to their property. Property is of course integral to family life, not to speak of inheritance and family businesses.

There are innumerable such pairs of terms in English (human and nonhuman, culture and nature, law and society, person and property and so forth). These merographic connexions are a source of flexibility in Euro-American conceptualizations, giving a particular inflection to the 'layers of redundancy' one expects in cultural life (Battaglia 1993: 439). As similar but not identical constructs, such pairs sustain one another. Indeed, that none of them is identical to another is part of their rhetorical power, since similar contrasts appear to hold across several discrete (all slightly different) fields. Thus one can talk of an embryo as human but not a person, while making moral discriminations between human and nonhuman, person and property.

Papastergiadis (1995: 14-15) gives the example of Lotman's (1991) 'semiosphere'. 'For Lotman, the semiosphere is in a constant state of hybridity. It always oscillates between identity and alterity, and this tension is most evident at its boundaries'. Boundaries are contained in those first-person forms that differentiate self from other. In Lotman's (1991: 131) phrase, 'Every culture begins by dividing the world into "its own" internal space and "their" external space'. This is the dangerous nonsense of which European xenophobia is formed (Stolcke 1995). It will be clear that I do no more than brush the tip of recent cultural critiques; for an anthropological commentary, see the essays edited by Fardon 1995.

When Law (1994: 18-19) defines network, he remarks that it does not have much to do with standard sociological usage as in the tradition of kinship studies. I suggest to the contrary that English kinship offers an interesting model of networks that concern links not just between persons but between human and nonhuman entities. This is touched on at the end of the article.

The tools of their discipline include methods of classification and comparison that are, arguably, an effect of the same Euro-American scientific imagination with which they battle in every ethnographic description.

Whereas the brief references to Melanesia that follow distil extensive ethnographic enquiry, the references to Euro-American incidents are ethnographically anecdotal; that is, no more than examples of the culturally possible. Their value lies in their distillation of reflection on analytical models within the discipline.

And they are not innocent (Riles 1994). The observer's or writer's counter-rhetorical practice in deconstructing narratives of unity carries its own politics (Jean-Klein n.d.), as does the easy assimilation of conjuncture to the concept of hybridity (Thomas in press).

I have used the example elsewhere (Strathern n.d.) from the point of view of the element 'added' by human enterprise. The details are as The Independent reported them on December 1st 1994, following a High Court ruling enforcing the patent in this country.

Critics have pointed out that there is only one set of DNA sequences to be identified in the human genome, and no claims to identification could be challenged by further inventions; the patent is protecting the company from competition, not promoting competition.

Hill and Turpin (1995: 145) quote the Vice-President for Science and Technology at IBM who observed in 1991: 'Most large companies in the world are extensively cross-licensed with each other. Exclusive licences are almost non-existent. The key is not ownership, it is access'. Of course the key is ownership, but ownership of a network or segments of it along which 'access', like money, flows.

'No skill or labour has been exercised on it; and there has been no change in its character': a dissenting judge refuting claims made to property in a corpse, quoted in Nuffield Council on Bioethics 1995: 80. Such principles are of course open to contestation in the way they are applied in specific cases; I do not have to add that which persons claim property will depend on the relations of production.

Moore v Regents of the University of California, 1990, is taken as a locus classicus for debate concerning human tissue developed as the basis for a commercial product (Nuffield Council
on Bioethics 1995: 72). The phrasing in this paragraph is mine. The court was trying a preliminary point of law as to whether a person had property rights in tissue taken from the body (Nuffield Council on Bioethics 1995 includes a summary of the judgment). Rabinow 1992 offers a full and fascinating anthropological comment.

16 A distinction between those killed by other persons (death by homicide) and those killed by ancestors (death by illness) alters the sequences here. I should add both that I have put my own interpretation on Coppet’s analysis and that my extracts do not do justice to his fine, holistic account.

17 The exegeses of several Melanesianists are relevant here, but I truncate that chain of collaborative work in referring to one: J. Weiner (1993b) invokes a delightful succession of resting places in his description of the winged Foi pearlshell capturing in hardened form the life-giving force of birds in flight, while certain shells set aside in houses immobilize the life-giving force of shells in constant circulation.

18 In a positive mode; negative modes would include uncontrolled flow or unproductive blockage or obstruction (Taylor n.d.).

19 However, in contrast to universes of kin where affines are already consanguines (see, for instance, Kapadia [1994] on South India), for Euro-Americans the possibility is either rhetorical or belongs to the class of bizarre truths.

20 Networks (in Latour’s sense) arise as a result of ‘translation’, that is, the mobilization of claims and interests by which people traverse or assemble components of their lives. While Steve and his present wife try to ‘treat’ all the children equally, his mother-in-law cuts the network: she ignores Steve’s children from his earlier marriages and gives treats only to her daughter’s children (Simpson 1994: 835).

21 This observation derives from Wagner’s (1986) description of contraction and expansion in perceptual process. The figure of the father serves as a single ‘iconic’ image, while containing specifiable, ‘symbolic’, possibilities within itself. These act as codes or reference points for the image, but they always add up to less than the whole. I should note that in this work Wagner is concerned with the ‘flow’ of imagery which is ‘stopped’ by the specifying practice of symbolic reference. My focus here is with another side of that process: the endless ability to create more and more reference points, as in a narrative, or bring more and more elements into play, which is ‘stopped’ by the singularity of the image as a particular, usable object. Law (n.d.) observes that actor network theory creates links in the very process of creating objects of study. The ‘object of study’ thus cuts potential networks, by drawing things to a particular encompassing point or image.

REFERENCES

—. 1993. At play in the fields (and borders) of the Imaginary: Melanesian transformations of forgetting, Cult. Anthrop. 8, 430–42.
Fitzpatrick, P in press. Governmentality and the force of law. *Teoria Sociologica* [spec. iss. 'Regulation, constraints, alternation, governmentality'].


Jean-Klein, I. n.d. The 'national community', constructionism and deconstruction – the rhetorical enactment of the suspended community in the West Bank territories during the intifada [mss, University of Edinburgh].


MARILYN STRATHERN


**Couper à travers le réseau**

*Résumé*

Les nouvelles technologies ont rouvert un vieux débat concernant les descriptions de la vie sociale et les approches considérées novatrices ou surannées. Répondant à l'appel lancé par Latour, qui prône une anthropologie symétrique réunissant les formes de savoir modernes et non-modernes, l'article considère les concepts d'hybride et de réseau tels qu'ils sont utilisés aujourd'hui. Ce faisant, il présente une réflexion sur le pouvoir d'extension infinie de la narration analytique, et sur la place tout à fait intéressante qu'occupe le droit de propriété dans un monde apparemment sans limites.

Department of Social Anthropology, University of Cambridge, Free School Lane, Cambridge, CB2 3RF, U.K.