ANTHROPOS

101.2006: 203–219

Issues in the Classification of Kinship Terminologies

Toward a New Typology

David B. Kronenfeld

Abstract. – Kinship terms – like words in other domains – are part of the general semantic system of contrastive sense and reference while encoding pragmatic conceptualizations of a particular substantive domain. A good classification of types of terminology takes account of intrinsic structure in the categorized world – for words, both semantic and pragmatic structure – while enabling clean and effective analytic statements relating to given theoretical goals. For data universes which are fairly well-understood and which have received theoretical attention, revised and improved data categorizations may offer a powerful and effective means for the refinement of theory. *[Kinship terminology, semantics, pragmatics, typology, alternative systems]*

David B. Kronenfeld, Ph.D., Prof. of Anthropology, University of California at Riverside. – Research interests include cognitive anthropology, the semantics of natural language, social organization, ethnicity, and kinship. His approach to social and terminological issues reflects an underlying concern with the cognitive coding and social distribution of relevant knowledge; in this work he joins a concern with functional and historical questions to an appreciation of the explicitness offered by formal analytic techniques. His current research focus concerns culture as the system of distributed cognition which enables the intellectual as well as the economic division of labor. – Publications include numerous articles on kinship, semantics, cognitive anthropology, and society. He edited and annotated Sydney H. Gould's "A New System for the Formal Analysis of Kinship" (Lanham 2000) and guest edited a special issue of *Anthropological Theory* (June 2001) on "Kinship." – See also References Cited.

Introduction

Classification, the assignment of individual (and, ultimately, unique) events to categories is crucial for any kind of analysis. A coherent and complete system of contrasting categories into which events can be sorted is called a typology. A good typology is one that takes account of what structure we find in the natural world, while enabling clean and effective analytic statements relating to a given theoretical goal. Such a typology captures the distinctions and uniformities that are basic to the analysis in a form appropriate to the analysis, and thus to the theory on which the analysis is based. Effective typologies are thus in part theory dependent, and hence, different analytic goals may require different typologies – even when the same events are being classified. Typologies are conceptual tools that we analysts create to aid our work; they are not judged as "true" or "false," but, rather, are evaluated according to their usefulness. The closer a classification comes to "cutting nature at the joints" the better it seems, and the more likely its organization is to help lead analysts to theoretically important entities and relations.

In a well-understood theoretical universe such as nuclear physics, organized interrelated sets of categories such as "proton," "neutron," "electron," "charge," "ion," "nucleus," "atomic number," "mass," etc. flow naturally from theory. But theories do not emerge full-blown in the minds of analysts. They come from a process of observing events, collecting data within some tentative categories, trying out tentative conclusions on that data, and then revising the categories, the propositions on which the conclusions were based, and/or the range and manner of data collection in order to improve the fit. For data universes which are

fairly well understood and which have received a fair amount of theoretical attention, revised and improved data categorizations may offer a powerful and effective means for the refinement and improvement of theory.

The effective use of the development of a typology as an aid to theory construction depends on having a rich data set. This set is likely, to some degree, to contain data already collected in the categories of older and less general typologies, but it also will depend importantly on new data collected with the new typological (and hence theoretical) issues in mind.

A good theory of even a single (and somewhat aberrant) domain may in turn greatly advance our general theory of linguistic (and cognitive) meaning. The specific domain here is kinship.

Kinship terminologies offer a domain that is ready to benefit from typological experimentation and exploration. We have lots of data sets, a clearly inadequate existing typology, lots of theories about kinterms, some of which are very good, but none of which seem to relate to the full scope of theoretical findings and questions that have been posed in the literature. My suspicion (cf. Denham and White 2005) is that we will wind up with a small number of logically distinct theories for different aspects of kinterminologies, and then with some separate theoretical understanding of how the various theories come together in actual kinship usage.

This article is aimed at contributing a refinement of our classification of kinterminologies which will, in turn, aid our theoretical understanding of the historical, social, and psychological regularities which kinterminologies respond to and reflect, and of the role that they play in our social and cultural lives. Toward that end I will offer an overview of analytic approaches to the analysis of kinterminologies. I will note the terminological issues that each approach foregrounds and the empirical concomitants whose recognition it facilitates. Each of these approaches represents a theoretical perspective from which could be built a typology (often easily); but the combination of all the resultant typologies produces too large a number of types with too many empty slots (empirically nonexistent types) to be either workable or useful. Hence the larger typological problems are 1) to try to find which of these approaches can be effectively subsumed in others and 2) to distinguish the combinations of these approaches which produce categories containing empirical exemplars (actual terminologies) from the combinations which do not, and to determine the principles which distinguish empirically occurring typological categories from nonoccurring ones. My general approach to the typological enterprise comes from Greenberg (e.g., 1966) and my particular approach to the kinship avatar grows out of Nerlove and Romney's (1967) pioneering application and extension of Greenberg's lessons.

Wider Relevance

The actual focus of this article – on weaknesses and needed developments in the systems (or typologies) by which kinterminologies are classified – is quite narrow, and only of direct interest to those concerned with comparative treatments involving formally analyzed or described kinship terminologies. But it does have two kinds of significantly wider relevance.

First is a kind of pragmatic use – for those who talk about (or refer to) types of kinterminologies in the course of a developmental or comparative framework. It is important for such people to make sure that they understand what they are buying into when they assign a specific terminology to one or another analytic category (i.e., "type" – such as "Iroquois-type," "Crow-type," "classificatory," or "skewed"). That is, they have to understand the attributes which actually characterize the analytic categories into which they sort specific terminologies – especially those attributes relevant to the issues or comparisons involved in their wider study. This article summarizes the current state of known or shown relationships of types to attributes and varieties of regularities external to kinterminologies themselves, and it summarizes the strengths and weakness of each approach.

The second kind of wider relevance of this typological discussion is as a kind of analytic example or model. It focuses on an analytic area within anthropology in which formal analysis is fairly advanced and in which theoretical relations are increasingly well understood. This is an area in which it appears that our rough first approximations of a technical vocabulary aimed at capturing empirical regularities have gotten too out of touch with our increasingly sophisticated theoretical understanding, and thus an area in which our technical terminology – especially the categories (or typology) into which empirical cases are sorted – needs further refinement. The definitions of types of terminological systems need to be redefined in a way that is conceptually clear, logically consistent, and empirically useful. This kind of refinement of technical language cannot be done by fiat, but

depends on the kind of feedback between logical constructions and empirical examples that enables us to consistently locate nature's "joints" and do our analytic "cutting" at them. The classic example in physics is the process by which folk notions of "weight" were transformed into the idea of "mass." I argue that our classifications of types of kinship terminologies are in the middle of such a transformation, that the process of transformation will be aided by its being made explicit, and that other ethnological categorizations can benefit from the relatively advanced kinterminological one.

The necessary role of additional empirical studies explains why I am not able to offer any final categorization or typology. The logical and definitional issues that have arisen in one or another specific terminological analysis – and that are discussed in this article – have not been examined within (or for) enough other systems (or kinds of systems) to enable dependable generalizations about them. One hope I have for this article is that it will help generate the kinds of attention which will allow a more rapid homing in on basic attributes of kinship terminologies than would otherwise be the case.

In the meanwhile I do want to point out that even the present incomplete treatment suffices to cover many of the pragmatic uses alluded to above. That is, the significant problems (at least, those so far apparent) with existing categories of terminological types, the assumptions they build in, and the considerations they ignore are pretty much put on the table and discussed here. Thus, ethnographers and ethnologists who are not specialists in kinship terminological arcanities can be aware of what they are buying into with their choice of one or another label.

Toward General Conclusions – Wider Typological Issues

Three underlying issues that have bedeviled previous comparative treatments of types of analytic approaches to kinterminologies – and thus the typologies implicit in them – need to be put on the table before moving to any direct discussion of existing typologies and the strengths and weaknesses of each. These issues are semantic vs. pragmatic meaning and meaning structures, ethnographic vs. ethnological focus (with associated "emic" vs. "etic" perspectives), and the alternative goals to which a formal analysis might be directed (particularly characterizations of how kinterms are best defined vs. what structures their use in thought and action). Confusion resulting from inattention to these issues has led to some classic "talking past" in which analyses implicitly (but *not* explicitly) aimed at different goals were treated as competing alternatives where a winner was being sought when, instead, they should have been treated as complementary enterprises where the search or evaluation should have been for how/how well they fit together. The "talking past" has extended, also, to the question of what data or measures are best or most crucially to be used to evaluate the success of a given analysis.

Word Meaning and Meaning Structures

Relevant to our consideration of kinterminologies are two different but interrelated aspects of word meaning: semantics and pragmatics. Semantics, in turn, traditionally (and, usefully) breaks up into "meaning" or "sense" relations and reference. These aspects of semantics are intrinsic parts of the system of language. They obtain across all the various semantic domains of language, including kinship. The specific properties of different domains (such as kinship or ethnobotany) come out of the *pragmatic* properties of the entities (things, relations, actions, functional properties, etc.) that make up those domains and come out of the ways in which these entities are interacted with – and are represented in various pragmatic structures.

Semantic: Meaning or Sense Relations

First we have the basic (Saussurean) semantic relations of opposition among conceptual entities. Opposition (or contrast) implies both difference on some specific dimension of opposition and similarity on other relevant dimensions – which gets us to the early ethnoscience concerns with contrast and inclusion. We know concepts by what they are different from and what they are like.

Thus, we know that "chairs" contrast with "tables" as kinds of "furniture." We know that "furniture" contrasts with "appliances" as kinds of "household furnishings." We also know that "chairs" contrast with "sofas," "benches," etc. as kinds of "things to sit on." We know that "sofas" and "easy chairs" contrast as kinds of "living room furniture," while "tables" and "chairs" can be "dining room furniture" or "conference room furniture." "Natives," being some mixture of lazy

and efficient, often try to reuse existing contrasts and categories of inclusion. Thus, these relations can be arranged by an analyst into taxonomies and paradigms – though almost always at the "expense" of pruning out some additional "native" knowledge (e.g., a more detailed hierarchy of kinds of rooms, kinds of furniture, etc. or of some crosscutting structure such as styles – cf. Romney and Moore's [1998: 316 f.] study of conceptual relations among animal terms).

Semantics: Reference

Reference is a separate issue from contrast, and it is here that semantic extension comes in. My claim is that our conception of referents (the specific things covered by reference) is not in terms of a whole class defined by features, but is more in terms of a "gestalt" representing a "focal" or "prototypic" referent[1] – where focality is based on a combination of frequency of use, logical fit with semantic and pragmatic knowledge (algebraic accounts are relevant here – see my discussion of pragmatic knowledge below), personal history, etc. (see Kronenfeld 1996). The connection between prototype and term is what I have spoken of as the "referential lock" that prevents the famous Wittgensteinian infinite regress of "family resemblances." What philosophers have spoken of as "essential" properties of terminological categories pertain not necessarily to the full range of referents of terms but only necessarily to the focal prototypes.

Referents that are not prototypic or focal referents can still be referred to by a term. And most of the things in the world that we talk of do not have their own terms (i.e., belong to the focal gestalt of some term). Part of the power, use, and flexibility of language is our productive use of old terms for new things – in ways that we, as speakers and hearers, easily and transparently understand. This is semantic extension – the use of words for referents which are not included in the words' prototype gestalts. In Kronenfeld 1996, I outline the differences among denotative, connotative, and figurative extension. For present purposes, note that denotative extension refers to referents that *are technically correct* applications of a term (ones that fit whatever is the formal definitional process, whether implicit or explicit), but that just don't totally match the prototypic referent.

Fanti speakers have a whole logical system (see Kronenfeld 1980b) that makes, e.g., father's mother's sister's son, a totally correct instance of *egya* (glossed by them as "father" in English). But Fanti speakers also have a prototypic conception of *egya* as the man who married their *na* (glossed as "mother") and physiologically fathered them. This prototypicality comes out both behaviorally and in definitional discussions. It can be seen behaviorally in both how Fanti are seen to treat alternative *egyas* (e.g., father's mother's sister's son vs. own biological and social father) and in how they describe behavior toward alternative referents of the term, and can be seen in how they respond to requests such as "tell me about (or describe) your *egya*." Definitionally, the prototypic conceptions can be seen in answers to the question "how is he your *egya*" about different referents. For nonfocal referents the typical answer will be a relative product, something like, "because he is my *egya n'nua*" (my father's sibling [implicit male → father's brother]), while for focal referents it will be some reference – outside the relative product game – to the referent's role in conception.

For terms such as *wofa* (maternal uncle), that do not have any directly physiologically defined referent, we still see the focality (though, possibly less sharply defined). That is, *na n'nua banyin* (mother's male sibling) is the system definition – and thus the usual answer to the "how is he your *wofa*" question (for all denotatively correct referents). But both the behavioral incidence records and the answers to the "tell me about your *wofa*" requests again clearly string out along a distance metric that is anchored by real mother's real male sibling (and extends, e.g., through real mother's mother's sister's son to real mother's father's brother's son) – where the "real" modifiers are glosses for words that Fanti use. Additionally, in definitional conversations one can see a parallel regress – though the question that produces the regress is not the opening question "how is he your *wofa*?" (eliciting the answer "because he's my *na n'nua banyin*"), but one step removed in the follow-up question about the linking *na* (how is she your *na*?) or *nua* (how is he her *nua*?).

That is, focal referents are identified and knowledge about behavioral and other concomitants of the terms is keyed to these focal referents. The focality and keying is clearest with terms such as

1 Note that I say "our conception" – referring to us as native speakers – and note that I am explicitly not speaking of denotative definitions (or of the axiomatic systems that create and organize them) which may well not depend on focality in some of the places where, as native speakers, we feel it and in one way or another rely upon it.

na and *egya* which are initially defined outside the relative product word game and which play a key definitional role in the wider system, but it is still apparent with a term like *wofa* which is totally and only defined within the system by the relative product game. In the *wofa* case the focality is not immediate (as it is with *egya*, and as it would be in a Lounsburian approach) since all "uncles" are "mother's brothers," but it is a conceptual focus that figures powerfully in Fanti understandings and conversations.

Pragmatic Knowledge

Interfacing with semantics we have our pragmatic knowledge of the world that the words refer to – which I spoke of in my book (Kronenfeld 1996) as "schemas about the world" or "functional schemas." Today, however, I would speak of such knowledge as "cultural conceptual systems" or "cultural models" (depending on specifics of form and function that are beyond our present discussion) rather than as "schemas." This knowledge is structured, but not semantically. This is our knowledge, e.g., that chairs and tables are functionally related – that in the dining room you sit on the one while eating off of (and being up against and partially under) the other. Or that living rooms typically have some mixture of sofas and easy chairs for sitting and little/low tables (end tables, coffee tables) for putting stuff on. And our knowledge that rooms have floors (with various kinds of coverings) and walls (often with windows) and ceilings . . . This is the general version of the kind of assemblage that Dougherty and Keller (1985) speak of as a "taskonomy." Relevant here are the features which make a dining chair different from a living room chair – or a claw hammer different from a ballpeen hammer. (The semantic features, discussed above, tell us that the claw hammer is different from the ballpeen one, and perhaps imply that this difference is in terms of some defining feature, but the questions of what *specific* feature defines the difference, and why that feature matters (that is, is functionally significant – significant enough to merit linguistic coding) is a matter that concerns our pragmatic understanding.

I think that in a general sense the above distinction between semantic relations and pragmatic ones applies to kinship terms as well as any other kinds of words. I think that among the kinds of pragmatic knowledge we have of kinship terms is the formal system by which they are organized and defined – the system that Read (2001, 1984; and Read and Behrens 1990) analyzes and models. As kids we are not taught that system (as a system) and do not learn it directly. Instead, we are exposed to a range of applications of kinterms, a smattering of contextually specific definitions ("No, Johnny, he is not your father; he's your uncle – 'cause he's Mommy's brother."), and a variety of conversational and behavioral contexts in which relatives get sorted out ("uncle and daddy both go to the men's room"; "daddy and mommy can spank me but uncle and aunt can't"; "I'm supposed to be respectful to uncle and aunt but I can tease my cousins"; etc. etc.). Out of this we each pull out (sort of induce, but not via the rigors of any formal inductive logic) a productive representation of the system – of the patterns (a.k.a. "rules") that specify who is which kind of relative. We each create our own version of the system – but the semantic and interactive constraints on kinship (like the constraints on the grammar of language itself) are sufficiently rigorous to lead us each to come up with pretty much the same system as those around us.

It is this productive system that Read's algebraic formalization describes. His algebraic analysis is powerful, regular, and embodies an ultimate definitional reality in the sense that it precisely (and thus productively) captures the systemic regularities of the described systems. But note also, though, that this algebraic structure is not the first kinship stuff learned, and is not itself learned directly; it is inferred from patterns of experienced usage. Other understandings (such as focality) can be based directly and independently on that experienced usage. And it is through, and only through, changes in those patterns of experienced usage that the system changes over time – that people in a culture move from one type of system to another. The axioms of the algebraic system are not what is learned first or on any privileged basis; they are induced through the process by which a new speaker tries to come up with an efficient, productive system (or, rather, a representation of the system – since the system is perceived by the learner as a preexisting cognitive property of the community). Focality, thus, is tied to experienced relations – and to how these are later coded (in the learning process) – not to anything external such as our anthropological "kintypes." (The degree to which there exists some sort of universal "native" conception of something like a kintype and, if it exists, what properties it might have, are questions in which I am quite interested, but which are not relevant to the current discussion).

Ethnography vs. Ethnology – Inside a Culture vs. Outside

Ethnographic Specificity

The preceding discussion is about the actual specific systems of knowledge held by specific people – what is spoken of in the Pikean (Pike 1967, and cf. Headland et al. 1990) sense as "emic." Its descriptive specificity makes it also ethnographic. The description of a kinship system from an ethnographic perspective aims at the axioms (entities, patterns, rules, etc.) which actually generate the system.

Ethnological Comparison

Another perspective is represented by our comparative, ethnological concerns. The questions of what should be compared and of how ethnological comparison relates to ethnographic description are old problems in anthropology. The ethnoscience (or "ethnographic semantics") methodological approach arose as a response to Murdock's cross-cultural comparisons by his second generation of students at Yale who questioned the value of any comparative conclusions based on what they saw as an inadequate ethnographic record – and who then resolved to try to get the ethnography (or ethnographic understanding) right. Goodenough said (1956b, arguing with Fischer) that to understand a residence pattern in a culture we needed to consider their residence rules rather than any externally ("etically" in that lingo) defined classification of their residence distribution. But, our tension between ethnography and ethnology remains (see, e.g., my Goodenough vs. Fischer article; Kronenfeld 1992). It turns out that different analytic goals require different definitions; there do exist interesting and reasonable empirical theories relating to households that one might want to evaluate that are hard to address through residence rules, but easily addressed through old-fashioned household composition maps.

An ethnological comparison requires that the compared cases be placed in a common conceptual frame – which then is highly unlikely to be the "emic" conceptual frame of any one of the compared cases. (One can, of course, compare "emic" descriptions [as Frake, among others, has suggested], and such comparisons can lead to very interesting findings, but these findings do not seem normally or easily to address the kinds of theoretical questions which ethnological comparisons typically address.)

Thus an ethnological characterization of some system will *not* itself be an "emically valid" description of that system; it will instead be an external description or characterization of the emically valid description. Its couching in comparative terms will commonly (maybe necessarily?) lead to the loss of specific ethnographic details that don't seem to pertain to the more general issues.

Under "ethnological" comparisons I include not only comparisons of one terminological system with another but also comparisons – driven by external, ethnological theory – of terminological patterns with other aspects of culture.

It is for such ethnological comparisons that I have found Lounsbury's Crow-Omaha-approach useful (in spite of its nonrepresentation of "emic" conceptual operations) – as a reasonably simple description (from the outside) of regularities found in a large class of systems. My claim here, then, is *not* that kinship systems are only genealogical or narrowly dependent only and strictly on kin-type characterizations, but only that a large and powerful set of cross-system regularities can be fairly rigorously defined in these terms. This is why in my comparison of my formalization of Fanti calculations with my version of Lounsburian rules (Kronenfeld 1980b) I found uses for both approaches within my wider Fanti project, even while noting the more limited range of application of the Lounsburian version.

As Read, Lehman, and others have noticed, Lounsbury's system is indeed loose and ad hoc. Gould, a mathematician, became involved in terminological analysis via his exposure to Lounsbury's work (including its Schefflerian emendations). What he (Gould 2000) aimed at was a comparative treatment that worked across systems (as does Lounsbury's), and that spoke to the various kinds of regularities (and, maybe, relations) that Lounsbury had addressed, but that (unlike Lounsbury's treatment) was mathematically elegant and complete. Gould explicitly recognized that the demands of comparative (i.e., ethnological) simplicity necessitated ignoring (and thus omitting) some of the systemic specificities of particular ethnographic cases (e.g., his analysis explicitly ignored the fact that in Fanti – unusually for Cheyenne- and Crow-type systems – father's sister is referred to by the *na* mother term). And he made no claim to be producing a model or theory of actual native calculations (modeling himself, I'm sure, on Lounsbury, who explicitly eschewed such claims). What he aimed at was a rigorous formal system

which captured the regularities that characterized the range of classificatory kinship terminologies that he could find – or, at least, the regularities that could be captured by the particular kinds of parent-child links that his system is based on.

Analytic Goals

On the model of structural linguistic analyses of phonological systems, formal analyses of kinterminologies have classically been aimed at producing efficient and insightful definitions of "native" categories. Initial analyses by Lounsbury (1956, 1964b), Goodenough (1956a), Wallace and Atkins (1960), Romney and D'Andrade (1964), and others, directly applied the componential approach of phonology (in which entities are defined by the intersection of distinctive features) to the semantic problem of kinterms. As differences emerged between phonological and semantic domains in general – and more particularly between phonemes and kinterms – other forms of analysis were explored. These included Lounsbury's (1964a, 1965) rewrite or extension analysis, and then the algebraic approaches of Lehman (1993, 2001, Lehman and Witz 1974), Read (1984, 2001, Read and Behrens 1990), and Gould (2000).[2]

The problem with componential analyses was that they depended on prior knowledge (by both native speakers and anthropological analysts) of genealogical structure and of what kinds of kinfolk went into which kinterm category – which meant that they could *not* provide the basic definitions of kinterm category membership. On the other hand, a wealth of psychological data has shown up (beginning with that in Romney and D'Andrade 1964) implying that componential attributes are "psychologically real" in the sense that people think about kinterm categories in terms of them.

Componential analyses – whether of whole kinterm ranges or only of focal referents – provide an interesting and useful example of a structure which is merely descriptive (as opposed to generative), which is derivatively based on some prior analytic understanding of the denotative system (as opposed to representing any primary understanding of the system either by natives or by anthropological analysts), and which includes a mix of generatively relevant and generatively irrelevant features. Componential (i.e., paradigmatic) structures[3] represent the semantic relations among terms (a structure of contrast and inclusion) – as opposed to the pragmatic relations among the entities referred to by kinship that structure the denotative definitions of kinterms and that are embodied in the relative product-based algebraic approaches of Gould, Lehman, and Read. Componentially defined patterns of opposition are useful because they capture the attribute patterns (sex, generation, distance, cross vs. parallel, etc.) that structure the connotations of kinterms and that code much of the cultural significance of kinterms; such features underlie most of the figurative uses of kinterms – as for God, country, priests, fellow members of a movement, etc.

It is noteworthy in this connection that Gould finds componential definitions of focal referents worth carefully defining and analyzing, but does not make any attempt to derive them from his algebraic system. This implies that he sees them as reflecting a different role (with different constraints) from that of the algebraic system. Even if the two are interdependent, the componential paradigm is not simply an epiphenomenon of the algebraic system. The two are interlinked in the sense that the componential paradigm must contain the distinctions basic to the working of the algebraic system – and in the sense that changes in the componential paradigm can constitute a pressure toward change in the algebraic system (as illustrated by my discussion of English loanwords in Fanti [Kronenfeld 1991: 28–30]).

Different analytic purposes seem to demand different (perhaps very different) forms of formal analysis. The best formal analysis of definitions in a given terminology may well not represent how native speakers actually calculate terminological assignments (Kronenfeld in press). The basis on which native speakers derive the connotations and communicative force of their kinterms may differ considerably from how they define membership in kinterm categories; componential solutions, in particular, seem well suited to structuring the former understandings while quite unsuited to the latter definitional task. Pertinent analytic questions include whether or not componential patterns of conceptual contrast feed back on the algebraic structure, and if so, how. Are cognitive considerations such as conjunctivity simply epiphenomena of some underlying algebraic system or do they represent some independent shaping force?

2 For a fuller historical account see Kronenfeld 2001a.

3 See Lounsbury 1956, Goodenough 1956a, Romney and D'Andrade 1964.

The Meta-Typology

In order to produce a useful (effective and powerful) typology, we need to know the kinds of variables on which terminologies can differ from one another (including the actual feature values that actual terminologies take on these variables), the combinations of these that empirically occur, and the principles which govern these combinatorial possibilities. "Variables" can refer to distinctive features, but also to other formal ways of describing or defining patterns, such as equivalence rules, algebraic axioms, algebraic generating propositions, and perhaps even logical systemic effects of particular kinds of equivalence.

What I propose to do in the remainder of this article is to sketch out a kind of "meta-typology," that is, the set of logical bases – based on relationships that have emerged, especially lately, in the literature – on which at least some kinterminologies or analyses seem to differ significantly from some others. In connection with my discussion of these various kinds of bases I will offer some empirical speculations and some extended queries regarding attributes or concomitants of kinterminological systems or relations among related ones. I aim at contributing to the construction of a typology that enables a clear demarcation of possible (i.e., occurrent) from impossible (i.e., nonoccurrent) types, that encompasses possible historical transitions, and that enables a clear view of the relationship of terminological systems to the functional, cultural, or historical bases to which they respond (including the communicative load they carry as words in languages). It is possible that such a typology will turn out to be based directly on a single algebraic analysis, but there exist reasons for suggesting that things will not be so simple (see Kronenfeld 2001a and consider the case for Lounsburian rules that I made above); I do expect that an effective typology will relate in logical and systematic ways to good algebraic analyses – and that a successful typology and effective algebraic analyses will mutually illuminate each other.

Typological Base 1

Typological Base 1 concerns the sets of distinctive features (as in a componential analysis) that – within a given terminology – distinguish either kinterminological categories from one another or focal members of such categories from one another.[4] Common examples include generation (either signed generation [+1, 0, −1, etc.] or absolute generation [0, 1, 2, etc.] plus polarity [+, −]), collaterality, sex of alter, and relative age.[5]

Whole category definitions have the problem of becoming extremely complex and hard to follow (and thus cognitively unreasonable – see Nerlove and Romney's 1967 and Kronenfeld's 1974 findings on sibling typology) and fly in the face of much ethnographic usage information regarding focality and the special status of focal referents (see below). On the other hand, features limited to focal categories then necessarily depend on being linked to some mechanism for extension to nonfocal referents (see Typological Base 2).

Such distinctive feature sets have provided the traditional basis for distinguishing Hawaiian-type from Cheyenne-type from Iroquois-type/Dravidian-type terminologies, but, taken focally, they do not distinguish Iroquois-type from Dravidian-type, nor Cheyenne-type from Crow-type/Omaha-type. Distinctive feature sets applied to extended referents have not much been used for typological purposes – perhaps because of the complexity of the features and/or system to system variation in definitional details.

4 Focal (also called, variously, kernel, core, or prototypic) members of a terminological category (i.e., referents of the term) are the members that are closest to ego and from which simple extension rules can be written which identify other members of the given terminological category; focal members (or referents) contrast with extended members (or referents).

5 I suggest (following on Gould [2000], Read [2001, and see Read 1984 and Read and Behrens 1990], and Lehman [2001, and see Lehman 1993 and Lehman and Witz 1974]) that it matters whether such features are either structurally relevant – in the sense of affecting the logic by which category membership and resulting equivalences are calculated – or structurally irrelevant – in the sense of coding socially important information, but information which does not affect the logic of category calculations. As an example, in English, the sex-of-relative feature that distinguishes, among other pairs, "brother" from "sister" is structurally irrelevant; the child of either will be "nephew" or "niece" according to its sex. On the other hand, in English, the collaterality feature which distinguishes "cousin" from "brother" and "sister" is structurally relevant; the child of a "cousin" is a "cousin," while the child of a "brother" or "sister" is a "nephew" or "niece." A typological issue concerns whether the distinction between structurally relevant and structurally irrelevant distinctive features – and the determination of which features are of which sort – is specific to whichever particular formalism is being used to define the structure, or whether this distinction and/or determination is robustly constant across formalisms (and, thus, across the different goals to which different formalisms are directed).

The problem with (or limitation of) Base 1 is the important terminological contrasts that it does not reflect. The contrast between Dravidian- and Iroquois-type terminologies is important because of the systematic and logical dependence of the former on marriage relations between moiety-like categories, as opposed to the absolute incompatibility of the latter with such systematic relations. "Skewing" refers to the systematic crossing of generation lines by primary terminological categories of relatives (such as those labeled by "father," "mother," "brother," "uncle," etc.) in the context of (and paralleling) some variety of unilineal succession (see footnotes 8 and 9 for illustrative examples). Additionally, Base 1 does not directly reflect significant aspects of the contrast between Iroquois- and Dravidian-type systems on the one hand and skewed ones on the other – i.e., that Iroquois and Dravidian are unskewed. In sum, what we have traditionally called Iroquois-, Dravidian-, Cheyenne-, Crow-, and Omaha-type systems are interrelated in consistent ways that the Base 1 approach does not adequately represent.

On the other hand, Base 1, applying particularly to focal exemplars, seems important because it provides a basic framework for understanding connotations of kinterms, figurative extensions of them to non-kin, and their understood relationship to behavioral relations by native speakers (as shown for Fanti in Kronenfeld 1973). Perhaps more basically, Base 1 types of contrasts among focal exemplars reflect the underlying social issues that drive the terminological distinguishing of one category from another (again, for Fanti see Kronenfeld 1973). Base 1 has provided a useful basis for thinking about the historical development of terminological systems (see, e.g., Allen 1998; Hage 1998a, 1999b, 2001).

Relating to Base 1, I hypothesize that the set of kinterms in a system will be the result of the intersection of a universal pattern of nuclear family roles (mother, father, child) with culturally specific patterns representing rules of succession and inheritance. "Intersection" means that the categories produced by the one pattern are potentially subdivided by the categories produced by the other pattern. This intersection will determine whether a) collateral relatives (possibly further divided by collateral lines) are distinguished from lineal, as in Eskimo-type systems such as English, b) whether maternal relatives are distinguished from paternal, but lineals not distinguished from collaterals – as in Dravidian-, Iroquois-, Crow-, and Omaha-type systems, c) whether neither distinction is made, as in Hawaiian-type systems, or d) whether both distinctions are made. From this perspective, grand-relatives could be taken as an extension of either the nuclear family pattern or the succession/inheritance one.

Typological Base 2

Typological Base 2 represents the means by which category membership is extended from core (focal, prototypic, kernel) referents to other, extended, referents. Extension can be represented by extension "rules" as in Lounsbury (1964a and 1965) or by other representational devices (as in Romney's notational scheme[6] – see, e.g., Romney 1965 – or as productive algebraic equivalence of the sort we will consider under Base 3). The following kinds of extension alternatives seem to exist:

a) There is simple generational extension, which can be either (i) simply by generation, applying without distinction to ego's mother-side and father-side relatives (as in Fanti's unskewed variant where the "mother" term is extended to all G^{+1} female consanguines), or (ii) generationally, but according to side of the family (as, e.g., in Fanti where father's side G^{+1} males are called by the "father" term while mother's side ones are called by the mother's brother ["uncle"] term).

b) There is extension by cross vs. parallel categories, which can be either (i) Iroquois-type (as in Lounsbury 1964b), (ii) Dravidian-type (see

6 In Romney's notation scheme m refers to a male person, f to a female, and a to a person of either sex; b..b refers to a same-sex pair while b..$\bar{b}$ refers to an opposite sex pair. + represents a child to parent link, – a parent to child link, o a sibling link, and = a marriage link. An e or a y at the end of string makes the terminal person elder or younger than the initial one. A period at the end of a string means that the expression has to end there, while three dots at the end means that something most follow, and no punctuation allows either. A ( ) parenthesis encloses an optional element; linked parentheses, i.e., ( )___( ), enclose linked options in which either both or neither must be taken. An expression's reciprocal is formed by reversing the order of the symbols and changing +s to –s and –s to +s. Slant lines enclosing a string mean that the expression applies both to the string and to its reciprocal.
In Romney's notation the Omaha skewing rule, in Dorsey's data, can be represented as:
/+mof-/ → /of-/
And the Omaha merging rule as:
/+bob/ → /+b/
The expanded Omaha maternal uncle term as:
a+f(+b)o(b-)(m-)

Kay 1965), or (possibly) (iii) others (as in Tyler 1966; Tjon Sie Fat1998).[7]

c) There is extension by skewing (coupled with merging). Skewing variants (see Lounsbury 1964a) include the Crow-type basic pattern[8] (with Lounsbury's various "type" limitations on range of application) and the Omaha-type basic pattern[9] (again with Lounsbury's limitations). Skewing extension types include a variation which limits merging (the terminological equivalence of same-sex siblings as linking relatives) to one parallel sibling sex, but not the other; the Crow-type variant, in which only females are merged would be Trobriand (see Lounsbury 1965), while the Omaha-type variant, in which only males are merged would be Kalmuk (see Romney 1965).

The Iroquois-type vs. Dravidian-type distinction is defined by alternate forms of cross/parallel extension and Crow-type and Omaha-type terminological systems are defined by the presence of skewing, but – beyond these specifics – no real typological scheme based on patterns of extension seems to have emerged. For unskewed systems extension seems mostly to be a way of applying the distinctions that structure (or, are implicit in) the componential paradigm of focal referents to the wider range of kinfolk. The Iroquois-type vs. Dravidian-type contrast represents alternative ways of generalizing a shared focal cross/parallel distinction.

Relevant questions particularly regarding extension include the following:

a) What must be uniform across a system, vs. what can vary? One kind of variation is represented by the Trobriand (Lounsbury 1965) and Kalmuk (Romney 1965) variations mentioned just above. Another kind is represented by the mixture of generational extension forms one sees in Cheyenne-type systems (such as the Fanti unskewed variant) in which there is a cross/parallel distinction in G^1 but not in G^0 or G^2 (Kronenfeld 1973, 1980a).

b) What kinds of alternatives are mutually compatible – that is, can coexist as variant patterns within a single system – such as the Crow skewed and Cheyenne generational variants in Fanti (Kronenfeld 1973, 1980a, 2001b)?

c) Whether skewing is best seen as an alternative to cross/parallel (and generational) extension or as an overlay on some prior kind of extension. By "overlay" I refer to a situation such as that I have described for Fanti in my "Lounsburian" analysis (1973, 1980a, 1980b) in which all of the extension rules needed to describe the unskewed variant apply as well – along with an additional, skewing, rule – to the skewed variant. It is in this sense that the unskewed variant can be seen as "unmarked" vs. the more "marked" skewed one (see below).

If skewing is best seen as an overlay on some unskewed type of extension, then the issue arises of whether any types other than Dravidian and Cheyenne can be thus overlain – e.g., can Hawaiian (generational), Iroquois, or any variants of Eskimo be skewed.

The idea of skewing as a kind of overlay is supported by a comparative examination of language families in which skewed systems occur (as in Lewis Henry Morgan's "Systems of Consanguinity and Affinity of the Human Family"). Very closely related – and thus only very recently diverged – languages show a mix of Crow-type, Omaha-type, and unskewd patterns of extension, while their sets of paradigmatic contrasts and the kinterm labels that fill out the paradigm are quite constant across the whole family. Skewing forms (or their lack) seem much more labile than do the basic kin categories and the oppositions which define them.

d) Whether there is some consistent contrast to be made between extensions that are seen implicitly by native speakers simply as the obvious interpretation of their basic categories (i.e., not felt as extensions) and extensions that are explicitly recognized by native speakers as extensions. For the Fanti this difference is clearly seen in the contrast between the self-conscious nature of extensions based on skewing, and the implicit nature of other extensions – and in their repeated adducing of an explanation (inheritance) for the one, but not for the other. Alternatively, such a contrast might be seen as being between extensions that are logically consistent with, and (maybe even) implied by, the componential definitions of focal

7 The difference between patterns of extension of cross and parallel categories from focal parents' children – "first cousins" in English – account for the categorical compatibility of Dravidian-type systems with moities and the absolute incompatibility of Iroquois-type systems (among others) with moieties. Dravidian- and Iroquois-types represent the only ethnographically common forms, but others are logically possible and perhaps sometimes occur ethnographically.

8 In a Crow-type system, for example, one's mother's brother's child is terminologically equivalent to one's own brother's child and, reciprocally, one's father's sister's child is terminologically equivalent to one's father's sister or father's brother.

9 In Omaha-type systems, for example, one's father's sister's child is terminologically equivalent to one's own sister's child, while one's mother's brother's child is equivalent to one's mother's sister or mother's brother.

referents, and those extensions which are logically inconsistent with, and thus override, componential definitions of focal referents.

Base 2 considers the regularities of extension, but in no way attends to the nature, meaning, or significance of contrasts between kinterms – their basic semantic import. Bases 1 and 2 thus are needed together to completely characterize any terminological system. The problem with them, even taken together, is that they fail to capture the systematic constraints (underlying axioms) that shape the regularities that are described, including both where contrast occurs and where extension. As we shall see in Typological Bases 3 and 4, such successful small axiom sets do exist – from which complete terminological systems can be deduced.

We have seen, in Bases 1 and 2, formal evidence for the systematic importance of Morgan's distinguishing of "classificatory" terminologies (in which terms for lineal relatives apply also to collateral ones) from "descriptive" ones (where the lineal vs. collateral distinction is rigidly maintained), and have seen what social features are crucial for that distinction.

It seems likely that the distinctive feature differences among terminologies (Base 1 for typologizing) relate generally to the kinds of corporate kin groupings of the society (none, vs. unilineal vs. nonunilineal). Those same social groupings seem also related to some of the variation in Base 2's kinds of extension from core referents to extended referents and to some of the variation in Base 3's productive algebraic equivalences (see below). But, while corporate descent groups do seem a precondition for skewed terminologies, and while the contrast between matrilineal and patrilineal succession seems largely to explain the contrast between "Crow-type" and "Omaha-type" skewed variants, no such features seem able to account for the basic contrast between skewed and unskewed terminologies. In the literature, both marriage patterns and an intensification of unilineal focus have been proposed as reasons for skewing, but neither has so far proved really convincing.

Staying within the context of Base 2, and following on observations made above, I want to offer, as an explicit hypothesis, that componential (Base 1 type distinctive feature) analyses – for typological purposes, at least – are best limited to focal referents (see Kronenfeld 1980a; Gould 2000: 106–126 for discussions of relevant issues). Focal referents, within the analytic approach that distinguishes them, are the prototypic instantiations of the semantic categories and are the referents in terms of which native reasoning regarding the categories is normally made. This analytic approach to focal categories implies that extensions to nonfocal referents are best handled through separate processes – because they are secondary, because they often lack attributes which informants presuppose as basic to the categories, because there often exist alternative extension patterns, and so forth. The questions posed by this hypothesis (and its linked assumptions) concern the following. Do there exist any empirical insights or correlations for which componential definitions of extended ranges seem particularly important or useful? For instance, are the alternative ways of extending the cross/parallel distinction within G^1 considered in Kronenfeld (2004) an example of the usefulness of extended componential analyses – or can all such insights be equally well pulled out of extension patterns?

Additionally, I offer, as another hypothesis, that all skewed systems will turn out in fact to have unskewed variants, and, moreover, that, in such situations the skewed system will be "marked" relative to the unskewed (see Kronenfeld 1973, 1980a for discussions of relevant issues in connection with the Fanti case). The marking hypothesis means that in the absence of the special conditions which evoke the "marked" alternatives, the terms will be understood and used as if unskewed. The skewed pattern will be seen as a more distinctive or unusual usage. Marking can mess up expectations normal to native speakers and thus produce what are to native speakers intuitively funny category assignments; marked patterns thus can be, *inter alia*, more inviting of some kind of self-conscious native speaker explanation than are unmarked ones. With this hypothesis goes the related claim that past ethnographers, in looking so hard for the *single* correct system, suppressed (that is, did not believe) evidence of internal variation that they encountered, and then picked as the "correct" system the variant most unlike English (or another outside language) – and thus, by their lights, the presumably least acculturated variant – that is, the skewed variant, where such existed (see Kronenfeld 2001b: 188 f.). Additionally, and relatedly, the skewed system, being more marked, will appear to native speakers to be more "correct," reinforcing the hypothesized ethnographer bias.

Typological Base 3

Typological Base 3 represents the sets of productive algebraic equivalences between kintypes (vs. simple concurrences) which enable formal

accounts of extension and reduction. Equivalence between kintypes (i.e., here, genealogical specifications) means that all longer expressions derived from the equivalent kintypes are terminologically equivalent. An example would be father's brother and mother's brother in English, where both are called "uncle" and the children (grandchildren, etc.) of each are "cousins." "Simple concurrences" refer to situations such as that in Fanti where father's sister is called by the same "mother" term as is mother's sister, but where the children of the one are always "siblings," while the children of the other can be skewed (into "fathers" or "mothers"). Equivalent kintypes are often called by the same kinterm (as just seen for English "uncle"), but not necessarily. For instance, in English, brother and sister are equivalent kintypes which receive different kinterm labels, but everything derived from them is the same for both.

Gould, in his typology (2000; and see Kronenfeld 2001b), offers us one such set of productive equivalences. In Gould's set, all classificatory systems (those in which lineal relatives are terminologically grouped with collateral ones) are characterized by $I \leftrightarrow J \leftrightarrow M\bar{M} \leftrightarrow F\bar{F}$ equivalences; the formula states that, terminologically, one's self falls in the same equivalence class as one's sibling, one's mother's sister's child, and one's father's brother's child. Specific types of classificatory systems are generated (and thus defined) by additional equivalences as follows:[10]

a) Generational, by $M \leftrightarrow F$ (and reciprocally $\bar{M} \leftrightarrow \bar{F}$). Here mother and father fall in the same equivalence class, as reciprocally do a woman's children and a man's children.

b) Cheyenne, by $X \leftrightarrow J$. Here one's cross-cousins fall in the same equivalence class as one's parallel cousins (and, derivatively, one's siblings).

c) Seneca (i.e., Iroquois), by $MF \leftrightarrow MM$; $FM \leftrightarrow FF$ (and reciprocally $\bar{F}\bar{M} \leftrightarrow \bar{M}\bar{M}$; $\bar{M}\bar{F} \leftrightarrow \bar{F}\bar{F}$). Here one's mother's father falls in the same equivalence class as one's mother's mother, and one's father's mother falls in the same class as one's father's father; reciprocally a man's daughter's children fall in the same class as a woman's daughter's children, and a woman's son's children fall in the same class as a man's son's children.

d) Tamil (i.e., Dravidian), by $FF \leftrightarrow MM$; $FM \leftrightarrow MF$ (and reciprocally $\bar{F}\bar{F} \leftrightarrow \bar{M}\bar{M}$; $\bar{M}\bar{F} \leftrightarrow \bar{F}\bar{M}$). Here one's father's father falls in the same equivalence class as one's mother's mother, while one's father's mother falls in the same class as one's mother's father. Reciprocally, a man's son's children fall in the same class as a woman's daughter's children, while a woman's son's children fall in the same class as a man's daughter's children.

e) Omaha, by $F\bar{M} \leftrightarrow \bar{M}$ (and reciprocally $M\bar{F} \leftrightarrow M$). One's father's sister's child falls in the same equivalence class as a woman's child or a man's sister's child; reciprocally one's mother's brother's child falls in the same class as one's mother.

f) Crow, by $M\bar{F} \leftrightarrow \bar{F}$ (and reciprocally $F\bar{M} \leftrightarrow F$). One's mother's brother's child falls in the same equivalence class as a man's child or a woman's brother's child; reciprocally one's father's sister's child falls in the same class as one's father.

I might tentatively extend Gould's set (cf. Liu 1986: 38) to descriptive systems by removing the general classificatory equivalences, and then defining.

g) Eskimo (as in English), by $M \leftrightarrow F$ (and reciprocally $\bar{M} \leftrightarrow \bar{F}$). Here one's mother falls in the same equivalence class as one's father; reciprocally a woman's child falls in the same class as a man's child.

Gould's approach suggests some formal importance for at least one common reading of Morgan's old (1871) distinction between classificatory and descriptive systems.

Questions relevant to this base include the following. a) Is any one algebraic approach logically equivalent to, or subsumable by, others? b) What is formally or practically at issue in any contrasts among alternative algebraic approaches? c) Does any special insight or empirical usefulness accrue to any one algebraic approach that does not accrue to others?

A problem with any Base 3 approach is that, given its comparative ethnological perspective, it omits or ignores some of the further idiosyncratic regularities or special features that each individual kinterm system invariably has.

10 In Gould's system, M and F, respectively, stand for someone's mother and father, while $\bar{M}$ and $\bar{F}$, respectively (representing an M with an overbar and an F with an overbar), stand for a woman's child ("motherling") and a man's child ("fatherling"); I represents someone's self; J represents someone's sibling; X represents someone's closest (focal) cross relative (i.e., $M\bar{F}$ or $F\bar{M}$). The double headed arrow, $\leftrightarrow$, indicates structural equivalence, wherein the expression on the one side can always be substituted for the expression on the other side in a kintype specification without changing the superclass (cf. Romney's range set – Romney 1965; Romney and D'Andrade 1964) to which the kintype belongs. Letters chain as relative products, so that MM is someone's mother's mother, $F\bar{M}$ is someone's father's motherling (i.e., a cross-cousin), and so forth.

Typological Base 4

Typological Base 4 is similar to that of Base 3, but aims at a complete set of equations that generate all of the categories and relations of each kinterm system. As such, it represents a stronger ethnographic focus. A classification could be defined on this kind of base, but it would contain a great many types (cf. Gould 2000: Appendix H) – though perhaps with some organizational groupings of types that we are not yet aware of – and would thus might get in the way of the kinds of developmental and comparative generalizations that ethnology has traditionally aimed at. We see here what may turn out to be an unavoidable tension between formal ethnographic descriptions or analyses of kinterminologies and formal ethnological treatments. The distinction has to do with the manner in which an analysis deals with the specific details of a given terminology that make that terminology different from other terminologies with which it is grouped on one or another basis. Read's analysis (below) offers an illustration of a Base 4 approach.

In Read's analysis (1984, 2001; Read and Behrens 1990 – based in part on his reading of discussions by David Schneider), the generating equations relate kinterm categories to one another, rather than to genealogical categories as Gould's Base 3 system did. Thus there really are two differences between Gould's and Read's systems. The first is the distinction between a comparative ethnological focus and an exhaustive ethnographic focus (Base 3 vs. Base 4), while the second (Base 5) is the distinction between equations based on genealogical specifications (kintypes) and equations based on kinterms.

The existence of a complete algebraic system for generating kinterm categories, including a specification of term referents, such as that being developed by Read, raises the possibility of a typological ordering based on the generating equations that produce different terminological patterns. The research question of what empirical (cognitive, social, linguistic, etc.) situations relate to different generating equations (or to different subsets or aspects of those equations, depending on how they vary) would then be opened up. One question then posed would concern which of the kinds of associations framed by other formalisms might be subsumable within such a typology of generating equations vs. which might be left outside of such a framework. Empirical work within this framework will to some degree have to await fuller elaboration or description of Read's system; the fact that he is embedding the system within a computer program should eventually greatly help with such empirical assessments.

Typological Base 5

Read's use of native language categories in his algebraic analysis (as mentioned above) implies a Typological Base 5 concerning whether analyses are based directly on ethnographically provided native categories, or on ethnologically provided comparative ones (normally, for kinship, some sort of kintype specification). In addition to Read's algebraic analysis there exist other ethnographically based analyses, as, particularly, the natural language approach of Keen (1985) but see also Kronenfeld (1980b).

An important and basic question concerns what is at issue in Read's distinction between a kintype-based algebraic analysis and a kinterm-based one – given that, obviously, there exist formal considerations or devices that tie them together. These devices relate to what it is that leads us to label the given terminology as a "kinship terminology" and they relate to the definitions (or axioms) by which Read's initial axiomatic categories are linked to referents – and thus via which the results of calculations within the system can be systematically linked to external referents.

There is a presupposition that I am making – in the context of the various formal approaches subsumed by Bases 3, 4, and 5 – that I want to be explicit about. The best formal account of the regularities of a kinship terminological system is not necessarily or automatically the best characterization of either the cognitively salient aspects of that terminology, or of the social and linguistic patterns which might be shaping that terminology (see Kronenfeld in press). The one kind of account must logically (mathematically) relate to the others, but need not be identical in terms of structure, axioms, operations, etc. These formal aspects of an account, and the alternative regular computative mechanisms or cognitive understandings (or constraints) which come with them, need each to be empirically described and analyzed. Communities, for instance, may well not pick terminological systems by picking generating axioms, but might instead select for other more superficial patterns of relations – and, in effect, just take whatever axioms come along with the preferred representation of those targeted patterns. In such a situation, similar but not identical targeted patterns might well imply strongly different generating axioms –

in which case an empirically useful typology might be of types of patterns, even if those types cut across the pattern of axiom similarities (see Kronenfeld 2001a for a discussion of instances).

Typological Base 6

Typological Base 6, following on Base 5, further concerns the kinds of terminological elements on which we are basing our analyses and resulting typological classifications. The classificatory issue involves the relationship between the set of kinship lexemes (kinterms proper) or morphemes (kinship lexemes and bound kinship forms) and the kinterminological system. Kay (1975) pointed out that Lounsbury's Iroquois analysis was of words that included subject and object morphological inflections (bound morphemes); Kay suggested that the analysis might better have been limited to the much smaller set of kin morphemes. Kronenfeld (1991: 24 f.) used a comparison of sibling terms in English, Spanish, and Fanti to suggest that – at least if one's goal is to relate kinterm categories to the wider culture – one needs to take account of relevant grammatical markers, but also of routine semantic constructions. English uses different lexemes for "brother" and "sister," while Spanish uses a single morpheme (*herman-*) and depends on obligatory grammatical suffixes (morphemes) (*-o* vs *-a*) to distinguish brothers from sisters, and while Fanti has only the single kinship lexeme (*nua*) for siblings and depends on the general *banyin* (male) and *besia* (female) modifier lexemes to make the distinction. Read (n.d.) has proposed a form of algebraic analysis which depends on the analytic distinction between brothers and sisters for its analysis of classificatory systems. The distinction is routine in Fanti, and important for apparent Fanti thought about siblings, but is only coded, as explained, via the use of very general – and optional – "male" and "female" modifiers. The same is true for Fanti coding of the distinction between elder and younger same-sex siblings – which is also important in Read's analysis. Fanti calculations of kinship (see Kronenfeld 1980b) do take account of the sex of a *nua* when relevant as sex-of-relative, but do not for *nua* as a linking relative where they, instead, use a set of other devices. We are left, then, with some serious questions concerning which items properly should go into a terminological analysis for which purpose. In particular, what should "count" as a "kinterm" for kinterminological analysis – morphemes, lexemes, segregates, or something else? Data on native speaker conceptualizations seems important to resolving this issue, even if formal (systemic algebraic) considerations may also enter in.

Typological Base 7

As a seventh entry – and potential reason for keeping one or another kind of classification in our overall typological scheme – I would like to pose the question of whether there exist any advantages to be reaped (e.g., insights produced, regularities captured and expressed, native operations mapped, etc.) from any of the less algebraic formal approaches currently in use that might be lost without them. In particular, a) Is there any special insight represented by Lounsbury's notions of separate skewing, merging, and half-sibling operations (1964a) – and by related ones such as cross-parallel neutralization, spouse-equivalence, etc.? Certainly they have proven for me to be convenient labels for discussing analytically important processes and distinctions. b) Does Romney's notation scheme capture anything special – especially with its parenthetical coding of many extension operations?[11] c) Is there useful typological insight to be gained from natural language approaches such as that of Keen (1985)? Keen's approach and that of Kronenfeld (1980b; a relative product analysis of Fanti kinterm categories) both share a concern with representing how inter-kinterm-relations (e.g, in English, "mother's" "brother" is an "uncle") and kintype assignments to kinterms (e.g., in English, father's brother's sister's son is a "cousin") are calculated in the language of the kinterminology in question by users of that language. And, if some useful typological insight is to be gained from such approaches, does the

11 In particular, as an example of what I am concerned about, see in Kronenfeld 1989: 90 f. how Romney's notational scheme (Romney 1965; Romney and D'Andrade 1964) captures a key aspect of Morgan's Omaha (the actual language) data (1871). The Romney scheme allows an easy summary presentation of the extended kintype patterns for Morgan's cross and parallel kinterms. It thus allows a clear presentation of important logical inconsistencies (regarding reciprocals) in Morgan's data. At the time I could find no other way of showing the relevant patterns so clearly. Do there exist other formalisms for capturing this insight – especially ones that preserve the focal member-extended member distinction? Do there exist other situations in which one or another descriptive or analytic formalism represents an insight that others have trouble with. If so, is it found or conveyed as effectively or clearly by any other formal means?

algebraic approach of Read (see Base 4) – based as it is on native language categories (but more algebraically framed) – completely subsume either or both of these?

Conclusion

As it now stands I have offered no new typology for organizing the universe of kinship terminologies; instead I have offered only a kind of meta-typology, a discussion of the overly complex and possibly redundant list of bases (elements or features) that seem potentially important for any new typology. I have enlarged on and spelled out the major nonterminological concomitants of these different bases.

The reduction of my list of typologizing bases and issues to a single powerful typology – or to at least a small set of alternative classifications – is where cross-cultural empirical studies – as well as comparative regional/culture area studies and historically oriented comparisons within language families – have a large role to play. The empirical question concerns which of these various formal approaches or considerations are useful in terms of enabling clean and powerful linkages between terminological systems on the one hand, and social, cognitive, historical attributes, on the other.[12] Ethnographers have to find data that shows which of these classificatory bases and issues are relevant to the societies they study and which are not – and then, amongst the relevant ones, which are analytically useful.

Recent kinship studies, in general, have had more of a focus on the kinds of kin groupings and kin relations that are important in contemporary societies, than on either classical kinds of kingroup structures or the terminological patterns considered pertinent to them. This article – with its focus on terminology – does not directly relate to these recent endeavors. But an important aspect of terminological studies has always involved (and continues to involve) their relationship to kin groups and relations. Language, including kinterms, is a tool we collectively create and recreate to enable us to talk easily and clearly about what matters to us. Thus, an important question relating to newer (or more newly attended to) kin groups and relations concerns what effects, if any, they each have on kinterm systems and or kinterm usage – and where no effect is found, why not.

This paper develops out of "Definitions of Cross vs. Parallel: A Suggestion Regarding Dravidian-Type Systems," which was delivered at the 29th Annual Meeting of the Society for Cross-Cultural Research (New Orleans, LA) as part of the "Sessions in Honor of A. Kimball Romney," 25–26 February 2000. I want to thank Martin Orans, Dwight Read, Judy Z. Kronenfeld, and anonymous reviewers for helpful comments on earlier drafts.

12 Of these potential typologizing bases, Base 1, especially (in effect, though not explicitly) the version that attends to the components which distinguish focal referents of terminological categories from one another, has been the most studied – since Murdock's classifications of aunt and cousin terms picked much of it up (even if the single sex emphasis tended to preclude exploration of some marking effects). Significant starts have been made for some of the other typologizing bases. Lounsbury's classic Iroquois analysis (1964b) brought to our attention the sharp differences between Iroquois- and Dravidian-type cross-parallel definitions. Greenberg (1966: chap. 5), in the work on which Nerlove and Romney's sibling typology paper was based (see also Kronenfeld 1974), introduced the application of marking to the comparative treatment of kinship terminologies. More recently, Thomas Trautmann has contributed an historically considered comparative treatment of terminologies in the Indian subcontinent (1981) which makes use not only of distinctive focal components, but also of Lounsburian equivalence rules. N. J. Allen (1998) has offered a potential developmental sequence that addresses some typological issues and that involves a consideration of some basic extension patterns. Per Hage has contributed historically oriented comparative treatments of Oceanic systems and Salish (1998a, 1998b, 1999a, 1999b; also see Hage 2001) that are based on an application of Greenberg's marking theory via graph theory to terminological comparisons. I (Kronenfeld 2001b) have used Sydney H. Gould's formalism to address some relevant terminological issues concerning social features and historical transitions.

References Cited

Allen, N. J.
1998 The Prehistory of Dravidian-Type Terminologies. In: M. Godelier et al. (eds.); pp. 314–331.

Denham, Woodrow W., and **Douglas R. White**
2005 Multiple Measures of Alyawarra Kinship. *Field Methods* 17/1.

Dougherty, Janet W. D., and **Charles M. Keller**
1985 Taskonomy. A Practical Approach to Knowledge Structures. In: J. W. D. Dougherty (ed.), Directions in Cognitive Anthropology; pp. 161–174. Urbana: University of Illinois Press.

Godelier, Maurice, Thomas R. Trautmann, and **Franklin E. Tjon Sie Fat** (eds.)
1998 Transformations of Kinship. Washington: Smithsonian Institution Press. [Papers of the Round Table on Dravidian Kinship, Maison Suger, Paris, June 3–5 1993]

Goodenough, Ward H.
1956a Componential Analysis and the Study of Meaning. *Language* 32: 195–216.
1956b Residence Rules. *Southwestern Journal of Anthropology* 12: 22–37.

Gould, Sydney H.
2000 A New System for the Formal Analysis of Kinship. Edited, Annotated, and with an Introduction by David B. Kronenfeld. Lanham: University Press of America.

Greenberg, Joseph H.
1966 Language Universals. In: T. A. Sebeok (ed.), Current Trends in Linguistics. Vol. III: Theoretical Foundations; pp. 61–112. The Hague: Mouton.

Hage, Per
1998a Proto-Polynesian Kin Terms and Descent Groups. *Oceanic Linguistics* 37: 189–192.
1998b Was Proto-Oceanic Society Matrilineal? *The Journal of the Polynesian Society* 107: 365–379.
1999a Linguistic Evidence for Primogeniture and Rank in Proto-Oceanic Society. *Oceanic Linguistics* 38: 366–375.
1999b Marking Universals and the Structure and Evolution of Kinship Terminologies. Evidence from Salish. *The Journal of the Royal Anthropological Institute* 5: 423–441.
2001 Marking Theory and Kinship Analysis. Cross-Cultural and Historical Applications. *Anthropological Theory* 1: 197–211.

Headland, Thomas N., Kenneth L. Pike, and **Marvin Harris**
1990 Emics and Etics. The Insider/Outsider Debate. Newbury Park: Sage Publications. (Frontiers of Anthropology, 7)

Kay, Paul
1965 A Generalization of the Cross/Parallel Distinction. *American Anthropologist* 67: 30–43.
1975 The Generative Analysis of Kinship Semantics. A Reanalysis of the Seneca Dada. *Foundations of Language* 13: 201–214.

Keen, Ian
1985 Definitions of Kin. *Journal of Anthropological Research* 41: 62–90.

Kronenfeld, David B.
1973 Fanti Kinship. The Structure of Terminology and Behavior. *American Anthropologist* 75: 1577–1595.
1974 Sibling Typology. Beyond Nerlove and Romney. *American Ethnologist* 1: 489–506.
1980a A Formal Analysis of Fanti Kinship Terminology (Ghana). *Anthropos* 75: 586–608.
1980b Particularistic or Universalistic Analyses of Fanti Kin-Terminology. The Alternative Goals of Terminological Analysis. *Man* 15: 151–169.
1989 Morgan vs. Dorsey on the Omaha Cross/Parallel Contrast. Theoretical Implications. *L'Homme* 29/109: 76–106.
1991 Fanti Kinship. Language, Inheritance, and Kin Groups. *Anthropos* 86: 19–31.
1992 Goodenough vs. Fischer on Residence. A Generation Later. *Journal of Quantitative Anthropology* 4: 1–21.
1996 Plastic Glasses and Church Fathers. Semantic Extension from the Ethnoscience Tradition. New York: Oxford University Press. (Oxford Studies in Anthropological Linguistics)
2001a Introduction. The Uses of Formal Analysis re Cognitive and Social Issues. *Anthropological Theory* 1: 147–172.
2001b Using Sydney H. Gould's Formalization of Kin Terminologies. Social Information, Skewing, and Structural Types. *Anthropological Theory* 1: 173–196.
2004 Definitions of Cross vs. Parallel. Implications for a New Typology (An Appreciation of A. Kimball Romney). *Cross-Cultural Research* 38: 249–269.
in press Formal Rules, Cognitive Representations, and Learning in Language and Other Cultural Systems. [To appear in *Language Sciences*]

Lehman, F. K. (F. K. L. Chit Hlaing)
1993 The Relationship between Genealogical and Terminological Structure in Kinship Terminologies. *Journal of Quantitative Anthropology* 4: 95–122.
2001 Aspects of a Formalist Theory of Kinship. The Functional Basis of Its Genealogical Roots and Some Extensions in Generalized Alliance Theory. *Anthropological Theory* 1: 212–238.

Lehman, F. K., and **Klaus Witz**
1974 Prolegomena to a Formal Theory of Kinship. In: P. Ballonoff (ed.), Genealogical Mathematics; pp. 111–134. Paris: Mouton.

Liu, Pin-Hsiung
1986 Foundations of Kinship Mathematics. Nankang, Taipei: Institute of Ethnology, Academia Sinica.

Lounsbury, Floyd G.
1956 A Semantic Analysis of the Pawnee Kinship Usage. *Language* 32: 158–194.
1964a A Formal Account of the Crow- and Omaha-Type Kinship Terminologies. In: W. H. Goodenough (ed.), Explorations in Cultural Anthropology; pp. 351–393. New York: McGraw-Hill Book Company.
1964b The Structural Analysis of Kinship Semantics. In: H. G. Hunt (ed.), Proceedings of the Ninth International Congress of Linguists; pp. 1073–1093. The Hague: Mouton.
1965 Another View of Trobriand Kinship Categories. In: E. A. Hammel (ed.), Formal Semantic Analysis; pp. 142–185. Menasha: American Anthropological Association. [*American Anthropologist* 67/5, Part 2; Special Publication]

Nerlove, Sara, and **A. Kimball Romney**
1967 Sibling Terminology and Cross-Sex Behavior. *American Anthropologist* 69: 179–187.

Morgan, Lewis Henry
1871 Systems of Consanguinity and Affinity of the Human Family. Washington: Smithsonian Institution. (Smithsonian Contributions to Knowledge, 218)

Pike, Kenneth
1967 Language in Relation to a Unified Theory of the Structure of Human Behavior. The Hague: Mouton. [2nd edition; first edition in three volumes: 1954, 1955, 1960]

Read, Dwight W.
n.d. Outline for a General Theory of the Production of Kinship Terminologies and Their Relationship to Genealogy. Personal communication, 5 November 2002.
1984 An Algebraic Account of the American Kinship Terminology. *Current Anthropology* 25: 417–449.
2001 Formal Analysis of Kinship Terminologies and Its Relationship to What Constitutes Kinship. *Anthropological Theory* 1: 239–267.

Read, Dwight W., and **Clifford Behrens**
1990 KAES. An Expert System for the Algebraic Analysis of Kinship Terminologies. *Journal of Quantitative Anthropology* 2: 353–393.

Romney, A. Kimball
1965 Kalmuk Mongol and the Classification of Lineal Kinship Terminologies. In: E. A. Hammel (ed.), Formal Semantic Analysis; pp. 127–141. Menasha: American Anthropological Association. [*American Anthropologist* 67/5, Part 2; Special Publication]

Romney, A. Kimball, and **Roy Goodwin D'Andrade**
1964 Cognitive Aspects of English Kin Terms. In: A. K. Romney and R. G. D'Andrade (eds.), Transcultural Studies in Cognition; pp. 146–170. [*American Anthropologist* 66/3, Part 2; Special Publication]

Romney, A. Kimball, and **Carmella C. Moore**
1998 Toward a Theory of Culture as Shared Cognitive Structures. *Ethos* 26: 314–337.

Tjon Sie Fat, Franklin
1998 On the Formal Analysis of "Dravidian," "Iroquois," and "Generational" Varieties as Nearly Associative Combinations. In: M. Godelier et al. (eds.); pp. 59–93.

Trautmann, Thomas R.
1981 Dravidian Kinship. Cambridge: Cambridge University Press. (Cambridge Studies in Social Anthropology, 36.)

Tyler, Stephen A.
1966 Parallel/Cross. An Evaluation of Definitions. *Southwestern Journal of Anthropology* 22: 416–432.

Wallace, Anthony F. C., and **John Atkins**
1960 The Meaning of Kinship Terms. *American Anthropologist* 62: 58–80.