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COMMENT ON GERMAN DZIEBEL

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Abstract: *German Dziebel considers it more likely that the Crow-Omaha terminologies derive from terminologies that already have the vertical skewing associated with the Crow-Omaha terminologies than from terminologies without such a property. Thus, he argues, the horizontal skewing of genealogical relations that is characteristic of the Iroquois terminologies makes them unlikely candidates for being the kind of terminology from which Crow-Omaha terminologies originated. Vertical skewing does occur with self-reciprocal kin terms, and for this reason Dziebel posits that the Crow-Omaha terminologies had their origin in terminologies with self-reciprocal kin terms. While Dziebel is correct that the Iroquois terminologies lack vertical skewing, vertical skewing is introduced by simply adding the equation, 'son' of 'maternal uncle' = 'maternal uncle' to an Iroquois terminology, along with its logical implications for kin terms relations, to derive an Omaha terminology, or add the equation 'daughter' of 'sister of father' = 'sister of father' to derive a Crow terminology. One of these equations may have been added to the kinship terminology of a group with an Iroquois terminology when unilineal descent groups were introduced into the social organization of that group since the added equation would resolve what otherwise would be structural inconsistency between an Iroquois terminology and the introduced unilineal descent groups.*

Introduction

In his article, German Dziebel considers it to be more likely that the Crow-Omaha terminologies derive from terminologies already sharing a defining property associated with the Crow-Omaha terminologies than from terminologies without such a property. Dziebel considers the vertical skewing of genealogical relations across generations in the Crow-Omaha terminologies to be such a property. Thus, he argues, the horizontal skewing of genealogical relations that is characteristic of bifurcate merging terminologies and expressed through genealogical equations such as fb = f and mz = m makes them less likely as candidates for being the kind of terminology from
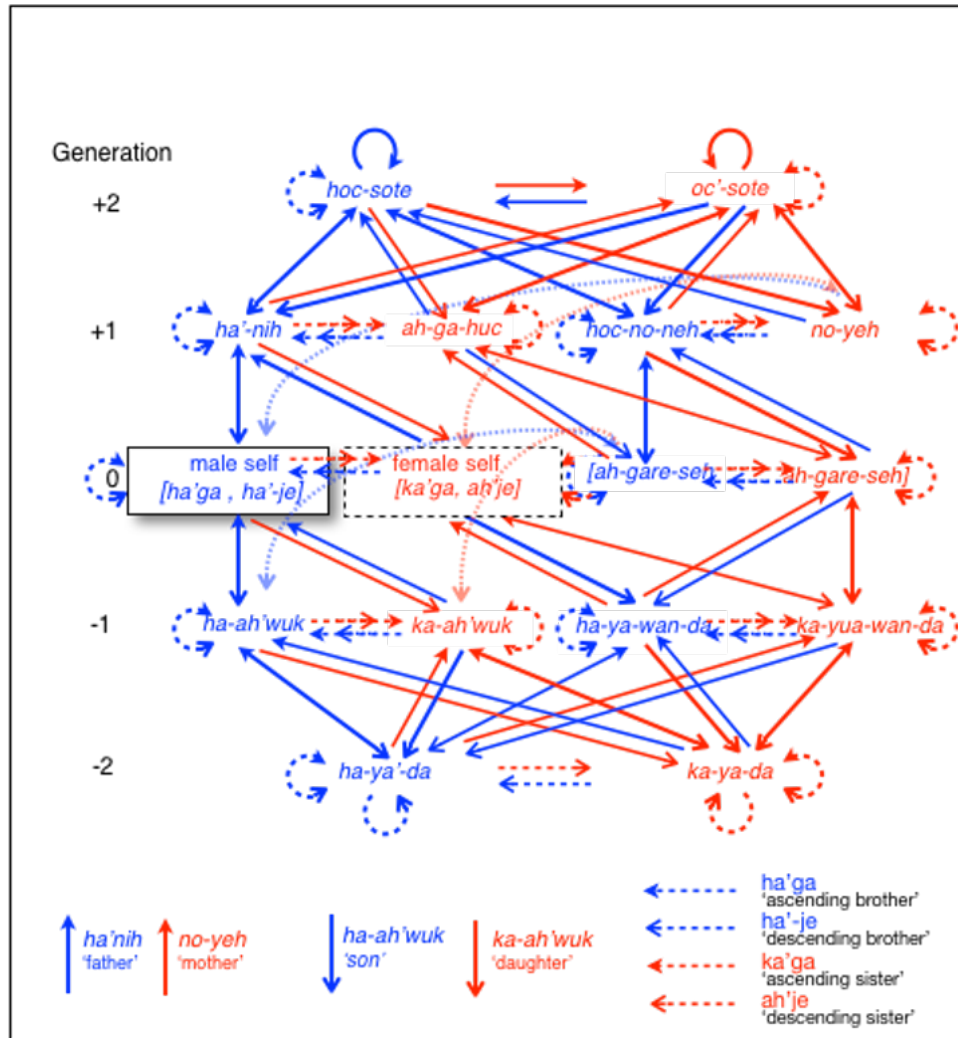
Figure 1: Kin term map of the Iroquois kinship terminology, based on the primary kin terms listed below the kin term map. Only consanguineal kin terms are shown in the kin term map.

which Crow-Omaha terminologies originated. Vertical skewing is found instead, he argues, with self-reciprocal kin terms, and for this reason Dziebel posits that the Crow-Omaha terminologies had their origin in terminologies characterized by self-reciprocal kin terms. Consequently, he rejects the claim that the Crow-Omaha terminologies originated from the Iroquois terminologies since the latter incorporate bifurcate merging, hence have horizontal skewing, and lack self-reciprocal kin terms, thus do not have the vertical skewing that characterizes the Crow-Omaha terminologies. What I will demonstrate in this Comment is that while Dziebel is correct about the lack of vertical skewing in the Iroquois terminologies, that feature and all of the other skewing features comprising what Floyd Lounsbury (1964) refers to as a Type I Omaha terminology, are in fact introduced by simply adding the equation,'son' of 'maternal uncle' = 'maternal uncle' and its structural implications to an Iroquois terminology. Similarly, because of the mirror-image relationship of the Type I Crow terminologist to the Type I Omaha terminologies, the equation 'daughter' of 'sister of father' = 'sister of father' suffices to transform an Iroquois terminology

into a Type I Crow terminology. In addition, the content of these two equations suggests, I argue, that the rational for introducing the first of these two equations into a group in which patrilineal descent groups have been added and the second into a group in which matrilineal descent groups have been added stems from structural inconsistency between an Iroquois terminology and unilineal descent groups. More precisely, the inconsistency is between vertical lines of kin terms — of the same sex as the lineality of the descent groups — and the lineality of unilinear descent groups. The inconsistency arises when unilinear descent groups are introduced into a group that already has kinship relations organized through an Iroquois kinship terminology.

Kin Term Map for the Iroquois Terminology

I begin the demonstration with the kin term map for the Iroquois kinship terminology shown in Figure 1 for a male speaker, thus the kin terms making up the map are centered on male self. (Female self is used when the kin term map is constructed for a female speaker.) The primary kin terms used to make the kin term map, shown below the graph in Figure 1, are: *ha'nih* ('father'), *ha'ga* ('asecending [elder] brother'), *ha-ah'wuk* ('son'), h*a'-je* ('descending [younger] brother'), *no-yeh* ('mother'), *ka'ga* ('ascending [elder] sister'), *ka-ah'wuk* ('daughter'), and *ah'je* ('descending [younger] sister'). (Note that kin terms are italicized, in blue for male kin terms, in red for female terms, and in black for neutral terms.) The arrows in the kin term map show the result of computing the kin term product of each primary kin term with all of the Iroquois kin terms. For example, the red arrow from *ha'nih* ('father') to *oc'sote* ('grandmother') in the upper left of the kin term map graphically denotes that the result of computing the kin term product of *no-yeh* ('mother') with *ha'nih* ('father') is the kin term *oc'sote* ('grandmother') since the red arrow has form (color and arrowhead shape) representing the primary kin term *no-yeh* and begins at the kin term *ha'nih* and points to *oc'sote*. Thus, it indicates that *no-yeh* of *ha'nih* = *oc'sote* as a kin term product. This kin term product equation means that if speaker refers to alter 1 by the kin term *ha'nih* and alter 1 refers to alter 2 by the primary kin term *no-yeh*, then speaker (properly) refers to alter 2 by the kin term *oc'sote.*

Note that the Iroquois terminology has a covering term *ah-gare-seh* for 'male cross-cousin' and 'female cross-cousin', but lacks sex marked kin terms that distinguish 'male cross-cousin' and 'female cross-cousin' from each other. The latter two relations are only recognized implicitly. The two positions for these implicit terms are not collapsed together in the kin term map but are shown with implicit male marked and female marked 'cross-cousin' terms enclosed in square brackets to denote that what is being represented at those two positions is the covering term *ah-gare-seh.*

Transformation of Kin Term Maps: From Iroquois to a Type I Omaha

I now show, in five steps, how the kin term map shown in Figure 1 is transformed into the kin term map for the Fox terminology, with the latter used by Lounsbury (1964) as a canonical example of a Type I Omaha terminology. After showing this, I will discuss a functional reason for making the transformation.
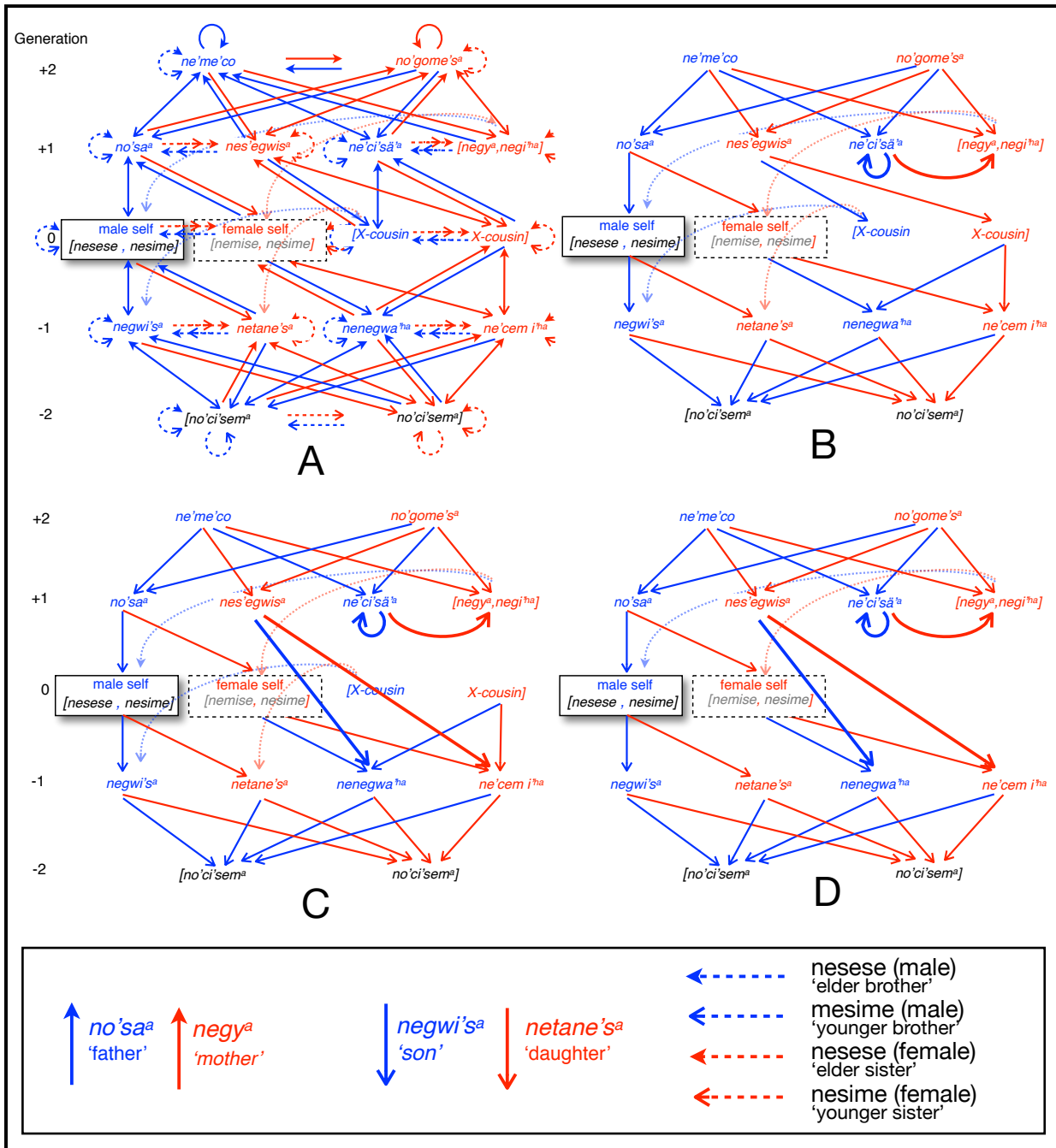
Figure 2: (A) Fox kin terms have replaced the Iroquois kin terms in the kin term map for the Iroquois terminology shown in Figure 1. (B) The kin term equation 'son' of 'maternal uncle' = 'maternal uncle' and its implied equation, 'daughter' of 'maternal uncle' = 'mother', have transformed the kin term map shown in (A) to the kin term map shown in (B). (C) The reciprocal equations for the equations introduced in (B) have transformed the kin term map shown in (B) to the kin term map shown in (C). (D) The equations implied by the equations introduced in (B) and (C) have transformed the kin term map shown in (C) to the kin term map shown in (D).

Transformation Step1

Replace the Iroquois kin terms (see Figure 1) with their equivalent Fox kin terms (see Figure 2A). Note that each of the Iroquois kin terms can be replaced exactly by a corresponding Fox kin term except for three variant replacements and one non-occurring replacement. For the variants, the sex marked Iroquois terms *ha'ga* and *ha'-je* are replaced by the neutral terms *nesese* ('elder same sex sibling') and *nesime* ('younger same sex sibling'), respectively, the male and female marked Iroquois terms *ha-ya'-da* ('grandson') and *ka-ya-da* ('granddaughter') are replaced by the neutral Fox term *no'ci'sem^a* ('grandchild'), and the Iroquois kin term *no'yeh* ('mother') is replaced by [*negy^a* ('mother'), *negi^{ha}* ('mother's sister')]. The non-occurring replacement for *ah-gare-seh* is indicative of the skewing of the Fox terminology. The Fox terminology neither has a covering kin term nor implicit kin terms for the implicit 'male cross-cousin' and 'female cross-cousin' in the Iroquois terminology, so these two implicit positions are labeled by 'X-cousin' and 'X-cousin' in Figure 2A.

Transformation Step 2

(a) Add the equation;

      negwi'sa^a ('son') of *ne'ci'sä'^{a}* ('maternal uncle') = *ne'ci'sä'^{a}* 'maternal uncle',   (1)

which breaks the line of vertically linked male terms:

      ne'me'co → *ne'ci'sä'^{a}* → *'X-cousin'* → *negwi's^a* → *no'ci'sem^a*.

(b) Add the equation *;*

      ka-ah'wuk ('daughter') of *ne'ci'sä'^{a}* ('maternal uncle') = *negy^a* ('mother')   (2)

that follows from Equation (1) as follows:

      ka-ah'wuk ('daughter') of *ne'ci'sä'^{a}* ('maternal uncle') = *ka'ga* ('older sister')/*ah'je* ('younger sister') of (*negwi'sa^a* ['son'] of *ne'ci'sä'^{a}* ['maternal uncle']) = *ka'ga* ('older sister')/*ah'je* ('younger sister') of *ne'ci'sä'^{a}* ('maternal uncle') = *ka'ga* ('older sister')/ *ah'je* ('younger sister') of *negy^a* ('mother') = *negy^a* ('mother').

    The changes due to Equations (1) and (2) are shown in Figure 2B. (Only downward pointing arrows, here and below, are shown in order to increase the visual clarity of the kin term map.

Transformation Step 3

Add the reciprocal equation for each of Equations (1) and (2).

(a) Reciprocal of the equation *negwi's^a* ('son') of *ne'ci'sä'^{a}* ('maternal uncle') = *ne'ci'sä'^{a}* ('maternal uncle') is the equation:

      negwi's^a ('son') of *nes'egwis^a* ('paternal aunt') = *nenegwa'^{ha}* ('nephew').   (3)

(b) Reciprocal of the equation *netane's^a* ('daughter') of *ne'ci'sä'^{a}* ('maternal uncle') = *negy^a* ('mother') is the equation:

      netane's^a ('daughter') of *nes'egwis^a* ('paternal aunt') = *ne'cemi^{ha}* ('niece').   (4)

The changes due to Equations (3) and (4), with both derived from Equations (1) and (2), respectively, since kinship terminologies are closed under kin term reciprocity, are shown in Figure 2C.

Transformation Step 4

Step 3 leaves the implicit kin terms 'X-cousin' and 'X-cousin' isolated from both male self and female self, hence neither position can be an implicit (or actual) kin term after Equations (3) and

(4) have been implemented in the kin term map. Thus, these two implicit kin term positions are removed in Step 4 (see Figure 2D).

Transformation Step 5

The logical implications of Equations (1) - (4) are worked out next. To simplify the text, I will use F in place of the kin term *no'sa^a* ('father'), M in place of the kin term *negy^a* ('mother'), D in place of the kin term *netane's^a* ('daughter'), and S in place of the kin term *negwi's^a* ('son'). Thus, F, M, D, and S are being used here as symbols for kin terms, not as symbols for kin types as is usually the case for these symbols. The derivations depend on how the two 'grandparent' kin terms are computed from kin term products, hence the relevant kin term products will be spelled out explicitly using the above symbols. For easier readability, I will use the English translation of Fox kin terms rather than the actual Fox kin term.

(a) 'son' of 'brother of paternal grandmother' = S of B of M of F = S of (B of M) of F = B of M of F = 'grandfather'. Thus:

$$\text{'son' of 'brother of paternal grandmother'} = \text{'grandfather'.} \qquad (5)$$

Note that the 'son' arrow from *ne'me'co* to *ne'ci'sä'^a'* in Figure 2D has now become a reflexive arrow from *ne'me'co* back to itself in Figure 2E, thus truncating still further what was a line of male kin terms starting from *ne'me'co*, going next to *ne'ci'sä'^a'* and then continuing downward through male terms.

(b) 'daughter' of 'brother of paternal grandmother' = D of B of M of F = D of (B of M) of F = M of F = 'grandmother'. Thus:

$$\text{'daughter' of 'brother of paternal grandmother'} = \text{'grandmother'} \qquad (6)$$

(e) 'son' of 'sister of maternal grandfather' = S of Z of F of M = S of (Z of F) of M = 'nephew' of M = (S of Z) of M = S of (Z of M) = S of M = 'son'. Thus:

$$\text{'son' of 'sister of maternal grandfather'} = \text{'son'.} \qquad (7)$$

(d) 'daughter' of 'sister of maternal grandfather' = D of Z of F of M = D of (Z of F) of M = 'niece' of M = (D of Z) of M = D of (Z of M) = D of M = 'daughter'. Thus:

$$\text{'daughter' of 'sister of maternal grandfather'} = \text{'daughter'.} \qquad (8)$$

(e) 'son' of 'brother of maternal grandmother' = S of B of M of M = S of (B of M) of M = (B of M) of M = 'grandfather'. Thus:

$$\text{'son' of 'brother of maternal grandmother'} = \text{'grandfather'.} \qquad (9)$$

(f) 'daughter' of 'brother of maternal grandmother' = D of B of M of M = D of (B of M) of M = M of M = 'grandmother'. Thus:

$$\text{'daughter' of 'brother of maternal grandmother'} = \text{'daughter'.} \qquad (10)$$

(g) 'son' of 'sister of paternal grandfather' = S of Z of F of F = S of (Z of F) of F = 'nephew' of F = (S of Z) of F = S of (Z of F) = 'nephew'. Thus:

$$\text{'son' of 'sister of paternal grandfather'} = \text{'nephew'.} \qquad (11)$$

(h) 'daughter' of 'sister of paternal grandfather' = D of Z of F of F = D of (Z of F) of F = 'niece' of F = (D of Z) of F = D of (Z of F) = 'niece'. Thus:
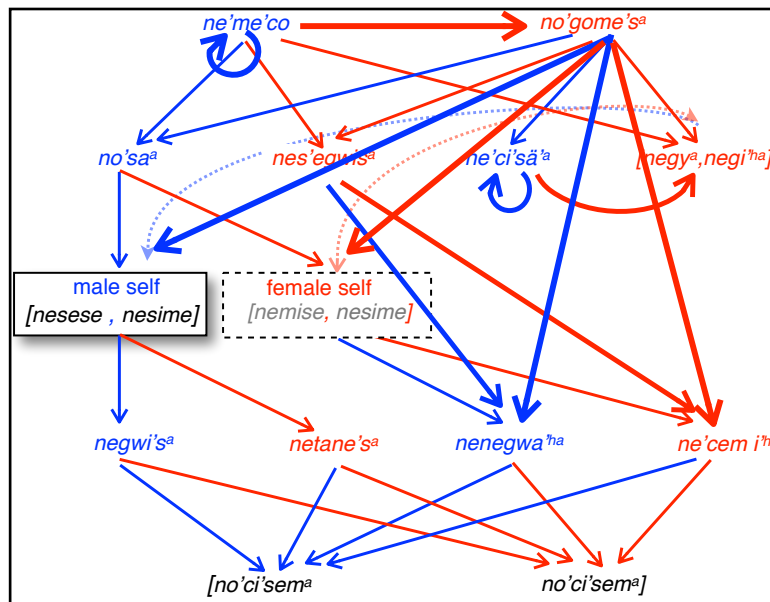
Figure 2E: Transformation of Figure 2D induced by the 8 equations derived in Transformation Step 5. The heavy arrows show the kin term connections that derive from Equation (1). The transformed kin term map is now a kin term map for the Fox terminology.

$$\text{'daughter' of 'sister of paternal grandfather'} = \text{'niece'.} \tag{12}$$

The changes due to these eight equations are included in Figure 2E, which is now the kin term map for the Fox terminology transformed from the kin term map in Figure 2A having the structure of the Iroquois terminology. Hence, the skewing of the Fox terminology can be accounted for by adding Equation (1) from Transformation Step 2(a) along with the equations from Transformation Steps 2(b) - 5(h) that are implied by Equation (1).

Conclusion

As has just been demonstrated, the Fox terminology — what Lounsbury (1964) refers to as the canonical form of a Type I Omaha terminology — can be derived directly from an Iroquois terminology by adding the single equation, 'son' of 'maternal uncle' = 'maternal uncle.' This also shows that David Kronenfeld's (2009: 274) conclusion that "Iroquois type systems seem impossible to skew" is not warranted. All of the properties associated with skewing in the Fox terminology derive from this single equation. So the question: What is the evolutionary origin of the Type I Crow-Omaha terminology skewing? reduces to the simpler question: What is the reason for introducing the equation, 'son' of 'maternal uncle' = 'maternal uncle' (or its mirror image) into the kinship terminology?

To answer this question, consider how the Iroquois kin terms are structurally distributed over descent lineages when these are introduced into a society with an Iroquois terminology that previously did not have descent lineages. Figure 3A shows three critical lineages when patrilineal (or, alternatively, matrilineal) descent lineages are introduced: (1) the 'father' lineage, (2) the 'maternal uncle' lineage and (3) the 'husband of sister' lineage. These lineages, superimposed
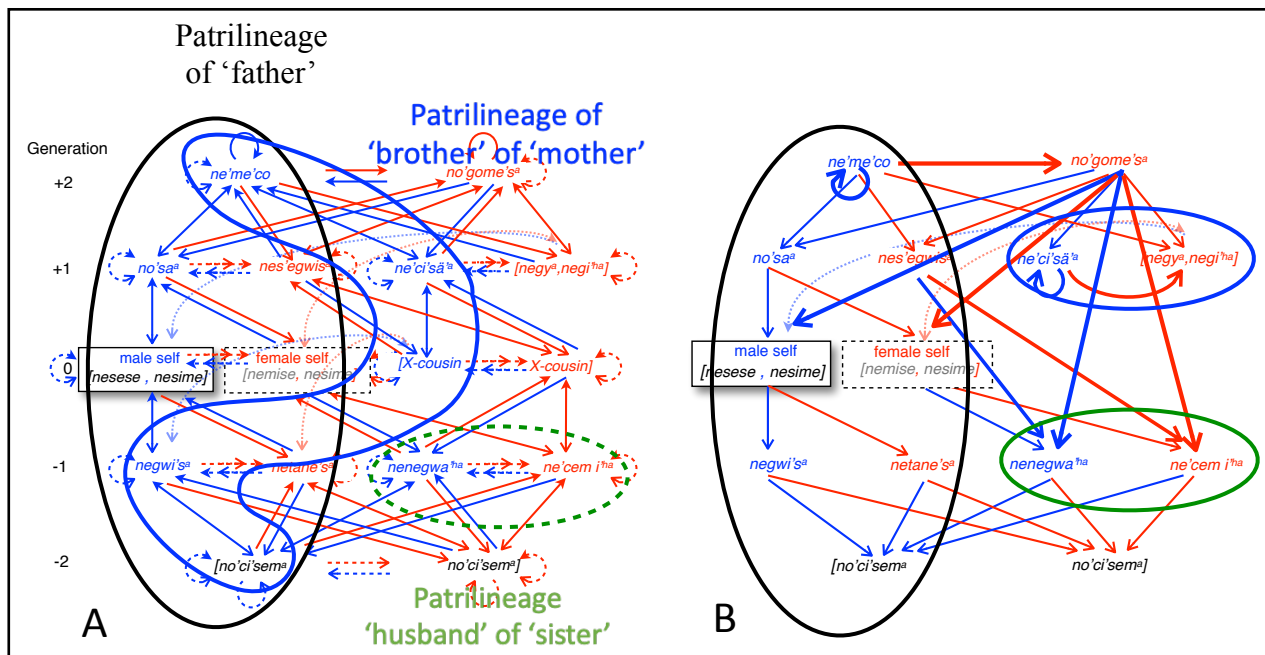
Figure 3: (A) Patrilineal descent lineages drawn over the kin term map of an Iroquois terminology to show which kin terms refer to members of the 'father' lineage. (B) The relationship of the terminology to the descent lineages after the terminology has been transformed by adding the equation 'son' of 'maternal uncle' = 'maternal uncle.'

over the kin term map for the Iroquois terminology, with the kin terms replaced by Fox kin terms, shows how the Iroquois kin term positions structurally relate to the members of these lineages (see Figure 3A). As is visually evident, all of the Fox male kin terms in the vertical line of male terms *ne'me'co'* ('grandfather') → *no'sa^a* ('father') → *nesese/nesimse* ('older same sex sibling'/'younger same sex sibling') → *negwi's^a* ('son') → *no'ci'sem^a.* ('grandson') refer to members of the 'father' patrilineal lineage. In addition, for the vertical line of male kin terms through *ne'ci'sä'^a* ('maternal uncle'), namely *ne'me'co'* → *ne'ci'sä'^a* → *'X-cousin'* → *negwi's^a* → *no'-ci'sem^a,* the kin terms *ne'me'co'* ('grandfather'), *negwi's^a* ('son') and *no'ci'sem^a.* ('grandson') refer to males in the 'father' lineage. The problem that arises, then, is the following. Lineages defined on the basis of apical ancestors at the same generation level will be disjoint. This means that while the 'father' lineage and the 'maternal uncle' lineages will have empty intersection, the parallel property for kin terms does not hold. Some of the 'father' lineage members are referred to by kin terms from the 'father' line of male terms and some are referred to by kin terms from the 'maternal uncle' line of kin terms. That is, there is lack of consistency between the descent lineage structure and the kin term structure in a society with an Iroquois terminology and a descent lineage form of social organization.

Now consider what happens with the introduction of Equation (1). This removes the basis for the inconsistency between lineage structure and kin term structure, so the transformed Iroquois terminology will be consistent with the descent lineage form of social organization. Equation (1) has, then, the function of introducing consistency between lineage structure and kin term structure, which relates back to the argument for the origin of the Crow-Omaha terminologies

developed by Leslie White. White (1939) argued that the occurrence of the Crow-Omaha termi-
nologies relates to the "maturity" of the system of descent lineages, but his argument lacked an
operational definition for the "maturity"of a descent lineage system. The results presented here
do not imply that any group with an Iroquois terminology must transform that terminology into
an Omaha terminology with the introduction of patrilineal descent lineages, but only that intro-
ducing descent groups without modifying the terminology will lead to inconsistency between the
lineage structure and the kin term structure. The conditions under which the inconsistency will be
removed by transforming the Iroquois terminology into an Omaha or a Crow terminology are
obviously not precise, but a "gray area" that may initially be "tolerated." As the descent structure
becomes increasingly the focus for the group's structural organization, it sees reasonable to as-
sume that the inconsistency becomes increasingly problematic and leads eventually to the intro-
duction of Equation (1) (or its mirror image for matrilineages) as a means to 'break," for patrilin-
eages, the line of male terms through 'maternal uncle", thereby reducing the kin terms in the
terminology that refer to members of the 'maternal uncle' lineage into two sex marked kin terms,
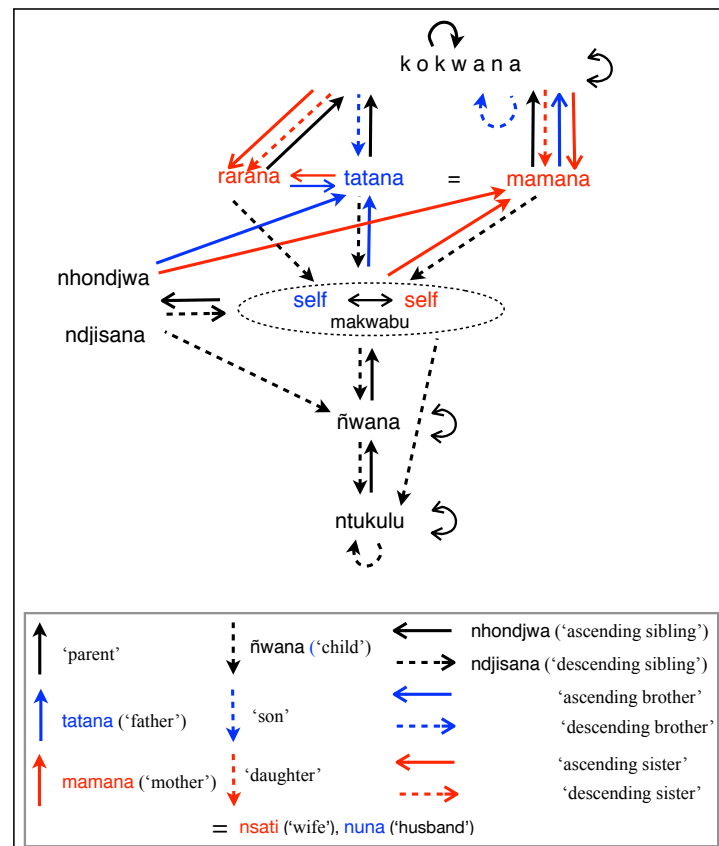

Figure 4: Kin term map of the Thonga, South Africa terminology based on Junod (1913:
Table1). The terminology is classified as an Omaha terminology. The box shows the prima-
ry generating kin terms used for computing kin term products and their corresponding ar-
rows. For some terms there is only an implicit covering term (e.g., there is no kin term with
translation 'parent'), and for terms that are covering terms there is no kin term for the sex
marked form of the term (e.g., for the kin term *ñwana* there are no sex marked kin terms
with translation 'son' or 'daughter'). See Read (2018) for the analysis of the Thonga kinship
terminology.

'mother' and 'maternal uncle', thus transforming the relationship of the terminology to the descent groups to what is shown in Figure 3B.

The argument being made here does not imply that all Omaha or Crow terminologies are due to Equation (1) (or its mirror image), only that Type I Omaha (or Crow) Terminologies may be generated in this manner. Defining types of terminologies through genealogical equations, it should be noted, is open to misclassifications due to the same genealogical equations arising through different processes, as occurs with the Thonga terminology of South Africa that is said to be an Omaha terminology. As Read (2018) has shown, the Thonga terminology has a generative logic that leads to it having the defining genealogical equations for an Omaha terminology but its kin term map (see Figure 4) shows that the form and features of the Thonga terminology are unrelated to the kin term map of the Fox terminology (see Figure 2E). Simply using genealogical equtions to classify kinship terminologies is not adequate. Kronenfeld (2006: 221) foresees "the possibility of a typological ordering based on the generating equations that produce different terminological patterns" and Read 2016) has developed an initial classficatinon of kinship termimologies grounded in their genrative logic and kin term equations rather than by genealogical equations that are incidental to that logic and those equations.

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