

**Peer Reviewed**

**Title:**

Persistent Cultures: Miskitu Kinship Terminological Fluidity

**Journal Issue:**

[Structure and Dynamics, 8\(1\)](#)

**Author:**

[Lyon, Dr. Stephen M.](#), Durham University  
[Jamieson, Mark A.](#), University of East London  
[Fischer, Michael D.](#), University of Kent

**Publication Date:**

2015

**Permalink:**

<https://escholarship.org/uc/item/6w65n7sf>

**Acknowledgements:**

We are grateful for feedback on earlier drafts of this paper by members of the Society for Anthropological Sciences.

**Keywords:**

kinship terminologies, Miskitu, cultural systems

**Local Identifier:**

imbs\_socdyn\_sdeas\_27342

**Abstract:**

Kinship is understood dynamically and processually but kinship terminologies are remarkably stable idea systems. They provide cultural continuity over time and are more resistant to modification than many types of cultural instantiations. Miskitu speakers in Nicaragua, however, have adopted new kin terms that appear to have fundamentally changed the idea system used to generate their kin terms historically. The shape of the changes that have occurred in Miskitu kin terminologies over time are the result of powerful economic, political and social forces introduced, in part, as a consequence of the geography of Mosquito Coast economies, migrations and political processes. We argue that the current use of kin terms is atypically hybrid and is not the result of a single, algebraically derivable idea system. Rather than negating the validity of mathematical approaches to kinship terminologies, the case of Miskitu kinship terminology suggests that core idea systems, although subject to change over time, move between informationally economical forms adapted to socioeconomic changes.

**Copyright Information:**



Copyright 2015 by the article author(s). This work is made available under the terms of the Creative Commons Attribution 3.0 license, <http://creativecommons.org/licenses/by/3.0/>



**eScholarship**  
University of California

eScholarship provides open access, scholarly publishing services to the University of California and delivers a dynamic research platform to scholars worldwide.

## **Persistent Cultures: Miskitu Kinship Terminological Fluidity and Idea Systems**

Stephen Lyon, Mark A. Jamieson and Michael D. Fischer

### **1 Abstract**

Kinship is understood dynamically and processually but kinship terminologies are remarkably stable idea systems. They provide cultural continuity over time and are more resistant to modification than many types of cultural instantiations. Miskitu speakers in Nicaragua, however, have adopted new kin terms that appear to have fundamentally changed the idea system used to generate their kin terms historically. The shape of the changes that have occurred in Miskitu kin terminologies over time are the result of powerful economic, political and social forces introduced, in part, as a consequence of the geography of Mosquito Coast economies, migrations and political processes. We argue that the current use of kin terms is atypically hybrid and is not the result of a single, algebraically derivable idea system. Rather than negating the validity of mathematical approaches to kinship terminologies, the case of Miskitu kinship terminology suggests that core idea systems, although subject to change over time, move between informationally economical forms adapted to socioeconomic changes.

### **2 Introduction**

Miskitu kinship terminologies provide a useful entry into several distinct anthropological questions. They indicate important social, economic and political ruptures in the organization of Miskitu speaking peoples of Nicaragua. These ruptures, in turn, reveal something important about the constraints on human knowledge production and organization. Jamieson's (1998) careful reproduction of historical Miskitu kinship terms reveals shifts not only in terms used, but also in associated conceptual relationships. We do not deal extensively with the first issue, though such concerns are of course worthy of investigation and explanation. Rather, we concentrate on the second issue, changes in the associated conceptual relationships. If Miskitu speakers are able, within a relatively short period of time, to shift from one kinship terminological system to another (and not just replace new terms for old terms), then it reveals a certain amount of flexibility in human knowledge organization and production. In light of earlier arguments about core foundational systems such evidence might support a more *ad hoc*, emergent explanation for the production of culture. This would indeed be a radical finding and one that would no doubt be adopted were it not for the problematic of how a set of conceptual relationships between kin terms whose productions correspond precisely to a specific algebra, with all the constraints that entails, might change over time. Focussing on underlying kinship algebras in such cases, as analyzed here, suggests that under strong pressures core cultural systems are subject to fragmentation and collapse, supporting a strong emergent rather than rigid basis for culture. Such collapse is characterized by instability in the systemic underpinnings of knowledge representations and we predict is not sustainable over time. While the evident fluidity present in contemporary Miskitu kin terminologies studied here defies simple algebraic description, key elements of this instability that have no mechanism for their own reproduction are explainable in historical terms. But unless Miskitu speakers develop mechanisms for provoking transformations of kin term usage between generational life stages, the current dual kin term systems in evidence will gradually diminish and cease to be practiced as the current elder generation die. We would suggest that such would only be the case where there were compelling social, economic and political

reasons to do so. It is not unimaginable that dual kinship algebras might be persistent and even sustainable, but they would require considerably higher informational investment by the societies that employ them.

### 3 Foundational Cultural Models and the Production of Culture

How cultures are reproduced over time and across large numbers of people has always required some careful thought. Sperber's (1985) seminal work on epidemiological approaches to the transmission of knowledge representations rightly suggests that it is not the high levels of change in knowledge representations that require explanation, but rather those aspects of culture that would appear resistant to the sorts of profound fluidity that characterize so many aspects of learned behavior. Learned behaviors, unlike those that are more strongly influenced or directly instantiated by genetic programming (such as response to pain, separation anxiety in infants and so on), *should* be highly susceptible to rapid change in response to variation in the environment and between individuals. Rather than displaying high levels of change, however, one of the things that marks human cultures is in their relative consistency and reproduction of patterns over time. Carrithers' (2009) notion of story seeds offers rich examples of the extent to which constituent elements of narrative communication (in a rather broad sense) serve to anchor communication in ways that reinforce and reproduce cultural representations, and by extension knowledge. Story seeds serve as nuggets of shared meaning that enable meta-messages about the context to be shared between communicators (or indeed, between objects and communicators), which situate a message culturally and temporally within understood domains. Communication, consequently, lay at the heart of *why* culture displays such consistency. Cultures are produced in ways that must be communicable by members of cultural groups. This limiting factor introduces constraints on the extent of variation in ways not dissimilar to Darwinian principles of natural selection. As with natural selection in species, where variants that fail catastrophically or fall outside the range of what is recognized as shared mating partners may have difficulty reproducing, and it is no different with knowledge or cultural representations. Sharing knowledge and representations, as Paul Grice (1975) laid out in 'Logic and conversation', is organized around cooperative principles as maxims relating to being meaningful, truthful, relevant, and organized.

Cultural products that do not communicate something meaningful or effective are unlikely to persist. Seen in another way, the issue is not solely one of meaningfulness, but also of the versatility of the cultural product. Cultural products that are too narrow in meaning may do so little that they disappear, while those that mean too much may likewise be short lived. There is a mathematics to describe such processes, information theory, which we suggest may be a very productive approach for the study of culture. Cultural products that mean a very small number of things, or even one and only one thing, in effect, wind up transmitting no information (the information is already known and therefore no transmission is required); while those that mean a large, or infinite number things, also transmit no information because there is too much ambiguity for communicators to effectively transmit a message. The persistence of culture, therefore, arises from cultural products that convey sufficient ambiguity to transmit more than one message but are constrained in ways that allow communicators to rule out most meaning options.

Anthropology, as the science of human behavior, has long produced the types of data to enable more sophisticated representations of both the constraining and flexible properties of generative cultural models. Kinship terminologies have long been identified and investigated because of their centrality and pervasiveness in human culture. Although

terminologies clearly serve functional ends, they are not adequately explained solely by virtue of their functions. Schneider, despite the criticisms one might level at his work, rightly characterized kinship terminologies as symbolic systems that should not be understood as solely the product of biological reproduction. Such an approach enabled Leaf (1972, 2004) to develop a method for eliciting Punjabi kinship terminologies that relied neither on biological reproduction nor on direct translation of English kin terms. Leaf sought to produce complete terminologies from the logic of the relationship of the terms. Leaf's method relies on using terms to generate more terms regardless of what the terms may mean. So the critical feature is the relationship of one term to another term -- not the relationship of the people to the terms (or vice versa). By focussing on the mathematical properties of those relationships it became possible not only to describe whole terminologies but also to predict the boundaries of unfamiliar terminologies with confidence.

Using this approach enabled the development of formal kinship algebras to generate complete kin term maps from a core set of non-reducible kin terms. One of the outcomes of Read's (2001) extensive analysis of kinship terminologies using an algebraic approach has been the realization that while there are a great many kinship terminologies present in the ethnographic record, there are remarkably few kinship algebras required to generate them. Like Berlin and Kay's (1969, 1999) groundbreaking work on basic color terms, the observable range of variation is ridiculously and implausibly small in comparison to the potential range if all combinations were equally possible. Clearly, all combinations are *not* equally likely. Some forms of knowledge organization (or classification) are evidently substantially more common than others. In the case of basic color terms, the difference is on the order of more than 20,000 potential combinations of basic color terms versus roughly two-dozen combinations that are actually present in the ethnographic record. Read, Fischer and Leaf (2013) have found that in all kinship terminologies thus far analyzed, a finite number of the structure of a set of related primary kin terms can be precisely generated from an algebra comprised of a finite set of culturally salient equations and generators capable of generating the structure more efficiently than listing each relationship. This demonstrates that the kinship structure we observe can be acquired using less information than would be required than if the entire terminological structure were acquired as observed. While the number of kinship terminologies thus far studied is not exhaustive, the fact that what appear to be profoundly distinct kin term maps *can* be generated by a limited range of simple algebras is compelling evidence for a strong constraint on the underlying classificatory models of the human brain used to produce such systems.

#### **4 Miskitu Kin Term Maps**

Jamieson's article focused specifically on changes to Miskitu kinship terminology used for consanguineal relations that had evidently taken place in the past. Although the article was most concerned with a particularly marked set of changes identified for the Miskitu enclave in the Pearl Lagoon basin based on his work in the village of Kakabila, it also summarized and considered a rather different set of changes that had been previously described by Mary Helms (1971) for the Miskitu community of Asang on the Río Coco far to the north of Pearl Lagoon.

The article described three systems of Miskitu terminology. The first of these, termed by Jamieson, the First Time System (FTS) and represented in Figure One from Jamieson, was based on Helms's careful reconstruction of a classic Dravidian-type system. Her evidence for the existence of such a system was based on interviews with Asang elders, many of whom

remembered how this system worked, on her readings of the dictionary entries, and ethnographic accounts and interpretations of Ziock (1894) and Heath and Marx (1983). This system encoded distinctions between siblings and parallel cousins on the one hand, and cross cousins on the other, between patrilineal 'aunts' and 'uncles', and between the offspring of same sex siblings and those of cross sex siblings (see Figures 1 and 2 below). All of these were further terminologically distinguished by whether the referents were same sex or cross sex if the referents belonged to the same generation.

So, for example, terms existed that might be glossed as 'cousin' were classified according to these distinctions: same sex parallel cousin = *muihni* (also same sex sibling); cross sex parallel cousin = *lakra* (also cross sex sibling); same sex cross cousin = *waiyat* (if both male) or *kauhka* (if both female); and cross sex cross cousin *klua*.

The First Time System differed markedly in formal terms from the system that Helms (1971) described for Asang during her fieldwork in the 1960s, which Jamieson termed the Asang System (AS), only insofar as the distinction between siblings and parallel cousins on the one hand, and cross cousins on the other had been lost, with the terms used for the former (sibling/parallel cousins) now expanded to include cross cousins. Thus *muihni* (same sex) and *lakra* (opposite sex) came to be used both for siblings/parallel cousins and for cross cousins. While the sociological fall-out of this change was no doubt of considerable significance, in terms of classificatory arrangements at 'surface' level, it was relatively small.

The Asang System as described by Helms is still evidently found in most Miskitu villages, having been reported for Awastara on the coast north of Puerto Cabezas and having been elicited by Jamieson from Miskitus elsewhere in Nicaragua and Honduras. In the Pearl Lagoon area, a Miskitu-speaking enclave to the south, the present day classificatory arrangement of consanguineal kinship terminology is quite different from either the Asang System or its predecessor, the First Time System. Jamieson termed this very different system, represented in Figure Three, as the Kakabila System (KS).

Although the terms used in the Kakabila System are in many instances the same as those used in the Asang System and the First Times System, their semantic ranges, and thus the relationships they denote, are very different. So, for example, the term *tahti*, which in both of the prior systems so far described glosses as 'mother's brother', in the Kakabila System, it means 'mother's brother' and 'father's brother', thus approximating in its semantic range the English term 'uncle'. Indeed the easiest way to summarize the classificatory properties of those Miskitu terms as they are used in the Kakabila System is to compare them with the consanguineal kinship terms used by Creole English speakers in the Pearl Lagoon basin (where in fact Creole English speakers are numerically dominant). This latter system, referred to as the English System by Jamieson (1998: 722) and here again, is broadly speaking identical to that used by English speakers in most of the Anglophone world.

The most striking thing about the Kakabila System when it is compared with the English System is that, despite the obvious differences in phonetic shape of the terms used (one Miskitu, the other English), the cognate terms for particular categories of kin are almost identical in their semantic ranges, and are very different to their nearest cognates in the First Time and Asang systems, though two striking exceptions are the cognates for 'brother' and 'sister' for which the nearest equivalents, *muihni* and *lakra* still retain the meanings of 'same sex sibling' and 'cross sex sibling', though they are no longer used to refer to 'cousins' for most speakers.

The extent of the similarities between the Kakabila and English systems, of those between the Asang and First Time systems, and of the differences between the former pair and the

latter pair can be seen easily if one looks at Table One from Jamieson (1998), where the three Miskitu language systems are compared with the English System. Exact translations are abundant in his table for the simpler Kakabila System, while the Asang and First Time Systems are necessarily represented by a large number of periphrastic glosses.

Although it is a logical possibility that the Kakabila System pre-existed the arrival of the Creole population in the Pearl Lagoon district, and always differed from the First Time System, we regard this as highly unlikely. To suppose that the English speakers who settled in the Pearl Lagoon basin in the mid eighteenth century found a system of kinship terminology exactly like their own rather unusual one in its classificatory arrangements begs credibility. We rather suggest that the Kakabila System, like the Asang System, represents a transformation of the First Time System to meet new requirements, as described in Jamieson. These transformations of Miskitu kin terms in the Pearl Lagoon basin have been far more reaching and dramatic than those experienced in Asang and other Miskitu communities, owing to the rather exceptional history of this particular district described by Jamieson, but both the Asang and Kakabila Systems are equally, we can confidently assert, 'descendants' of an 'ancestral' First Time System.

#### 4.1 Miskitu Kinship Algebras

The variation in kin terms between the three instances suggest, as Jamieson argued, that the underlying semantic systems were different. Despite considerable overlap in terms, it is clear that fundamental changes have taken place in the structure of the terminological systems. Kin terms in the FTS retain strong distinctions between parental cross or parallel siblings. Parallel parental offspring are conflated with parental offspring while cross-parental offspring are set apart and form an important pool of prospective marriage partners. One of the terms for cross cousin also indicates brother-in-law (*waikat*), reflecting this practice of cross cousin marriage. Jamieson reports that while such marriage practices continue, the disapproval of missionaries has probably resulted in the abandonment of the use of *waikat* to refer to male cross cousins. Beginning with three kin term maps derived from Jamieson's earlier work, we begin to identify graphically important distinctions between the three instances of Miskitu kin terminologies. Figure 1, the First Time System, has a relatively straightforward terminological structure that reflects the significance of cross and parallel parental differences. So unlike the Punjabi system, which has elaborated patri and matrilineal mirroring (for the most part) in which there are effectively two duplicate versions of the kin terminology for each parent, the FTS emphasizes the distinction between Father's-Brother and Mother's-Sister on one side and Father's-Sister and Mother's-Brother on the other.

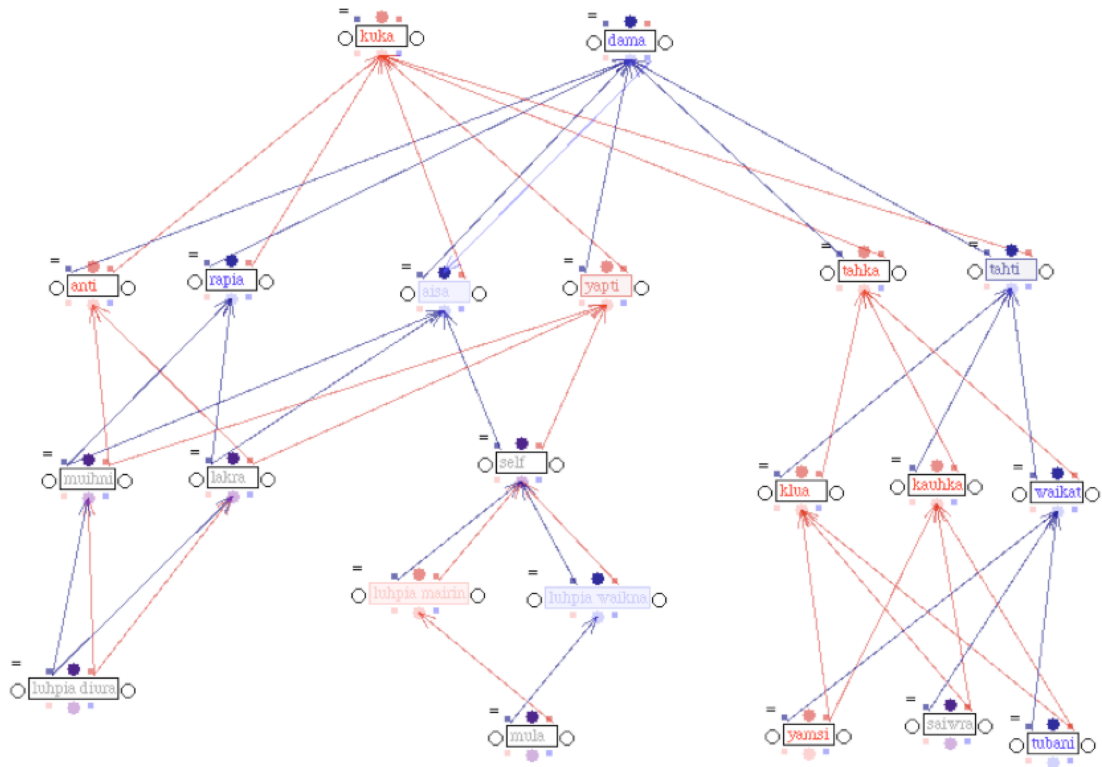


Figure 1: First Time System. Note that terminologically there is no distinction between uterine siblings and parallel cousins.

Helms' Asang kin terminology, in Figure 2, displays an absence of the cross and parallel distinctiveness in Figure 1. Important elements of the FTS, however, remain intact. Sex of speaker determines the choice of term for collateral terms. What appears most strikingly different is the absence of cross cousin terms, with parallel cousin terms taking their place. In algebraic terms this transition can be accounted for and described by modifying a couple of equations that reflect the new equivalence between descendants of *dama* and *kuka* siblings.



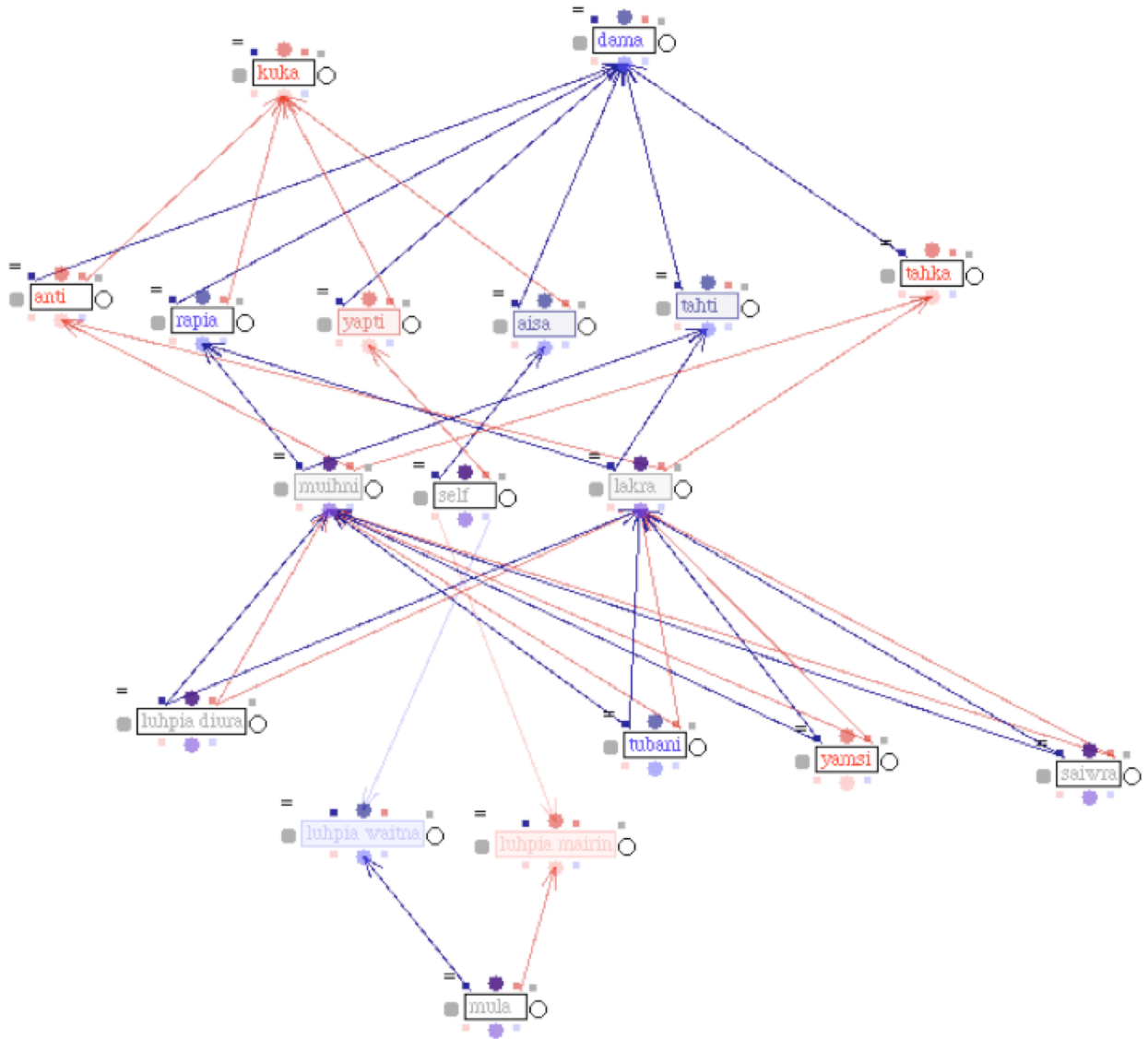


Figure 2: The Asang System. The greatest difference between this and the First Time System is the collapsing of collateral terms. The distinction between cross and parallel cousin has disappeared and the ambiguous and troublesome overlap (at least for missionaries) of brother-in-law and cousin has been terminologically eliminated.

The Kakabila System demonstrates the most radical shift, though perhaps one that might have been predicted given the enclave nature of the Miskitu population and the steady influence of English speaking traders. Figure 3 shows that while sibling terms from the AS and FTS are still used, they have been joined by English derivatives (*breda*, *sista*) and they have ceased to be used to refer to any parental sibling offspring, which now appear to be universally referred to by another English derivative (*kosin*).

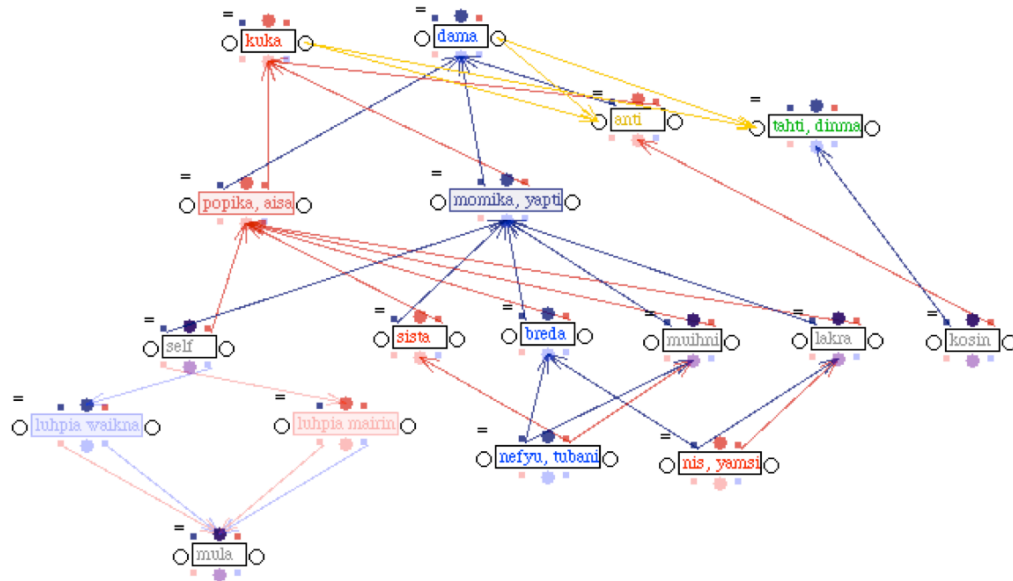


Figure 3: The Kakabila System. In this system the distinction between cross and parallel parental siblings is entirely absent. Additionally, the logic of sibling reference has undergone dramatic transformation from a system in which the sex of the speaker determined the term (Figure 2) to one in which the sex of the individual determines the term referred to.

It would appear that the FTS (Figure 1) and the KS (Figure 3) cannot be derived from the same underlying kinship algebra. In the Kinship Algebra Modeler, we find the algebra underlying FTS represents gender as an isomorphic mapping between a male gendered terminology and a female gendered terminology that are structurally equivalent. That is, we can analyze either the male or the female gendered structure, and derive the other gender term positions from an isomorphic mapping. In KS, gender is a generator applied to a gender-neutral structure at the final stage of derivation. That is, the underlying algebra can be derived without reference to gender beyond that applied to each node of the derived structure when instantiated.

Even without recourse to a software modeling tool like the Kinship Algebra Expert System/Kinship Algebra Modeler, it is unclear how a kin term map lacking any demarcation between cross and parallel parental siblings can be derived from an algebra that produces strong distinctions between those categories to the extent of conflating uterine siblings and parallel cousins.

One of the many intriguing aspects of cultures is the extent to which they are somehow recognizably the 'same' across time given the simultaneous presence of what Tylor would have called survivals. We accept that cultures change but we see considerable continuity and, all hyperbolic claims aside, communicability persists within them. The most interesting point is that in which audiences cease to 'understand' or 'get' the messages when some form of objective cultural rupture has occurred. This is apparent in literature through the ages. While readers find certain aspects of Shakespeare odd or out of date, there is sufficient overlap of cultural meaning to render Shakespeare intelligible to contemporary English audiences. One reason for perpetuation of cultural communicability is the persistence of generative cultural systems. Such cultural systems form the core of culture and as such are pliable and fluid in practical usage but resistant to structural change. In other words, they convey minimal information about relationships of symbols or categories, but leave the

content of the symbols and categories open to application to wide ranges of uses which are moderated by structural constraints.

Kinship systems offer excellent examples of persistent cultural systems that lend themselves to a wide range of applications, both directly and indirectly, yet remain structurally stable and easily reproduced despite such flexibility in application. This, we argue, is *not* a result of the fact that kinship systems are so closely associated with biological reproduction, as they clearly are in English and American kinship systems but rather because informationally they provide a low cost mechanism for producing relationships between categories that order social worlds. It is not, of course, unprecedented for kinship terminological systems to undergo substantial change. Spoehr (1947) documented clear shifts in Creek, Cherokee and Choctaw kinship from lineage to generational systems of reckoning. As with the Miskitu, change in these southeast American kin systems appeared as a consequence of radical disruption to subsistence patterns and social networks. Spoehr does not argue that such change was brought about solely through interaction with white people, but that such interaction is a necessary factor for explaining the specific transformations of terminological change.

Kinship systems are not the only cultural systems that display such efficiency and resilience. Leaf (1972) argues that there are a restricted number of underlying idea systems that operate in such a way as to enable culture to exist and be reproduced. Although precise numbers of such idea systems might vary across different cultures and there are clearly different domains in which such systems exist cross-culturally, kinship is one that appears to be universal.

There is no society that would appear to lack something that anthropologists would call a kinship system. Furthermore, kinship terminologies are so remarkably efficient and structured that they are likely far more persistent than most other idea systems. One need only look at the adoption of the English kin term 'uncle' among Punjabis to see that shifts in terms need not impact underlying idea systemic logic. Although Punjabis highly proficient in English know and understand the conflated sense of the term 'uncle' in English, those without such proficiency use uncle in ways that correspond to the local term '*chacha*', or father's brother. Both Lyon and Fischer have been corrected when referring to a '*mamou*', mother's brother, as 'uncle'. Similarly, the wide use of alternatives to the spousal terms, husband and wife, in North America and England, do not appear to have significantly transformed the underlying idea system. Offspring of 'partners' are endowed with grandparents, cousins, brothers, sisters and so on regardless of the shift in term employed to refer to their parents (indeed, they are still endowed with mums and dads despite their parents' choice of union-based terms). In other words, the underlying idea systems that produce kinship terminologies must be understood as distinct from the actual terms used within the kin term maps. This allows for variation in terms (dad, pop, pater, father for example) without compromising the principles that reflect the algebraic foundation of how the relationships between those terms persist (whatever these happen to be in any particular time).

## 5 Mixed Algebras and Non Algebraic Kinship

While there is nothing inherently impossible in the simultaneous existence of relational systems that can be described by competing kinship algebras within the same family groups, although at different generations, it is something of an oddity. The simultaneous instantiation of competing and sometimes contradictory cultural systems, however, is not problematic; indeed, we argue that human culture would be sorely impoverished and

inflexible in the face of environmental and historical fluidity were such distinct systems not available to culture-bearing humans. But if kinship is to be understood as a *core* cultural system from which subsequent cultural expression is derived, then it is distinctly puzzling how there can be a working relational system that corresponds to two or more distinct basic algebras. Nevertheless, we see it as feasible, though unlikely, that a society could develop and sustain the logics underlying two distinct kinship algebras used by different segments of the population. One could imagine that in rare cases gender might serve as the basis for two (or more) lexicons of kinship corresponding to two fundamentally different kinship algebras (e.g. male and female terminologies that are not isomorphic). Such a situation might arise, for example, if men and women (to use a minimal set of gender terms) were drawn rigidly from different pools of people and were socialized with only minimal contact. To be sure, even the more extreme gender segregated populations, such as those described by Godelier (1986) in Highland Papua New Guinea, do not exhibit such a property, so these now enter the realm of fantastic speculation.

The Miskitu of Kakabila do not, in actuality, appear to have two distinct kinship systems. Instead, they have an unusual hybrid in which different generations invoke relationships corresponding to distinct kin algebra for their own collateral terms. This, we suggest, is what enables such a hybrid system to exist at all. It can lead to some entertaining stories in which confusion is based on when speakers of one generation use their own gender to determine the appropriate term, while those of another generation use the gender of the referent. In practice, this does not introduce barriers to communication between individuals trying to refer to collaterals. The Miskitu appear to have developed a generational rupture in which the elder generation employ what we might call a more indigenous set of terms (and structure) for their own collaterals while the younger generations have adopted a set of terms (and structure) more easily translated into English or American kin terms.

The presence of such a rupture is interesting, but probably short lived. Elder people find upsetting the misuse of collateral terms by younger generations when the latter choose to use the terms *breda* and *sista* or *kosin* but it becomes of little consequence since precision in referents is not critical for communication. No doubt younger people find the elders' use of collateral terms anachronistic and quaint and are not required to understand the nuances of the underlying conceptualizations. There are several reasons why we believe that such a situation might arise and exist for a time but ultimately collapse. Even in the most age-segregated forms of social organization where elders and juniors might have only minimal interaction, communication seems a prerequisite for the reproduction of the age cohorts. The majority of the changes occur within a single generation, but this appears to have triggered significant change in the next generation. Within the collateral generation of self, the collapse of sib and cousin terms is related to a corresponding collapse of offspring of sib and cousin terms.

We do not know the full range of social consequences of juniors not *understanding* what the elders are saying at the underlying conceptual level. It is possible that this may subtly impact what it means to be an elder. Following from this, it seems likely to us that in the absence of strong socializing forces to guide individuals into adopting new structures (that correspond to new kinship algebras) as they enter the next life stage, there simply is no persuasive reason to think that the kinship algebra underlying terms employed by the elder generation will outlive the individuals who use it. The younger generations who will replace them may seem to have adopted a new structure and kinship algebra with a hybrid kin term

map,<sup>1</sup> but their sociocultural contexts are in fact very different from that of elder generations, while retaining a need to communicate with them.

Thus for example Katy told Jamieson that she generally used the terms *breda* and *sista* (or its variant *tita*) for 'male sibling' and 'female sibling' respectively, but occasionally employed the terms *muihni* and *lakra* for 'brother' and 'sister', apparently unaware that these terms were 'properly' used to mean respectively 'same sex sibling' and 'opposite sex sibling', with absolute rather than relative *denotata*. This, we believe, suggests that Katy, typically of human beings generally, anticipates and expects to find conceptual systematicity.

Interestingly, Katy made what older Kakabila people would also have regarded as being a terminological 'error'. Rather than using the affinal term *masaia* ('spouse of same sex sibling' or 'spouse's same sex sibling') for a sister's spouse, Bam Bam, she referred to and addressed him as '*waik*' (a variant of *waikat* - a specifically male term for 'brother-in-law'). When this was pointed out to her, she declared herself entirely ignorant of the supposedly 'correct' usage. Once again Katy imagined her terminological relationship to Bam Bam in absolute rather than relative terms, a position consistent with most of the Kakabila System and all of the English System, at odds with the 'surviving' rump of First Time usages still extant among users of the Kakabila System.

## 6 Instability in Foundational Models

Jamieson's work on Miskitu kinship terminologies raises the issue of persistence and stability of foundational cultural models. In order for cultures to perpetuate themselves and be persistent and recognizable over time, there must be aspects of continuity even while there must also be radical change in the face of shifting social, economic, political and natural environmental forces around the population. Hence it becomes possible for English people to recognize 'their' culture when reading a story from the 19th century by someone like Charles Dickens or even for Japanese people to recognize 'their' culture when reading the first modern novel by Murasaki Shikibu written in the early 11th century. Part of the continuity comes from shared lexicon but, even when translated into a shared English lexicon, *The Tale of Genji* remains distinctly non-English culturally. So there must be more than simply common vocabulary at work to generate the cultural familiarity that renders distinct temporal populations members of the same culture group. Similarly, across geographical separation, a number of distinct cultural expressions may arise and lead to increasing variance between populations.

Foundational cultural models would appear to be the most durable and persistent aspects of culture production that connect populations across both time and space. So while it is entirely true that there are enormous differences between Anglo Americans, Anglo Australians and Anglo British populations, there are enough identifiable similarities in the basic cultural models, such as kinship, that these groups not only represent themselves as part of broader cultural entity but they genuinely *understand* the cultural representations and productions of one another. The misunderstandings between these groups are the stuff of comedy and are easily overcome when unambiguous communication is required. There is arguably more misunderstanding and bafflement at the reactions of individuals when they

---

1. This may be similar to what has been reported in syncretic religious movements in the Caribbean where the underlying relationship between supernatural entities seems to have been borrowed (or retained) from West African religious systems but the terms of reference for those entities have been borrowed from the Catholic pantheon of saints.

come from cultural groups that do not share the same foundational cultural models of kinship, hierarchy, honor or gift reciprocity. Similarly, in the event that one of *these* foundational cultural models should show evidence of radical transformation, we suggest that cultural continuity is likely to be compromised. In the case of indigenous contact with global capitalism, there are cases of persistence of cultural models as well as their collapse. Where collapse has taken place, one might argue that assimilation towards the larger group is more complete and final. Where persistence has occurred, there are likely to remain ongoing tensions, which vary in their severity.

## **7 Causes and Implications**

The conditions that brought about instability among those Miskitu who use the Kakabila System are not particularly hard to identify. As Jamieson (1998) showed, these are to be understood in terms of the peculiar history of the Pearl Lagoon district and the Miskitu who live there; one quite markedly different to the histories of other Miskitu-speaking districts in the region. First we consider the region-wide Anglo-Miskitu encounter. Then we present the distinctive nature of that engagement in the Pearl Lagoon basin.

Anthropologists, historians, linguists and other social scientists have long been aware of what Charles Hale refers to as the Miskitu 'Anglo affinity'. The Miskitu have experienced various kinds of English speaker during the last three and a half centuries: buccaneers in the 17th century; settlers known as 'shoremen' in the 18th century; Anglo-Jamaican traders in the first half of the 19th century; and representatives of the logging, banana and mineral companies (initially British but then increasingly North American) during the later 19th century and the first half of the 20th century. From the late nineteenth century (during which time many Miskitu experienced conversion to Moravian Christianity) religious authority has been dispensed by English-speaking North American pastors who, although working in the Miskitu language, have brought respect for the English language. During the insurgency of the 1980s Miskitu combatants received assistance (as well as propaganda) from the United States and the Central Intelligence Agency. Since then, English speakers have led many of the NGO teams that have come to work in the region.

The Miskitu experience of these Anglophone visitors and settlers has generally been regarded as positive, as opposed to their experience of Spanish speakers, who have generally over the course of this history been regarded as enemies. So, for example, the buccaneers and early traders in the late seventeenth and early eighteenth century encouraged Miskitu warriors to raid the Spanish settlements, while the Moravian missionaries (mindful of Nicaraguan Catholicism) and the CIA in the early and late twentieth century projected hostility among the Miskitu for Spanish-speakers. English-speakers, on the other hand, as allies even came to be regarded as kin, or classificatory affines and indeed some of these English speakers in the Western Caribbean (in the Bay Islands, the Caymans and Belize) continue to this day to refer to the Miskitu as the *Waika* (the Miskitu term for 'brother-in-law'). The influence of these waves of English speakers on Miskitu culture is still readily detectable in the large number of vocabulary items of English origin (as opposed to the rather few of Spanish origin) in the Miskitu language.

Following the Anglo-Spanish Convention of 1786, the British recognized the formerly contested Mosquito Coast as a Spanish possession, and most of the numerous English-speaking inhabitants left for Belize and other British territories. The direct engagement between the Miskitu and their English speaking allies, and consequently the cultural influence of the latter on the former, was weakened. In the Pearl Lagoon basin (as well as Bluefields), however, many of the English-speaking inhabitants agreed to swear loyalty to

the Spanish crown and remained. The close engagement between Miskitu and English speakers in the Pearl Lagoon area (where the Kakabila System of kin terms is now used) remained important.

Indeed, though atrophying elsewhere among the Miskitu, this relationship became progressively more important as Miskitu speakers came to constitute a minority in the district. English speakers had been principally located in the village of English Bank (later Pearl Lagoon town) in the eighteenth century and the first half of the nineteenth century, but now other English speakers arrived, eventually founding the villages of Brown Bank (in the mid nineteenth century) and Marshall Point (in the early twentieth century), and also settling among the Miskitu of the important turtling community of Tasbapauni, founded in the 1860s. At the very end of the nineteenth century and the beginning of the twentieth century Garifunas from Honduras also began to arrive in the district in large numbers to work for the logging camps and established the villages of Orinoco, La Fe and Square Point, all of which soon become English speaking, as children abandoned Garinagu, the Garifuna language.

By the mid twentieth century, the Miskitu of the village of Haulover, only a mile from Pearl Lagoon town, had all but abandoned the Miskitu language for English, with Tasbapauni and Set Net Point beginning to do the same by the end of the twentieth century. Miskitu-speakers in the district, now concentrated in the villages of Kakabila, Raitipura, and the latter's tiny satellite, Awas, now constituted a minority linguistic enclave in a predominantly English-speaking area, and even the inhabitants of these latter villages were fully fluent in Nicaraguan Creole English as well as Miskitu. In other Miskitu-speaking areas outside the Pearl Lagoon area, where the Asang System was used, English was now only spoken by older coastal people as a pidgin. In the Miskitu villages of the Pearl Lagoon basin this shift has been further accelerated by the universal adoption of the English-Spanish bilingual education program (as opposed to its Miskitu-Spanish equivalent adopted elsewhere).

The emergence of Puerto Cabezas to the north was also an important factor in the production of a "standard" Miskitu which influenced what otherwise almost certainly would have been more divergent varieties of the language. This principally Miskitu-speaking logging company entrepot, which began to rival Bluefields in importance in the early to mid twentieth century, became the principal political and economic centre of gravity for most Miskitu-speaking communities. Indeed Puerto Cabezas is now the capital of the North Atlantic Autonomous Region (RAAN). The Pearl Lagoon basin, however, remained closely linked to the geographically closer town of Bluefields, once the only major town on the Mosquito Coast but now the capital of the South Atlantic Autonomous Region (RAAS) with its few Miskitu-speakers is a large and an influential Creole English-speaking population.

In summary while most Miskitus (those now using the Asang System), although still conceptually allied to the English-speaking world, have found themselves in day-to-day terms progressively more distanced from that world during the course of the last two centuries, the exogamously-minded Miskitu of the Pearl Lagoon basin (those using the Kakabila system) have become even more enmeshed within a cognitive environment where English is almost as important a medium for communicating ideas as is Miskitu, and where the notion of 'capturing' English-speaking 'brothers-in-law' remains an important representation. Effecting these 'captures' has been made arguably easier by Pearl Lagoon Miskitus offering this affinal prey a readily intelligible conceptual framework that mirrors their own. So, just as these English-speakers have presented the Miskitu with an ethnonym, *Waika*, which represents the Miskitu's own understanding of kinship, the Pearl Lagoon basin Miskitu have reciprocally offered these Anglophone affines a terminology that, as a set

of calques from English, represents the English-speaker's classificatory understanding of how kin terms work.

## 8 Conclusion

Although it may seem inconsistent with the apparent messiness of contemporary kinship systems in the Pearl Lagoon of Nicaragua, we suggest that this case constitutes considerable evidence for the power of persistence in core idea systems. The Kakabila system exhibits acute signs of unsustainable stress that has already passed the point at which it is feasible to try and re-instate it. We do not suggest that this is either beneficial or detrimental for the Miskitu of the Pearl Lagoon, such judgments are for the people of the Pearl Lagoon to make. Rather, our concern is with the implications for understanding culture as the product of discrete, logically coherent, idea systems. Core idea systems, those upon which aggregated ideas and domain knowledge are built, must be robust in their structuring principles which yield a robust structure corresponding to an algebraic logic if they are to offer continuity of cultural production over time. Yet their production must demonstrate resilience and a capacity to shift with changes in environmental or ecocultural contexts. In the case highlighted here, what one finds is that under enough stress, core idea systems can 'break', so to speak. This may occur where the logic of the idea system is unable to produce instances of cultural products that enable the groups and individuals within the culture to do certain new things. In such circumstances one would expect the idea system to lose importance. Kinship is of such central importance in all societies that it is unlikely to disappear without considerable change in many other social and economic systems. A human without a kinship system is lacking what appears to be a fundamental core idea system. So in this case, it is not that the kinship idea system has lost importance, but rather that an alternative idea system has been implemented to suit changed ecocultural demands.

The survivals of the previous system or systems, if one considers the possibility that the Asang and the First Time System may actually have been co-existing kinship systems in different Miskitu populations historically, are not likely to survive the current older generation. While younger people may understand and know that *lakra* means or should mean an opposite sex sibling or even a parallel cousin of the opposite sex, they do not invoke such a term in that way. When they invoke this 'older' term (from the Miskitu point of view anyway), they do so using the logic of an idea system that generates brothers and sisters rather than *lakra* and *muihni*.

It is perhaps more common than we have hitherto imagined for core idea systems to change in the aftermath of strong external pressure. Lyon and Fischer's primary regional expertise is in Pakistan. While the people of Pakistan have been colonized in the past (some would say it continues to be so) their cultures have not undergone the kind of marginalization and threats of eradication experienced by scattered indigenous peoples of the tropical rainforests. There is evidence that social institutions among indigenous peoples decline and disappear in response to changing subsistence practices and shifts to wage labour. Read (2005) describes the gradual demise of seal partnerships following the introduction of rifles used for hunting seals. The breakdown of such a social institution followed shifts in the demands of ensuring adequate seal meat to survive the winter. Kinship, as a knowledge domain, is not so simple as to diminish in importance with changes in social practice, however. While kinship terminologies *neither* rely manifestly on biological reproduction for their logic or their existence nor do they rely on social production of persons as an *a priori raison d'être*, they are *used* in concert with such social practices to good effect. Consequently, while kinship terminologies are neither driven by nor correspond to the



biology of reproduction, they are nevertheless one of the most powerful information tools at the disposal of human groups for organizing the social life of reproduction and the constitution of personhood and the self.

Leaf (2007) suggested there are other useful formal systems for dealing with shapes, but Euclidian geometry is one such system that has enabled people to do practical things. Adopting an alternative formal system to describe and predict the behavior of shapes is therefore inefficient once Euclidian geometry has been established. The same could be said of kinship systems. There are several formal systems found in different populations for reckoning kinship. They all appear to be computationally efficient and to serve multiple purposes with impressive power. Consequently, one would not expect to see frequent change in kinship systems, but as with Euclidian geometry, there is nothing inherent in the phenomena being ordered, described and produced by the system that precludes alternative mechanisms for reckoning relationships. It is rather the case that once a computational idea system has been established and serves its purposes it would be surprising indeed were it to be subject to easy change.

Sperber posed the question of why some knowledge representations demonstrated persistent continuity. He said that the opposite is arguably the default position given the fact that culture resides in no particular place and is constantly subject to manipulation and transformation in the processes of interactions by self-interested individuals. But of course, it is the very high reliance on interactivity that demands communicability and that requires some mechanism for constraining the rates of change of knowledge representations. Knowledge must have the capacity to adapt to external changes, but communicability demands that such adaptation not isolate cooperating groups. It is in the notion of core idea systems that one begins to develop a coherent theory of culture and communication in which continuity of structure, and persistence of culture, are possible without positing unrealistic assertions of shared norms, social values or other instances of cultural products.

## References

- Berlin, Brent, and Paul Kay. *Basic Color Terms: Their Universality and Evolution*, The David Hume Series of Philosophy and Cognitive Science. Stanford: CSLI Publications, 1999 [1969].
- Carrithers, Michael. "Story Seeds and the Inchoate." In *Culture, Rhetoric and the Vicissitudes of Life*, edited by Michael Carrithers, 34-52. Oxford: Berghahn Books, 2009.
- Dennis, Philip A. *The Miskitu People of Awastara*. Austin: University of Texas Press, 2004.
- Fischer, Michael D, Dwight Read, and Stephen M Lyon. "Introduction to Special Issue on Complexity and Cultural Systems." *Cybernetics and Systems* 2005; 36 (8). 719-34. doi:10.1080/01969720500356654.
- Godelier, Maurice. *The Making of Great Men: Male Domination and Power among the New Guinea Baruya*, Cambridge Studies in Social Anthropology. Cambridge: Cambridge University Press 1986.
- Grice, H. P. 'Logic and conversation'. In P. Cole and J. Morgan (eds) *Studies in Syntax and Semantics III: Speech Acts*, , pp. 183-98. New York: Academic Press, 1975.
- Hale, Charles R. *Resistance and Contradiction: Miskitu Indians and the Nicaraguan State, 1894-1987*. Stanford: Stanford University Press, 1994.
- Heath, George R., and Werner G. Marx. *Diccionario Miskito-Español, Español-Miskitu*. 3rd ed. Winston, Salem: Hunter Publishing Co., 1983.

Helms, Mary. *Asang: Adaptations to Culture Contact in a Miskito Community*. Gainesville: University of Florida Press, 1971.

Jamieson, Mark. "Linguistic Innovation and Relationship Terminology in the Pearl Lagoon Basin of Nicaragua." *The Journal of the Royal Anthropological Institute* 1998; 4 (4): 713-730.

Leaf, Murray J. "Cultural Systems and Organizational Processes: Observations on the Conference Papers." *Cybernetics and Systems: An International Journal* 2004; 35, (2 and 3 ): 289-313.

———. "Empirical Formalism." *Structure and Dynamics* 2007; (1), <http://escholarship.org/uc/item/851847x3>.

———. "Indigenous Algorithms, Organizations, and Rationality. Structure and Dynamics." *Structure and Dynamics*, 2008; (2), <http://escholarship.org/uc/item/996031cv>.

———. *Information and Behavior in a Sikh Village: Social Organization Reconsidered*: University of California Press, 1972.

———. "The Message Is the Medium: Language, Culture, and Informatics." *Cybernetics and Systems: An International Journal* 2005; 36 (8): 903-17.

Lyon, Stephen M. "Culture and Information: An Anthropological Examination of Communication in Cultural Domains in Pakistan." *Cybernetics and Systems*. 2005; 36 (8): 919-32.

Read, Dwight W. "Some Observations on Resilience and Robustness in Human Systems." *Cybernetics and Systems: An International Journal* 2005; 36 (8): 773-802.

———. "Formal Analysis of Kinship Terminologies and Its Relationship to What Constitutes Kinship." *Anthropological Theory* 2001; 1 (2): 239-67.

———. "Kinship Algebra Expert System (Kaes): A Software Implementation of a Cultural Theory." *Social Science Computer Review* 2006; 24 (1): 43-67.

Read, Dwight W., and Clifford A. Behrens. "Kaes: An Expert System for the Algebraic Analysis of Kinship Terminologies." *Journal of Quantitative Anthropology* 1990; 2: 353-93.

Read, Dwight, Michael Fischer, and Murray Leaf. "What Are Kinship Terminologies, and Why Do We Care? A Computational Approach to Analyzing Symbolic Domains." *Social Science Computer Review* 2013; 31 (1): 16-44. doi:10.1177/0894439312455914.

Schneider, David. *American Kinship: A Cultural Account*: University of Chicago Press, 1968.

Sperber, Dan. "Anthropology and Psychology: Towards an Epidemiology of Representations." *Man* 1985; 20 (1): 73-89, <http://www.jstor.org/stable/2802222>

Spoehr, Alexander. *Changing Kinship Systems: A Study in the Acculturation of the Creeks, Cherokee, and Choctaw*. Chicago: Field Museum of Natural History. 1947.

Tylor, Edward Burnett. *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Language, Art and Custom*. Second edition. ed. London: John Murray, 1873.

Ziock, H. *Dictionary of the English and Miskito Languages*. Saxony: Herrnhut, 1894.