

Are you my mother? Learning to discern who's who within a universal kinship system

Abstract:

In the Australian language Murrinhpatha, kinterms may be universally extended to all and sundry. For Murrinhpatha speakers, the abstract mergers underpinning genealogical or polysemic theories of kinship (Scheffler 1978; 1972; Scheffler and Lounsbury 1971) are not purely theoretical constructs. These are procedures that can be observed within social interaction. Knowing how to merge same-sex siblings, on the fly, appears to be a necessary requirement for cultural competence within Murrinhpatha speaking society. While acquisitional studies of kinterms have been able to identify developmental stages in kinterm cognition (e.g., Piaget 1928; K. Danziger 1957; Haviland and Clark 1974; Greenfield and Childs 1977), these psychological studies are mostly concerned with a select few types of relationships, and are usually limited to genealogically close kin. In this paper I examine the development of the entire system of kinship relations – genetically close kin as well as more distant classificatory relationships.

From psycholinguistic tasks targeting both the kinship lexicon and Murrinhpatha's sibling-inflected grammar, we find that adult-like competence develops slowly into the late teens (Blythe et al. 2020). In some respects, the social learning required for mastery of universal kinship parallels the acquisition of literacy, in which life-long learning enables certain individuals to develop genuine expertise. Less is known about *how* children are socialised into systems of classificatory kinship. In data from the LAMP (Language Acquisition of Murrinhpatha) corpus, we find that small children receive explicit instruction on kinship matters from caregivers, older siblings and cousins. The mapping of kinterms onto the personal names of close relatives is instilled through pretend prompting routines in which toddlers are told what to say to whom. Caregivers use gesture and gaze to map genealogical relationships onto the participation frame. Overgeneralised kinterms are corrected when the mapping is inappropriate, yet the classificatory term *mama* (which includes one's biological mother) is frequently overgeneralised, but not always inaccurately. This makes the process by which broader kinship categories emerge from focal referents something of an enigma.

1 Introduction

In the children's picture book *Are you my mother?* (Eastman 1960), the learning problem for the hatchling bird emerging from its shell, alone, is to establish which of the entities it encounters (a dog, a cow, a steam-shovel, among others) is its mother. Because *mother* in standard English is a *descriptive* kinterm, it designates a single, unique individual (the female parent of a child). Descriptive kinterms can be distinguished from *classificatory* kinterms like *uncle* because consanguineal kin (FB, MB) and affinal kin (FZH, MZH) fall within the same kinship category (Morgan 1871). Certain types of systems, like the Sudanese system, are highly descriptive – every term denotes a unique position within a genealogy. Classificatory kinship systems, like the Hawaiian system, are those that extend kin categories beyond genetic relationships, grouping different types of kin together within a broader

category. Extremely classificatory systems like the Australian kinship systems are effectively universal in scope because a small number of kinterms can be indefinitely extended such that all members of society may be referred to with a classificatory kinterm (Blythe et al. 2020; Barnard 1978). In Wadeye¹, where Murrinhpatha is spoken, the words used to address one's biological mother (*kale* or *mama*) can be extended to literally hundreds of individuals. In Australian Aboriginal communities this situation is far from unusual, even in urban contexts. In most varieties of Aboriginal English, kinterms like *mother*, *father*, *brother* and *sister* have classificatory designations, allowing them to be widely extended to individuals who are not relatives through either genealogy or by marriage (Arthur 1990).

In a series of experiments targeting Murrinhpatha's kinship lexicon and kin-based grammar Blythe et al. (2020) demonstrate that the universal system of classificatory kinship in Wadeye is acquired very gradually throughout childhood, with adult-like competence emerging in the teens and beyond. In acquiring mastery of such a system, children must absorb a range of different types of knowledge. They must learn which individuals they are closely related to (ie., genealogically, or through marriage) and how to address and/or refer to those individuals. This inevitably involves learning how to map faces onto both names and kinterms. In other words, they must learn their own genealogy or family tree. They must also learn how to address and/or refer to other individuals to whom they are less closely related. Once again this involves learning to map faces onto names and kinterms. Finally, as children transition to adulthood they must ultimately absorb the rationale by which the set of kinterms used for very close kin can be expanded out to accommodate the more distant (classificatory) relatives.

I suggest that acquiring a universal kinship system is somewhat like learning to read and write, in that learning the system is a protracted process that doesn't have a finite end point, and while all members of the community will ultimately achieve competence, genuine expertise may take longer to achieve, just as certain authors ultimately produce their finest creations later in life. Every individual in the community has their own genealogy. For young children these genealogies are like isolated trees. They somehow absorb not only their own genealogies but those of the peers. Like the baby bird in Eastman's picture book, children have to climb down their own family tree to get to the next one. Yet as they gain agility, they learn to move from tree to tree more rapidly, like a bird does once it has learned to fly. The isolated family trees then become more like a network or a forest of interconnected genealogies. Once you 'read' the network of classificatory relationships, you then have access to the encyclopaedic knowledge of the community. Some individuals will become particularly adept in cultural matters like kinship – the scholars of the community.

The approach adopted in this study presumes a polysemic analysis of classificatory kinterms, whereby a broader kinship category may be extended from a focal kinship type, via merging procedures (Lounsbury 1964; Scheffler 1978).² Thus a category term like *ngathan*, which is usually translated as 'brother', also includes a range of other derived relationship types which are reduceable down to a primary sense which is focal or basic. This chapter concerns itself with emergence of children's proto-categories, the precursors to the broader kinship categories which include these focal referents. It is also concerned with the

¹ The modern community of Wadeye was originally established as a Roman Catholic mission at Port Keats in 1939.

² That is for the overall system, but not necessarily for every kinterm in the system.

mechanisms by which children are instructed in the classificatory merging procedures that will allow them to arrive at the adult-like categories that characterise the universal system.

In this chapter I examine some of the procedures by which classificatory kinship principles are instilled in very young children. The study draws on the LAMP corpus (Language Acquisition of Murrinhpatha), a longitudinal corpus of casual face-to-face interactions collected under the auspices of the ARC Discovery Project *From little things, big things grow: how children learn a morphologically complex Australian indigenous language*. The study adopts an ethnographic variety of conversation analysis that is backgrounded by a genealogical database compiled from my own field data plus former mission records.

In the following section I firstly discuss some of the previous acquisitional studies of kinterms and kinship categories. I then discuss the Murrinhpatha kinship system and the preceding research on children's kinship knowledge in Wadeye which feeds into the present study. From there I examine extracts in which children are socialised into the kinship system through prompting routines and quizzes. I then examine instances of overgeneralisation and how error correction helps to set the domain of the emerging kinship categories. Finally, I examine cases in which clan totemism is used to help instil abstract kinship principles that underpin the classificatory system, such as same-sex sibling merger.

From the extracts below we will see that classificatory kinship and its instruction is a collective responsibility. Furthermore, kinship socialisation is a multiparty activity that is multimodally implemented using gaze, gesture and touch. Caregivers and close family members use each other, and whatever resources they have at their disposal – even the birds singing overhead – to advance a child's learning.

2 Studies of kinterm acquisition

Although the acquisition of kinship intersects several disciplines including anthropology, linguistics and psychology, the amount of research overall has been minimal (Mitchell and Jordan 2021a) and the majority of this has been situated within developmental psychology. Piaget's seminal (1928) study of Swiss children's understanding of sibling terms was principally concerned with the development of logical reasoning and perspective taking. This study probed for children's definitions of the terms, as did many of the replication studies to follow. Although Piaget identified three developmental stages in kin term conceptualisation, most of the Piagetian developmental studies identify four such stages (e.g., Greenfield and Childs 1977; Price-Williams et al. 1977; LeVine and Price-Williams 1974; Haviland and Clark 1974):

1. a *pre-categorical stage* in which a kinterm designates a specific individual; thus a form like *grandpa* is functionally equivalent to a name like *John*,
2. a *categorical stage* in which the child overgeneralizes a semantic feature like gender or age, such that a kinterm like *mother* is extended to 'women' in general, or to 'adults',
3. a *relational stage* in which children reckon kinterms from their own perspective and these relationships are essentially unidirectional,
4. a *reciprocal stage* in which the child understands a term like *father* to also implicate an inverse relationship (son, daughter).

In this chapter, the young children we are concerned with are either pre-categorical toddlers who are beginning to talk or categorical children between four to six years of age, who are prone to overgeneralise kin terms.

That very young children's perspective taking ability is initially quite limited and that their ability to abstract away from their own perspective develops from about 8 years of age has general consensus from studies in communities with a range of with different languages and kinship systems, including English (K. Danziger 1957; Haviland and Clark 1974), Hausa (LeVine and Price-Williams 1974), Mayan (Greenfield and Childs 1977; E. Danziger 2001; 1993), Hawaiian (Price-Williams et al. 1977), and Australian Aboriginal systems (Bavin 1991; Blythe et al. 2020). For an overview see Mitchell & Jordan (2021a).

Noting that certain English kin terms are acquired before others (K. Danziger 1957), Haviland and Clark (1974) looked at whether semantic complexity can predict acquisition order. Using componential analyses, they determined that terms with fewer semantic components (e.g., *father*, [X Parent of Y][Male X]) are acquired before terms with more relational components (e.g., *nephew*, [X Child of A][A Sibling of Y][Male X]). Others (Bavin 1991; Benson and Anglin 1987) have proposed that sociocultural factors like experience with particular kin are more important than semantic factors. Ragnarsdóttir (1999; 1997) in particular compares rates of acquisition between Danish and Icelandic children of between 4 and 8 years of age. She finds that the morphological and semantic transparency of Danish parent's sibling and grand-parent terms does not advantage Danish children over Icelandic children, for whom the equivalent terms are opaque. On the contrary, Ragnarsdóttir finds that Icelandic children are about one year ahead of their Danish counterparts, which she puts down to Iceland being small and tight-knit society, where genealogy is something of a cultural preoccupation.

Studies also differ methodologically. Many of the Piagetian replication studies utilise questionnaires which probe for children's understanding of kin term definitions. Ecological validity is a substantial issue here in that even for certain adults the Piagetian definitional questions can be confusing (Hirschfeld 1989), or can lead to results which do not indicate a 'reciprocal' stage of development (Benson and Anglin 1987). To reduce the degree of abstraction, some researchers have incorporated photographic stimuli or dolls into questionnaires (Chambers and Tavuchis 1976; Carter 1984; Ragnarsdóttir 1999), in some cases with very different results, or they have developed more novel approaches. Only a few experimental studies utilised the children's own genealogies (Ragnarsdóttir 1999; Greenfield and Childs 1977; Blythe et al. 2020). Mollica and Piantadosi (2022) implement a formal Bayesian model of conceptual development on four different languages with different kinship systems that correctly predicts common error patterns associated with children's kinship learning.

Only a handful of studies have investigated classificatory kin terms (E. Danziger 1993; Bavin 1991) but the focus of these studies was not on the terms' use in extended classificatory relationships. The only study to scale up from actual genealogy to more abstract classificatory kin types is that of Blythe et al. (2020) who used photographic stimuli and video animations to examine children's Murrinhpatha kin term comprehension and production, as well as comprehension of the language's sibling-inflected morphosyntax³ (see below).

³ Synchronic, evolutionary and ontogenetic perspectives on Murrinhpatha's siblinghood contrast are covered in Blythe (2009), Blythe (2013) and Blythe et al. (2020), respectively.

Experimental questionnaires and surveys are generally ill-equipped to provide information about kinterm usage and, as Carter (1984) points out, they mostly fail to distinguish between the use of kinterms for address and for third person reference. Kinterm usage does feature within certain ethnographic studies of language socialisation (e.g., Schieffelin 1990; Ochs 1988; Davidson 2018) but kinship per se has generally not been the focus of these investigations. Goldfield & Snow (1992) used an interactional child language corpus (of English) to look at a single child's developmental understanding of kinship relationships, including the rights and responsibilities of various family members. This is a point of overlap with Mitchell and Jordan's (2021b) study of kinship and seniority among Tanzanian Datooga children, which incidentally is one of the few studies to utilise a video corpus of natural interactions.

Although very young children tend to use kinterms as proper nouns (Luong 1986), little of this literature considers how kinterms are to be discriminated from personal names. As Searle (1997, 591) points out:

The uniqueness and immense pragmatic convenience of proper names ... lies in the fact that they enable us to refer publicly to objects without being forced to raise issues and come to agreement on what descriptive characteristics exactly constitute the identity of an object. They function not as descriptions, but as pegs on which to hang descriptions.

While kinterms and names are both person reference items, kinterms *do* describe how one individual relates to another. Because they are regularly pegged onto names, a properly grounded understanding of kinship pragmatics should consider the interdependent relationship that kinterms have with names (Fleming and Slotta 2018). This is especially true within Australian settings in which the kinship systems mandate the avoidance of certain names. From a developmental point of view, the trajectory a child takes toward an adult-like conception of kinterm categories doesn't happen in a vacuum, as this trajectory necessitates a categorical departure from the lexical category 'names'.

3 Age graded learning of Murrinhpatha classificatory kinship.

The Murrinhpatha kinship system, like all Australian systems, is a *bifurcate merging* system, whereby relatives on the father's side are distinguished from relatives on the mother's side, and where relatives of similar types (e.g., same-sex siblings) are grouped together within overarching categories. The merger of affinal step-kin (e.g., FW, *kale*) into the same categories as consanguineal kin (M, also *kale*) and the terminological merger of same-sex siblings (e.g., F and FB are both *yile*, M and MZ are both *kale*), without limitation of range, have long been considered the defining characteristics of Australian systems that allow kinterms to be universally extended to all members of society (Radcliffe-Brown 1977; Scheffler 1978; Blythe et al. 2020).

While Murrinhpatha has a small number of descriptive and tri-relational kinterms (Blythe 2018), Table 1 displays the 17 classificatory relationships that are widely extended across the community. Every four generations the terms recur. The traditional Murrinhpatha forms are listed in the second column. However, within the LAMP corpus some of these forms have essentially been supplanted by the 'junior' variants in the third column, some of which are of English origin. Many of these 'junior' forms are used by adults when children are not present, which suggests that the relationship terminology is perhaps undergoing relexification.

Generation	Traditional kinterms	Junior variants	Included kintypes
G+2	<i>kangkurl</i>	<i>kakurl</i>	FF, FFB, FFZ, FMH, FMZH, etc.
	<i>kawu</i>		MM, MMB, MMZ, MFW, MFZH, etc.
	<i>thamunh</i>		MF, MFB, MFZ, MMH, MMBW, FMB, FFZH, FMZB, etc.
	<i>mangka</i>	<i>maka</i>	FM, FMZ, FFW
G+1	<i>yile</i>	<i>dedi</i>	F, MH, FB, FFS, MMBS, MFZS, SpMB, etc.
	<i>pipi</i>		FZ, FBZ, MBW, MMBD, MFZD, SpM, SpFW etc.
	<i>kaka</i>		MB, FZH, MMS, MMZS, MFS, MFBS, FMBS, FFZS, SpF, SpMH etc.
	<i>kale</i>	<i>mama</i>	M, MZ, FW, MFD, MMD, FMBD, FFZD, SpMBW etc.
	<i>nginarr</i>		SpM, SpFW, SpMB, MMBD, MMBS, MFZD, MFZS
G0	<i>munak</i>	<i>mumak</i>	Z, MD, MZD, FD, FBD, MMDD, FFSD, MMBSD, MFZSD, etc.
	<i>ngathan</i>	<i>paba, pule</i>	B, MS, MZS, FS, FBS, MMDS, FFSS, MMBSS, MFZSS, etc.
	<i>pugarli</i>	<i>kas, kaski</i>	MBC, FZC, FMDC, MFBC, FMZDC, MMSSC, etc.
	<i>nangkun</i>		MMBDS, ♀H, ♀HB, ♂ZH
	<i>purrima</i>		MMBDD, ♂W, ♂WZ, ♀HZ
G-1	<i>muluk</i>		♂S, ♂BS, ♀BS, MBDS, FZDS, MBSS, FZSS, ♀S, ♀ZS, ♂ZS (any G-1 male)
	<i>newuy</i>		♂D, ♀BD, ♂BD, MBDD, FZDD, MBSD, FZSD, ♀D, ♀ZD, ♂ZD (any G-1 female)
	<i>wakal</i>		any G-1
	<i>nginarr</i>		MBDC, FZDC, ♀DH
G-2	<i>kangkurl</i>	<i>kakurl</i>	♂SS, ♀ZSS, ♂SD, ♀SSD
	<i>kawu</i>		♀DS, ♂ZDS, ♀DD, ♂ZDD
	<i>thamunh</i>		♂DS, ♀BDS, ♂DD, ♀BDD, ♂ZSS, ♂ZSD
	<i>mangka</i>	<i>maka</i>	♀SS, ♂ZSS, ♀SD, ♂ZSD

Table 1 Classificatory kinterms in Murrinhpatha

In polysemic analyses of kinterm semantics, some of the peripheral relationships within a broader kinship category can be distilled down to a focal or prototypical relationship via abstract merging rules (Lounsbury 1964; Scheffler 1972). When applicable these rules will reduce the number of nuclear kinship units (M, B, D, etc) within a genealogically based kintype string (e.g., FFB > FF). In order to quantify relationship complexity in Murrinhpatha, Blythe et al. (2020) operationalised three of Scheffler's merging rules to determine the effects of distance and merger on kinterm cognition. The three merging rules (Scheffler 1978, 102–3, 115) are as follows:

1. *same-sex siblings* can be treated as categorically merged into a single category (e.g., FB > F, *yile*; MZ > M, *kale*),
2. *half-siblings* can be treated as equivalent to full siblings (e.g., FS >> B, *ngathan*; MD >> Z, *munak*), and

3. *step-kin* can be treated as equivalent to consanguineal kin (e.g., MH >>> F, *yile*; FFW>>>FM, *mangka*).

Blythe et al. (2020) proposed that distance could be conceptualised in two ways, one being *genealogical distance*—the raw number of kinship units, as tallied from the kintype string on the left side of the merging operation; the latter being the *kinship distance*—the derived output, as tallied from the right side of the merging operation.⁴ They used logistic regression to detect age-graded improvements in response accuracy as relationship complexity increased, both in terms of genealogical distance and in the number of mergers. An important finding of this research is that same-sex sibling merger in particular has the effect of making the children’s responses more accurate. Thus, when kinship distance is reduced by merger, the overall effect of genealogical distance is minimised. In other words, structural mergers simplify classificatory kinship by reducing the cognitive burden of genealogical distance.

In the anthropological literature on kinship semantics, mergers have been presented as abstract rules or formalisms. However Blythe et al. (2022) demonstrate that adult Murrinhpatha speakers deploy merging procedures so as to explain why certain people should refer to other people using particular kinterms. By evoking linking relatives, disparate genealogies can be collapsed upon each other such that simplified kinship structures can be used to explicate the relationship (see also Dousset 2008).

Blythe et al.’s (2020) quantitative studies provide baseline data about comprehension and production across various age bands. To establish *how* children gain these abilities, we turn to the LAMP corpus, a collection of 90 video recordings of multiparty face-to-face interaction between adults and children, or between child peers, collected by William Forshaw and Lucinda Davidson for their doctoral dissertations (Forshaw 2016; Davidson 2018). These were longitudinal studies in which focus children were recorded with various family members in natural settings, mostly in the bush, over a two year period. Two video cameras were used to record the interactions. Children wore radio lapel mikes fitted into little backpacks which allowed them to roam freely, largely unencumbered by the recording equipment. The LAMP corpus furnished 21 hours, 47 min, 32 seconds of transcript. From this 1635 kinterm tokens were extracted. This included 639 tokens of *mama* (‘mother’, which was 39% of all tokens). Sections of the recordings that were rich in kinship information were then transcribed in more detail so that interactional analyses could be performed.

Large families of five or more children are not unusual in Wadeye. This, plus the token frequency in the LAMP corpus of kinterm tokens and kin-based grammatical inflections⁵, reveal that children are thoroughly immersed in an environment that is supersaturated with classificatory kinship. In this chapter we are concerned with identifying the procedures by which children acquire the classificatory system. We will try to establish whether kinship is simply absorbed through osmosis, or whether children receive explicit kinship instruction, or implicit instruction.

⁴ For example, the relationship FFBW has a *genealogical distance* of 4. If we apply same-sex sibling and step-kin mergers (FFBW > FFW >>> FM), the output gives a *kinship distance* of 2.

⁵ One kinterm token occurs every 47.9 seconds, on average (cf., one every 70.6 seconds in the Murrinhpatha CIARA conversational corpus). Although the zero-marked ‘sibling’ inflections are difficult to count, tallies on the four ‘non-sibling/gender/number markers reveal that one token occurs in the LAMP corpus every 72 seconds, cf. 1 token every 15.76 seconds, in the ‘adult’ CIARA conversational corpus.

All of the participants in the extracts occupy positions within the extended genealogy shown below in Figure 1. The children are all to be found on the bottom row of the figure whereas the caregivers in these data are all located in the middle row. As such, the children are either cross-cousins or siblings (which include parallel cousins; FBC, MZC). Similarly, the caregivers, who are invariably female, are all either cousins or sisters. As such, the caregivers are either the children's 'mothers' or their 'aunties'. The children must therefore determine which of these women should be considered their 'mothers' and which of them should not.

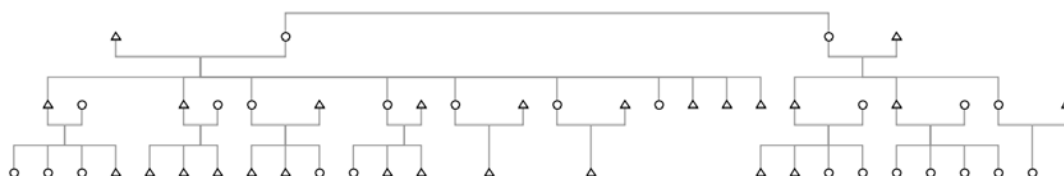


Figure 1: The children and caregivers in the extracts to follow all belong to this large extended family

4 Kinship socialisation through prompting routines and quizzes

In Davidson's (2018; 2022) language socialisation research in Wadeye she discusses how children are socialised into locally relevant membership categories such as 'totems' (*ku ngakumarl*), 'country' (*da*, but also 'mother's country', *da kangathi*) and 'family/kinship'. In particular she describes certain prompting routines that are used for teaching or testing children's knowledge of *kardu thipmam* ('black person's') categories. The instructional prompts are usually issued using framing speech verbs (e.g., *thama* 'say/do', *nange* 'tell her', *narna* 'tell him', *thikay* 'call out', *thadharrpu* 'ask') that are inflected as second person singular imperatives, which instruct children what to say to whom. There is no syntactically 'indirect' reported speech in Murrinhpatha (Blythe 2009) so when directed toward children, these instructions are very precise. Consequently, children frequently produce verbatim repeats of what they have been instructed to say. These verbs are used to cue a shift in footing (Goffman 1979; Goodwin 2007) in which non-present relatives become participants within imagined or remembered conversations. The storyworld frame is used to impart kinship knowledge by mapping child anchored kinterms onto the names of known relatives. On certain occasions older children are co-opted into this socialisation procedure.

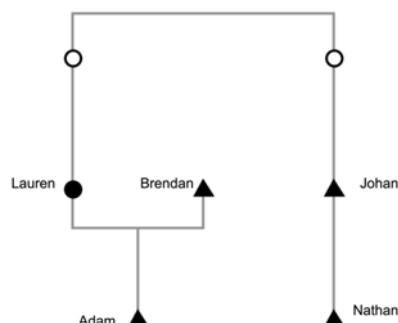
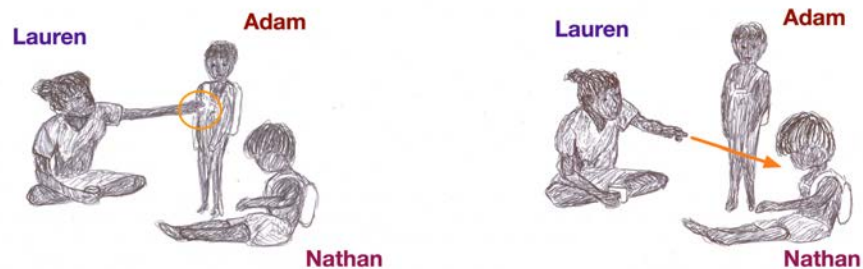


Figure 2: Nathan is Lauren's nephew (MZSS > MSS >> BS) and Adam's cousin (MMZSS > MMSS >> MBS)

When the session from which extract (1) was recorded Adam was 3;10 while his cousin Nathan was 4;6⁶ (see Figure 2). In terms of the Piagetian stages presented above Adam is clearly within the pre-categorical stage of kinterm development. While he understands that Brendan is his father and that Lauren is mother, he does not know their personal names, nor does he understand that the lexical properties of names differ from those of kinterms. Similarly, he displays little understanding that the terms *dedi* and *mama* can be anchored onto other persons besides himself. For this reason, Lauren's prompting routine in extract (1) provides rich data points because the kinterm *dedi* is anchored onto two separate individuals, Brendan and Johan, both of whom are referred to by name. This instruction is deftly managed by Lauren as she is not at liberty to mention her brother Johan's name because adults who are opposite-sex siblings should avoid each other's names. By drawing Nathan into the prompting routine she urges him produces his own father's name so that she doesn't have to. In the extracts to follow⁷, all kinterms are bolded.

(1) *Who is your father?* (LAMP_20130530_WF_01_2175583_2193865)

- 1 Lauren *#nga **dedi** ninhika nang**kal #narna da. *
nga dedi ninhika nangkal na-rna da
Hey father 2SG-TOP who 2SG.S.say.FUT-3SG.M.IO go_on!
Hey say to him, "Who is your father?", go on!
Lauren *#Fig.3 taps Adam's belly*----#Fig.4 points@Nathan*

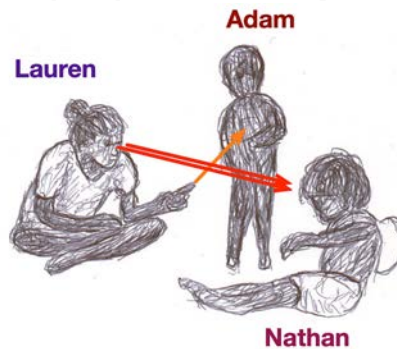


- 2 (0.7)
3 Adam (angka)
Nangkal
Who?
4 (0.7)
5 Lauren nangkal narna
nangkal na-rna
who 2SG.S.say.FUT-3SG.M.IO
Say to him "who?"
6 Adam (angkay)
Nangkal
Who?
7 Nathan Yuwan.
Johan
8 (0.5)

⁶ This notation indicates three years and ten months, and four years and 6 months, respectively.

⁷ Extracts are transcribed according to modern conversation analytic conventions (Hepburn and Bolden 2017; Mondada 2018). Transcription symbols and morphological glosses are listed at the end of the chapter. All participant's names are pseudonyms. Hand-drawn figures are loosely based on video screenshots.

9 Lauren ~dhiwa.~`kanhire #tha'arrpu.^
 dhiwa kanhi-re tha-dharrpu
 That's_right PROX -PERL 2SG.S.poke.FUT-ask
 That's right, ask this one here!
 Lauren *#Fig.5 gaze@Nathan, points@Adam



10 (0.5)
 11 Nathan **dedi** ninhika nangkai?
 dedi ninhi-ka nangkai
 father 2SG-TOP who
 Who is your father?
 12 (0.4)
 13 Adam (Inhi)
 14 (0.3)
 15 Nathan Aa?
 OIR
 Huh?
 16 (0.2)
 17 Adam (Enhi)
 18 (0.3)
 19 Lauren >patha thathpirr!<
 patha thathpirr
 good correct
 Say it right!
 20 (1.2)
 21 Lauren Be:ndan thama
 Brendan thama
 Name 2SG.S.say.FUT
 Say "Brendan"
 22 (0.1)
 23 Adam (menan)
 Brendan
 Brendan

Having just reminded Adam about something funny his uncle (Nathan's father) had said to him, Lauren gets Adam's attention by tapping him on the belly (Figure 3) as she prompts him (at line 1) to ask Nathan who his father is (*dedi ninhika nangkai*, 'Who is your father?'). At the moment she produces the framing speech verb *narna*, 'say to him', Lauren has shifted her gaze toward Nathan, to whom she also points with her index finger (Figure 4). Adam pronounces something at line 3 that vaguely approximates the person-interrogative *nangkai*

(‘who’). Lauren’s second prompt at line 5 targets only the interrogative *nangkal*, which Adam does his best to repeat at line 6. Nathan obliges this information request by producing his father’s name *Yuwan* (‘Johan’) at line 7.

At line 9 Lauren firstly confirms the name to be correct (*dhiwa*, ‘that’s right’) then turns to face Nathan, directing him to ask the same question of Adam who she is by this stage pointing at with her index finger (Figure 5). At line 11 Nathan then produces a verbatim repeat of the question that Lauren had previously instructed Adam to produce at line 1. In response to this question, Adam produces a disyllabic utterance at line 13 which is not at all similar to his father’s name. When Nathan initiates repair at line 15, Adam produces a similar disyllable which also barely approximates his father’s name. At line 19 Lauren sanctions him for his sloppy pronunciation. When it becomes evident during the silence at line 20 that the correct name is unlikely to eventuate, she provides his father’s name for him to copy, which he does (more or less) at line 23. Despite Adam’s articulatory capacity being largely limited to single word productions, Lauren teaches Adam that the term *dedi* can be anchored onto different individuals, and that *dedi* can be used to designate people with different names (Johan, in the case of Nathan’s father, and Brendan, in the case of Adam’s father).

As well as adults, teenagers also engage in these prompted elicitation routines. In extract (2) fourteen year old Luella observes an unattended video camera so she takes it on herself to interview her cousin Molly (5;0) about herself and her family, effectively issuing her a series of known-answer test-questions – although very few of the prompts have interrogative morphosyntax. The strings of prompts are reminiscent of *initiation, response and evaluation* (IRE) sequences in classroom interactions (Mehan 1979), however the evaluation is mostly produced when the answer is incorrect, not when the answer is correct. Having tested Molly about her clan totems, where her country is and what her name is, Luella then begins to quiz her about who her relatives are.

(2) Interview (LAMP20140305LD01_1192486_1279141)

- 1 Molly (Molly, middle name, last name)
(First name, middle name, last name)
- 2 Luella nhinda.
ANAPH
That's it
- 3 (0.4)
- 4 Luella **dedi** ninhika.
dedi ninhika
father 2SG-TOP
{Who's} your dad?
- 5 (0.6)
- 6 Molly Patrick
(name)
- 7 Luella **mama** ninhika.
mama ninhika
mother 2SG-TOP
Your mother?
- 8 (0.4)
- 9 Molly Estelle
(name)

10 Luella **maka** ninhika
maka ninhika-ka
FM 2SG-TOP
{Who's} your paternal grandma?

11 (.)

12 Molly Karen.
(name)

13 Luella Awu **maka.** (.) °°Mabel.°°
awu maka Mabel
NEG FM woman's_name
No, paternal grandma! °°Mabel.°°

14 Molly °Mabel.°
(name)

15 (0.6)

16 Luella **thamunh** nga!
thamunh nga
MF Hey
Maternal grandpa, hey!

17 (1.2)

18 Luella Ethan.
(name)

19 Molly Ethan
(name)

20 Luella **kawu**ka.
kawu-ka
MM-TOP
Maternal grandma.

21 (0.2)

22 Molly Karen
(name)

23 (0.2)

24 Luella Aa[:?
OIR
Huh?

25 Molly [Karen.
(name)

26 (0.2)

27 Luella **thamunh** Ethan
thamunh Ethan
MF name
{Your} maternal grandpa is Ethan

28 (1.2)

29 Luella nangkai **paba** ninhiyu
nangkai paba ninhi=yu
who brother 2SG=CL
Who is your brother?

30 (0.8)

31 Luella ngathparr [()
far
Away from the camera!

32 Molly [Kendrick
(name)

33 Luella Aa?
OIR
Huh?

34 (0.2)

35 Molly Kendrick
(name)

36 (0.8)

37 Luella i nangkai **mumak** [nhinhiyu
i nangkai mumak nhinhi=yu
and who sister 2SG=CL
and who is your sister?

38 Molly [Kendrick
(name)

39 (1.4)

40 Molly Kendrick
(name)

41 Luella ngathparr i nangkai **mumak** nhinhiyu
ngathparr i nangkai mumak ninhi=yu
far and who sister 2SG =CL
Get back! And who is your sister.

42 (1.4)

43 Luella (whisper)
(whisper)

44 Molly tebala.
deaf
deaf one

45 (0.2)

46 Luella nangkai **pugarli** ninhiyu
nangkai pugarli ninhi=yu
who MFC/FZC 2SG =CL
Who is your cross-cousin?

47 Molly ((points@Luella))

48 Luella nangigkawadha.
na -ngi -gkawadha
2SG.S.say.FUT-1SG.DO-say_name
Call my name.

49 (1.4)

50 Molly nan tharrmirnka.
nan tharrmirnka
word_search rainbow_bee-eater
What's its name, Rainbow Bee-eater.

51 (1.4)

52 Luella bere thama.
bere thama
finish 2SG.S.SAY/DO(34).FUT
Say 'That's all'

53 (0.1)

54 Molly bere
 bere
 finish
 That's all
 55 (0.9)

The responses here indicate the limits of Molly's kinship knowledge at age 5. She can correctly name very close biological kin when prompted, such as her father (line 6) and mother (line 8). At line 12 she produces the wrong grandmother's name when prompted for the paternal grandmother (*maka* line 10). At line 13 Luella negatively evaluates the answer (*Awu*, 'no') before reissuing the prompt (*maka*). She then produces the paternal grandmother's name under her breath (*Mabel*), which Molly then repeats at line 14. When Luella prompts for the maternal grandfather (*thamunh*) at line 16, Molly is unable to produce the name, so Luella provides it at line 18 (*Ethan*), which Molly repeats at line 19. When asked for the maternal grandmother (*kawu*) at line 20 she produces the same name at line 22 that she had previously produced for her paternal grandmother. This time she is correct. It would seem she has realised that her earlier error was in confusing the paternal and maternal lines of descent. At line 27 Luella once again reiterates that Molly's maternal grandfather is Ethan.

Luella then moves onto sibling terms (lines 29 and 37), which is a tricky issue. Molly is an only child so these sibling prompts are not eliciting immediate genealogical kin. The name *Kendrick* she produces at line 32, 35 and 38 is actually that of her paternal grandfather. Luella does not audibly correct this error. The two prompts for *mumak* 'sister' (at lines 37 and 41) yield no response. Luella whispers a suitable answer *tebala* 'deaf one' which Molly repeats. This is the standard form that females use to use to address a sister, which makes it a highly appropriate response. Her prompt for the cousin term *pugarli* at line 46 yields a point directed at Luella (line 47). When pressed for a name at line 48, Molly provides a suitable name of totemic origin at line 50 (not her English name, *Luella*).

The experimental data in Blythe et al's (2020) study showed the children in youngest age bracket (5—7;9) struggling with relationships greater than one or two units of genealogical distance. Molly's answers are commensurate with the responses in the experiments for this age. Her responses are accurate for genealogical distances of 1 and 3 (the cross-cousin response), but the results for genealogical distances of 2 are mixed. The misfires, as genealogical distance expands, suggest that the rudiments of the classificatory system are in place, whereby the relationships to socially salient kin are rote learned, but the broader categories and the mechanisms required to expand these out from these salient prototypes are not yet in place. In the next section, we begin examining children's knowledge of simple classificatory relationships, ie., those that include sibling mergers.

5 Overgeneralised categories or emerging general kinship categories?

The challenge that a classificatory kinship system poses for the child is that of scaling up from an initial use of kinterms which is reasonably specific to a more mature use of kinterms which is more general, as category terms with indeterminant boundaries. This issue however is really a domain specific incidence of learning problems that are more general, namely under-extension and over-extension (Clark 1973; 1993, 33–36). An example of under-extension would be the exclusion of "peripheral category members" like Chihuahuas and Pekinghese from the category *dog* but to otherwise include members that are similar to

prototypical dogs (Clark 1993, 34). Additionally, when *mummy* uniquely designates the mother (ie., it is used as a proper name), this is an under-extension of the category term. On the other hand, examples of overextension would include the use of *mummy* for both parents, or the use of the term *mummy* such that it ‘overincludes’ all females.

Just as a categorical child learning English will overextend the descriptive term *mummy*, the Murrinhpatha child prone to overinclusion will extend *mama* (or *kale*, ‘mother’) beyond the biological mother, yet if the use of the classificatory term *mama* is not inappropriate for the referent in question, then term has not really been *over-extended*. Sometimes they’ll get it wrong, but sometimes they’ll get it right, unwittingly. We observed in extract (2) that while Luella corrected Molly’s errors her acceptable responses were *not* rewarded audibly for being correct. We might then ask what sort of feedback do children receive to help them refine their emerging kinship categories?

In extract (3), Tania is sitting on the ground with her daughter Emily and her niece Acacia. Tania is making a little model shelter out of grass and leaves. When Acacia addresses Tania as *mama* Tania promptly corrects her.

(3) *I’m not your mother!* (LAMP20130502WF01 _662571_685031)

- 1 Emily **mama** da mulurn nakal amamu[ga
mama da mulurn wakal thama -nu -ka
mother NC:PL/T shade small 2SG.S.say/do (34) FUT-FUT-TOP
mum you make the little shady place
- 2 Tania [Mm. da mulurn wakal
Mm da mulurn wakal
Mm NC:PL/T shade small
Mm. little shady place.
- 3 (0.2)
- 4 Emily da mun- da munun na[kal
da mulurn da mulurn wakal
NC:PL/T shade NC:PL/T shade small
the sha- the little shady place
- 5 Tania [Mm. da mulurn wakal
da mulurn wakal
NC:PL/T shade small
Mm. A little shady place
- 6 (1.7)
- 7 Acacia dupa:k; **mama** du~pak.
du -pak mama du -pak
2SG.S.17.FUT-put_down mother 2SG.S.17.FUT-put_down
put it down mum put it down.
- 8 (0.2)
- 9 Tania mere ***mama** nhinhi ngay* larrinnhiri.
mere mama nhinhi ngay] larrin =nhi -ri
NEG mother 2SG 1SG dry/dead=2SG.IO-buttocks
I’m not your mother, (you’re dry/dead behind/backside)
Tania **taps Acacia on head**
- 10 (2.0)
- 11 Tania **pipi** thama
pipi thama
FZ 2SG.S.say (34) FUT

say "aunty".

12 (1.4)

13 Tania ^Oo::h!^
Oh!!

14 (0.8)

15 Tania Dinthimpurr bere. Manangka da thelput.
dim -yimpurr bere manangka da thelput
3SG.S.sit(1).NFUT-fall finish NEG NC:PL/T house
It's fallen down, no more house.

16 (3.9)

When Acacia tells Tania to put something down at line 7 (a leaf presumably), she addresses Tania as *mama*, having previously heard her cousin Emily also address her as *mama* at line 1. At line 9 Tania taps Acacia on the head and points out that she's not Acacia's mother, then seemingly sanctions her for getting the term incorrect.⁸ She then adds at line 11 that she really should say *pipi* 'auntie'. This is not a straightforward 'auntie' relationship. Genealogically, Tania is Acacia's FMZD which can be contracted by same-sex-sibling merger to FMD and by a half-sibling merger to FZ (*pipi*) (see Figure 6). The kinship distance of 2 is a substantial reduction from the raw genealogical distance of 4. Although the sibling mergers are not here foregrounded, eventually they need to be internalised. Even though Emily doesn't repeat the term *pipi*, what is important here is that Emily's overextension of *mama* has been refuted and an appropriate alternative term has been provided.

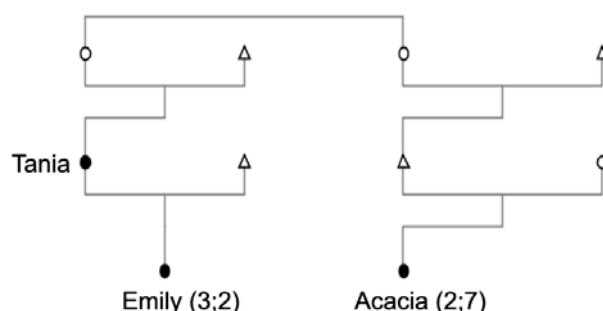


Figure 6 Tania is Acacia's *pipi* (FMZD > FMD >> FZ).

About thirty minutes later Acacia is again informed that Tania is not her mother, initially by Tania and then also by her cousin Emily. As we encounter this extract (4) Tania is leading the two girls into the bush to search for bush tucker.

(4) That's not your mother! (LAMP20130502WF01_2469800_2516809)

1 Tania Bill kanhethu kanhi;
Bill kanhi-gathu kanhi
Name PROX-hither PROX
Bill is coming up here.

2 (0.2)

3 Acacia ^**mama**!

⁸ Although the pragmatics of the term *larrinnhiri* are not well understood, its deployment here seems rather disparaging.

Mum!

4 (1.0)

5 Tania manangka **mama** ninhi ngayyu Acacia mana: **mama** ninhhi ngayyu.
 manangka mama ninhi ngay=yu Acacia mana mama ninhhi ngay=yu
 NEG mother 2SG 1SG=CL name NEG mother 2SG 1SG=CL
I'm not you mother Acacia, I'm not your mother.

6 (3.8)

7 Emily ((whini[ng]))!

8 Tania [mi kumilu nga; kumilu kumilu.
 mi kumilu nga kumilu kumilu
 NC:VEG Eriosema_chinense hey E.chinense E.chinense
Red-skin yam, hey!, red-skin yam, red-skin yam.

9 (1.5)

10 Emily (ngapa nganalili)
 ngapa nganam -lili
 shoulder 1SG.S.BE.NFUT-walk
(Shoulders, I'm walking)

11 (0.8)

12 Emily (**mama**)
 Mum.

13 (.)

14 Acacia **mama** (thurru[wathu ngarra miyu)=
 mama thurru -gathu ngarra mi =yu
 mother 2SG.S.G0.FUT-hither LOC NC:VEG=CL
mama (you go where that food is)

15 Tania =()

16 Emily [**mama** (0.9) mamiya ((sobs))
 mama ma-mi =ya
 mother NEG-NC:VEG=CL
Mum! No food.

17 Acacia () [**mama** (thani).
 () Mum ()

18 Tania [(thirranginthamardamardanu xxx karrimkadhuknu)
 thirra -ngintha -mardamarda-nu xxx
 2SG.S.stand.FUT-DU.F.NSIB-wait -FUT ??
 karrim -ngkadhuk-nu
 3SG.S.stand.NFUT-exist -FUT
(You two non-siblings wait), () (There'll be something here.)

19 (0.2)

20 Acacia **mama** (thangkuwa panayu;)
 mama thangka-wa panayu
 mother what-EMPH RECN=CL
(Mum what's that?)

21 (2.4)

22 Emily **mama** manawa ku[dan panguyu.
 mama manawa kurran pangu=yu
 mother NEG-EMPH 3SG.S.go.EXIST DIST =CL
That one walking isn't {your} mother!

23 Tania [(Manangka) **mama** ngayyu.
 Manangka mama ngay=yu

- NEG mother 1SG=CL
I'm not {your} mother.
- 24 (2.9)
- 25 Emily **mama** manawa kudan panguyu.
 mama mana-wa kurran pangu=yu
 mother NEG-EMPH 3SG.S.go.EXIST DIST =CL
 That one walking isn't {your} mother!
- 26 (1.1)
- 27 Emily mup thi nhinta.
 mup thi nhinta
 sit 2SG.S.sit.FUT thus
 Wait, sit there. That's right.
- 28 (0.9)
- 29 Emily mup! mup! mup!
 wait wait wait
- 30 (1.3)
- 31 Emily mup thi nhinta.
 mup thi nhinta
 sit 2SG.S.sit.FUT thus
 Wait, sit there. That's right.

Tania speaks to the two toddlers (at line 1) as she turns off the dirt track and walks into the scrub. Acacia, who is straggling behind the others tries to summon Tania's attention at line 3. At line 5 Tania twice points out that she is not Acacia's mother. Emily, who is tired and a little whiny seems to want to be picked up and carried on her mother's shoulders (lines 7 and 10), addresses her mother as *mama* at both line 12 and line 16, where she is seemingly complaining about having no food. At line 20 Acacia also uses the term *mama* to address Tania, producing an utterance with the intonation contour of a content question but which is otherwise barely comprehensible. Emily very forcefully points out to Acacia at line 21 that "That one walking there is not {your} mother!", a point that is echoed in partial overlap by Tania at line 23 (*Manangka*) *mama ngayyu*, 'I'm not {your} mother'). Once again Emily repeats her prior assertion at line 25 that "That one walking there is not {your} mother!" (*mama manawa kurran panguyu*). Emily then (rather crossly) tells her cousin several times (lines 27, 29, 31 and again, after the extract finishes) to wait behind while she follows her own mother into the bush.

Although Acacia hasn't yet memorised the term she should use to address Tania, Emily has twice heard her own mother point out that *mama* is not the term that Acacia should use. Emily twice points out Acacia's error, rather forcefully, before relegating her cousin to the back of the line (she actually pushes Acacia away, as she tells her to wait). Evidently Emily *has* learned that she is the *only* person present who may legitimately address Tania as *mama*, so she literally puts Acacia in her place (both verbally and physically).

When a child that overgeneralises a kinterm is corrected for their mistake, they have the opportunity to reset the extension of their emerging proto-category by eliminating that person from the set of persons to whom they can reasonably apply the kinterm, and if they are also provided with an alternative term they can learn a new person-to-kinterm mapping which would be appropriate for the person in question. However in this type of kinship system there are many people who can legitimately be addressed as *mama* or *dedi*. So do children who are

prone to overgeneralisation, that correctly pick the appropriate terms, receive positive feedback which will help them calibrate the boundaries of their emerging proto-categories?

In the extract to follow (5), Bob and Emily are biological siblings, while Adam is their parallel cousin, and is thus also considered a sibling (see Figure 7). Their mothers, Tania and Lauren are full sisters so they are ‘mothers’ of all three children. Penelope is a younger (adult) sister of Tania and Lauren so she too is another ‘mother’ of Adam, Emily and Bob. Lauren and Tania are nearby fishing. Penelope is sitting on the ground with Adam while Bob and Emily are hovering around. Emily is cooking shellfish on the fire.

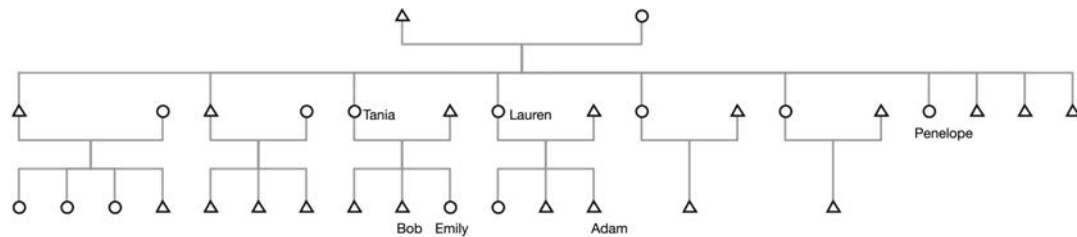
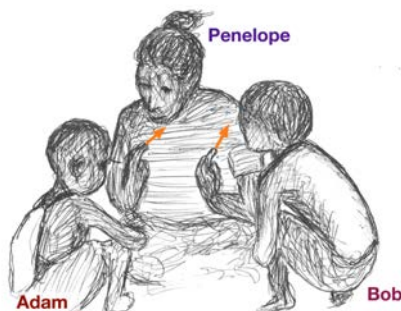


Figure 7: Adam is a classificatory brother of Bob and Emily. Tania, Lauren and Penelope are the mothers.

(5) No, you are my mother! (LAMP20140601WF01_2900681_2900681)

- 1 Bev ku ngurlmirl ngay;
ku ngurlmirl ngay
NC:ANM fish 1SG
It's my fish.
- 2 (0.8)
- 3 Adam ku ngurlmirl ngay.
ku ngurlmirl ngay
NC:ANM fish 1SG
It's my fish.
- 4 (0.5)
- 5 Bob ku ngurlmirl ngay.
ku ngurlmirl ngay
NC:ANM fish 1SG
My fish.
- 6 (0.2)
- 7 Adam ku ngurlmirl nga::y.
ku ngurlmirl ngay
NC:ANM fish 1SG
It's my fish.
- 8 (0.1)
- 9 Pene nangkalthaya
nangkal-dha=ya
who-SOURCE =CL
Whose is it?/Who is it from?
- 10 (1.7)
- 11 Adam *kanhirda.=
PROX.LOC
Here



- 24 (0.2)
- 25 Adam °°**mama** ngayka La:ren.°°
 mama ngay-ka Lauren
 mother 1SG-TOP name
My mother is Lauren
- 26 (2.7)
- 27 Pene ***mama** ngayka Taniawa thama.*
 mama ngay-ka Tania-wa thama
 mother 1SG-TOP name-EMPH 2SG.say.FUT
Say "My mother is Tania"
*Pene *-----points@self-----**
- 28 Adam **mama** ngayka Taniawa.
 mama ngay-ka Tania-wa
 mother 1SG-TOP name-EMPH
My mother is Tania.
- 29 (0.1)
- 30 Emily WAYA!!!
- 31 (0.1)
- 32 Bob **stands up and walks off*
- 33 Pene ***Mama** ngayka Lauren*wa thama Bob.]
mama ngay-ka Lauren-wa thama Bob
 mother 1SG-TOP name-EMPH 2SG.S.34say.FUT name
My mother is Lauren, tell Bob!
*Pene *gazes@Bob, touch@Bob's belly**
- 34 (2.0)
- 35 Adam Aa! wurda **mama** ngaywa ninhiyu.
 Aa wurda mama ngay-wa ninhi=yu
 HES no mother 1SG-EMPH 2SG=CL
Ah No, you are my mother!
- 36 Pene Ya **mama** ninhi (.) Ta- (0.3) Ta:nia:ya::, i La:ren:;=
 Ya mama ninhi Ta- Tania=ya i Lauren
 HES mother 2SG STRI- name=CL and name
Ah, your mothers are Tania and Lauren.
- 37 Emilyka **mamarde** mamngewurran Laurenyu.
 Emily-ka mama-deyida
 name-TOP mother-too
 mam -nge =wurran Lauren=yu
 3SG.S.say.NFUT-3SG.F.IO=3SG.S.go.NFUT name=CL
Emily also calls Lauren "mama".
- 38 (0.6)
- 39 Pene *Thirrabath () thungkuwa thama.*

thirra -bath thungku-wa thama
 2SG.S.stand.FUT-take/bring NC:FIRE-EMPH 2SG.S.do/say.FUT
Let's look (out for) firewood, you know.
 Pene *points@fire then stands up to go--*

At lines 1, 3, 5 and 7 the three siblings assert their claims over a fish that Lauren had caught. When Penelope asks who caught the fish, and then doesn't get a response, she prompts Adam to say it was from Lauren (line 12), which he repeats (line 14) before correctly asserting at line 16 that Lauren is his mother. At line 19 Penelope points at Bob but looks at Adam (Figure 8), telling him to say to Bob "Your mother is Tania". Tania is Bob's biological mother. Note that she here instructs Adam to anchor the kinterm off Bob, rather than himself. Adam does say this at line 21, with a verbatim repeat. Then, still looking at Adam, she points to herself (Figure 9), and tells him to say "My mother is Lauren", which he does with another verbatim repeat at line 25. Lauren is Adam's biological mother.

Then, still looking at Adam, she tells him at line 27 to say "My mother is Tania", which he does at line 28, with another verbatim repeat. By now Penelope has pointed out that both Bob and Adam should call Tania *mama*. There are implicit sibling mergers here, where either the boys or the mothers are categorically merged.⁹ The complex anchoring of these indexical kinterms is supported visually by the pointing gestures.

Adam is shown how the same kinterm *mama* can be anchored off both himself and off Bob, but whether Adam understands all this person deixis is not clear. In line 35 however, he disputes her claim and asserts that she, Penelope, is his mother. As a sister of Lauren and Tania, Adam's assertion is entirely correct. Is this then a (stage 2) overextension of *mama* to adult women in general, or has he already learned that all three sisters can all be addressed as *mama*? At line 36 Penelope neither refutes his assertion nor confirms it as being correct. That the two sisters Lauren and Tania can be categorically merged would appear to be the point she is making. This merging lesson is furthered at line 37 when she adds that Emily, his parallel cousin and thus sister, can also call Lauren *mama*, such that her mother Tania and mother's sister Lauren should be merged into the single category. At this point the lesson ends when they both get up to collect more wood for the fire (line 39). Given the detail she has provided thus far, it seems odd that she has left herself out of the equation; and the absence of any positive reinforcement for Adam's correct assertion seems like a wasted teaching opportunity on Penelope's behalf. Although children are overtly corrected for their mistakes, few, if any, overt indications are provided when children have correctly understood a key concept or used a kinterm appropriately (cf. Luella in extract (2)). Perhaps children are left to infer when their answers are correct – on the basis of them not having been overtly sanctioned for making errors.

6 Clan totemism and abstract kinship cognition

The Thamarrurr region of the Northern Territory where Murrinhpatha is spoken as a regional lingua franca is characterised by patrilineal clans, of which there are 24 represented at Wadeye. Each clan estate contains a number of important totemic sites (*ngugumingki*) which are jointly owned by all members of the clan, who also share the same set of clan totems

⁹ Genealogically, Bob is Adam's MZS, and vice-versa. By same-sex-sibling merger, MZS can be contracted to MS and then by half-sibling merger to B. Alternatively, Tania is Adam's MZ which can be contracted by same-sex-sibling merger to M.

(*ngakumarl*). One's clan totems are regarded as 'siblings' and may be thus addressed as *ngathan* 'brother' or *munak* 'sister', depending on whether the relevant totemic ancestor is regarded as male or female in the dreamtime (Falkenberg 1962; Ward 1983). The predominant lexical sources for indigenous personal names are *ngakumarl* and *ngugumingki*. Any person may – in principle – be addressed or referred to by any of the names of their clan totems, even if that particular *ngakumarl* isn't their personal name.

A clan's totems include certain species of birds, fishes, bush foods, insects and their associated paraphernalia (e.g., beeswax), spirits, trees and various cultural artifacts. Birds are relatively conspicuous and are often noisy. As such they become useful props for instructing children about cultural norms, such as clan membership and classificatory kinship. The next two extracts demonstrate how totems may be leveraged for kinship instruction.

In extract (6) Tania is sitting on the ground with her daughter Emily (3;2) and niece Acacia (2;7). When Tania hears the sound of a whistling kite (*Haliastur sphenurus*, or *ku pulupulu* in Murrinhpatha), which is one of Emily's clan totems, she instigates a prompting routine in which she tells Emily to tell the whistling kite what to say to her grandmother Karen, who is fishing nearby. As part of the routine, she tells Emily to address the kite as *ngathan*, 'brother'.

(6) *Brother! Say to her, "What's your name?"* (LAMP20130502WF01_1058636_1116506)

- 1 Emily ya nanga **ma^ma**! (1.1) na~nga.
 ya na -nga mama na -nga
 HES 2SG.say/do.FUT-2SG.IO mother 2SG.say/do.FUT-2SG.IO
 Mum do it for me! do it for me.
- 2 (3.8)
- 3 Tania nhinta kanamkaykay.
 nhinta kanam-kay-kay
 ANAPH 3SG.SB.be.NFUT-call-RDP
 That's him calling out.
- 4 (0.4)
- 5 Tania ku ngurlmirl Karen thama.
 ku ngurlmirl Karen thama
 NC:ANM fish name 2SG.say/do.FUT
 Say "Karen's fish"
- 6 (0.6)
- 7 Emily () (ku ngurlmirl.) ((has food in mouth))
 ku ngurlmirl
 NC:ANM fish
 () *fish.*
- 8 (0.5)
- 9 Tania **kawu:** ngay tha~ma.
 kawu ngay thama
 MM 1SG 2SG.S.say/do.FUT
 say "my grandmother"
- 10 (1.1)
- 11 Emily **kawu** nga:y:~
 kawu ngay
 MM 1SG
 my grandmother

12 (0.4)

13 Tania kanthimdim thama.
kanthim =dim thama
3SG.S.BRING/TAKE.NFUT=3SG.S.sit.NFUT 2SG.S.say/do.FUT
Say "she has it".

14 Emily umirl.
ngurlmirl
fish.

15 (1.1)

16 Tania ^ngayka makuwa thama.^
ngay-ka ma-ku -wa thama
1SG -TOP NEG-NC:ANM-EMPH 2SG.S.say/do.FUT
Say "I have no fish."

17 (0.8)

18 Emily ngayka ma- (0.3)ku::,
ngay-ka ma-ku
1SG -TOP NEG-NC:ANM
I have no fish,

19 (0.3)

20 Tania **nga^than** narna.
ngathan na -na
brother 2SG.S.say/do.FUT-3SG.M.IO
Say to him "brother!"

21 (0.3)

22 Emily **nga^than!**
ngathan
brother
Brother!

23 (1.8)

24 Tania Aa!
Oh!

25 (1.6)

26 Emily Aaah.
Aaah

27 (11.4)

28 Tania ^nangkai murrinh ninhi:[ya^ na~nge.
nangkai murrinh ninhi=ya na -nge
who NC:SPEECH 2SG=CL 2SG.S.say.FUT-3SG.F.IO
Say to her, "What's your name?"

29 Emily [nangkai murrinh ni:nhiya::;
nangkai murrinh ninhi=ya
who NC:SPEECH 2SG=CL
What's your name?

30 (0.1)

31 Tania pulupulu: th[ama.
pulupulu thama
Haliastur spheonurus/Milvus migrans 2SG.S.say/do.FUT
Aay "Whistling kite"

32 Emily [pulupulu::;
Haliastur spheonurus/Milvus migrans

Whistling kite.

- 33 (0.3)
- 34 Tania Acacia thikaykay nange.
 Acacia thi -kaykay na -nge
 name 2SG.S.sit.FUT-call_out 2SG.S.say/do.FUT-3SG.F.IO
 "Acacia call out", tell her.
- 35 Emily (waya yuwakay!)
 Acacia thi -kaykay
 name 2SG.S.sit.FUT-call_out
 Acacia call out!
- 36 Tania Acacia thikaykay thama
 Acacia thi -kaykay thama
 name 2SG.S.sit.FUT-call_out 2SG.S.say/do.FUT
 Say "Acacia call out".
- 37 Emily (Acacia yuwakay!)
 Acacia thi -kaykay
 name 2SG.S.sit.FUT-call_out
 Acacia call out!
- 38 (1.2)
- 39 Acacia thiya:::ka::y!!!
 thi -kaykay
 2SG.S.sit.FUT-call_out
 Call out!!!

Hearing the sound of the whistling kite at line 3, Tania instructs her daughter Emily (at line 5) to tell the kite that the fish belongs to Karen. At line 7 Emily, who has food in her mouth, produces a slightly garbled repetition of Tania's prompt. Tania's next prompt at line 9 is an addendum that informs the kite about Emily's relationship to Karen, which Emily dutifully repeats at line 11. At lines 13 and 14 and at lines 16 and 18, Tania, via Emily, tells the kite what to say to Karen. At line 20, Tania instructs Emily to address the kite as *ngathan*, 'brother', which Emily does at line 22. At line 28 Tania prompts Emily to tell the kite to ask Karen, "What is your name?" (*Nangk'al murrinh ninhiyu?*), which Emily repeats at line 29 (minus the framing speech verb *nange*, 'tell her'). At line 34 she tells Emily, to tell Acacia, to also call out – presumably to the kite ("Acacia call out", tell her'). At line 35 Emily reproduces the instruction ('Acacia call out'). This routine is repeated at lines 36 and 37, after which Acacia complies, as instructed, by calling out to the kite, "You call out!"¹⁰

This classification of clan totems with siblings provides a developmental anchor for children in that the kinship domain has shifted from a concrete genealogical base, where kinterms are linked to people's names, to a more abstract plane in which totems occupy the same positions within the kinship structure as people. After all, if your totems are your siblings, then your mother's clan totems are your mothers, and your grandmother's totems are your grandmothers, and so on; as the following extract (7) demonstrates.

In extract (7) Emily and Adam are parallel cousins (siblings) as their mothers, Lauren and Tania, are sisters (see Figure 7). They have different fathers, and thus different father's mothers, *mangka* (or *maka*, which is the junior form). Despite this, both maternal

¹⁰ Although Acacia evidently understands the verb *thikaykay* as an instruction for her to call out, the form she produces is essentially a rote learned (unanalysed) chunk (Forshaw 2021; MacWhinney 1978).

grandmothers, Belinda and Wendy, belong to a clan that has *ku tek* (the red-tailed black cockatoo, *Calyptorhynchus banksii*) as a totem. When the three sisters Tania, Lauren and Penelope hear a red-tailed black cockatoo screeching from a nearby tree they use the opportunity to teach them about the *maka* relationship, and how the two children can each call either woman *maka*, essentially because their two mothers are sisters.

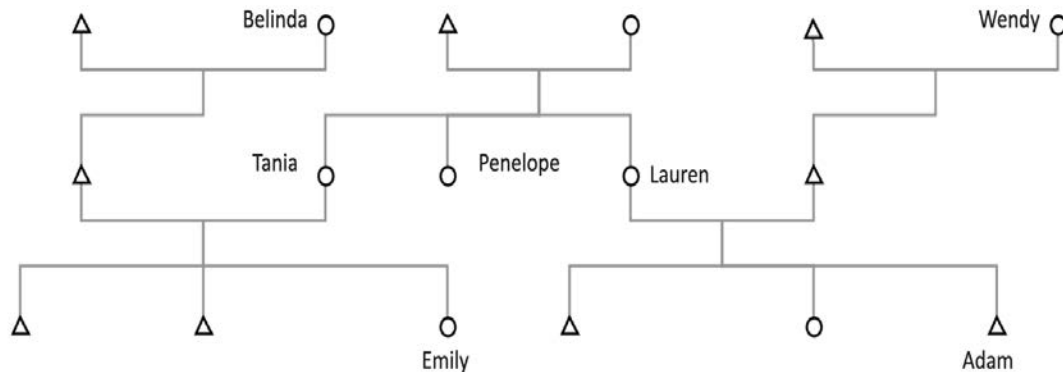
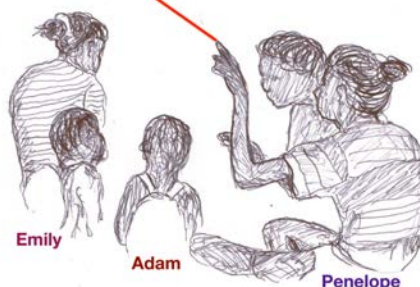


Figure 7: Emily and Adam, their mothers (Tania, Lauren and Penelope), and their paternal grandmothers (Belinda and Wendy).

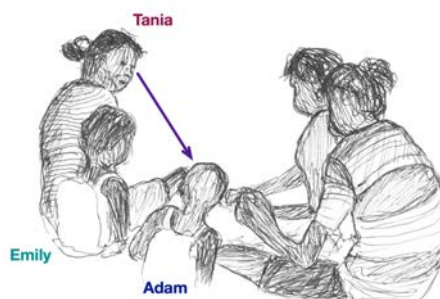
(7) Paternal grandmother is over there! (LAMP20140601WF01_4113737_4160064)

- 1 Pene Ku tek yinda kurrankaykay.
Ku tek yinda
NC:ANM Calyptorhynchus_banksii ANAPH
kurran -kaykay
3SG.S.go6.EXIST-call_out
Red tailed black cockatoo is calling out.
- 2 (3.1)
- 3 Pene *Adam **ma[ka** #Wendy kurran panguya.*
Adam maka Wendy kurran pangu=ya
name FM name 3SG.S.go.EXIST DIST=CL
Adam paternal grandmother Wendy is going over there.
Pene *-----#Fig.10 points into a tree---



- 4 Tania [(ku ngurlmirl ku ngen ngalla warda.
ku ngurlmirl ku ngen ngalla warda
NC:ANM fish NC:ANM flesh big TEMP
The fish was really fat
- 5 pidhaka [wuleththa.)
pidha-ka wule -ath-dha
3SG.S.sit.PIMP-TOP 3SG.S.31.PIMP-eat-PIMP
that it was eating.

- 6 Emily [(**Kawu**ka.)
kawu-ka
MM-TOP
MoMo
- 7 Pene ***Maka** kurran panguya::*****
Maka kurran pangu=ya
MM 3SG.S.go.EXIST DIST=CL
Paternal grandmother is going over there.
Pene **points up into a tree**
- 8 Adam **maka** ngay::*****
maka ngay
FM 1SG
My paternal grandmother?
- 9 (0.3)
- 10 Pene ***maka** nanku * * one:: two::.
maka nanku one two
FM 2DU.SIB
You two siblings' paternal grandmother(s), one two.
Pene **points from Adam->Emily* *points from Emily->Adam**
- 11 Pene ***(0.4) one: ** two:: ***
One two
Pene **--touch@Adam--*--touch@Emily--**
- 12 (4.2)
- 13 Tania ***nangkal maka** ni#nhiyu;*****
nangkal maka ninhi=yu
who FM 2SG=CL
Who is your maternal grandmother?
Tania **---gaze@Adam---#Fig.11-**



- 14 (2.0)
- 15 Emily Ngayka;
Ngay-ka
1SG-TOP
Me.
- 16 (0.1)
- 17 Tania ***nangkal maka** ninhi#yu. *****
nangkal maka ninhi=yu
who FM 2SG =CL
Who is your paternal grandmother?
Tania **----gaze@Emily----#Fig.12**



- 18 (0.2)
- 19 Emily Belinda
- 20 (0.1)
- 21 Tania *°Yu::; ngakumarl niyurnure panguyu;°*=ninhika! *
 yu ngakumarl niyurnu-re pangu=yu ninhi-ka
 yes totem 3SG.F-PERL DIST=CL 2SG-TOP
Yeah her totem {is} around there. You!
*Tania *---gazes around over her shoulder---* *gaze@Adam**
- 22 (2.7)
- 23 Pene ***Maka** ninhika nangkalk murrinh nukun- niyunuyu.
 maka ninhika nangkalk murrinh nukunu nuwunu=yu
 FM 2SG-TOP who NC:SPEECH 3SG.M.[trunct'd] 3SF=CL
Your paternal grandparent, what is hi- her name?
*Pene *-----gaze@Adam*
- 24 (1.2)
- 25 Adam ()
- 26 (0.9)
- 27 Pene Mamba mengkawadha **maka** ninhika nangkalka nuwunuyu.
 mam-mba me -ngkawadha-dha
 3SG.S.say.NFUT-2SG.IO 3SG.S.say.PIMP-say_name -PIMP
 maka ninhika nangkalka nuwunu=yu.
 FM 2SG who-TOP 3SG.F=CL
She said it to you! She was saying the name. Your paternal grandmother, who is she?
- 28 (0.7)
- 29 Emily () Belinda
- 30 (0.4)
- 31 Pene *Ninhika warda.*
 2SG TEMP
You now!
*Pene *---gaze@Adam---*
- 32 (2.1)
- 33 Pene Thudhuth warda thurran (minuwu).
 Thudhuth warda thurran ??
 Swim TEMP 2SG.S.go.NFUT
You were swimming ().
- 34 (0.1)

At line 1 Penelope notices the cockatoo. At line 3 she points up into a tree (Figure 10) and, addressing Adam, asserts that Wendy, his *maka* (FM), is over there. At line 7 she again points up into the tree and asserts that his *maka* is over there. In each case, the kinterm is covertly anchored onto Adam. Adam initiates repair at line 8 by proffering a candidate understanding of the reference *maka ngay* ‘my paternal grandmother?’ At 10 Penelope neither confirms the understanding as being correct (which it is) nor refutes it for being incorrect. Instead, she explicitly anchors the same kinterm onto both Adam and Emily using the second person dual-sibling inflected possessive pronoun *nanku*, “you two siblings’ *maka*” with points from Adam to Emily and back again, before articulating the English numerals *one* and *two* (line 11) whilst touching Adam and Emily in turn, as she pronounces each numeral.

After a 4 second lapse, Tania turns to face Adam and asks him “Who is your maternal grandmother?” (line 13, Figure 11). Her gaze designates him as the targeted recipient of the second person possessive pronoun *ninhi*. When Adam hasn’t responded after two seconds (line 14) Emily prompts Tania to ask her at line 15, *ngayka* ‘me’ (as in, ‘Ask me!’). At line 17 Tania shifts her gaze toward Emily (Figure 12) and asks her the same question. Emily provides the name of her father’s mother, Belinda, at line 19. At line 21 Tania confirms the answer to be correct (*Yu*, ‘yes’) as she gazes around looking for the bird, pointing out that Belinda’s *ngakumarl* (‘clan totem’) is around. She then turns her gaze to Adam and prompts him (*Ninhika*, ‘you_{SG}’) to provide his *maka*’s name (his own *maka* had been mentioned by Penelope at line 3 and Emily’s had been mentioned at line 19). When he hasn’t responded after 2.7 seconds Penelope then asks him at line 23 what his *maka*’s name is. His delayed mumbling at line 25 is incomprehensible. At 27 Penelope adds that Emily had just mentioned a name that would suffice. In the same breath she asks ‘what’s your *maka*’s name?’ Emily again responds with her own *maka*’s name at line 29. The final prompt at line 31 is unsuccessful and from thereon the sequence expires.

There is a lot going on this extract. Birds are being equated with grandmothers. With two types of merger in play¹¹, the three mothers are not exactly dumbing things down for the children. There are however hooks to learning that are surely helpful. Points and eyegaze (which is effectively a type of point) are used to map kinterms onto the participation frame. The target of the point becomes the anchor of the kinterm and even touch is used to unpack the sibling-inflected dual pronoun. Quite how much of all this Adam understands is debatable; but even if he hasn’t internalised it all now, he does have some useful data points that connect his genealogy to Emily’s genealogy, especially through the magical merging of the two grandmothers, Belinda and Wendy, as a single bird, singing out from a tree. This is rich, deeply enculturated social learning and it evidently starts very young. The examples in these extracts set the scene for the abstract systems-level cognition required to navigate one’s way through the jungle of Wadeye’s interconnected genealogies.

7 From the nuclear family to an emerging classificatory system

Kinterms are deictic items that are differentially anchored onto one person at one moment and onto another person the next. Personal names, on the other hand, are locked to the individual as part of their persona. While the name is likely to follow an individual around

¹¹ Belinda is Adam’s FZMH, just as Wendy is Emily’s MZHM. This relationship can be reduced via same-sex- and step-kin mergers to FM (ie., MZHM > MHM >>>FM).

for life, they will be referred to by different people on different occasions, using a range of different kinterms. In Wadeye, kinship socialisation begins while children are still at the *pre-categorical* stage of kinship conceptualisation, when a handful of kinterms are used to designate a small number of very close kin. At this stage the child's use of kinterms is essentially *as* personal names, and they mightn't actually know the names of their very close relatives. Despite this, caregivers use personal names to teach their children about kinship. We see this even in extract (1) where Lauren's inability to pronounce her brother's personal name isn't actually an obstacle that prevents her using the name to instruct her own child about the deictic properties of kinterms.

Prompting routines and quizzes are used to teach children about who they are related to and how. The prompting routines enter a referential frame of imagined reported dialogue in which child anchored kinterms are mapped onto the children's relatives who are usually mentioned by name. By instructing children what to say to whom, both kinterms and names are introduced, and children learn how both names and kinterms have different functions and different pragmatic affordances. The children mightn't necessarily understand all of what they are being instructed to say, but they are nevertheless given the occasion to rote-learn mappings between persons, their names, and the kinterms they should use to address them.

Kinship socialisation transpires within multiparty interaction. Caregivers leverage co-present children, particularly older children with more advanced genealogical knowledge, to help 'teach' the younger children what to say and what to call the younger child's various relatives. Likewise, instruction is delivered multimodally, whereby concrete features of the current participation frame such as gaze, points and touch, link co-present participants to non-present relatives within a remembered or imagined 'storyworld' conversational frame. As such, adults quite literally 'point out' how the people who are present relate to the people they are talking about.

Very young children are sanctioned and corrected when they use the wrong kinterms but it is not clear whether they are ever rewarded for appropriately using the correct terminology. They are implicitly instructed about the categorical equivalence and structural mergers. We don't see explicit explanation of the mechanisms of merger but we do see children being provided with lots of data points, which are nodes within their own genealogies, as well as nodes within other children's genealogies. These help children scale up their use of kinterms from initially as specific terms with small numbers of nuclear referents to the broader category terms with many possible referents. The incorporation of totems into the kinship structure helps children entertain the abstract thinking required to broaden out the kinship domain from a purely genealogical basis.

Although universal kinship with its categorical mergers might seem impenetrably complex to the outsider, this is the social environment into which Wadeye children are born and raised, and of which they will ultimately attain mastery. Life takes place within a sociocultural and linguistic environment that is supersaturated with kinship, and where everyone is kin. So while there is much to learn about the system of relationships, there are countless relatives to learn from and countless opportunities to learn.

Acknowledgements

Many thanks to William Forshaw and Lucinda Davidson for creating the LAMP corpus and to the families in Wadeye who participated in the project. I'm grateful for feedback received

on presentations of this work at the 2019 conference of the Australian Linguistic Society, at CAKTAM (Children’s Acquisition of Kinship Knowledge: Theory and Method) in Bristol in 2018, and at seminars presented at Macquarie University in 2021 and James Cook University in 2022. Huge thanks to Jeremiah Nguvidirr Tunmuck, Peter Withers, Kinngirri Carmelita Perdjert, Loraine Tunmuck for feedback, advice, and support; and to Jeannie Messer, Margaret Chi and Greg Flannery for research assistance. This research was funded by the Australian Research Council (DE130100399, DP110100961).

Morphological glosses

ANAPH: anaphoric	NC:VEG: ‘vegetable’ noun classifier
CL: clitic	NEG: negator
DIST: distal	NFUT: non-future
DU: dual	NSIB: non-sibling
EXIST: existential	OIR: other initiation of repair
F: feminine	PERL: perlativ
FUT: future	PIMP: past imperfective
IO: indirect object	PROX: proximal
M: masculine	S: subject
NC:ANM: ‘animate’ noun classifier	SG: singular
NC:FIRE: ‘fire’ noun classifier	SIB: sibling
NC:PL/T: ‘place/time’ noun classifier	TEMP: temporal adverbial
NC:SPEECH: ‘speech’ noun classifier	TOP: topicaliser

Kinship abbreviations

B: brother/brother’s	W: wife/wife’s
C: child/child’s	Z: sister/sister’s
D: daughter/daughter’s	♂: male’s
F: father/father’s	♀: female’s
H: husband/husband’s	> same-sex sibling merger
M: mother/mother’s	>> half-sibling merger
S: son/son’s	>>> step-kin merger
Sp: spouse/spouse’s	

Transcription symbols

[] overlapping speech
^ pitch upstep, ^high pitch^
~ pitch downstep, ~low pitch~
? high rising terminal intonation
ˆ mid-rising terminal intonation
, low-rising (listing) intonation
; mid-rising terminal intonation
. falling terminal intonation
! emphatic delivery
: prolongation
> < compressed talk
°soft°, °°very soft°°

* alignment of gesture/gaze with speech
 ---duration of gesture/gaze---
 # alignment of figure with speech

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