

Introduction

PEDIGREES OF KNOWLEDGE

ANTHROPOLOGY AND THE GENEALOGICAL METHOD

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‘It will lead to an understanding of who we are as a species and how we came to be.’ These bold words were uttered by Dr. Marie-Claire King, a geneticist at the University of California, Berkeley, to refer to the plan to create a global map of human genetic diversity (quoted in Lewin 1993: 25). Known as the Human Genome Diversity Project (HGDP), the aim of this venture has been to ‘create a data base of human genetic variation’ (Hayden 1998: 174) before this diversity disappears from the planet. The plan entails collecting blood and tissue samples from literally hundreds of indigenous groups worldwide. Targeted groups were selected on the basis of their geographic isolation – with priority going to those who are ‘most endangered’ (Hayden 1998: 179), and their presumed ability to answer questions of compelling scientific interest.

As described by the major parties involved, the ultimate goal of the HGDP was to create a microphylogeny of the human species – a master genealogy of the human race – which could then be used to study patterns of human migration and disease susceptibility (Cavalli-Sforza et al. 1991; Gillis 1994; Hayden 1998; Lewin 1993). The project was also seen to be of value to those groups from whose bodies tissue samples are being drawn. In the words of one proponent who appeared before an audience of bioethicists at the International Congress of Bioethics in 1996: ‘We are going to tell these peo-

ple who they really are' (quoted in Marks 2001: 355, italics added). As they strive to create an authoritative account of human identity and history, proponents of the HGDP cast into stark relief several themes that have been of central concern to anthropological researchers for decades. These include how social groups are constituted through time and what role heredity plays in establishing various kinds of social identities (Marks 2001: 377).

In this collection we explore the seemingly natural place that a genealogical paradigm occupies in Euro-American thought. More specifically, we are concerned with the ways in which assumptions that lie behind a genealogical model – in particular, ideas concerning sequence, essence, and transmission – structure other modes of practice and knowledge making in domains that lie well beyond what we normally label 'kinship'. In the diverse set of essays that follow, the contributors to this volume examine the role that genealogical thinking has played in structuring the development of social science thought, including, among other things, how anthropologists have approached the social lives of non-Western peoples.

Genealogical modelling became a standardized implement in the anthropological toolkit with the publication in 1910 of W.H.R. Rivers's essay *The Genealogical Method of Anthropological Inquiry*. Armed with a technique that was intended to facilitate ethnographic comparison, scholars have undertaken a great deal of anthropological work following his procedure, thereby implicitly drawing upon the assumptions that are inherent in this model. Schneider's (1968, 1984) critique of 'kinship' was intended to debunk the premises upon which genealogical thinking rested. Yet despite the critical acclaim with which his work was received in anthropology, the genealogical model has proven to have a remarkable tenacity in the discipline and continues to underpin a great deal of work in the social and natural sciences (see Ingold 1990, 2000).

This volume addresses the persistence of genealogical thinking. In addition to examining the role that it has played in framing orthodox anthropological understandings of 'kinship', the chapters in this collection broaden the scope of inquiry to include a consideration of how the concept of genealogy has influenced Euro-American understandings of race, personhood, ethnicity, property relations, and the relationship between human beings and nonhuman species. We also consider how recent developments in the fields of science and technology are providing scholars with new avenues through which to view many assumptions that inform genealogical thinking. The contributions make clear that a genealogical paradigm

not only figures centrally in organizing knowledge about the world alone but is also implicit in structuring those social institutions and relations that give our social world its form and meaning.

The chapters draw upon ethnographically based analyses to address a series of important questions. We began by asking contributors to consider exactly what the genealogical model is – either theoretically or historically – and to what extent anthropological theory relies (both implicitly and explicitly) upon the assumptions inherent in this framework. Secondly, we were interested in understanding the degree to which genealogical thinking has been constituted through a set of metaphorical borrowings between the ‘social’ and the ‘natural’ sciences. In tracing this, we are concerned with highlighting any additional domains of thought into which the genealogical model has penetrated. Given these overlaps and borrowings, what does the adoption of a genealogical model occlude, if anything, in terms of our ability to understand human / environmental relations? Such questions in turn prompt enquiry into our notions of ownership and of creativity, and how these too are structured by elements of the genealogical model of reckoning connection and relatedness. Given recent shifts in science and medicine, we also examine how the rise of biotechnology has both challenged and reaffirmed the assumptions upon which a genealogical framework is based. And finally, we were concerned with investigating how anthropologists might go about developing alternative models of understanding that move beyond the assumptions that undergird a genealogical framework.

In addressing these issues, the chapters in this book contribute to several ongoing debates in anthropology. By returning to the founding premises of our discipline, the authors reconsider anthropology’s ability to provide a unique framework capable of bridging the social and natural sciences. Secondly, we bring new perspectives to bear upon contemporary theories concerning biotechnology and its effects on social life. Thirdly, the chapters engage with the recent revival of interest in kinship as ‘modes of relating’. The focus on genealogical thinking, we believe, is a shift that can tell us new things about our own epistemology and help us to separate out elements that inform and in some cases hinder our theorizing.

Conceptual Beginnings and Ethnographic Emplacements

Although a genealogical model formally entered anthropology through the work of W.H.R. Rivers, the concept has far greater his-

torical depth in Euro-American thought. As Mary Bouquet has argued, genealogical thinking draws upon the diffuse currency of tree imagery as a taxonomic device for organizing religious, secular and scientific purposes in the West (1996: 43). As we shall see, the broad range of contexts within which this concept has figured in the popular imagination – not to mention its seemingly natural acceptance as a founding principle of anthropological thinking – helps to elucidate its appeal to Rivers as a methodological device.¹

Early uses of the family tree as a representational device are to be found in Christian religious texts. As Bouquet relates, from the eleventh century on, various Christian scholars sought to represent the ancestry of Jesus from Jesse, who is said to have been the father of David, following the information in the Old Testament. Known as the Tree of Jesse (*radix Jesse* in Latin), these visual illustrations are often found in medieval manuscripts, wall paintings, woodcarvings, stained glass windows, floor tiles and embroidery. In renderings of the Tree, it is usual for Jesse to be portrayed reclining on a couch with a tree rising from his body and the ancestors of Christ depicted in its branches along with prophets and evangelists. Moving up the trunk, one encounters four kings, the Virgin and the Trinity. Jesus Christ is enthroned at the summit of the Tree.

Given its use in sacred literature and imagery, it is not surprising that genealogical reckoning came to serve as a model of distinction in early European society, nor that aspects of its visual representation appear in fascinating diffraction in many places (see Figure I.1).² By the end of the twelfth century, genealogy had become the surest means of preserving the memory of one's ancestors and of enhancing the prestige of an elite family. Demonstrated birth and membership in an aristocratic family became the legitimizing criteria for anyone who wanted to take advantage of the automatic inheritance system for fiefs. By 1500, a 'well born' man thought of his ancestors and descendants as a group of people through whose veins flowed the same noble blood (Klapisch-Zuber 1991: 107–9). The presumed transmittal of noble qualities between parents and offspring was legitimized by keeping detailed records of one's family tree – a written pedigree – which documented that the purity of the noble line had not been sullied by interbreeding with outsiders of an inferior class. As Bouquet notes: '[The] nobility, who seem to exercise control over their marriages (and hence the intermingling of blood in their offspring) are distinguished from the common ranks where chance appears to govern convergence of partners. Breeding emphasizes the behavioural outcome of controlled procreation: being



FIGURE I.1: Javanese tree image.

well bred implies having natural good manners and gentility' (1993: 190).

Biblical imagery in the form of genealogy furnished a metaphor for imagining class-based distinctions during certain periods of European history, but its influence did not end there. A genealogical framework came to provide an organizing trope for nineteenth-century evolutionary biology, a discipline with huge and ongoing influence,

as the HGDP attests. As Marilyn Strathern (1992) outlines, Darwin's intent in writing *The Origin of Species* (1859) was to develop a master genealogy of the 'natural world'. He endeavoured to show that human beings are connected 'through the great trunk of life' (Bouquet 1996: 56) to apes, salamanders, dogs and single-celled organisms, to name but a few. Toward this end, Darwin drew upon relationships in the social world (i.e., existing kinship configurations) in order to describe relationships between natural species. Throughout *The Origin of Species*, terms such as 'descent', 'affinity' and 'ancestry' are used to express ideas about the evolution of life forms for which there existed no ready-made vocabulary (Strathern 1992: 90).

Yet as Strathern notes, in drawing upon existing notions of pedigree for inspiration, Darwin also transformed them in important ways. In particular, he divested pedigree of its aristocratic underpinnings and replaced it with a democratized vision of genealogy as organizing various organic processes. As Strathern explains: 'Contained within [*The Origin of Species*] is a double move: in undoing the connotations of rank and status attached to the very fact of knowing one's pedigree, he puts in place the assumption that a genealogy is a recorder of natural relations. It displays physical kinship in the chain of being. If there were once a sense in which only the aspiring had "connections," now we all have connections and, as he put it, probably all the organic beings which have lived on this earth appear descended from one primordial type' (1992: 91). In one and the same move, Darwin both broadened the scope of genealogy and recast it as being grounded in 'nature' and thus as having an unchanging and primordial essence.

It was the newly attributed scientific qualities associated with the genealogical framework that prompted Rivers to adopt it as a tool for ethnographic research. Indeed, according to Bouquet, Rivers intended nothing less than to establish ethnography as a science 'as exact as physics or chemistry' (1993: 114). Toward this end, he enjoined fieldworkers to obtain 'basic information' on relatedness by collecting genealogical data as a standard component of ethnographic research. As envisioned by Rivers, the genealogical method involved two distinct tasks: first, a pedigree consisting of the proper names of relatives of a particular individual was assembled; next, the terms for addressing these persons were collected (Rivers 1910; Bouquet 1993: 32). It was felt that this procedure allowed the fieldworker to capture the thought processes through which the population being studied classified kinspersons within their social universe. It also allowed ethnographers to discover laws concerning local patterns of

social organization. Rivers extols the virtues of this method in his 1910 essay: 'By means of the genealogical method, it is possible, with no knowledge of the language and with very inferior interpreters, to work out with the utmost accuracy, systems of kinship so complicated that Europeans who have spent their whole lives among the people have never been able to grasp them' (1910: 107).

In addition to its utility in revealing indigenous forms of sociality, the genealogical method was scientifically sound for other reasons as well. It provided the researcher with a means of double-checking the veracity of informants' statements, thereby bolstering the empirical reliability of the investigation as a whole:

Among savages, just as among ourselves, there are the greatest differences between persons in the accuracy with which they can give an account of a ceremony or describe the history of a person or course of events. The genealogical method gives one a ready means of testing this accuracy. I do not mean merely that a person who remembers pedigrees accurately will probably have an accurate memory on other subjects, but that the concrete method of inquiry which the genealogical method renders possible enables one to detect carelessness and inaccuracy so much more readily than is possible by the more ordinary methods of inquiry. It is not an unimportant point that the knowledge that the facts are accurate gives one a sense of comfort in one's work which is no small asset in the trying conditions, climatic and otherwise, in which most anthropological work has to be done. (Rivers 1910: 107–8)

From the perspective of contemporary anthropological kinship theory it is ironic (see Astuti and Viveiros de Castro, this volume) that Rivers believed that one of the greatest advantages of his method was that it would 'preserve' indigenous culture against the onslaught of European influences. In his essay, he writes:

It is almost impossible at the present time to find a people whose culture, beliefs and practices are not suffering from the effects of European influence, an influence which as been especially active during the last fifty years. To my mind, the greatest merit of the genealogical method is that *it often takes us back to a time before this influence has reached people*. It may give us records of marriages and descent and other features of social organization one hundred and fifty years ago, while events a century old may be obtained in abundance in all of the communities with whom I myself have worked, and I believe that with proper care they could be obtained from nearly every people. (Rivers 1910: 109, italics added)

The development of the 'genealogical method' was to have a profound impact on the intellectual history of anthropology. Holding out the promise of scientific objectivity, it was enthusiastically adopted by field researchers for many decades, and continues to be advocated as a methodological instrument in many standard introductory texts. Significantly, Rivers's focus on pedigree as the pre-eminent tool of cross-cultural research 'paved the way for kinship to become the centrepiece of British social anthropology during the first half of the 20th century' (Bouquet 1993: 208). Whatever else an ethnographer might seek to document, a description of the 'kinship system' was a required component of his or her research. As a common denominator in anthropological accounts of 'primitive people', kinship allowed each society to be analysed separately and then compared according to a standard global idiom. Even as late as 1967, J.A. Barnes referred to the collection of genealogical diagrams as 'part of the ethnographer's minimum obligation for making fieldwork intelligible to others' (quoted in Bouquet 1994: 43). An understanding of kinship, viewed through the lens of a genealogical framework, was (and often continues to be) an incontrovertible component of ethnographic research.

It was, of course, David Schneider who came to question the foundation upon which over half a century of anthropological research had been based. In his first major work, *American Kinship: A Cultural Account* (1968), Schneider set out to expose the assumptions that structured North American kinship configurations. He argued that North American kinship logic rested on a distinction between two orders: the order of nature and the order of law. He demonstrated that in the worldview of many North Americans, one can be related 'by blood' (i.e., in 'nature'), or one can be related 'in law' (by marriage). Sexual intercourse served as a core symbol in this conceptual framework inasmuch as it provided a bridge between these two domains: 'This figure [coitus] provides all of the cultural symbols of American kinship. The figure is formulated in American culture as a biological entity and a natural act. Yet throughout, each element which is culturally defined as natural is at the same time augmented and elaborated, built upon and informed by the rule of human reason, embodied in law and in morality' (Schneider 1968: 40). Sexual intercourse between two people who are biologically unrelated (but married, that is, related in law) results in children who are connected to their parents through shared biogenetic substance (nature), but who will relate to one another on the basis of love (i.e., through social conventions). Kinship is biology with cul-

ture put on top. It has to do with the social regulation of biological givens.

To the extent that Schneider demonstrated that our taken-for-granted understandings of kinship were the product of our own cultural assumptions, the implications of his study were far-reaching.³ Schneider suggested that insofar as the categories of culture and nature ('social' vs. 'biological' kinship) had informed the bulk of our ethnographic research abroad, we had failed as a discipline to understand much of anything about the world. For several decades, cultural anthropology had staked out a seemingly unique place in the social sciences by virtue of its seemingly 'obsessive' (Franklin 1998: 102) interest in matters pertaining to kinship and succession. Any particular kinship system was seen as a cultural elaboration on the 'basic facts of life' (Fox 1967: 27). It was the task of sociocultural anthropology to document the different interpretative spins that each society placed on procreative arrangements. But if the distinction between 'social' versus 'biological' kinship was culturally specific, what exactly had anthropologists been studying?

In his second major work, *A Critique of the Study of Kinship*, Schneider (1984) tackled this question in detail. He argued that what anthropologists had been studying (or thought they had been studying) for well over a century was nothing more than a reflection of Euro-American cultural categories taken abroad. The taken-for-granted assumption that people everywhere assigned conceptual significance to the 'facts' of human sexual reproduction and classified relatives in accordance with these principles revealed more about the internal fabric of dominant Western worldviews than it did about the societies that anthropologists purported to be studying.

In the course of deconstructing the universal basis of kinship, Schneider also deconstructed kinship as an independently existing analytical domain (Weston 1995: 89). The publication of *Critique* challenged the idea that the study of kinship was front and central to anthropology. Having 'dismantled the subfield's procreative underpinnings' (Weston 1995: 89), Schneider undermined the foundations upon which kinship as a domain of scholarly theorizing rested. If kinship was not the 'same thing' in all cultures, then the comparative mission of anthropology seemed doomed to fail (Carsten 2000: 25). Like was not being compared with like. Having lost its genealogical underpinnings, the study of kinship appeared to lose its status as an independent object of analytical inquiry. Not surprisingly, throughout much of the 1970s and 1980s, studies of kinship came to be subsumed by studies of gender. In a like man-

ner, analyses highlighting the play of politics and power replaced an earlier interest in elucidating the presumed 'jural' properties of kinship relationships.

In the wake of Schneider's critique, anthropologists were left with something of a conundrum: they could either abandon the concept of kinship altogether (see Leach 2003: 85–86), or they could adopt a far wider definition of the concept than had been used in previous discussions. Since the early 1990s at least, an attempt has been made in the latter direction. This effort has drawn upon a notion of 'relatedness' to define kinship as a 'process' rather than a state of being. Proponents of this model have given much attention to optative and adoptive relations, to postnatal modes of creating substance-based links through purposeful acts of feeding, caring, loving and sharing (see Viveiros de Castro, this volume). To redefine kinship in this manner, it is argued, offers redemption for the topic by understanding it to be a varied and locally constituted process, not dependent upon Western notions of procreation as the defining element relating persons to one another.

Janet Carsten's (1995, 1997) work with Malays in Southeast Asia is representative of this theoretical move. In an article that discusses social relations on the island of Langkawi, she writes: 'Here, I focus strictly on notions about substance and the way it is acquired through feeding. My intent is to show how bodily substance is not something with which Malays are simply born and remains forever unchanged, [but] to show how it gradually accrues and changes throughout life as persons participate in relationships' (Carsten 1995: 225). Mary Weismantel (1995) adopts a similar stance in her analysis of Zumbagua adoptions. More specifically, she states: 'The physical acts of intercourse, pregnancy, and birth can establish a strong bond between two adults and a child. But other adults, by taking a child into their family and nurturing its physical needs through the same substances as those eaten by the rest of the social group can make that child a son or daughter who is physically as well as jurally their own' (Weismantel 1995: 695).

This model appears, at first glance, to represent a new point of departure in our understanding of social relations. Analyses that treat kinship as a fluid process rather than a "state" suggest the emergence of a new kind of anthropology, in which scholars have finally succeeded in moving beyond the assumptions of a genealogical framework. One aim of this collection is to suggest that the situation is not quite so simple. As the chapters here illustrate, genealogical thinking permeates more than Euro-American conceptualizations

of kinship. It follows that any thoroughgoing critique of the concept must extend beyond an investigation of kin connections. The logic of genealogy has become entrenched in medical practices, innovations in technology, corporate boardrooms, the organization of colleges and universities, Western conceptions of self and personhood, and the organization of the organic world. Consider the following short vignettes:

- In the fall of 2002, a London hospital became the source of a media frenzy when it was revealed that two women had been implanted with the ‘wrong’ embryos while undergoing IVF procedures (Marsh 2002). Because identification labels were not properly checked, one patient’s healthiest embryos were implanted in a second woman whose embryos, in turn, went to a third woman. The first patient received her own embryos, but they were of a poorer quality and failed to develop into a pregnancy. When the ‘mistake’ was detected, the two women were *ordered* to report back to the hospital where an emergency technique was carried out to ‘flush’ the embryos from their wombs. The women were also given drugs to ensure that there was no risk of pregnancy (Allen 2002; Pook and Martin 2002).
- In California’s Silicon Valley, computer scientists have been hard at work developing artificial life systems that are intended to replicate processes of biological evolution. The goal is to recreate biological phenomena from first principles by putting together digital systems that behave like living organisms insofar as they can reproduce, mutate, compete and ultimately evolve into new digital forms (Helmreich 1998: 207). In many artificial life simulations, computer organisms ‘mate’ through a process in which they mutually exchange computer codes or bit streams. The terms ‘parents’ and ‘children’ are routinely used to refer to the ‘generational’ relationship between digital organisms. In a recent gathering of international scientists at MIT, Tom Ray – the creator of one such simulation – made an impassioned plea for a portion of internet space to be given over to these digital organisms so they could ‘roam freely in a cyberspace reserve, “evolving” into new unexpected, and potentially useful software forms’ (Helmreich 1998: 222).
- In March of 2004, interior designer and business entrepreneur Martha Stewart was found guilty of obstructing justice and lying to investigators about a well-timed stock sale. Within hours of the

verdict, whereupon she would face prison time, stock in her company, Martha Stewart Living, dropped 22.6 points on the New York Stock Exchange ('Stewart Convicted on All Charges' 2004). The incident brings to mind Franklin, Lury and Stacey's (2002: 68–70) perceptive insight that the reproduction of commodities and markets is grounded in a genealogical framework. In the case of Martha Stewart Living, so close was the connection between the life of the person and the life of the brand (i.e., brand : product :: genetrix : progeny) that when Stewart's 'good name' (pedigree) came under attack, so too did the reputation of the products she represented.

- In many colleges within Cambridge University, new students are initiated into the 'culture' of the institution by being assigned mentors who facilitate their transition to college life. Drawing upon kinship metaphors – in particular, the terms 'mother' and 'father' – knowledge is 'passed on' to new recruits in a way that is intended to mimic the care giving role between parents and children. First-years have the opportunity to mix with 'another generation' and are drawn into groups and invited to events that have an established history. Transmission of norms and values is expected. Being assigned a mother and father, rather than 'mentors', emphasizes the corporate familial context of these institutions and reportedly makes a great deal of difference in how seriously the mentors take their responsibilities to their 'children'. Versions of this kinship-like relationship are to be found in other, particularly prestigious, educational institutions in Europe and the United States.
- In 2003, the *Book of Icelanders* – an online genealogical data base – was made available as a public resource to residents of that country. Since that time, thousands of Icelanders have gone online to explore their 'family tree'. Pálsson (this volume) recounts the considerable disquiet experienced by some citizens when they discover that they have no digital relations. In one incident, an individual wrote to the company responsible for updating and maintaining the website, claiming that according to his online search he has no connection to a single human being. He asks the company 'to fix the error so that *I can convince myself that I do exist*'.

These examples (both more and less serious) are highly suggestive. What they help to illustrate is that a genealogical framework underpins domains of thought and institutional arrangements far removed from what typically falls under the rubric of family life. To

expose genealogical thinking through an investigation of kinship alone leaves many elements of the framework tellingly intact in a host of other arenas. As a consequence, genealogical assumptions are often woven *back* into anthropological accounts, even when every effort has been made to avoid their uncritical application. It is here that the chapters in the present volume hold out promise. They show in various ways how genealogical thinking permeates a range of social institutions such as property inheritance, pedagogy, ethnicity, class and politics, not to mention how we conceptualize human ecology.

New Directions

In the introduction to their edited volume, *Relative Values: Reconfiguring Kinship Studies*, Sarah Franklin and Susan McKinnon quote Ladislav Holy. He wrote that ‘new insights into kinship have been gained, as they are always gained, through shift[s] in contextualization’ (Holy, in Franklin and McKinnon 2001: 20). The chapters in this volume engage in a parallel enterprise. The focus on the genealogical model is a shift that we believe can tell us new things about our own epistemology and help us isolate certain elements that organize social scientific investigation and knowledge making. Some of the chapters in this collection explore the idea that genealogical modelling of kinship relations has, in fact, done a disservice to the discipline. The fact that connections and relations have been modelled on pedigree and the representational image of the family tree detracts from recognizing the possibilities of other forms of organization and of the different assumptions (and indeed asymmetries) these might bring with them. It is because we can apparently map relations so easily onto genealogy that the model has such salience. Other essays herein address the genealogical model as an ethnographic reality (see, in particular, Astuti). This helps to highlight a point that Schneider made several decades ago: namely, that a genealogical framework is a socially particular rendering of relatedness that must be analysed anew within any given ethnographic context.

Certain themes run through the collection as a whole. First, it becomes clear that however far studies of kinship may have come in the last few years, the discipline of anthropology has yet to truly shed the trappings of a genealogical paradigm. Several essays in this collection take up this point with respect to the ‘new processual kinship’ and its claim to reinvent kinship after David Schneider’s in-

sightful critique. Eduardo Viveiros de Castro argues that a familiar universalism – the distinction between ‘social’ versus ‘biological’ kinship – has crept back into the way kinship is now discussed in anthropology. In an analysis that explores the history of kinship studies in anthropology, he suggests that one outcome of focusing on kinship as a ‘constructed process’ is a reinscription of the notion that human beings are everywhere biological beings with the capacity for culture. In contrast with this view, he presents us with a portrait of Amazonian peoples who have, in his terms, a ‘nonbiological theory of life’.

Bamford takes up a related critique in her discussion of the Kamea of Papua New Guinea. She argues that while the new processual view of kinship claims to perceive social relationships in a radically new light, the model continues to rest on the underlying idea that kinship is an embodied connection that unites two or more people in a ‘physical’ relation. Her analysis of Kamea sociality raises the following question: need kinship always be conceptualized as entailing a material bond between people? Drawing upon data collected during fieldwork with Kamea, she describes a world in which cross-generational ties are conceptualized as inherently non-embodied ones.

The essay by James Leach highlights an additional problem with respect to recent theorizing on kinship. Focusing on Reite conceptions of sociality, he suggests that despite the fact that the new processual model claims to treat kinship as a flexible process, it has the effect of reinventing fixity as the background against which flexibility is judged. Leach’s chapter thus highlights the extent to which anthropological theorizing must change if it is to seriously incorporate the understanding of nongenealogical social realities. His suggestion is to develop the Reite understanding of an alternative essence that connects persons who are kin, an essence that is both mutable and yet definitional.

A second theme to emerge in many of the following chapters concerns our inability to divorce human sociality from the nonhuman world, a finding that runs counter to the assumptions of a genealogical framework (see also Leach 2003; Bamford 1998, 2007). Genealogical thinking relies heavily upon a subject/object distinction. This model assumes that physical elements of a person are fixed and given at birth. One can interact with components of the organic world, but such interactions play no role in shaping one’s being in a constitutive sense. This idea has figured significantly in the development of anthropological theory. Uniting several schools

of thought, including Marxist (Marx 1976; Marx and Engels 1970), functionalist (Damas 1969; Hardesty 1977; Lee and Devore 1968; Vayda 1969), structuralist (Levi-Strauss 1966) and symbolic interpretations (Bird-David 1993; Descola 1992; Durkheim and Mauss 1903), is the view that the organic world is somehow 'external' to human social life. One can adapt to the environment, pass it on as a form of heritable property, model interpretative schemes after it, or impress a prefigured model of society upon it, but it is always 'other' in relation to human beings and their activities (Bamford 2007).

Several essays in this collection present a radically different vision of the world in which human sociality emerges in tandem with the kinds of relationships that people form with nonhuman resources. This point figures centrally in the chapters by Tim Ingold, Teresa Holmes, James Leach and Sandra Bamford. By questioning the utility of a subject/object distinction, these chapters reveal important processes that have traditionally been obscured by a genealogical paradigm. In a related vein, Rebecca Cassidy shows the extent to which Euro-American perceptions of human beings and nonhuman animals are constituted through a set of metaphorical borrowings between what are assumed to be radically different domains. She thus uncovers foundational elements of the background to pedigree and class in Europe and America, which plays an important role in situating and making explicit the political implications of the arguments by Pálsson, Holmes and Cunningham that are introduced later in the collection.

A third theme that links together the following chapters concerns the implications of recent developments in science and technology. While the advent of the 'bio-age' appears, at first glance, to upset many of the assumptions upon which genealogical thinking is based, several essays in this collection suggest that the situation is not quite so straightforward. Jeanette Edwards's chapter on new reproductive technologies highlights the extent to which recent innovations in reproductive medicine help to affirm – not just challenge – the guiding tenets of a genealogical framework. The essay by Hilary Cunningham brings our attention to bear on the practice of transgenic species crossing, which involves the lateral transfer of genetic material between different forms of life. Despite the fact that this practice involves a 're-temporalization and re-spacialization' (Franklin, Lury and Stacey 2000) of reproduction, Cunningham demonstrates that a genealogical framework remains surprisingly intact in terms of how these innovations are re-presented to the general public. Gisli Pálsson also deals with subject of new technolo-

gies. Drawing upon ethnographic material collected from deCODE – a biotechnology company based in Iceland – Pálsson likens the emerging technologies to a machine for reinscribing genealogy and its assumptions in novel contexts. Both Pálsson and Cassidy end their chapters with more or less impassioned pleas for a replacement of the tree imagery, and the descent, transmission, exclusivity and hierarchy it embodies, with a rhizomatic or fungal imagery when we discuss life (also see Ingold 2000: 13).

Finally, several chapters take up the question of what it means to do anthropology as a comparative endeavour. Rita Astuti tackles this issue in her analysis of the Vezo of Madagascar. She argues that anthropologists have drawn an over determined distinction between Western and non-Western societies, and have recently assumed that only Western societies rely on the conceptual assumptions of a genealogical framework. So entrenched has this perspective become in the canon of our discipline that when we encounter points of similarity between our own conceptual system and those of other people, we are apt to dismiss them out of hand as being the blind imposition of our own cultural logic. In the process, we may fail to grasp important social realities. Holmes's essay demonstrates that whether or not people in certain African societies really have an underlying perception of the reality of biological kinship connection, there are political consequences for choosing to describe, and thus set policy, on the basis of that description of connection rather than another.

Tim Ingold examines the problem of how social scientists understand knowledge. He argues that scholars have implicitly drawn upon a genealogical framework in their efforts to understand how making sense of the world takes place. Ingold proposes a nongenealogical approach to knowledge in which learning is generated through practice and engagement with the world. Eduardo Viveiros de Castro also highlights the need for anthropologists to exercise caution in their analyses. He sets out four competing models of kinship and demonstrates that they share in common a reliance on a distinction between the innate and the artificial. Hence, what often strikes us as being a 'new approach' to social phenomena turns out to be grounded in the same assumptions that we have sought to move beyond.

Chapter Outlines

In addressing these themes, this volume unfolds as follows. In chapter one, Rebecca Cassidy describes how models of human pedigree

have developed alongside models of animal pedigree. She charts some significant borrowing and reciprocal influence between these domains, and thus provides us with insights into how notions of sequence, essence and the transmission of value/quality are integral to ideological constructions of superiority between social classes and with respect to gender. The chapter shows some of the effects of the extension of reasoning about human relations to animal worlds, and vice versa, and how selective and interested reasoning is easily served by the principles of the model.

In chapter two, Teresa Holmes extends the theme of social differentiation by examining genealogical thinking in colonial Kenya. She shows how knowledge about others has been rendered coherent to Western audiences by being structured through a genealogical paradigm. Luo people actively resisted being defined in this way, despite being subject to several decades of colonial rule. Holmes's essay suggests, as do the contributions by Cassidy and Pálsson, that there is nothing innocent about ordering knowledge through the assumptions of a genealogical framework.

Chapter three focuses on the objectification of a genealogical framework through the intersection of traditional understandings of pedigree and of financial capital. Gisli Pálsson examines how the *Book of Icelanders* (a detailed compendium of Icelandic genealogical history) has been put to use by a biotechnology company for commercial purposes. Pálsson documents the importance of genealogical data in fabricating Western notions of self and personhood. He also explores the political implications of this situation by considering how social relationships that are coming to be recast as genealogy are simultaneously being imbued with monetary value.

In chapter four, Cunningham documents how a genealogical framework is increasingly drawn upon to the benefit of certain actors in a global world. She documents the political implications of exporting a genealogical framework to non-Western societies – an occurrence that is increasingly taking place through such initiatives as the mapping of the human genome and the manufacture and sale of genetically modified organisms. This chapter suggests that it is no longer enough for anthropologists to worry that we are 'misrepresenting' the people with whom we work. A genealogical framework is coming to take on a life of its own and is shaping social realities at a transnational level.

In chapter five, Jeanette Edwards examines the extent to which new reproductive technologies are shaping existing understandings of pedigree. Here, we are provided with the opportunity to view

several assumptions of genealogical thinking refracted and made specific through contemporary Northern English views on what is and is not appropriate between kin. She describes how semen donations between fathers and sons both problematise and support the way the people she worked with think about intergenerational ties.

If Edwards's essay shows the centrality of bodily substance in a particular vision of kinship logic, chapter six, by Sandra Bamford, explores a world in which such types of connection are not made. More specifically, she details an ethnographic case in which parents are not understood to share any type of embodied connection with their offspring. How is relatedness imagined between persons under such a logic? What elements of people's lives become significant as points of connection if bodily substance does not serve as a link between generations?

The salience of substance is also taken up as a theme in chapter seven. Here, James Leach presents a case in which substance *does* appear as a central element in people's understanding of relatedness. Yet significantly, substance is something that is passed on not through procreation but as 'knowledge', which is transmitted through proximity, sharing, purchase, exchange and so forth. Within this context, substance maintains the quality of an essence that differentiates people from one another, one that they embody in their growth, appearance, effectiveness and identity. Differences in knowledge relate to differences in places, and being part of a place makes people what they are. The transmission of knowledge is crucial to reproduction of the human world, yet knowledge is not transmitted in the biological sequencing of procreation. The link between this chapter and the preceding one is land, and how nonhuman resources furnish a point of attachment between people. For Bamford, land does not create substance, but knowledge of its use is a connecting element. For Leach, by contrast, knowledge is also a connection, but in keeping with Reite understandings, knowledge is itself a kind of substance drawn from the land.

In chapter eight, Tim Ingold discusses Euro-American assumptions concerning genealogy and how they relate to assumptions about the process of acquiring knowledge. He emphasizes both process and intersubjectivity as crucial to how learning takes place. By stressing how social scientists have typically misunderstood what it means to acquire new skills, he undermines the view of knowledge as entailing both the transmission of an object, and the separation of knowledge from the people who supposedly hold and act

upon it. In this sense, his chapter complements that by Leach, suggesting that Reite people's understanding of both kinship and knowledge may not be so far-fetched, once the assumptions of the genealogical model are taken as one option among many.

In chapter nine, Rita Astuti presents a challenge to the critique of the use of the genealogical model in contemporary anthropological writing. She sets out the potential continuing utility of a method of collecting information that reveals genealogical understandings, addressing head-on the critiques that have been levelled at this approach. In contrast to Ingold and others represented here, she asserts that the blanket rejection of this model may obscure our understanding of non-Western social worlds.

Whereas Ingold's paper examines the status of knowledge as an objectified entity, the volume's concluding essay, by Eduardo Viveiros de Castro, interrogates the making of anthropological knowledge about kinship itself. He sets forth a typology of kinship modelling that can be grouped on the basis of sharing (or rejecting) various elements of a genealogical paradigm. In the process, he reveals the very real difficulty of using our own epistemology to consider other 'ontologies'.

The essays collected here establish the range and depth of the genealogical model's influence in ordering thinking about transmission, sequences and essences. Different ideas about the utility of the model and its purchase allow us to consider afresh how it has come to structure debate on matters such as knowledge transmission, the implications of scientific investigation, human ecology and social hierarchy. The chapters thus highlight a need, both theoretical and political, to develop new understandings of humans' ways of relating to one another, and to their worlds, that are conscious of the models we use. The suggestion of this volume, then, is to think backwards, as it were, and to see again how and why this framework gained ascendancy and why it now appears as a 'natural' way of interpreting the world. We also hope the essays in this volume offer a glimpse, however partial, of how the world might look if it were to be viewed through a sophisticated understanding of the place that genealogy occupies in our thinking, and thus also a hint of the potential for viewing the world through 'nongenealogical' eyes. The essays ask us to consider the taken-for-granted ordering of knowledge and authority of information created and organized through genealogical thinking. In other words, they propose that we question the formula whereby things happen in sequence, there is a 'development', and thus it is natural for nature to be overtaken by (a

particular) technology, one that most potently builds its own foundation of authority by discovering ever more complex genealogical determinants of the human and nonhuman world.

Acknowledgements

A few select portions of the material presented in this introduction previously appeared in S. Bamford, *Biology Unmoored: Melanesian Reflections on Life and Biotechnology*, 2007 (The Regents of the University of California. Published by the University of California Press).

Notes

1. The Biblical precedents for reckoning kinship, group formation, identity and indeed, special relation to the deity, are all well known (Delaney 1986; Mimica 1991; Pocock 1992).
2. The picture is an example of depictions of family trees hung in the Royal Palace of Jogjakarta in Central Java. While imagery from nature is clearly a feature of Islamic art much more widely and such representations may have developed independently of Western genealogical depiction, it is also the case that Dutch colonial power in Java was exercised through conditional support for certain royal families, and thus depictions such as this served ideological purposes for both rulers and colonial powers. This painting is early twentieth-century, and depicts the king as the trunk of the tree, wives as the branches, male children as fruit and female children as leaves.
3. At the very least, his work made clear the problematic juncture at which kinship lies in Western thought. It might be argued that from the very beginning of kinship studies (Morgan 1870), the problems of using our own kinship reckoning as the natural basis against which to view others' constructions (artifice) was implicitly apparent if unarticulated. Revealing the link between these two major organizing concepts – kinship and its relation to humanity itself – was the focus of several major social theorists of the last century, from Freud to Levi-Strauss.

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