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The theory of feature systems: One feature versus two for Kayardild tense-aspect-mood

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Abstract Features are central to all major theories of syntax and morphology. Yet it can be a non-trivial task to determine the inventory of features and their values for a given language, and in particular to determine whether to postulate one feature or two in the same semantico-syntactic domain. We illustrate this from tense-aspect-mood (TAM) in Kayardild, and adduce principles for deciding in general between one-feature and two-feature analyses, thereby contributing to the theory of feature systems and their typology.

Kayardild shows striking inflectional complexities, investigated in two major studies (Evans 1995a; Round 2013), and it proves particularly revealing for our topic. Both Evans and Round claimed that clauses in Kayardild have not one but two concurrent TAM features. While it is perfectly possible for a language to have two features of the same type, it is unusual. Accordingly, we establish general arguments which would justify postulating two features rather than one; we then apply these specifically to Kayardild TAM. Our finding is at variance with both Evans and Round; on all counts, the evidence which would motivate an analysis in terms of one TAM feature or two is either approximately balanced, or clearly favours an analysis with just one.

Thus even when faced with highly complex language facts, we can apply a principled approach to the question of whether we are dealing with one feature or two, and this is encouraging for the many of us seeking a rigorous science of typology. We also find that Kayardild, which in many ways is excitingly exotic, is in this one corner of its grammar quite ordinary.

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Abbreviations

ABL	ablative
ABLC	compass ablative
ABS	absolutive
ACC	accusative
ACT	actual
ALL	allative
ALLC	compass allative
ANTE	antecedent
AOBL	associating oblique
APPR	apprehensive
c	complementized full clause
CASEN	nominal case
CASEP	pronominal case
CAUS	causative
CNTRFCT	counterfactual
COLL	collative
COMP	complementization
CONS	consequential
CONT	continuous
DAT	dative
DES	desiderative
DIR	directed
DP	determiner phrase
e	embedded VP
EMO	emotive
ERG	ergative
FUNC	functional
FUT	future
HORT	hortative
IMM	immediate
IMP	imperative
INCH	inchoative
INCIP	incipient
INS	instantiated
J	thematic element
LOC	locative
LLOC	long locative
μ	morphomic
MABL	modal ablative
MALL	modal allative
MOBL	modal oblique
MLOC	modal locative

MPROP	modal proprietive
NEG	negative
NEGAT	negatory
NMLZ	nominalization
NOM	nominative
NONVER	nonveridical
OBL	oblique
PL	plural
POSS	possessive
POT	potential
PREC	precondition
PRES	present
PRIOR	prior
PRIV	privative
PROG	progressive
PROP	proprietive
PST	past
RDP	reduplication
RES	resultative
SEJ	sejunct
SG	singular
TAM	tense-aspect-mood
TAMA	athematic tense-aspect-mood
TAMT	thematic tense-aspect-mood
TAMV	verbal tense-aspect-mood
TH	thematic element
u	uncomplementized full clauses
VP	verb phrase
ZERO	zero

1 Introduction

We discuss a fascinating issue in Kayardild. Anyone who has read Evans' grammar (1995a) is likely to have come away thinking that this is an amazing language. And Round (2013) shows that Kayardild is both more exotic and in other ways more "normal" than Evans suggests. Here we focus on one key issue in the analysis of Kayardild, namely the feature(s) of tense, aspect and mood (TAM). Both Evans and Round provide analyses in which Kayardild has two, concurrent features for TAM.[1] Now this issue is itself of quite general interest. We normally expect to find that a language has, say, a case feature, which takes some range of values. Or it has no case feature, but hardly two case features, each with its own distinct set of values, operating concurrently within the clause. And while we do occasionally meet analyses which include concurrent features, this whole issue is rarely discussed (though

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[1]This is therefore different to the issue discussed by Frajzyngier (2004), where languages appear to have two TAM systems in complementary distribution, such that a given clause makes use of only one of them.

Goddard 1982 on case is an interesting exception). We will therefore revisit the issue of Kayardild's TAM feature(s). Our first aim is to elucidate the arguments which, more generally, are appropriate to support arguments in favour of one feature or two features. We then find that investigating the appropriate feature structures in this way leads us to question the previous analyses, to investigate the data further, and eventually to propose a more satisfying analysis. In short, we discuss a key theoretical issue, and we reanalyse a challenging system in a more elegant way.

1.1 Kayardild

Kayardild is a language of the non-Pama-Nyungan, Tangkic family of northern Australia; traditionally it was spoken primarily on Bentinck Island in the south of the Gulf of Carpentaria. Typologically, it can be characterized as an agglutinative, purely suffixing, dependent-marking language with nominative–accusative argument alignment. It has a fixed word order in DPs, but otherwise word order is free, to the extent that any order appears to be possible under appropriate contextual conditions. DPs and certain verbs of movement and transfer are freely elided if the meaning is recoverable from context. The language is treated in a comprehensive grammar (Evans 1995a), and in a formal analysis of morphology and syntax (Round 2013); see also Arkadiev (in press) for a careful comparison of these two works. Kayardild is of interest to us here because two substantial analyses have both characterized the majority if not all of Kayardild's clause types as involving two separate yet concurrent tense-aspect-mood (TAM) features: **VERBAL TAM** and **MODAL CASE** (Evans 1995a), or **THEMATIC TAM** and **ATHEMATIC TAM** (Round 2009, 2013). Consequently, the TAM system of Kayardild is 'exotic' in the sense mentioned above, and for that reason is of wide theoretical interest.

TAM in Kayardild is also interesting because many morphological patterns in the language are by their nature open to multiple analyses. Particularly significant in this respect is the abundance of morphological exponents that are polyfunctional, an issue to which we return in Sect. 3.1.

1.2 Claim and outline

Our central claim will be that, contrary to the analyses by both Evans (1995a) and Round (2009, 2013), Kayardild does not have two TAM features. Rather, measured against a range of criteria, an analysis based on a single TAM feature is the better motivated alternative. It will be important to be clear about our terms. By a feature we mean a category of grammatical meaning, such as **NUMBER**. A feature comprises a discrete class of contrasting values, such as SINGULAR, PLURAL, DUAL and so on. For clarity, we use **SMALL CAPITALS AND BOLD** for features and SMALL CAPITALS for their values.

The paper is structured as follows. We begin by foregrounding the key theoretical point, the logic of differentiating features (Sect. 2). We then outline previous analyses of Kayardild TAM in Sect. 3, taking the opportunity to explain the essentials of the system and to elucidate why we need to go beyond current accounts. This leads naturally to a review of the evidence, the results of which we summarize in Sect. 3, with

Table 1 Forms for Russian
devuška 'girl' and *mal´čik* 'boy'

	SINGULAR	PLURAL	SINGULAR	PLURAL
NOMINATIVE	devuška	devuški	mal´čik	mal´čiki
ACCUSATIVE	devušku	devušek	mal´čika	mal´čikov
GENITIVE	devuški	devušek	mal´čika	mal´čikov
DATIVE	devuške	devuškam	mal´čiku	mal´čikam
INSTRUMENTAL	devuškoj	devuškami	mal´čikom	mal´čikami
LOCATIVE	devuške	devuškax	mal´čike	mal´čikax

detail provided in the Appendix. We then bring the core theoretical concern together with our empirical material, to demonstrate how and why a reanalysis of Kayardild TAM is warranted. We do this based on our criteria for differentiating features, as we consider in turn: orthogonality (Sect. 4), compositionality (Sect. 5), licensing in clause types (Sect. 6), distribution within the clause (Sect. 7) and exponence (Sect. 8). Finally, we offer conclusions both on TAM in Kayardild and on its significance for the theory of feature systems (Sect. 9).

2 The logic of differentiating features

At this initial point, it is worth asking why we use features, and how we determine the number of features and of their values. This will provide the basis for debating the best analysis of Kayardild TAM.

2.1 Reasons for differentiating one feature from another

Let us take a simple example to clarify the central issues. Consider the paradigm of two types of Russian noun in Table 1.

What are the claims inherent in this layout, and how do we justify them? We generally assume that there is a difference between lexical meaning and more abstract grammatical meaning. We need rather specific, concrete information to learn the appropriate use of *devuška* 'girl' and *mal´čik* 'boy'. On the other hand, the choice between *devuška* 'girl' and *devuški* 'girls' is based on more abstract grammatical meaning. We model this using the feature NUMBER, with the values SINGULAR and PLURAL. The choice between SINGULAR and PLURAL cross-cuts the choice based on lexical meaning; they are different types of information. Thus if we learn a new noun, we do not need to relearn the difference between SINGULAR and PLURAL for it. We say, then, that NUMBER is orthogonal to lexical meaning, and we model it with a feature. Thus *devuška* 'girl' and *devuški* 'girls' are forms of the same lexeme, and they vary for values of NUMBER.[2]

Besides NUMBER, Russian nouns also make distinctions of CASE. These case distinctions are orthogonal to lexical meaning: if we know what *devuška* 'girl' means,

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[2]We recognize that NUMBER is not fully orthogonal to lexical meaning: not all nouns have a plural, though there are established regularities as to which these are likely to be in a given language (Corbett 2000: 54–88).

and we know the circumstances in which the GENITIVE is appropriate in Russian, then we know when to use the GENITIVE of *devuška* 'girl'. Most important for us, just as NUMBER and CASE are both orthogonal to lexical meaning, so they are orthogonal to each other. That is, each CASE value is found in each NUMBER value, and each NUMBER value is found in each CASE value.[3] It is evident that the representation in Table 1 makes sense: the alternative, suggesting that there is a single feature with twelve values, would be uneconomical, and would miss important generalizations of several kinds, which we mention now.

That the features are orthogonal to each other is reflected first in semantics, where we find (in the canonical instance) compositionality. That is to say, given the lexical semantics of a lexeme, and the characterization of the feature values in its feature specification, we can predict the meaning of the whole. That is, if we know what *devuška* means, and we know the grammatical meaning of PLURAL and of DATIVE, we know the meaning of *devušk-am* ('girl-PL.DAT').[4]

A further aspect of the distinctness of the features NUMBER and CASE in the Russian nominal system is that they are subject to different rules. Thus Russian verbs agree with their subject in NUMBER, but not CASE. Conversely, they govern CASE, as do prepositions, and they do so irrespective of NUMBER. That is, when we say that a preposition governs a particular case value in Russian (e.g. INSTRUMENTAL) we need make no reference to number: it will govern the INSTRUMENTAL whether the noun is SINGULAR or PLURAL.[5]

We should now consider the issue of exponents. The different forms of the lexemes in Table 1 can be distinguished in terms of their exponents. But while we can distinguish, say, the GENITIVE SINGULAR from the DATIVE SINGULAR in Russian, we cannot pull apart CASE and NUMBER. We cannot point to the expression of GENITIVE or DATIVE. Case values in Russian are realized cumulatively with number values. If they could be separated (as happens in languages like Turkish), that would further strengthen the analysis in terms of two distinct features, since the differences in grammatical meaning would be reflected straightforwardly in different forms.[6]

A final type of argument in favour of the analysis of CASE and NUMBER as distinct features in Russian comes from typology. We have seen instances like the NUMBER feature of Russian in a variety of languages, with or without a CASE feature. Equally we have seen other CASE features like that of Russian, with or without a NUMBER

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[3]There is more to be said about case and number in Russian, since there are additional, less straightforward case values; for the detail, see Corbett (2012: 200–222).

[4]Of course, the meaning of the PLURAL, for instance, is not always fully predictable. While lexical and grammatical meaning do not intersect perfectly, the established approach in linguistics seems right here.

[5]There are instances in the literature where a case value appears to depend on the number value; the interest which these arouse serves to demonstrate the strength of the expectation that this should not occur. See Corbett (2010) for an analysis of the famous example of Latvian.

[6]Not all the forms in Table 6 are distinct. Some that are identical in form have different featural descriptions; for instance, in the second paradigm the form *mal'čika* is both ACCUSATIVE SINGULAR and GENITIVE SINGULAR of *mal'čik* 'boy'. This is an instance of syncretism, the use of a single form for more than one function. The assumption which prompts both these non-obvious mappings between the forms and their specifications is the principle that syntax is 'morphology free'. We aim for simple rules of syntax, referring to featural specifications such as ACCUSATIVE, not rules which have access to the way in which such specifications are realized for particular nouns.

feature. And indeed, there are several languages with **NUMBER** and **CASE** interacting in a way similar to that of Russian. The typological perspective is invaluable, and helps us avoid suggesting a novel analysis for something that is typologically well-established. Nevertheless, we also need to guard against the danger of forcing a system into a familiar type and missing its particular interest.

Our theoretical reason for pursuing Kayardild TAM further is the general point that having two features of the same type is rare. We are used to finding systems of different types (like **CASE** and **NUMBER**). Similarly we know that a particular feature may be present or absent (many languages have case features and many do not). But it is unusual to find a language with two concurrent features of the same type. To take the argument further, we consider one area where concurrent features in fact have been proposed rather frequently.

2.2 Deceptive exponence: when one feature masquerades as two

There is one linguistic area, where proposals for concurrent features were made in various accounts, and where a careful argument was then made against them. Languages of Australia have often been analysed in terms of 'split ergativity', according to which there are two concurrent case features; for instance, different systems may be suggested for pronouns and nouns. In an important paper, Goddard (1982: 167) claims that 'the common belief that a typical Australian language has two case systems co-existing within it is mistaken'.

To get to the issues involved we will look at the case marking of subjects and direct objects in Guugu Yimidhirr (Pama-Nyungan), a language which Goddard mentions though it is not one that he analyses. The data are from Haviland (1979), discussed in Baerman et al. (2005: 42–45) and in Corbett (2012: 181–184). Haviland treats subject and object pronouns as distinguishing NOMINATIVE and ACCUSATIVE values of what we might call **CASEP** (pronominal case). The NOMINATIVE is used for the subject of transitive and intransitive verbs as in (1), (2), and the ACCUSATIVE for the direct object as in (1).

Guugu Yimidhirr

(1) Ngayu   nhinaan yiimuun gunda-l
     1SG.NOM 2SG.ACC this.ERG[7] hit-NON_PST
     'I'll hit you with this (thing I have here).'   (Haviland 1979: 73)

(2) Nyundu   nhaa-wal~a!
     2SG.NOM see-IMP~RDP[8]
     'You keep on looking.'   (Haviland 1979: 84)

Nouns and demonstratives however are analysed by Haviland as distinguishing ERGATIVE and ABSOLUTIVE values of what we might call **CASEN** (nominal case).

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[7]Haviland (1979: 73) glosses this as instrumental. However, in Guugu Yimidhirr the INSTRUMENTAL is always identical to the ERGATIVE (1979: 47); we gloss it as ERGATIVE. This is because giving two case value labels to a form which never distinguishes them, sometimes called 'absolute syncretism', confuses syntactic function with morphological realization and we wish to avoid this.

[8]Reduplication (here partial) is indicated by ~ in the Leipzig Glossing Rules.

Table 2 Guugu Yimidhirr as two **CASE** features

CASEP	CASEN	
NOMINATIVE	ERGATIVE	Transitive subject
	ABSOLUTIVE	Intransitive subject
ACCUSATIVE		Direct object

When a noun appears in the subject noun phrase of a transitive verb, its case value is ERGATIVE, as in (3). When a noun is in an intransitive subject or direct object, it is ABSOLUTIVE, as in the first and second clauses of (4) respectively.

Guugu Yimidhirr

(3)   Gabirr-inh nhaamuun nganhi   bulii-ma-ni.
      girl-ERG   that.ERG   1SG.ACC fall-CAUS-PST
      'That girl made me fall.'   (Haviland 1979: 100)

(4)   Buligi   gada-y,   nyulu   nhaayun gunda-y.
      bullock[ABS] come-PST 3SG.NOM that.ABS kill-PST
      'The bullock came and he killed it.'   (Haviland 1979: 73)

Given just the pronouns, we could analyse Guugu Yimidhirr as having a NOMINATIVE-ACCUSATIVE system of **CASE**. With just the evidence of nouns we would say that it was ERGATIVE-ABSOLUTIVE. As noted above, systems where both occur concurrently are often termed systems of 'split ergativity', and they may appear to involve the presence of two concurrent **CASE** features. Thus in Guugu Yimidhirr, **CASEP** is realized on pronouns and distinguishes the values NOMINATIVE and ACCUSATIVE, while **CASEN** on nouns distinguishes different values, ERGATIVE and ABSOLUTIVE. Moreover, correspondences between values of the two concurrent features are not one-to-one, as shown in Table 2.

According to this analysis, the syntax-morphology interface is somewhat complex. The verb, for example, would need either to 'peek' ahead to see the part of speech of its arguments in order to determine which **CASE** feature and value to assign, or it would always assign both **CASEP** and **CASEN**, though only one of those two features would ever be realized on any given word.

An alternative analysis involves treating Australian languages like most other languages of the world with **CASE** features. This is what Goddard (1982) recommends. If we have just one **CASE** feature for Guugu Yimidhirr, we say that an intransitive verb assigns to its subject a value of **CASE** which we may label NOMINATIVE-ABSOLUTIVE,[9] for instance, *ngayu* 'I' or *buligi* 'bullock'. A transitive verb assigns **CASE**:ERGATIVE to its subject (for instance, *ngayu* 'I' or *gabirrinh* 'girl') and **CASE**:ACCUSATIVE to its object (for instance, *nganhi* 'I' and *nhaayun* 'that'). Consequently, we are dealing with three distinct values of just one **CASE** feature,[10] as in Table 3.

[9]This label is mnemonic; we could label the values 1, 2, 3 and so on.

[10]Guugu Yimidhirr also has several additional case values, which would be shared if we had two features.

Table 3 Guugu Yimidhirr as a single **CASE** feature; also indicating syncretism across values, on pronouns and full nouns

CASE	Syncretism on		
	pronouns	full nouns	
ERGATIVE			Transitive subject
NOMINATIVE-ABSOLUTIVE			Intransitive subject
ACCUSATIVE			Direct object

There are additional facts which support this analysis, of which we mention one. In Guugu Yimidhirr, noun phrases referring to animates normally include a pronoun in initial position, even where there is also a full nominal, as in (5).

Guugu Yimidhirr

(5)   [Nyulu   bidha-al ₙₚ] [warrbi ₙₚ] dumbi
        3SG.NOM child-ERG   axe[ABS]   break.PST (glossing: two features)
        3SG.ERG child-ERG   axe[ACC]   break.PST (glossing: one feature)
        'The child broke the axe.'   (Haviland 1979: 101)

The combination of forms in the initial noun phrase makes an analysis with a single **CASE** feature more economical: the elements of the noun phrase are inflected for the same, single morphosyntactic feature.

A point that we wish to make here is that although there are sound reasons to reject the two-feature analysis of **CASE** in languages such as Guugu Yimidhirr, there are reasons why it was proposed in the first place which are worth noting. If we look at Table 2, we see that the analysis in terms of two features (**CASEP** and **CASEN**) and their values does two things. First, it hugs tightly to the contours of syncretism in the vertical direction: where two cells share their exponent, the analysis assumes that they do so because they share their feature value. Goddard, however, emphasizes that Australian case systems are just like any other inflectional system; they can exhibit syncretism which obscures the underlying grid of feature values. Consequently, to reach a valid analysis, evidence beyond mere exponence must be given weight. Second, the two-feature analysis interprets the divergence in syncretism between pronouns and full nouns as due to two distinct features, whose values fail to correspond one-to-one. Again, the two-feature analysis overly attributes characteristics of exponence to the underlying feature system; other evidence must be weighed before concluding that divergent syncretism across two word (or stem) classes is a symptom of the presence of distinct features.[11] What we see here, is that once a range of factors have been weighed up, an analysis in terms of one feature may emerge as the most compelling, even when exponence *per se* lends it little direct support.

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[11]We should also consider patterns of divergent syncretism within the same word. We would expect it to be harder to demonstrate concurrent systems here. See Evans (2015: 544–552) for interesting discussion of the verbal morphology of Nen, where there are different patterns of syncretism within the prefixes and suffixes, but it proves impossible to maintain an analysis in which they are distinct concurrent systems.

2.3 Two features or one, from the evidence

Having said that finding two features of the same type is unusual, and that certain suggested systems are better analysed in another way, we do not wish to imply that concurrent systems are impossible. Rather we are now ready to weigh up the evidence for Kayardild TAM. Does it support an analysis broadly in line with Evans (1995a) and Round (2013), in terms of two TAM features, or an analysis in terms of just one? In Sects. 4–8 we will do this by assessing the evidence from five key properties of the Kayardild TAM system: we examine the orthogonality of features in Sect. 4; semantic compositionality in Sect. 5; licensing of TAM types in various clause structures in Sect. 6; the distribution of TAM inflection across smaller clausal constituents in Sect. 7; and exponence and syncretism in Sect. 8.

3 Previous accounts of TAM in Kayardild

We turn now to Kayardild and its TAM system. In Sect. 3.1 we begin with a discussion of morphological polyfunctionality and its central place in any analysis of Kayardild morphology. Then we outline the accounts of TAM in Kayardild due to Evans (1995a) in Sect. 3.2 and Round (2013) in Sect. 3.3, Kayardild's three morphosyntactic clause structures in Sect. 3.4, and the treatment of polarity by Evans and Round in Sect. 3.5. We summarize the points of consensus in these analyses in Sect. 3.6, and in Sect. 3.7 we detail reasons to go further. As we shall see, the validity of certain aspects of previous accounts could be clarified by additional empirical data. Consequently, we conducted a corpus study to this effect. Results are summarized in Sect. 3.8, and details appear in the Appendix. At the conclusion of Sect. 3 we will have all the essentials for our central analytical and theoretical inquiry in Sects. 4–8. (Readers who require the barest outline only may go straight to Sect. 3.6.)

3.1 Polyfunctionality in Kayardild morphology

Polyfunctionality of morphological formatives is abundant in Kayardild, and presents two analytic challenges. First, one must account for why clusters of forms all share multiple functions, or equally, why clusters of functions share multiple forms; this challenge pertains to the analysis of the morphological system as a whole. Second, when considering individual utterances, and thus being confronted with a given instance of a form, one must decide which function out of a cluster of possibilities it fulfills.

With respect to analysing the system as a whole, Evans (1995a), following Dench and Evans (1988), handles the polyfunctionality of morphological exponents primarily by positing the existence of several, distinctly different, functions of CASE, where 'CASE' assumes the status of an umbrella concept. For example, the marker -*(k)u((r)u)* is analysed as a marker of the PROPRIETIVE value of CASE. The several functions of PROPRIETIVE CASE are the ADNOMINAL PROPRIETIVE which relates a DP to another DP, the RELATIONAL PROPRIETIVE which relates a DP to its clause, and the MODAL PROPRIETIVE which conveys TAM semantics marked primarily on

nominals.[12] Likewise, the OBLIQUE **CASE** marker *-inja*/*-ntha* has functions that are **RELATIONAL**, relating DP to clause; **MODAL**, conveying TAM semantics; or **COMPLEMENTIZING**, relating clause to clause. In a sense then, each of the various functions of **CASE** operates as a distinct morphosyntactic feature with its own semantico-grammatical domain and its own set of values. However, when we look across these morphosyntactic features, we repeatedly find values with labels in common (such as PROPRIETIVE, found as a value of **ADNOMINAL CASE**, **RELATIONAL CASE** and **MODAL CASE**), and moreover, such values with a shared label have shared exponents. In this manner, Evans (1995a) captures unity of form including diverse allomorphy, crossed with diversity of function, through an umbrella notion of **CASE**.[13],[14]

Notwithstanding the mileage which Evans gets from this construal of **CASE**, a wrinkle in the analysis is its handling of **VERBAL TAM**, henceforth **TAMV**. Recall that the success of the umbrella notion of **CASE** is that it captures commonalities of form which range across a diversity of function. In Evans (1995a), **TAMV** is Kayardild's second TAM feature. **TAMV** is marked primarily on verbs, and like **MODAL CASE** it functions semantically to signal TAM categories. Moreover, like all of the various functions of **CASE**, **TAMV** employs exponents such as *-(k)u((r)u)* and *-inja*, with allomorph sets which are the same as those used in the polyfunctional **CASE** system. At face value then, it would appear only logical to incorporate **TAMV** as yet another function under the umbrella of **CASE**. However, doing so would produce an anomalous result, according to which Kayardild would exhibit profusely polyfunctional **CASE**, yet have no **TENSE** at all. Thus we see a tension in Evans' analysis of Kayardild. The umbrella notion of **CASE** serves the purpose of accounting for polyfunctional forms, yet paradoxically, extending **CASE** to Kayardild's full range of polyfunctionality would lead to a situation in which even tense would be a function of **CASE**.[15] Evans (1995a: 255) elects to keep **TAMV** separate from **CASE**, even though its values share the same commonalities of form that justify the united analysis of **CASE**. (See Round 2013: 181–189 for discussion of further tensions in the system.)

Round (2009, 2011, 2013, 2015) argues that forms such as *-(k)u((r)u)* and *-inja*/*-ntha* belong neither to 'CASE' nor 'TAM' categories *per se*, but to categories of pure morphology, which Aronoff (1994) terms morphomes. These morphomic categories, which are units of analysis unto themselves, then relate on the one hand to sets of allomorphs and on the other hand to sets of morphosyntactic feature values. These feature values include Kayardild's two TAM features, its complementization features, and **CASE** (now construed narrowly, as a relation between DPs and superordinate constituents). Under this analysis, the link between clusters of forms and clusters of functions is always mediated by a shared morphomic category. It is no longer necessary, either to build an umbrella notion of **CASE**, or to divorce the analysis of

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[12]See Nordlinger and Sadler (2004a) for TAM marking on nominals in cross-linguistic perspective.

[13]Of course, we are used to case values having different functions, as with the subjective genitive, objective genitive and possessive genitive. Evans gathers much more diverse functions under the notion **CASE**.

[14]For a formal implementation of Evans' system in Lexical Function Grammar, see Nordlinger (1998), Nordlinger and Sadler (2004b).

[15]For an analogous argument on the attempt to incorporate person into gender in Archi, see Corbett (2012: 239–251) and Baerman and Corbett (2013).

tense from the remainder of the system. It also allows us to discuss polyfunctionality in a manner which treats Kayardild's various morphosyntactic features more evenly.

Turning now to the second point, the interpretation of individual utterances, it is significant for our present concerns that polyfunctionality of morphological forms can lead in certain instances to an ambiguity of analysis in which multiple analyses are viable. For example, in a particular sentence, a marker *-(k)u((r)u)* might plausibly be interpreted either as an exponent of a CASE value, or of a TAM value. As we will see, this can influence our picture of the TAM system itself, once we scrutinize clause types where the stock of putative tokens is small and arguably ambiguous.

3.2 TAM in Evans (1995a)

Evans (1995a) posits two TAM features for most clause types in Kayardild. A typical example is (6).

(6) *Ngada   kurri-nang-ku mala-wu   (balmbi-wu).*
     1SG.NOM see-NEG-POT sea-MPROP tomorrow-MPROP
     'I won't (be able to) see the sea (tomorrow).' [E404.ex.10-12][16]

In (6), the first TAM feature, TAMV, takes the POTENTIAL value (glossed POT) and is marked on the verb. The second TAM feature, MODAL CASE, takes the PROPRIETIVE value, and is marked on the direct object and the adverbial nominal *balmbi* 'tomorrow'. Evans' MODAL CASE is thus a feature concerned with TAM values, rather than with typical case semantics. Typical case semantics are encoded by RELATIONAL CASE, such as the NOMINATIVE RELATIONAL CASE which appears in (1) on the subject (note that Kayardild does not have any dedicated marker of ACCUSATIVE RELATIONAL CASE). Turning back to the TAM features, we can observe that more generally, values of the TAMV are marked on verbs and on nominals which are inflected for a specific set of so-called 'verbal(izing)' values of RELATIONAL CASE. MODAL CASE appears on direct objects and most other non-subject nominal constituents of the clause (Evans 1995a: 412ff). Example (7) is similar to example (6).

(7) *Ngada   kurri-nang-ku mala-y   (barruntha-y).*
     1SG.NOM see-NEG-POT sea-MLOC yesterday-MLOC
     'I could not see the sea (yesterday).' [E404.ex.10-13]

Examples (6) and (7) have in common the TAMV value POTENTIAL, while their values of MODAL CASE differ, between PROPRIETIVE in (6) and LOCATIVE in (7). This shows us that the value of MODAL CASE is not fully predictable from the value of TAMV,[17] and thus Evans emphasizes that the two features, TAMV and MODAL CASE, cannot be conflated into one. Example (8) shows that predictability is also lacking in

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[16]We cite sources of examples as follows: those from Evans (1995a) and Round (2013) are cited as [Epp.ex.ee-ee] and [Rpp.ex.ee-ee] respectively, where pp is page number, ee-ee the original example number; from Round's recordings (Round 2005, 2007), as [Ryyyy-mmm-dd]; from Wurm's (1960) recordings as [W1960]; from Tindale's (1963) recordings as [T1963]; and from Evans' (1982–1998) recordings, as [Eyyyy].

[17]In this section, glossing of examples is after Evans (1995a).

Table 4 **TAMV** and **MODAL CASE** values in sentences (6)–(12) after Evans (1995a)

Sentence, clause	TAMV	MODAL CASE
(6)	POTENTIAL	PROPRIETIVE
(7)		LOCATIVE
(8)	————	
(9) second clause	APPREHENSIVE	PROPRIETIVE
(10)		
(11)	DESIDERATIVE	OBLIQUE
(12)	HORTATIVE	

the reverse direction: examples (7) and (8) share their **MODAL CASE** value LOCATIVE, but differ in their values of **TAMV**, between POTENTIAL in (7) and APPREHENSIVE in (8).

(8) *Thararra   kali-nyarra wambal-iya,   naa-nyarr.*
     ember[NOM] jump-APPR bush-MLOC[18] burn-APPR
     '(Look out), the embers are jumping into the bush, it might burn.' [E405.ex.10-16]

Thus, although there are many specific cases of redundancy, in which one can predict **MODAL CASE** given the value of **TAMV** and vice-versa, such predictions are not possible across the board, and in the general case, values of **TAMV** and **MODAL CASE** can vary freely (Evans 1995a: 398–406). Additional instances are summarized in Table 4, and illustrated in the sentences that follow.

In (8), (9), (10), the **TAMV** value is APPREHENSIVE, while the **MODAL CASE** values vary meaningfully between PROPRIETIVE, LOCATIVE and OBLIQUE.

(9) *Nying-ka ngudi-na   wangalk,   ngada   ngumban-ju*
     2SG-NOM throw-NEG.IMP boomerang[NOM][19] 1SG.NOM 2SG-MPROP
     burldi-nyarr.
     throw-APPR
     'Don't you throw the boomerang, or I'll throw one at you.' [E205.ex.10-15]

In (10), (11), (12) the **MODAL CASE** value OBLIQUE remains constant, while **TAMV** varies between APPREHENSIVE, DESIDERATIVE and HORTATIVE.

(10) *Dathin-a wanku   baa-nyarra ngijin-inj.*
      that-NOM shark-NOM bite-APPR   1SG-MOBL
      'That shark might bite me.' [E204.ex.5-20]

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[18]One might well ask whether the *-iya* of *wambal-iya* marks the LOCATIVE **RELATIONAL CASE** (for locations) or the LOCATIVE **MODAL CASE** (i.e., TAM). In Kayardild, location nominals generally cannot be marked for both the LOCATIVE **RELATIONAL CASE** and for TAM, and TAM will always win out (see Round 2013: 146–150). Thus, if we assume that *wambal-* is a location, and that the clause is truly associated with LOCATIVE **MODAL CASE**, then we can be sure that the marker *-iya* is LOCATIVE **MODAL CASE**. However, this does require the assumption that the TAM value in (8) is indeed the same as in (7), and here we face a case of the kind of ambiguity discussed in Sect. 3.1. See Appendix A.5 for further analysis of these cases, including precisely this sentence, (8).

[19]In Kayardild, direct objects of imperatives take the NOMINATIVE **RELATIONAL CASE**.

Table 5 Features used in sentence types (6)–(15) after Evans (1995a)

Sentence, clause	After verb stems	After nominal stems
(6)–(12)	**TAMV**	**MODAL CASE**
(13)	NOMINALIZATION & PRIVATIVE **CASE**	LOCATIVE **MODAL CASE**
(14) first clause	CONSEQUENTIAL **CASE**	CONSEQUENTIAL **CASE**
(15)	NOMINALIZATION	**ASSOCIATING CASE** & ZERO **MODAL CASE**

(11)   *Dan-inja   nga-l-da jalji-nja   wirdi-d.*
       here-MOBL 1-PL-NOM shade-MOBL stay-DES
       'We should stay here in the shade.' [E263.ex.7-30]

(12)   *Wakatha   nguku-ntha yalawu-jinj.*
       sister[NOM] water-MOBL fetch-HORT
       'Sister should fetch some water.' [E264.ex.7-36]

Let us now mention some additional details. In certain clause types, one or both of Evans' TAM features can be absent, and other features may be used instead. We illustrate this in the following examples, and summarize their usage of features, including combinations other than {**TAMV** and **MODAL CASE**}, in Table 5.

In (13) the verb is inflectionally nominalized and inflected with the PRIVATIVE **CASE** and so does not carry **TAMV** inflections (Evans 1995a: 403–404), though the direct object is still inflected for **MODAL CASE**, in this instance the LOCATIVE.

(13)   *Ngada   kurri-n-marri   dathin-ki bijarrba-y.*
       1SG.NOM see-NMLZ-PRIV that-MLOC dugong-MLOC
       'I didn't see that dugong.' [E237.ex.9-237]

In the first clause of (14) both **TAMV** and **MODAL CASE** are absent. The nominalized verb carries a CONSEQUENTIAL **CASE** marker (and no **TAMV**), as does the direct object which therefore carries no **MODAL CASE** (Evans 1995a: 480).

(14)   *Ngada   kurri-n-ngarrba duujin-ngarrba   wuu-ju wuran-ku*
       1SG.NOM see-NMLZ-CONS younger.brother-CONS give-POT food-MPROP
       niwan-ju.
       2SG-MPROP
       'When I see younger brother I'll give him the food.' [E205.ex.11-72]

In (15) the verb is nominalized and the direct object is inflected with the OBLIQUE **ASSOCIATING CASE**. Following Dench and Evans (1988), **ASSOCIATING CASE** is analysed in Evans (1995a) as a **CASE** function distinct from **MODAL CASE**; in (15) **MODAL CASE** takes a 'ZERO' value.[20]

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[20]In contrast to sentences (13) and (14), Evans' interpretation of sentences such as (15) is that the verbal nominalizer does carry TAM information (Evans 1995a: 253–257, 266). The object has what Evans calls a 'ZERO' **MODAL CASE**, i.e., a **MODAL CASE** value whose exponent is null (Evans 1995a: 399, fn. 1, 472), though see also Evans (1995a: 266) for a different formulation.

(15)   *Ni-ya   kala-n-da   thungal-inj.*
       3SG-NOM cut-NMLZ-NOM tree-AOBL
       '(S)he is cutting the tree.' [E452.ex.11-1]

In sum, Evans posits two TAM features, TAMV whose values are listed in (16) and
MODAL CASE whose values are listed in (17), and these can be varied independently
'to some extent' (Evans 1995a: 405).

(16)   values of TAMV (Evans 1995a)
       ACTUAL, APPREHENSIVE, DESIDERATIVE, DIRECTED, HORTATIVE, IM-
       MEDIATE, IMPERATIVE, NOMINALIZATION, PAST (referred to as ALMOST
       in the negative, compare Sect. 5.1), POTENTIAL, PRECONDITION

(17)   values of MODAL CASE (Evans 1995a)
       MODAL ABLATIVE (also referred to as marking 'PRIOR MODALITY'),
       MODAL ALLATIVE, MODAL LOCATIVE (also, 'INSTANTIATED MODAL-
       ITY'), MODAL OBLIQUE (also, 'EMOTIVE MODALITY'), MODAL PROPRI-
       ETIVE (also, 'FUTURE MODALITY'), ZERO MODAL CASE (also, 'ZERO
       MODALITY')

Somewhat exceptional are clause types in which either or both of TAMV or MODAL
CASE are absent and/or some other kind of marking appears on the constituents where
typically TAMV or MODAL CASE are found; these include verbal NOMINALIZATION,
on its own or with PRIVATIVE CASE, in place of TAMV; CONSEQUENTIAL CASE in
place of both TAMV and MODAL CASE; and ASSOCIATING CASE in addition to a
ZERO MODAL CASE.

3.3 TAM in Round (2013)

Like Evans, Round (2013) posits two TAM features in Kayardild, and the analyses
are broadly similar. One difference is that Round (2013) also incorporates sentences
such as (13)–(15) above into the core TAM system. Having noted the high degree
of polyfunctionality in Kayardild's morphological exponents, Round (2013: 73–74,
182–184) argues that there is little reason to interpret the markers *-n-ngarrba*, in
(14) for example, literally as nominalization plus CASE:CONSEQUENTIAL. Rather,
notwithstanding their appearance elsewhere in the system with other functions, they
function in (14) precisely as a composite marker of a single TAM value. This move
allows Round (2013) to bring all of Kayardild's clause types under a uniform de-
scription in terms of two TAM features, both of which are therefore something of an
expansion of Evans' TAMV and MODAL CASE.

   As part of the move away from the use of 'CASE' as an umbrella concept for
handling polyfunctionality, Round relabels some of Kayardild's morphosyntactic
features, relative to Evans' analysis: Round's CASE feature is for case in the nar-
row sense (corresponding to Evans' ADNOMIMAL and RELATIONAL CASE), and
Round's TAM features are termed THEMATIC TAM or TAMT (an expansion of
Evans' TAMV) and ATHEMATIC TAM or TAMA (an expansion of Evans' MODAL
CASE). The terms 'thematic' and 'athematic' refer to types of morphological stems
which condition a choice between the appearance of TAMT or TAMV inflection, as
follows.

In Kayardild morphotactics, TAM suffixes appear directly on lexical verbal stems, and outside of CASE marking, if there is any, on nominal stems. When inflecting for the TAM values associated with a given clause, stems that get inflected for TAM will license (or subcategorize for) either TAMT inflection or TAMA inflection, but not both. (When clauses are embedded, a word which exhibits *Suffixaufnahme* may carry up to one TAM inflection for each clause, Round 2013: 118–29.) Thematic stems, which license inflection for TAMT, all end morphologically with a 'thematic' element, phonologically /t̪/ or /c/ at the underlying level (Round 2013: 15–22).[21] These include lexical verb stems, which end with a thematic element in their lexical representation; nominal stems consisting of a base plus the thematic-final markers of what Evans (1995a) had termed verbal(izing) CASE inflections; and both nominal and verbal stems consisting of a base plus the thematic-final markers of INCIPIENT TAM inflections, a rare kind of TAM marking identified in Round's corpus of spontaneous speech (Round 2013: 103). Athematic stems, which license inflection for TAMA, are simply those stems which are not thematic. This analysis of TAM licensing differs from Evans (1995a). In Evans (1995a), thematics are placed inside the inflectional suffix, not the stem, and hence a different device is required to ensure that stems license the correct TAM feature. For Evans the solution is 'category-changing inflection', which gives rise to mismatches between the syntactic and morphological classes of 'nominal' and 'verbal' words (see Evans 1995a: 90–91, 163, 177–180). Round (2013) demonstrates that for Kayardild such an analysis is not necessary.[22]

Putting this together, Round's glossing of examples such as (18) is in three lines. Below the orthographic form, which is essentially surface-phonemic, appears an underlying phonological string in which morphs are separated by phonological junctures. Segments adjacent to junctures undergo various regular phonological processes, often involving lenitions and deletions (Round 2009, 2013: 13–14), for example in *waajarra* the underlying cluster /c+ŋ/ surfaces as just /c/ (orthographic *j*).[23] The lowest line in (18) gives semantic glosses for lexical stems and morphosyntactic feature values such as CASE:DATIVE (glossed DAT), TAMT:PAST (PST), TAMA:PRIOR (PRIOR). The middle line glosses morphomic categories, many of which have mnemonic labels such as μDAT 'morphomic dative'.[24] Also appearing on that line is a word final morphomic element T, the 'termination', which appears as a meaningless piece of morphological form at the end of all Kayardild words (Round 2013: 13–14, Round 2016); because the termination lacks a meaning, it receives no gloss on the bottom line. Braces indicate one-to-many mappings from morphosyntactic feature values to morphomic elements, as when the

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[21]The /t̪/ or /c/ consonant is typically visible in the surface phonological form, but will delete when followed by certain suffix-initial consonants, according to the regular rules of Kayardild phonology (Round 2013: 17).

[22]Indeed, the coherence of the category-mismatch analysis breaks down once the most complex corners of the morphological system are taken into account (Round 2013: 187–189).

[23]This clarification of Kayardild's phonological processes (Round 2009) allowed for the sharpening of several morphological arguments, such as the status of thematics (Round 2009, 2013: 15–23).

[24]Some labels, such as μ̆CONS, bear a diacritic above the μ. This relates to morphomic conditioning of phonological allomorphs, on which see Round (2013: 30–33).

single feature value **CASE**:DATIVE, glossed {DAT}, maps to the morphomic string {μDAT-TH}.

(18)   *Niya*   *waajarra*   *wangarrina*
        ɲi-a   waː-c+ŋara-ø   waŋar+ki-naa-ø
        3SG-T   {sing-J}-ɲ́CONS-T   song-{μLOC-ɲ́ABL}-T
        3SG   {sing}-PST   song-{PRIOR}

        ngumbanmarutharra   *thabujumarutharr?*
        ŋuŋ+paɲ-maɻu-t̪+ŋara-ø   ʈapucu-maɻu-t̪+ŋara-ø
        {2SG-μPOSS}-{μDAT-TH}-ɲ́CONS-T   elder.brother-{μDAT-TH}-ɲ́CONS-T
        {2SG}-{DAT}-PST   elder.brother-{DAT}-PST
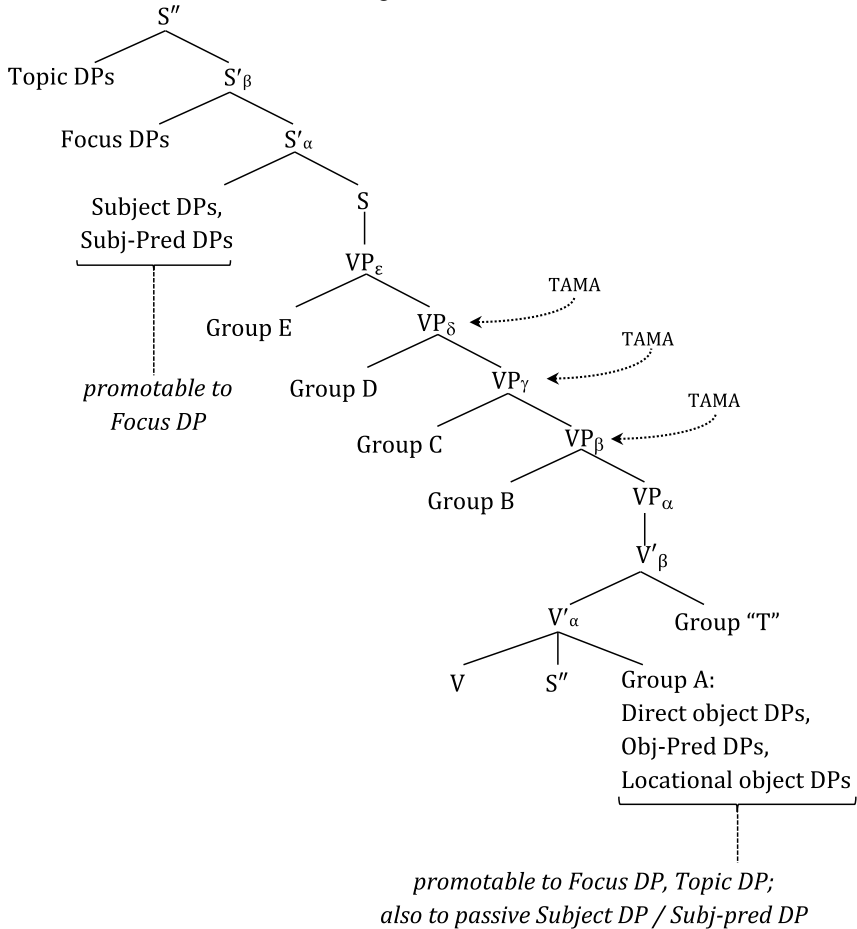   'Did she sing the song for/to your elder brother?' [E164.ex4-110]

In (18), the TAM features associated with the clause are **TAMT**:PAST and **TAMA**: PRIOR. Inflection for **TAMT**:PAST is licensed on the lexical verb stem *waaj-* 'sing', and on the nominal stems *ngumbanmaruth-* 'my (DAT)' and *thabujumaruth-* 'brother(DAT)', which are formed by inflecting lexical stems with the DATIVE **CASE**. **TAMT** inflection is licensed on exactly those stems, because both the lexical verb stem *waaj* and the DATIVE **CASE** marker end morphomically with a thematic element, glossed TH or J on the morphomic line. In contrast, inflection for **TAMA**:PRIOR is licensed on the athematic stem *wangarr-* 'song'. The subject *niya* 'she' is inflected neither for **TAMT** nor **TAMA**, for reasons we turn to next.

In a Kayardild clause, every thematic stem will inflect for the clause's **TAMT** value. However, of the athematic stems, only those in certain DPs will inflect for **TAMA** (Round 2013: 113–131). Put briefly, among all of the semantically and grammatically defined DP types in Kayardild, only a proper subset can inflect for each **TAMA** value. Moreover, there are only three such subsets which a given **TAMA** value will be associated with, and those subsets are nested one within another. For example, those **TAMA** values with the most restricted inflectional distribution appear only on a small group of object-like DPs (let us call these DPs 'group A'), plus an additional small group, B, of adverbial DPs. The next-most restricted **TAMA** values will inflect DPs in groups A and B, plus another small group, C, of additional adverbial DPs; and those **TAMA** values with the broadest distribution inflect DPs in groups A, B and C, plus another small group, D, of yet other adverbial DPs. Finally, there remains a further group, E, of other adverbial DPs, as well as subjects, topics and focus DPs which are never inflected for **TAMA**. Round (2013: 78–129) observes that essentially, the system is organized according to a constituent structure as shown in (19), in which various values of **TAMA** associate with, and take scope over, one of the three 'VP' nodes,[25] with respect to which various groups of DPs are situated as daughters of V'_α, VP_β, VP_γ, VP_δ and VP_ε.[26] Other non-TAM features provide similar evidence for yet more constituent structure, shown in (19) as the higher, S-category nodes (Round 2013: 88–96).

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[25]Evans (1995a: 121) defines his "VP" constituent in similar, inflectional terms.

[26]Group "T" refers to adverb phrases and DPs inflected with thematic CASE values.

(19)   Constituent structure describing inflectional distributions

S″
Topic DPs   S′_β
  Focus DPs   S′_α
    Subject DPs,   S
    Subj-Pred DPs   VP_ε
                    Group E   VP_δ ← TAMA
    promotable to   Group D   VP_γ ← TAMA
    Focus DP   Group C   VP_β ← TAMA
                             Group B   VP_α
                                      V′_β
                                 V′_α   Group "T"
                              V   S″   Group A:
                                        Direct object DPs,
                                        Obj-Pred DPs,
                                        Locational object DPs

promotable to Focus DP, Topic DP;
also to passive Subject DP / Subj-pred DP

As Round emphasizes, the constituent structure in (19) describes facts of Kayardild inflection; it is intended neither to describe nor to explain surface word order (which is much freer) but rather to furnish a simple formalization of some of Kayardild's most interesting and detailed grammatical facts with respect to inflection and its distribution in the clause. Supporting evidence for the geometry of the constituents labelled 'VP' and their daughters is detailed in Round (2013: Appendix B), and for the S category nodes and their daughters in Round (2013: 88–96).

In summary, Round (2013) analyses every clause of Kayardild as involving one value each of two TAM features, TAMA and TAMT, whose distribution in the clause is complex but regular, showing sensitivity to the morphological shape of stems (thematic versus athematic), the specific feature values involved (for TAMA), and an organizational constituent structure as in (19). Lists of the values for Round's TAMT and TAMA features are given at the end of the next section (Sect. 3.4).

3.4 TAM in Kayardild's three morphosyntactic clause structures

Kayardild clauses each have one of three major kinds of morphosyntactic structure (Round 2013: 88–95). There are two kinds of full clause, whose syntactic structure is as shown in (19); and embedded clauses which consist of a VP_ε node and structure below that. The most commonly occurring of these is a full clause which is uncomplementized, meaning that it is not associated with either of Kayardild's two morphosyntactic complementization features. The other kind of full clause is complementized; it is associated with one or both of Kayardild's two complementization features,[27] which are realized on most words of the clause (see further Round 2013: 88–96). Of interest for current purposes is that the range of TAM values available for use in each clause type is not identical.

Uncomplementized full clauses exhibit the widest variety of TAM options. The TAM options in complementized full clauses are essentially a proper subset of those in uncomplementized full clauses, though with one caveat. Round (2013: 115, 130) shows that the exponent of the default present-like tense on athematic stems has a different syntactic distribution in complementized and uncomplementized clauses. In the former, it appears on all DPs under VP_γ and in the latter on all DPs under VP_β. Consequently, Round posits two distinct values of his **TAMA** feature, labelled PRESENT and INSTANTIATED respectively, whose associations with VP nodes differs. However, we wish to emphasize an alternative not pursued in Round (2013). Namely, in complementized clauses all **TAMA** values associate with VP_γ.[28] One could propose, then, that the syntactic-distributional distinctions among **TAMA** values which are apparent in uncomplementized clauses are simply neutralized in complementized clauses, so that all **TAMA** associates with VP_γ. On that account, the distinction between Round's **TAMA**:PRESENT and **TAMA**:INSTANTIATED is unnecessary, and one can state rather simply, that the range of TAM types available in complementized clauses is a proper subset of those available in uncomplementized clauses. We provide additional support for this analysis in Appendix A.4.

In embedded VPs, the range of TAM options overlaps only partly with that of the full clauses. Lists of Round's **TAMT** and **TAMA** values, and the clause structures which license them are shown in (20) and (21). Clause structures are abbreviated as

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[27] Round's two features are labelled COMPLEMENTIZATION and SEJUNCT. The former feature associates in the syntax with the node S'_β in (19) and the latter with S'_α. All complementized clauses have a COMPLEMENTIZATION feature; only some have SEJUNCT. Both features have just a single value (glossed COMP and SEJ), if they are present at all. Given the level of scrutiny that we apply to Kayardild's two TAM features, one might reasonably ask whether the two complementization features also deserve such attention. To address this briefly, we can state that unlike TAM, the behaviour of the two complementization features is for the most part what we would expect from two features and not one according to the criteria in Sects. 4–8 below. Namely, their semantic contributions combine compositionally; and they associate with different syntactic constituents (S'_β and S'_α); they are partly orthogonal, in that a clause may be associated with COMPLEMENTIZATION with or without SEJUNCT (though SEJUNCT always co-occurs with COMPLEMENTIZATION); and they have distinct realizations, with the caveat that when a specific word is associated with both features, it will inflect overtly only for SEJUNCT. For further discussion, see Round (2013: 87–96).

[28] Stated more carefully, all available evidence is *consistent with* **TAMA** associating always with VP_γ. Some **TAMA** values' exact association is underdetermined by the available data, including data from the corpus we examine in the Appendix.

follows: u for uncomplementized full clauses, c for complementized full clauses, and e for embedded VP. Information in (20)–(21) is from Round (2013: 75), modulo our removal of the unnecessary **TAMA**:PRESENT.

(20)   Values of **TAMT** and the clause structures which license them (Round 2013)
        ACTUAL (u), ANTECEDENT (u, c, e), APPREHENSIVE (u, c), DIRECTED (u, e), DESIDERATIVE (u, c), HORTATIVE (u, c), IMMEDIATE (u), IMPERATIVE (u), INCIPIENT (e), NONVERIDICAL (u, e), PAST (u, c), POTENTIAL (u, c), PRECONDITION (u, c), PROGRESSIVE (e), RESULTATIVE (u, e)

(21)   Values of **TAMA** and the clause structures which license them (Round 2013)
        ANTECEDENT (u, c, e), CONTINUOUS (u, e), DIRECTED (u, e), EMOTIVE (u, c), FUNCTIONAL (e), FUTURE (u, c), INCIPIENT (e), INSTANTIATED (u, c), NEGATORY (u, e), PRECONDITION (u, c), PRIOR (u, c), ZERO (u, e)

3.5 Polarity

Evans (1995a: 254) and Round (2013: 68) both identify a NEGATIVE inflection, which is typically realized as the marker /-ŋaŋ/ and is licensed, like Evans' **TAMV** and Round's **TAMT**, by all thematic stems in the clause. This is seen in (22), where it appears on the lexical verb stem, and on the two nominal stems inflected with the thematic markers of **CASE**:COLLATIVE. In (22) as under most conditions, the marker of **TAMT**, in this case **TAMT**:POTENTIAL, is linearly ordered after the negation suffix.[29] We will assume that NEGATIVE is a value of the feature **POLARITY**.

(22)   *Ngada   warranangku   dathinkiiwanangku*
        ŋaṯ-ta   wara-c-ŋaŋ+kuu-ø   ṯaṯin+ki:-wa-ṯ-ŋaŋ+kuu-ø
        1SG-T   {go-J}-μNEG-ʉ́PROP-T that-{μLLOC-μINCH-TH}-μNEG-ʉ́PROP-T
        1SG   {go}-NEG-POT   that-{COLL}-NEG-POT

        ngilirriiwanangku.
        ŋilir+ki:-wa-ṯ-ŋaŋ+kuu-ø
        that-{μLLOC-μINCH-TH}-μNEG-ʉ́PROP-T
        that-{COLL}-NEG-POT
        'I will not go to that cave.' [E163.ex.4-107]

The suffix /-ŋaŋ/ which realizes NEGATIVE undergoes regular phonological processes, including the deletion of its final /ŋ/ in word final position, as in (18). Sentence (23) is a negative imperative. Unlike most **TAMT** values, which in the context of NEGATIVE are realized by distinct suffixes, the value **TAMT**:IMPERATIVE is realized cumulatively with **POLARITY**:NEGATIVE.

(23)   *Bilarrina   dathina   ngukuwa   wurumanki,*
        pilari-c-ŋaŋ-ø   ṯaṯina   ŋuku-a   wuṯuman+ki-a
        {spill-J}-μNEG-T   that.T   water-T   billy-μLOC-T
        {spill}-NEG.IMP   that   water   billy-LOC
        'Don't spill that water in the billy can,' [E139.ex.4-17]

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[29]Technically, the negative marker μNEG is itself 'thematic', and so licences **TAMT** inflection to its right, and not **TAMA** (Round 2013: 234).

There is one condition under which the negation feature is not realized as underlying /-ŋaŋ/: **TAMT**:ACTUAL and **POLARITY**:NEGATIVE are realized cumulatively as underlying /+wari/, as in (24).

(24) *Ngada   kalatharri   wangalk-i.*
      ŋaṯ-ta   kala-ṯ+wari-a   waŋalk+ki-a
      1SG-T   {cut-J}-µPRIV-T   boomerang-µLOC-T
      1SG   {cut}-NEG.ACT   boomerang-INS
      'I haven't made a boomerang.' [E257.ex.7-7]

Only a subset of the total list of **TAMT** values and **TAMA** values may co-occur with NEGATIVE **POLARITY**. For Round's (2013) system, these are as listed in (25), (26).

(25) **TAMT** values that can co-occur with **POLARITY**:NEGATIVE
      ACTUAL, HORTATIVE, IMMEDIATE, IMPERATIVE, PAST, POTENTIAL, PRE-
      CONDITION
      not: ANTECEDENT, APPREHENSIVE, DIRECTED, DESIDERATIVE, INCIPI-
      ENT, NONVERIDICAL, PROGRESSIVE, RESULTATIVE

(26) **TAMA** values that can co-occur with **POLARITY**:NEGATIVE
      EMOTIVE, FUTURE, INSTANTIATED, PRECONDITION, PRESENT, PRIOR,
      ZERO
      not: ANTECEDENT, CONTINUOUS, DIRECTED, FUNCTIONAL, INCIPIENT,
      NEGATORY

Other clause types either lack an inflectional negative counterpart, or make use of a second class of clausal negation strategies which is illustrated in (27)–(30).

(27) *Kurirra,   riinmarriya   thaanmarri.*
      kuṟir-a   ṟi-in-wari-a   ṯaː-ṯ-n-wari-a
      dead-T   east-µABLC-µPRIV-T   {return-J}-{µN-µPRIV}-T
      dead   east-ABLC-NEGAT   {return}-{NONVER}
      'They were dead, and did not return from the east.' [T1963]

(28) *Ngada   kurrinmarri   dathinki   bijarrbay.*
      ŋaṯ-ta   kuri-c-n-wari-a   ṯaṯin+ki-a   picarpa+ki-a
      1SG-T   {see-J}-{µN-µPRIV}-T   there-µLOC-T   dugong-µLOC-T
      1SG   {see}-{NONVER}   there-INS   dugong-INS
      'I didn't see that dugong.' [E275.ex.9-237]

(29) *Ngada   kurriju   ngumbanju,*
      ŋaṯ-ta   kuri-c+kuu-ø   ŋuŋ+paṇ+kuu-ø
      1SG-T   {look-J}-µ̋PROP-T   2SG-µPOSS-µ̋PROP-T
      1SG   {look}-POT   2SG-Ø-FUT

      wangalkuunha   ngudinmarrinj.
      waŋalk+kuu-inṯa-ø   ŋuti-c-n-wari-inṯa-ø
      boomerang-µ̋PROP-µOBL-T   {throw-J}-{µN-µPRIV}-µOBL-T
      boomerang-FUT-SEJ   {throw}-{NONVER}-SEJ
      'I will see you not throwing the boomerang.' [W1960]

Table 6 TAMT and TAMA values in sentences (27)–(30) after Round (2013)	Sentence, clause	TAMT	TAMA
	(27)	NONVERIDICAL	NEGATORY
	(28)	NONVERIDICAL	INSTANTIATED
	(29) second clause	NONVERIDICAL	FUTURE
	(30)	NONVERIDICAL	PRIOR

(30) *Nyingka ngukuna   dalijarrmanmarri?*
   ɲiŋ+ka   ŋuku-ki-naa-ø   ṯali-c-arma-ṯ-n-wari-a
   2SG-T   water-{μLOC-ɱ́ABL}-T   {come-J}-{μCAUS-TH}-{μN-μPRIV}-T
   2SG   water-{PRIOR}-T   {come}-{CAUS}-{NONVER}
   'Haven't you brought the water?' [E405.ex.10-11]

For Evans (1995a), sentences (27)–(30) fall outside of the TAMV system, and exhibit what Evans terms PRIVATIVE NOMINALIZATION of thematic stems (1995a: 373–374, 403–404, 475–476). For Round (2013), such sentences figure within the regular TAM system, and as a consequence examples (27)–(30) provide yet more instances of TAMA values varying independently of TAMT, as summarized in Table 6.

3.6 Consensus

The analyses of Kayardild TAM and polarity by Evans (1995a) and Round (2013) are in agreement that most if not all Kayardild clauses are characterizable in terms of two concurrent TAM features. They also agree that most of those values do not stand in a one-to-one relationship, between values of one feature and the other. The minority which do so are listed in (31), following the system of Round (2013). Other values of TAMA and TAMT co-occur with one another in a one-to-many or many-to-many fashion.

(31)   One-to-one pairings of TAMA and TAMT values (Round 2013: 75)
   TAMA:ANTECEDENT & TAMT:ANTECEDENT
   TAMA:DIRECTED & TAMT:DIRECTED
   TAMA:INCIPIENT & TAMT:INCIPIENT
   TAMA:PRECONDITION & TAMT:PRECONDITION

For both Evans (1995a) and Round (2013), a NEGATIVE POLARITY value realized on thematic stems can co-occur with certain values of the TAM features. A second set of clausal negation strategies, involving its own distinct marking of thematic stems, and which Round analyses as part of the TAMT system, also combines with multiple TAMA values.

3.7 Reasons to go further

Given that there are two detailed studies which include TAM in Kayardild, we should explain why we need to return to this well-rehearsed topic.

The first reason is that there are some unresolved issues regarding the categorization of key data. We observed in Sect. 3.1 that many of Kayardild's morphological markers are polyfunctional, and that as a consequence some sentences are

amenable to multiple analyses. Since this could become significant in cases where a given clause type is attested only sparsely and ambiguously, we wished to reexamine the Kayardild corpus before proceeding further. Results of our corpus survey are in Sect. 3.8, and details are in the Appendix.

The second reason to delve further is the key point on which the two analyses agree, namely that Kayardild has two concurrent TAM features. If correct, this would be typologically unusual, and it is this which makes us want to revisit the topic. Since this characteristic is rare, we must ensure that an account with two concurrent features does indeed represent the best analysis of Kayardild TAM. If so, we should explore its particular properties carefully. If it turns out not to be so, this is also an important finding. Either way, there are things to be learned from this area of Kayardild which we cannot investigate elsewhere.

3.8 Corpus study results

The Appendix contains detailed evidence on several empirical points bearing directly on the question of whether we analyse Kayardild as having one TAM feature or two, and consequently, rehearsing that evidence is the essential next step in the argument. However, the arguments and evidence in the Appendix contain many working parts and some readers may wish to avoid that level of detail, at least on first reading. For those who wish to see the full detail, we are pleased to recommend immersing oneself in the Appendix. For those who would prefer to take us on our word for the moment, the essential points are these: corpus overview in Appendix A.1; in Appendix A.2 the removal of Round's **TAMA**:NEGATORY value from the inventory of athematic TAM values, on the grounds of evidence from the interface between syntax and inflection; in Appendix A.3 the identification of a feasible reanalysis of NONVERIDCAL as a value of **POLARITY** rather than **TAMT**; in Appendix A.4 the simplification of Round's three-way distinction in present tense TAM types to a two-way distinction, after considering evidence from usage and frequency; in Appendix A.5 the simplification of Kayardild's range of apprehensive clause types, from three to two, after identifying more parsimonious alternative analyses; and in Appendix A.6 the identification of a consistently counterfactual usage of the combination of **TAMA**:INSTANTIATED and **TAMT**:POTENTIAL. At the end of this process, a revised list of eleven **TAMT** and fifteen **TAMT** values is given in (32)–(33). These are the values we will consider in the following sections.

(32)   Values of TAMT (revised list)
ACTUAL, ANTECEDENT, APPREHENSIVE, DIRECTED, DESIDERATIVE, HORTATIVE, IMMEDIATE, IMPERATIVE, INCIPIENT, NONVERIDICAL, PAST, POTENTIAL, PRECONDITION, PROGRESSIVE, RESULTATIVE

(33)   Values of TAMA (revised list)
ANTECEDENT, CONTINUOUS, DIRECTED, EMOTIVE, FUNCTIONAL, FUTURE, INCIPIENT, INSTANTIATED, PRECONDITION, PRIOR, ZERO[30]

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[30]The final value here, which has no overt phonological realization, is labelled ZERO. In Round's constraint-based analysis of Kayardild's realizational morphology, it is important to make the difference

Table 7 Co-occurrences of **TAMT** and **TAMA** values (in positive polarity clauses)

Thematic TAM	Athematic TAM										
	FUNC	CONT	EMO	FUT	INS	PRIOR	ZERO	ANTE	DIR	INCIP	PREC
PROG	✓	✓									
DES		✓									
HORT		✓									
APPR			✓	✓							
POT				✓	✓						
NONVER				✓	✓	✓					
ACT					✓						
IMM					✓						
PAST						✓					
RES							✓				
IMP							✓				
ANTE								✓			
DIR									✓		
INCIP										✓	
PREC											✓

4 Orthogonality of TAM values

If two features, **F** and **G** are fully orthogonal, then each value of feature **F** will co-occur with each value of **G**, as was true of **CASE** and **NUMBER** in the Russian data presented in Table 1. Conversely, in the limiting case, two non-orthogonal features would have values that only correspond in a one-to-one fashion. In such an instance, we would conclude that the evidence from orthogonality offers little support for the two-feature analysis, and rather, that **F** and **G** are better analysed as just one feature.

4.1 Orthogonality of the two TAM features

Let us apply these notions to the issue of TAM in Kayardild. If Evans and Round are correct in analyzing Kayardild TAM as based on two concurrent features, then all else being equal, we would expect those features to display a high level of orthogonality; a low level of orthogonality would weaken the claim for a two-feature system and favour a one-feature analysis.

In the two-feature analysis of Kayardild TAM, there are eleven values of **TAMA** and fifteen values of **TAMT** (if one counts NONVERIDICAL as **TAMT**, as in (32)). All co-occurrences attested in our corpus are shown in Table 7.

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between 'ZERO' **TAMA** (which blocks the overt realization of **TAMT** on the same word) and no **TAMA** at all, which would not do so (Round 2013: 234, fn. 6). One advantage of adopting a one-feature analysis is that the entire apparatus of TAM blocking becomes unnecessary. Rather than requiring **TAMA** and **TAMV** to block one another in different ways on different stems, it would suffice to state that a single TAM feature in the general case receives exponence on both stem types (thematic and athematic), and that for some values of the feature one or other stem type carries no overt exponent.

Table 8 Values in a two-feature versus one-feature TAM system

Thematic TAM	AThematic TAM										
	FUNC	CONT	EMO	FUT	INS	PRIOR	ZERO	ANTE	DIR	INCIP	PREC
PROG	[1]	[2]									
DES			[3]								
HORT			[4]								
APPR			[5a]	[5b]							
POT				[6]	[7]						
ACT					[8]						
IMM					[9]						
PAST						[10]					
RES							[11]				
IMP							[12]				
ANTE								[13]			
DIR									[14]		
INCIP										[15]	
PREC											[16]

Of the 165 potential co-occurrences in Table 7, only twenty are attested, which is to say that the two candidate features are very close to being perfectly non-orthogonal. Viewed from the standpoint of efficiency, we note that the two-feature analysis of Kayardild TAM requires twenty-six values distributed over two features in order to cover just twenty different TAM clause types. By way of comparison, in Table 8, we show that a one-feature analysis of the system would require just sixteen values, labelled [1]–[16]. In Table 8 we assume that NONVERIDICAL is a value of **POLAR-ITY** (see Appendix A.3), and we analyse the **TAMA**:FUTURE apprehensive complementized clauses as free variants of their semantically equivalent **TAMA**:EMOTIVE counterparts (see Appendix A.5). These are shown in Table 8 as [5a] ∼ [5b].

In terms of orthogonality then, the two-feature analysis of Kayardild TAM departs starkly from what we would expect from two-feature system in general.[31] Consequently, in order to defend the two-feature analysis of Kayardild TAM, we will be looking for strong support from other quarters, in Sects. 5–8.

4.2 Orthogonality of TAM and **POLARITY**

In contrast to the weak orthogonality between TAM features in the two-feature analysis of Kayardild TAM, there is considerable orthogonality between **POLARITY** and TAM. Tables 9, 10 and 11 show the co-occurrences of the **POLARITY** values POSITIVE, NEGATIVE and NONVERIDICAL with **TAMA** (Table 9), **TAMT** (Table 10), and with the single-valued TAM feature (Table 11), for which we cite the numbered values from Table 8.

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[31] See further Bank (2014) for interesting discussion of parsimony in feature descriptions.

Table 9 Co-occurrences of **TAMA** and **POLARITY** values in the two-feature TAM system

	FUNC	CONT	EMO	FUT	INS	PRIOR	ZERO	ANTE	DIR	INCIP	PREC
POSITIVE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEGATIVE			✓	✓	✓	✓	✓				
NONVERIDICAL				✓	✓	✓					

Table 10 Co-occurrences of **TAMT** and **POLARITY** values in the two-feature TAM system

	PROG	DES	HORT	POT	ACT	PAST	IMP	IMM	APPR	RES
POSITIVE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEGATIVE			✓	✓	✓	✓	✓			
NONVERIDICAL				✓	✓	✓				

Table 11 Co-occurrences of **POLARITY** and TAM values in the one-feature TAM system

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
POSITIVE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEGATIVE				✓		✓	✓	✓		✓		✓				
NONVERIDICAL							✓	✓		✓						

Tables 9, 10 and 11 show that even though the orthogonality of NONVERIDICAL with TAM values is low, it still combines more freely with TAM values than any **TAMT** and **TAMA** values do with one another in Table 7.

4.3 Conclusions from orthogonality

We find that evidence from orthogonality mutually reinforces arguments from semantics (Appendix A.3), to support the conclusion that polarity and TAM in Kayardild are separate features, and of course typologically this is no surprise. At the level of specifics, NONVERIDICAL is a value of **POLARITY**, not **TAMT**, contra Round (2013). Given that, however, our examination of the orthogonality between the TAM features themselves reveals that there is little in support of a two-feature analysis of Kayardild TAM. Consequently, if we wish to maintain the two-feature analysis, we will be looking for strong support from the tests presented in the sections to follow.

5 Semantic compositionality

In this section we ask if Kayardild TAM exhibits semantic compositionality, as we would expect from a true, two-featured system. The question at issue is whether the meaning contributed by combinations of feature values {**F**:A, **G**:B} is the simple combination of the meaning contributed by **F**:A and the meaning contributed by **G**:B. As a matter of principle, this kind of assessment is only possible where we have some

idea of the independent meanings of **F**:A and **G**:B. We can infer such independent meanings by holding one feature value constant and varying the other. For example, if we compare across {**F**:A, **G**:B}, {**F**:A, **G**:C} and {**F**:A, **G**:D}, and take note of what remains semantically constant, then all else being equal, we may reasonably attribute that semantic component to **F**:A. This, however, requires **F**:A to co-occur with more than one value of **G**. As we saw in Sect. 4, this kind of co-occurrence is absent for the majority of the feature values in the two-feature analysis of Kayardild TAM. Correspondingly, we will be constrained here to discussing those feature values which do cross-cut other feature values. For expository reasons, we begin with the **POLARITY** feature and then return to TAM.

5.1 Compositionality of POLARITY vis-a-vis TAM

Values of the **POLARITY** feature are almost perfectly compositional with TAM. The difference in meaning between any **POLARITY**:POSITIVE TAM clause and its corresponding **POLARITY**:NEGATIVE one is almost always solely a matter of simple negation. The one exception is that **POLARITY**:NEGATIVE in combination with the past tense TAM[32] yields the meaning 'X almost happened', rather than 'X didn't happen', as one otherwise would expect (Evans 1995a: 261). Likewise, the NON-VERIDICAL value of **POLARITY**, contributes a constant meaning in its combinations with TAM.[33]

In sum, the POSITIVE, NEGATIVE and NONVERIDICAL values of the **POLARITY** feature combine in a compositional manner with TAM in almost all instances, from which we conclude that there is strong evidence from compositionality, that **POLARITY** is a feature that is distinct from TAM (irrespective of whether TAM itself is one feature or two).

5.2 Compositionality of the two TAM features

Feature values in the two-feature analysis of Kayardild TAM, which co-occur with multiple other features-values are: the PROGRESSIVE, APPREHENSIVE and POTENTIAL values of **TAMT**, and the EMOTIVE, FUTURE, INSTANTIATED and ZERO values of **TAMA**. We consider these in turn.

5.2.1 Compositionality of TAMT:PROGRESSIVE

The feature value **TAMT**:PROGRESSIVE combines with **TAMA**:FUNCTIONAL in subordinate clauses which denote the intended function of an instrument (Round 2013: 101); and with **TAMA**:CONTINUOUS in main clauses to convey ongoing actions, and in subordinate clauses to convey contemporaneity with the main clause (Evans 1995a: 226, 472–474). This is summarized in Table 12.

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[32]That is to say, with {**TAMA**:PRIOR, **TAMT**:PAST} in the two-feature analysis.

[33]The difference in meaning is subtle (Evans 1995a: 374–375): the NEGATIVE treats the subject as topical and contributes a new, negated predicate (e.g. 'I didn't spear any turtle, I only speared dugong'), whereas the NONVERIDICAL takes the predicate as topical, but conveys that it is not true of the subject (e.g. 'I didn't spear the turtle, my brother speared it.').

Table 12 Clausal TAM meanings involving **TAMT**:PROGRESSIVE

TAMA value	Clause TAM meaning
FUNCTIONAL	Denotes intended function of an instrument
CONTINUOUS	Denotes ongoing, uncompleted actions; or contemporaneity in subordinate clauses

Table 13 Clausal TAM meanings involving **TAMT**:APPREHENSIVE

TAMA value	Clause TAM meaning
EMOTIVE	Undesirable eventualities, to be avoided
FUTURE	Undesirable eventualities, to be avoided

It is difficult to pinpoint any semantic constant across the two TAM types in Table 12, which one might attribute specifically to **TAMT**:PROGRESSIVE. Moreover, the **TAMA** values with which **TAMT**:PROGRESSIVE co-occurs, themselves co-occur with no other value of **TAMT**, and hence there is nothing to prevent us attributing the entire TAM meanings of these clause type to the **TAMA** values, while claiming that **TAMT**:PROGRESSIVE is semantically empty. In sum, there is little to work with here, and what little we can deduce provides no evidence that the PROGRESSIVE value of **TAMT** combines compositionally with **TAMA**.

5.2.2 *Compositionality of* TAMT:APPREHENSIVE

As is discussed in Appendix A.5, **TAMT**:APPREHENSIVE combines solely with **TAMA**:EMOTIVE in uncomplementized clauses. In complementized clauses, it combines with both **TAMA**:EMOTIVE and **TAMA**:FUTURE with no discernable difference in meaning, at least within our corpus. Thus, there is no positive evidence that **TAMT**:APPREHENSIVE combines in a compositional manner with **TAMA** (Table 13).

5.2.3 *Compositionality of* TAMT:POTENTIAL

The feature value **TAMT**:POTENTIAL combines with **TAMA**:FUTURE to convey a wide range of potential-like TAM meanings, such as futurity, expectation, prescription, desire, possibility as well as marking purposives and clausal complements of communication verbs (Evans 1995a: 258–260, 518–520). As we show in Appendix A.6, it combines with **TAMA**:INSTANTIATED in non-future counterfactual clauses.

In this instance, a strong case can be made for **TAMT**:POTENTIAL possessing a constant meaning, which we might describe informally as 'non-actuality'. The next question is, whether the total meanings contributed by {**TAMT**:POTENTIAL, **TAMA**:FUTURE} and {**TAMT**:POTENTIAL, **TAMA**:INSTATIATED} can be viewed as the simple addition, of the 'non-actuality' meaning of **TAMT**:POTENTIAL, to the meanings of **TAMA**:FUTURE and **TAMA**:INSTANTIATED. In order to derive precisely the set of meanings in Table 14, we would need to attribute to **TAMA**:FUTURE a complex set of meanings related most likely through a network of family resemblances; and to **TAMA**:INSTANTIATED something like 'non-futurity'. This is diffi-

Table 14 Clausal TAM meanings involving **TAMT**:POTENTIAL

TAMA value	Clause TAM meaning
FUTURE	Futurity, expectation, prescription, desire, possibility; purposives; clausal complements of communication verbs
INSTANTIATED	Non-future counterfactuals

Table 15 Clausal TAM meanings involving **TAMA**:EMOTIVE

TAMT value	Clause TAM meaning
DESIDERATIVE	Desirable eventualities; conditional protases for hypothetical future events; clausal complements of indirect communication verbs
HORTATIVE	Immediately relevant, desirable eventualities
APPREHENSIVE	Undesirable eventualities, to be avoided

cult to put into practice for **TAMA**:FUTURE without entertaining further complications which would take us away from simple compositionality—recall that when **TAMA**:FUTURE combines with **TAMT**:APPREHENSIVE it appears to contribute no distinct meaning at all. For **TAMA**:INSTANTIATED, however, we are arguably near to compositionality. The INSTANTIATED value of **TAMA** is associated with non-futurity (cf Appendix A.4). The only complication would be to ensure that the 'non-actuality' of **TAMT**:POTENTIAL and 'non-futurity' of **TAMA**:INSTANTIATED sum solely to 'counterfactuality', and not, for example to 'non-future expectation' and 'non-future ability'. Ascertaining the precise feasibility of this is beyond the scope of our present study, however we can conclude that the semantics of {**TAMT**:POTENTIAL, **TAMA**:INSTANTIATED} is reasonably compositional, perhaps at the same level as when **POLARITY**:NEGATIVE combines with past tense TAM to yield a meaning of 'almost' (Sect. 5.1). On the other hand, the semantics of {**TAMT**:POTENTIAL, **TAMA**:FUTURE} is not compositional.

5.2.4 Compositionality of TAMA:EMOTIVE, FUTURE and ZERO

TAMA:EMOTIVE combines with the **TAMT** values DESIDERATIVE, HORTATIVE and APPREHENSIVE, to yield the meanings summarized in Table 15 (Evans 1995a: 262–65). A common thread appears to be 'desire',[34] however, **TAMT**:DESIDERATIVE and **TAMT**:HORTATIVE only co-occur with **TAMA**:EMOTIVE, and thus one could argue that the full semantic value listed in Table 15 comes from the **TAMT** values, not **TAMA**:EMOTIVE. Likewise, apprehensive clauses show no discernable semantic difference when **TAMA**:EMOTIVE is substituted with **TAMA**:FUTURE, again suggesting that it is **TAMA** that supplies the full meaning. In sum, there is little evidence that **TAMA**:EMOTIVE combines compositionally with **TAMT** values.

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[34]Evans (1995a: 402) describes these as 'emotive' propositions (without characterizing them in greater detail), and also notes an alternative, along the lines proposed here, that the EMOTIVE denotes 'situations which it is the "goal" or "purpose" of the speaker to bring about or prevent' (1995a: 411).

Table 16 Clausal TAM meanings involving **TAMA**:FUTURE	**TAMT** value	Clause TAM meaning
	POTENTIAL	Futurity, expectation, prescription, desire, possibility; purposives; clausal complements of communication verbs
	APPREHENSIVE	Undesirable eventualities, to be avoided

Table 17 Clausal TAM meanings involving **TAMA**:ZERO	**TAMT** value	Clause TAM meaning
	RESULTATIVE	Completed events with a lasting effect (with active verbs yields passive diathesis)
	IMPERATIVE	Positive and negative imperatives

TAMA:FUTURE combines with **TAMT**:APPREHENSIVE, where it appears to make no meaningful contribution, and with **TAMT**:POTENTIAL where it would appear not to contribute anything to the 'non-actuality' meaning discussed above in Sect. 5.2.3 (Table 16).

TAMA:ZERO combines as shown in Table 17 with **TAMT**:RESULTATIVE and **TAMT**:IMPERATIVE, both of which co-occur with no other **TAMA** value. There is no evidence for compositionality here.

5.3 Conclusions from compositionality

The **POLARITY** feature and its values combine with TAM in a compositional manner, the one exception being the less than fully compositional combination of **POLARITY**:NEGATIVE and past tense TAM to yield an 'almost' meaning. In contrast, the two putative TAM features never combine in a fully compositional fashion. In most instances, compositionality cannot be assessed, since values of one feature do not combine with more than one value of the other feature. In cases when one value does combine with multiple others, we typically found that the single value appeared to contribute no meaning, with the entire semantics coming from its various partners. The one instance which came close to compositionality was the combination of **TAMT**:POTENTIAL 'non-actuality' with **TAMA**:INSTANTIATED 'non-future' to yield 'non-future counterfactual'. As we observed, this most-compositional instance of TAM semantics was approximately on par with the least-composition combination of **POLARITY** and TAM.

This is not the semantic behaviour that one expects from a true, two-feature system. By way of contrast, if we assume that Kayardild has a one-feature TAM system, then the semantic content of that single feature's values will typically be identical to the meaning of just one feature value in the pair which it replaces, and namely, the feature value in that pair which combines with only one partner. For example, the value designated as [1] in Table 8 replaces the two-feature combination of {**TAMT**:PROGRESSIVE, **TAMA**:FUNCTIONAL}; **TAMA**:FUNCTIONAL has no other partner **TAMT** value, and the semantics of feature value [1] would be identical to the semantics we found ourselves attributing to **TAMA**:FUNCTIONAL in Sect. 5.2.1. The overarching pattern is this: the meaning of TAM features in the two-feature system

Table 18 Feature values and the clause structures in which they appear

| Clause type | Two-feature system | | One-feature system |
	TAMT	TAMA	TAM
u	IMMEDIATE, IMPERATIVE,	ZERO*, INSTANTIATED*	[9] [12]
u, c	ACTUAL, APPREHENSIVE, DESIDERATIVE, HORTATIVE, PAST, POTENTIAL, PRECONDITION	EMOTIVE, FUTURE*, INSTANTIATED*, PRECONDITION, PRIOR	[3] [4] [5] [6] [7] [8] [10] [13]
u, c, e	ANTECEDENT	ANTECEDENT	[14]
c		FUTURE*	([5b])
u, e	DIRECTED, PROGRESSIVE*, RESULTATIVE	CONTINUOUS, DIRECTED, ZERO*	[2] [11] [15]
e	INCIPIENT, PROGRESSIVE*	FUNCTIONAL, INCIPIENT	[1] [16]

Notes: (i) the information displayed in Table 18 takes into account refinements summarized in Sect. 3.8 and therefore differs marginally from the initial lists (20) and (21) in Sect. 3.4

(ii) values of TAMT and TAMA are asterisked if their distribution is dependent on which particular partner feature value they are paired with

(iii) values of the single feature TAM are cited in terms of the numbers in Table 8

appears overwhelmingly to reside in feature values which participate in just one feature combination, while those features that combine with multiple partners are semantically vacuous. This is the antithesis of compositionality. We conclude, therefore, that the semantic evidence weighs against Kayardild TAM being a two-feature system, and instead points clearly to a single-feature system.

6 Licensing in different clause structures

In Sects. 4–5 we considered the two putative TAM features of Kayardild with respect to one another. However, the logic of justifying a feature system extends also to that system's interaction with other components of the grammar. For example, in Russian, the distinctness of NUMBER and CASE is reflected in the fact the verbs may agree for NUMBER but not CASE, and that verbs and prepositions may govern CASE but not NUMBER. In Sects. 6–7 we examine the interaction of TAM with other parts of the grammar of Kayardild. In this section we return to the differential permissibility of TAM types among the three clause structures of Kayardild introduced in Sect. 3.4: uncomplementized full clauses (u-clauses), complementized full clauses (c-clauses), and embedded VPs (e-clauses). We ask whether generalizations about TAM types and their distribution across clause structures, are more simply stated within a system of two TAM features or of one.

Table 18 shows these clause structure(s), and the feature values which are compatible with them, for the features TAMT and TAMA in the two-feature system, and the single feature TAM in the one-feature system.

In both systems, it is most efficient to begin with a statement that by default, a TAM feature value is compatible with u-clauses and c-clauses; after that only the

exceptions need to be listed. In the one-feature system, there are eight such exceptional feature values whose clause compatibility will need to be stated. In addition, realization rules (cf. Sect. 8 below) will need to state that for value [5], the realization variant [5b] is available only in c-clauses. In total then, the one-feature system requires one default statement, eight statements about exceptions, and one realization rule that refers to clause structure.

In the two-feature system, there are fifteen feature values for which 'exception' statements need to be made, and moreover, there are four whose clause compatibility can only be fully stated with reference to the other feature value with which it is paired: for each of those feature values, two of these more complex exception statements are needed. In total then, the two-feature system requires one default statement, eleven simple exception statements, and eight complex exception statements.

Comparing the two analyses, we can first observe that neither permits us to make particularly succinct statements about how TAM relates to clause structures, rather the system is characterized by considerable idiosyncrasy. Compared to the two-feature analysis, the one-feature analysis requires only half as many statements to be made in order describe which feature values are compatible with which clause structures. This may seem unsurprising, given that the one-feature analysis makes use of only about half as many feature values; but it suggests that the additional values in the two-feature analysis contribute rather little. We conclude that in terms of the interaction between TAM and clause structure, the one-feature analysis is more efficient than the two-feature analysis.

7 Distribution across constituents of the clause

Kayardild TAM also interacts with syntax in terms of the distribution, across DPs in the clause, of TAM inflection on athematic stems. As discussed in Sect. 3.3, in uncomplementized full clauses, TAM inflection can appear on all athematic stems of words under either VP_β, VP_γ or VP_δ, depending on the specific TAM type. By default, TAM types associate with VP_γ.[35] Just one type associates with VP_δ, namely **TAMA**:CONTINUOUS in the two-feature analysis, or **TAM**:2 in the one-feature analysis; this exception is expressed with equal succinctness in both analyses. Three TAM types associate with VP_β. These are **TAM**:8, **TAM**:9 and **TAM**:15 in the one-feature analysis, requiring three statements to be made. In the two-feature analysis they are **TAMA**:INSTANTIATED (paired with **TAMT**:ACTUAL or with **TAMT**:IMMEDIATE), and **TAMA**:DIRECTED; this requires just two statements, namely that **TAMA**:INSTANTIATED and DIRECTED associate with VP_β. In this sense, the two-feature analysis is marginally more efficient.

Let us take stock of the arguments for and against the two-feature account. In terms of orthogonality (Sect. 4), the one-feature analysis is overwhelmingly favoured. The compositionality test (Sect. 5) similarly points strongly to one feature. For licensing (Sect. 6) the one-feature account is clearly the more efficient. However, in terms of

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[35]Round (2013: 114) notes that for some TAM types the available data underdetermines which node precisely they associate with. In all those instances, the available data is consistent with the default, VP_γ.

Table 19 Morphomic realizations of **TAM** (one-feature analysis); also indicating syncretism across values, on thematic and athematic stems, and approximate semantic value

TAM	On thematic stems	On athematic stems	TAM semantics
1	μN	μUTIL	Function of an instrument
2	μN	μOBL	Continuing
3	μDES	μOBL	Desiderative
4	μOBL	μOBL	Hortative
5	μAPPR	μOBL (u), μOBL ∼ ɡ́PROP (c)	Apprehensive
6	ɡ́PROP	ɡ́PROP	Potential
7	ɡ́PROP	μLOC	Counterfactual
8	Ø (c), μLOC (u)	μLOC	Non-future
9	μLOC	μLOC	Immediate present
10	+ɡ́CONS	μLOC-ɡ́ABL	Past
11	Ø	μRES	Resultative
12	Ø	Ø	Imperative
13	μN-μCONS	μCONS	Antecedent
14	μLOC-μALL	μLOC-μALL	Spatially extended event; Purpose of motion
15	μN-μDAT-μMID-J	μDAT-μMID-J	Incipient
16	+μCONS	μLOC-μABL	Precondition

distribution (Sect. 7) we at last find some (weak) evidence which favours a two-feature analysis. With this in mind, we turn to matters of exponence.

8 Exponence

Canonically, a feature value would be realized uniformly by just one, overt exponent in all contexts, and that exponent would be distinct from all others in the system. Real systems often depart from this canonical ideal, and the degree to which the system is canonical depends, of course, on one's analysis of the underlying features and values. In this section we assess the two analyses of Kayardild TAM in terms of the canonicity of their patterns of exponence. It will be recalled from Sect. 3.3 that in Kayardild, morphosyntactic features are realized as morphomic elements, and so it is in terms of these morphomic elements that we discuss the topic of exponence below.

8.1 Syncretism under the two analyses

Table 19 shows the morphomic exponents of the sixteen values of **TAM**, the single TAM feature of the one-feature analysis. The **TAM** feature receives overt exponence both on thematic stems and athematic stems, as shown. In some instances the exact exponence varies according to clause type, indicated as (c) for complementized and (u) uncomplementized, and in one instance (for **TAM**:5 as realized on athematic stems in complementized clauses) there are two exponents in variation.

Many of the exponents in Table 19 are shared. For example, **TAM**:1 and **TAM**:2 share their exponents on thematic stems. So too do **TAM**:6 and **TAM**:7, and **TAM**:11 and **TAM**:12. Likewise, on athematic stems there are identical exponents for **TAM**:2,

Table 20 Feature values' morphemic realizations (two-feature analysis)

TAMT	On thematic stems	TAMA	On athematic stems
ACTUAL	Ø (u), μLOC (c)	ANTECEDENT	-μCONS
ANTECEDENT	μN-μCONS	CONTINUOUS	μOBL
APPREHENSIVE	μAPPR	EMOTIVE	μOBL
DESIDERATIVE	μDES	DIRECTED	μLOC-μALL
DIRECTED	μLOC-μALL	FUNCTIONAL	μUTIL
HORTATIVE	μOBL	FUTURE	μ̃PROP
IMMEDIATE	μLOC	INCIPIENT	μDAT-μMID-J
IMPERATIVE	Ø	INSTANTIATED	μLOC
INCIPIENT	μN-μDAT-μMID-J	PRECONDITION	μLOC-μABL
PAST	+μ̃CONS	PRIOR	μLOC-μ̃ABL
POTENTIAL	μ̃PROP	ZERO	Ø
PRECONDITION	+μCONS		
PROGRESSIVE	μN		
RESULTATIVE	μRES		

TAM:3 and **TAM**:4, and for **TAM**:7, **TAM**:8 and **TAM**:9. In the canonical situation, this kind of syncretism would not happen; each feature value would have its own, distinct exponent, which would not vary across stems.

Morphemic exponents in the two-feature system are shown in Table 20. In this system there is just one instance of syncretism between values of the same feature, namely **TAMA**:CONTINUOUS and **TAMA**:EMOTIVE. It is important, therefore, to ask how the two-feature system avoids syncretism.

Effectively, the two-feature analysis avoids syncretism among the values of its features, by taking as the basis of those values the very syncretisms that characterize the one-feature analysis. For example, in the one-feature analysis, **TAM**:1 and **TAM**:2 (following the labels of Table 8) share their syncretic, μN exponent on thematic stems, and in the two-feature analysis, **TAM**:1 and **TAM**:2 correspond to **TAMT**:PROGRESSIVE. Likewise, in the one-feature analysis, **TAM**:7, **TAM**:8 and **TAM**:9 share their μLOC exponent on athematic stems, and in the two-feature analysis, **TAM**:7, **TAM**:8 and **TAM**:9 correspond to **TAMA**:INSTANTIATED. If we consider this property of the two-feature analysis in light of findings in Sects. 4–7, we see that the feature values of the two-feature analysis are based not on orthogonality, or semantics, or on interactions with syntax, but on patterns of exponence. What unifies **TAMT**:PROGRESSIVE, for example, is simply that it is realized as μN. Consequently, while the single **TAM** feature often has multiple values mapping syncretically onto one and the same exponent, the two features **TAMA** and **TAMT** typically have a one-to-one mapping between their values and their exponents. All else being equal, this directness of mapping might count in favour of the two-feature analysis, on the grounds of simplicity, for example. However, it is important to ask: is this still true, within the context of our overarching analysis of Kayardild morphology? We answer that question in Sect. 8.2, and in Sect. 8.3 we draw parallels between Kayardild TAM and the discussion in Sect. 2.2 of 'split ergativity'.

8.2 Discordance with the logic of morphomic analysis

In Sect. 3 we saw that there are strong grounds for analysing Kayardild morphological exponence in morphomic terms. The core reason is that by doing so we make possible an elegant and balanced analysis of the abundance of instances where multiple inflectional feature values, throughout the inflectional system, map onto the same morphomic exponent. Worryingly though, the basis of the two-feature analysis of Kayardild TAM runs in the opposite direction: it reduces the amount of many-to-one mappings by packaging the 'many' into single feature values. In that sense, the basis of the two-feature analysis runs counter to the overarching analysis of Kayardild, as it attempts to package shared exponence *within* feature values, rather than in the mappings between feature values and morphomic categories. The one-feature analysis is more in keeping with the general analysis of the morphological system.

8.3 One feature masquerading as two

The reader may have noticed some similarities between Table 19, which shows syncretism in the one-feature analysis of Kayardild TAM, and Table 3, which showed syncretism in the one-feature analysis of Guugu Yimidhirr CASE. The parallels are strong. In both instances, the two-feature analysis was the first to be proposed by linguists; it was inspired by patterns of exponence, in particular by patterns of syncretism across values which differ between two kinds of stem (pronouns versus nouns in Guugu Yimidhirr, and thematic versus athematic stems in Kayardild); and it turns out to be largely at odds with evidence gained from other aspects of the inflectional system. In Sect. 2.2 we also noted that the two-feature analysis of Guugu Yimidhirr CASE placed a particular demand on the morpho-syntactic system, requiring a verb either to 'peek' ahead to look at the word class of its dependent before assigning the correct case feature and value, or to assign two feature specifications (both CASEP and CASEN), although only one feature would be realized on any given word. The latter analysis, in which two features are assigned but only one is realized, is in fact entirely parallel to Round's (2013) formal analysis of TAMA and TAMT. Both TAMA and TAMT are assigned to words under the appropriate VP node, but only one of them is realized on a given word. Without rehearsing the details of Round's formal analysis (see Round 2013: 169–176), we simply note that by adopting a single-feature analysis of TAM, the morphological system of Kayardild no longer needs to stipulate this complementarity between the realization of TAMA and TAMT, and it no longer needs to associate a large number of words in every clause with two TAM features, of which only one is ever visible. The formal system thereby becomes both simpler and more transparent under a single-feature analysis.

9 Conclusions

9.1 For the formal analysis of Kayardild morphology

We have argued for an analysis of Kayardild, according to which there is just one TAM feature. That feature, which we name simply TAM, has sixteen values whose

Table 21 Sixteen values of the single TAM feature and their equivalents

	TAM value	Evans (1995a)		Round (2013)	
		TAMV	MODAL CASE	TAMT	TAMA
1	FUNCTIONAL	–	–	CONT	FUNC
2	CONTINUOUS	_[a]	_[b]	CONT	PROG
3	DESIDERATIVE	DES	MOBL	DES	EMO
4	HORTATIVE	HORT	MOBL	HORT	EMO
5	APPREHENSIVE	APPR	MOBL, MPROP	APPR	EMO, FUT
6	POTENTIAL	POT	MPROP	POT	FUT
7	COUNTERFACTUAL	POT	MLOC	POT	INS
8	ACTUAL	ACT, IMM	MLOC	ACT, PRES	INS
9	IMMEDIATE	IMM	MLOC	IMM	INS
10	PAST	PAST	MABL	PAST	PRIOR
11	RESULTATIVE	RES	ZERO	RES	ZERO
12	IMPERATIVE	IMP	ZERO	IMP	ZERO
13	ANTECEDENT	_[c]	_[d]	ANTE	ANTE
14	DIRECTED	DIR	MALL	DIR	DIR
15	INCIPIENT	–	–	INCIP	INCIP
16	PRECONDITION	PREC	MABL	PREC	PREC

[a]Inflectional nominalization

[b]OBLIQUE ASSOCIATING CASE

[c]Inflectional nominalization, plus CONSEQUENTIAL CASE

[d]CONSEQUENTIAL RELATIONAL CASE

semantic value and morphomic exponents were listed in Table 19. In Table 21, we propose a set of labels for each value of TAM and present a comparison with equivalents in the analyses of Evans (1995a) and Round (2013).

In terms of Round's (2013) formal analysis of the morphology–syntax interface in Kayardild, our revision is easily integrated into the broader analysis, and has a simplifying effect. We can state this briefly. Our TAM values will need to attach in the syntax at the same nodes to which Round's equivalent TAMA feature attaches; this will ensure that features percolate to the requisite DP constituents. Round's analysis of competition between the realization of TAMA and TAMT becomes redundant once these are replaced by a single feature TAM, for which one need only formulate rules of stem-sensitive allomorphy in accordance with the facts in Table 19. As we argued in Sect. 8.2, our revision is also more in keeping with the overarching, morphomic analysis of the morphological system. We also argued that Round's (2013) NON-VERIDICAL value of TAMT is better analysed as a value of the POLARITY feature, which we can label NEGATIVE2.

9.2 For the typology of feature systems

There is a view, held by many but certainly not all linguists, that there is a fixed list of features, from which individual languages employ some subset, see for instance,

Zwicky (1986: 988) and Chomsky (2001: 10). This is a view we share (as in Corbett 2012: 107–111), though this does not impact directly on our analysis of Kayardild. Related to this view is another, directly relevant to our analysis, which we shall call the "No Concurrent Features Conjecture". According to this view, a language may have, or not have, each of the possible features, but it may not have two instances of the same feature. In other words, a language may have a CASE system, or not have one, but it may not have two CASE systems. The conjecture is not generally stated directly, but we see it in linguists' use of terms: where a language might be analysed as contravening the conjecture, we may find terms chosen to avoid the issue. Thus languages which arguably have two gender systems may be described as having a gender system and a classifier system.

In our view, the conjecture is an excellent rule of thumb. Following Ockham, we should not propose two features of the same type if there is an adequate analysis with just one. But we stress that we do not rule out such analyses. As just one example, consider gender in Michif. This language was formed in Canada through the marriages of local women who spoke Cree and men (fur traders) who spoke French. It combines an animate-inanimate gender system of the type we expect to find in an Algonquian language with a masculine-feminine gender system. These two systems occur together in the noun phrase. Research on this language is reported in Bakker and Papen (1997) and Bakker (1997). The data specific to gender are available in Corbett (2006: 269–270), while Corbett (2012: 176) discusses the Michif situation as an instance of a combined gender system. Thus Michif could be argued to have two gender features, that is, two orthogonal features, each of which independently would qualify as a gender feature.[36] Thus we do not rule out the possibility that a language should have two features of the same type. If it does, that is unusual, interesting and worthy of further study. In our Michif example, there are special circumstances which gave rise to the two potential gender systems but the result, we suggest, has two concurrent gender systems.

Given that we would take a critical view of analyses with concurrent features, but certainly not rule them out, we have re-examined the evidence in Kayardild and have concluded, unlike the previous accounts, that Kayardild has *one* TAM feature. Just as Goddard (1982) demonstrated that a single case feature offered a more insightful analysis of systems previously analysed as showing split ergativity so, we suggest, our comparable analysis of Kayardild is a step forward compared with the earlier accounts.[37] This means that we have removed a potentially strong candidate for concurrent TAM systems. On the way, we had to return to the data and sharpen the analysis of Kayardild at key points. We are thus making a methodological point: taking the

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[36]See Corbett and Fedden (2015) for extended discussion of potentially concurrent gender and classifier systems. Members of the Set-theoretical School grappled with the problem of gender and animacy in various Slavonic languages, as described with great care and insight by van Helden (1993), but their concerns were rather different. Van Helden himself considers briefly the question of a language with two gender-like categories, though he was not aware of any such language (1993: 905).

[37]The issues are far from obvious: thus Evans and Round were strong promoters of Goddard's insights into CASE, but found sufficient evidence in Kayardild to propose concurrent TAM analyses. Again we do not rule out the possibility of a language having two CASE systems: see the interesting analysis of Ossetic using concurrent case systems in Belyaev (2014).

issue of concurrent versus single features seriously has led us to a better analysis.[38]
And we are also making a claim about competence: we do not need to propose the
more complex system as part of the competence of speakers of Kayardild.

Though we have removed Kayardild from the list of potential examples of concurrent feature systems, we have not ruled out such systems. Nor indeed do we deny the existence of less clear, in-between systems. These would be expected, if languages can move to and from having concurrent systems.

9.3 Rewards of reanalysis

The Kayardild language, at the height of its power and world influence (as Evans
1995c nicely put it) had perhaps 120 speakers. While the number of speakers has
declined, the impact of Kayardild on the field of linguistics has been considerable,
primarily as a result of Evans' grammar (1995a). Any linguist who thinks they have a
clear notion of what is a "possible human language" might well check it against that
grammar, to have their notion refined or perhaps shaken. The influence of Kayardild
continues, for instance through Round (2013, 2015, 2016).

We have revisited one of the areas where Kayardild is particularly interesting, and
one where Evans and Round proposed relatively similar analyses. In slightly different
ways, both claimed that there were two TAM features in Kayardild. Among all the
other unusual traits of Kayardild this one had not drawn particular attention: however,
while it is perfectly possible for a language to have two features of the same type,
this is relatively unusual. In the current paper we have given a reanalysis of TAM
in Kayardild which is cross-linguistically more usual. We have treated it in a way
that fits more readily within the typology of feature systems. In doing so, we had to
look carefully at the arguments which would justify postulating two features rather
than one, and this constitutes our contribution to the more general typology of feature
systems. These arguments led us to revisit the corpus of Kayardild, to check on the
instances which are rare or in some cases questionable, and to give a more refined
analysis of the data.

We have moved from the fascination of an interesting corner of the grammar of
Kayardild, to the typology of features, and back to the corpus of Kayardild. As a
result, we found Kayardild to be both exotic and ordinary.

[38]The account we have given for recognizing features, and hence the possibility of concurrent systems,
relates directly to work in Canonical Typology (see the criteria for canonical features and values discussed
in Corbett 2012: 156–163). In essence we have clarified and extended proposals sketched there.

Appendix: Corpus study

This section contains detailed evidence on key empirical points bearing directly on the question of whether we analyse Kayardild as having one TAM feature or two. Rehearsing this evidence is essential for setting our argument on a firm footing. The essential points are: in Appendix A.2 the removal of Round's **TAMA**:NEGATORY value from the inventory of athematic TAM values, on the grounds of evidence from the interface between syntax and inflection; in Appendix A.3 the identification of a feasible reanalysis of NONVERIDCAL as a value of **POLARITY** rather than **TAMT**; in Appendix A.4 the simplification of Round's three-way distinction in present tense TAM types to a two-way distinction, after considering evidence from usage and frequency; in Appendix A.5 the simplification of Kayardild's range of apprehensive clause types, from three to two, after identifying more parsimonious alternative analyses; and in Appendix A.6 the identification of a consistently counterfactual usage of the combination of **TAMA**:INSTANTIATED and **TAMT**:POTENTIAL. We begin by introducing the corpus in Appendix A.1.

A.1 The corpus

The corpus comprises on the order of 12,000 distinct[39] multiword utterances in Kayardild, sourced from recordings by Stephen Wurm in 1960; Normal B. Tindale in 1960 and 1963; Nick Evans from 1984 to the present; and Erich Round from 2005 to 2007; as well as printed examples in Evans (1995a, 1995b, 2003) and Round (2009, 2013). All transcriptions were by Erich Round, produced between 2005 and the present. The recordings by Wurm, which supply many of the example sentences in Evans (1995a), were transcribed in full. Other recording sets were transcribed in part. Searches of transcriptions were conducted within the software application ELAN (Wittenburg et al. 2006), using regular expression search strings followed up with manual investigation of search results. For printed sources, full-text searches were conducted using literal strings.

   Our object of study is the traditional, or classical, Kayardild language, spoken by speakers who were fluent at the time when they left Bentinck Island in the late 1940s, and who maintained that fluency through their lifetimes. This was the variety studied by Evans (1995a) and Round (2013). With this in mind, we were careful to ensure that examples in our corpus should be representative of that variety and not any other, as both Round (2013: 3) and Evans (1995a: 54–56, 65, 149, 406, 517) note that younger speakers' Kayardild can differ morphologically from the classical variety. Wurm and Tindale recorded only the variety of Kayardild that we wish to focus on, and in Round's and Evans' recordings, speakers of that variety can be reliably

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[39]That is, the same content uttered on multiple occasions is counted only once.

identified. However, in the case of written examples for which we have not found a corresponding recording, our approach was to exercise caution. The experience of the first author is that even speakers of classical Kayardild will at times accept suggested, ungrammatical sentences of Kayardild as grammatical, and speakers of non-classical varieties may do the same when asked to judge putative sentences of the classical language. For this reason, we place a low level of certainty on the representativeness, with respect to classical Kayardild, of sentences which are obviously constructed by linguists, such as those in Evans (2003) which illustrate TAM possibilities by the presentation of a paradigm-like set of minimally varying sentences; and sentences which are possibly constructed by linguists, such as some few sentences from Evans (1995a) which vary minimally from attested, recorded sentences by Wurm. That being said, such examples were few in number, and we will mention them only infrequently in the remainder of the appendix.

A.2 Syntactic evidence against TAMA:NEGATORY

In this section we present syntactic evidence which makes Round's (2013) postulation of a NEGATORY value of **TAMA** untenable. The corpus reveals examples in which the distribution across the clause of the relevant marker /-wari/ is inconsistent with it being a realization of a **TAMA** value. Instead, the distribution of /-wari/ is consistent with Evans' (1995a) analysis, that /-wari/ marks **CASE**:PRIVATIVE. We refine this slightly: the surface forms at issue are markers of both **CASE**:PRIVATIVE and TAM, namely **TAMA**:INSTANTIATED.

In examples (27)–(30) of Sect. 3.5, we saw that Kayardild possesses a set of semantically negative clauses in which the marker *-n-marri* appears on all thematic stems of the sentence. In such sentences, DPs within the VP have been attested with inflections for **TAMA**:INSTANTIATED (28), **TAMA**:FUTURE (29) and **TAMA**:PRIOR (30). They have also been attested with a marker which is underlyingly /-wari/, for which there are two analyses with *prima facie* plausibility. The first analysis, adopted by Evans (1995a: 475) is that /-wari/ is a realization of **CASE**:PRIVATIVE as shown in the glossing of *dangkawalanymarri* and *junkiiyarri* in (A.1). (All other morphology in (A.1) is glossed after Round (2013).)

(A.1) *Niya*   *wuunmarri,*
       ŋi-a   wuː-c-n-wari
       3SG-T   {give-J}-{μN-μPRIV}-T
       3SG   give-NONVER

       dangkawalanymarri   *junkiiyarri.*
       ṭaŋka+palaṭ-wari+ki-a   cunki-ic-wari+ki-a
       man-μPL-μPRIV-μLOC-T   {straight-μSAME}-μPRIV-μLOC-T
       man-PL-PRIV-INS   {in return}-PRIV-INS
       'He never gives food back to other people.' [E228.ex.5-108]

Two remarks can be made, which support the plausibility of this analysis. First, in (A.1) **CASE**:PRIVATIVE functions as a kind of negation predicate. Semantically, this is not identical to the usual function of the Kayardild PRIVATIVE **CASE**, which is to mark something which is lacking or absent, but it represents an entirely plausible,

subsidiary function of a privative **CASE** category. Second, if the /-wari/ marker is taken to be a marker of **CASE**, then it is possible to argue cogently that the **TAMA** value in (A.1) is the same as that which we have seen previously in (28), namely **TAMA**:INSTANTIATED, even though in (A.1) there is no surface phonological marker of it: this is because the realization of **TAMA**:INSTANTIATED, if it were present, would come after the /-wari/ marker of **CASE**, and its underlying form would be /+ki/; the underlying string /i+ki/ becomes [i] at the surface according to general phonological processes of Kayardild, and therefore is consistent with what we see in (A.1). Thus, there is nothing in what we already know about Kayardild inflection which militates against an analysis in which the /-wari/ in sentences like (A.1) is **CASE**:PRIVATIVE, and the **TAMA** value is INSTANTIATED.

Round (2013: 182–184) proposes a different analysis. Noting the similarity between the clausal distribution of the /-wari/ marker and clausal distributions of **TAMA** markers in general, Round proposes that /-wari/ marks a value of **TAMA**, dubbed NEGATORY. The athematic marker *-n-marri* is also analysed as a marker of TAM, namely **TAMT**:NONVERIDICAL. A glossing according to Round's analysis is in (A.2). However, our corpus survey raised three problems for Round's analysis.

(A.2) *Niya   wuunmarri,*
       ŋi-a   wuː-c-n-wari
       3SG-T   {give-J}-{µN-µPRIV}-T
       3SG   {give}-{NONVER}

       dangkawalanymarri   junkiiyarri.
       ʈaŋka+palaʈ-wari-a   cunki-ic-wari-a
       person-µPL-µPRIV-T   {straight-µSAME}-µPRIV-T
       person-PL-NEGAT   {in return}-NEGAT
       'He never gives food back to other people.' [E228.ex.5-108]

The problems for Round's analysis relate to the syntactic predictions entailed by the analysis of /-wari/ as a **TAMA** value. Exponents of **TAMA** ought to appear on words within DPs subordinate to one of the VP nodes VP_β, VP_γ or VP_δ, shown in the syntactic structure (19) in Sect. 3.3. Moreover, if one DP in that VP is marked for the **TAMA** value, then all should be, because they would inherit their **TAMA** value in a precisely parallel fashion from the dominating VP node. Different predictions flow from an analysis of /-wari/ in terms of **CASE**. The privative **CASE** value would be free to appear on any DP, not only those under VP_β, VP_γ or VP_δ; and if it did appear on one DP within such a VP, there is no necessity that it should also appear on any others. Three pieces of evidence indicate that the analysis in terms of **CASE** is correct.

If /-wari/ is a marker of **TAMA** then it should appear on athematic stems in all DPs, without exception, under either VP_β, VP_γ or VP_δ. To test this prediction, we require a sentence which contains more than one DP inside the relevant VP, of which at least one such DP is inflected with /-wari/; in such instances, all DPs should be marked with /-wari/. Such sentences are rare, but our corpus reveals two. Sentence (A.2) is consistent with the prediction from Round's analysis, however (A.3) is not: its DP2 carries the /-wari/ marker but its DP1 does not. Given all else that we know about Kayardild inflection, this indicates that the suffix /-wari/ in (A.3) cannot be realizing a value of **TAMA**. An analysis in terms of **CASE**:PRIVATIVE is feasible, however.

(A.3)   [*Binjarrinjiya* DP1]   [*rawarriya* DP2]   *thulanmarri.*
         piɲcariɲci+ki-a   ɹa-wari+ki-a   t̪ula-t̪-n-wari-a
         place name-μLOC-T   south-μPRIV-μLOC-T   {flow-J}-{μN-μPRIV}-T
         place name-INS   south-PRIV-INS   {flow}-{NONVER}
         '[The creek] doesn't flow to the south at Binjarrinji.' [T1963]

Implicit in Round's (2013) analysis of /-wari/ is that it conveys a simple negative predicate when, and only when, it realizes **TAMA**:NEGATORY, in contrast to the meaning 'absent, lacking' of the PRIVATIVE **CASE**. If that were so, a second prediction is that we should be able to identify all instances of simple negative /-wari/ with **TAMA** inflection. If so, then /-wari/ should never convey simple negation on subjects, since subject DPs never inflect for **TAMA**. However in (A.4), the verb of the second clause is marked with *-n-marri*, and we find the /-wari/ suffix on its subject DP, where its meaning is a simple negative predicate. Since this /-wari/ cannot be a marker of **TAMA**, we conclude that /-wari/ as a marker of PRIVATIVE **CASE** can convey a simple negative predicate.

(A.4)   *Warirray*   *dulki*   *kurrij,*
         waɹira+ki-a   t̪ulk+ki-a   kuri-c-a
         nothing-μLOC-T   place-μLOC-T   {see-J}-T
         nothing-INS   place-INS   {see}

         niwanmarri   *warranmarri,*
         ŋi+paɲ-wari-a   wara-c-n-wari-a
         {3SG-μPOSS}-PRIV-T   {go-J}-{μN-μPRIV}-T
         3SG-PRIV   go-NONVER

         dathininja   *kurrkathurrk.*
         t̪at̪in+iṉt̪a-ø   kurka-t̪-kurka-ø
         that-μOBL-T   {take-TH}-{μLOC.OBL}-T
         that-SEJ   {take}-{INS-SEJ}
         '(They) can't see him anywhere, (no sign of) him going around, whom that one (Barrindindi) had just grabbed.' [E521.ex.12-75]

A third prediction of Round's analysis is that the NEGATORY **TAMA** value, realized by /-wari/, should only co-occur with the NONVERIDICAL **TAMT** value, realized by *-n-marri*. Yet we find two examples which contradict this prediction. In (A.5) and (A.6), DPs inflected with /-wari/ appear in clauses whose thematic stems are inflected not with *-n-marri*, but rather with the normal NEGATIVE **POLARITY** feature. The DP marked by /-wari/ in (A.5) is a subject, and in (A.6) is an object.

(A.5)   *Makuwalayarriya*   *burukuraajarriya;*
         maku+palat̪-wari-a   puɹukuɹaː-c-wari-a
         woman-μPL-μPRIV-T   {make fire-J}-μPRIV-T
         woman-PL-PRIV   {make fire}-NEG.ACT

         bithiinbala   *burukuraaj.*
         pit̪iːn+palat̪   puɹukuɹaː-c-a
         man-μPL.T   {make fire-J}-T
         man-PL   {make fire}-ACT
         'Women don't make fire (with firesticks); men make fire.' [R2006-aug-10]

(A.6) *Warraa,*   *kurrijarri*   *jawarri.*
   wara-a   kuri-c+wari-a   ca-wari+ki-a
   far-T   {see-J}+μPRIV-T   track-μPRIV-μLOC-T
   far-INS   {see}-NEG.ACT   track-PRIV-INS
   '[They go] far, [till] they can't see their tracks.' [E1984]

Taken together, our corpus examples indicate that Round's NEGATORY TAMA analysis of /-wari/ marking on DPs is untenable. For multiple reasons, the marker cannot be a realization of TAMA. In contrast, its distribution and semantics are consistent with PRIVATIVE CASE. We may add that when the verb of a clause is negated, either with *-n-marri* or by other means, then an available reading of CASE:PRIVATIVE is as a simple negative predicate. Accordingly, we remove NEGATORY from the list of TAMA values to be considered in Sects. 4–8.

A question then arises regarding the status of the *-n-marri* inflection on thematic stems, which Round (2013) analyses as TAMT:NONVERIDICAL. We turn to this next.

A.3 NONVERIDICAL as a value of POLARITY, not TAM

In this section our focus is on Round's (2013) TAMT:NONVERIDICAL feature, realized as *-n-marri* on thematic stems. We draw attention to an alternative, feasible analysis, according to which NONVERIDICAL is a value not of TAMT but of POLARITY.

In Round's (2013) system, there are two inflectional categories which share the properties of conveying clause-level semantic negation and appearing on thematic stems, though they are organized as values of two different morphosyntactic features: POLARITY:NEGATIVE and TAMT:NONVERIDICAL. These are not the only similarities between them. In Appendix A.2 we saw that both license the reading of CASE:PRIVATIVE as a simple negation predicate. Recalling Sect. 4 and Sect. 5, we note that both combine semantically with other TAM features in a compositional manner, and that both are relatively free in terms of which athematic TAM values they combine with: NEGATIVE combines with seven TAMA values, and NONVERIDICAL with three. The chief difference is that POLARITY:NEGATIVE is typically realized morphologically as an affix distinct from TAMT, which follows it, whereas the NONVERIDICAL appears alone on the thematic stem, unaccompanied by any (other) overt marker of TAMT. Our essential observation here is that there is no substantial impediment to analysing the NONVERIDICAL as a value of POLARITY. A NONVERIDICAL value of POLARITY would simply be one which is not accompanied by an overt realization of TAMT. Recall from Sect. 3.5 that even POLARITY:NEGATIVE will at times be unaccompanied by a distinct realization of TAMT, so this is not overly surprising.[40] The benefits of such a reorganization of the NONVERIDICAL would be that TAM and polarity in Kayardild would be partitioned into distinct morphosyntactic

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[40]Another approach would be this: we argue that unlike the μNEG marker /-ɲaŋ/ which realizes POLARITY:NEGATIVE, the exponent of POLARITY:NONVERIDICAL is athematic; for this reason, we do no expect TAMT inflections to follow it (since TAMT only appears on thematic stems). Furthermore, one could argue, an overt realization of POLARITY blocks a realization of TAMA, and so even though the exponent of POLARITY:NONVERIDICAL is athematic, no realization of TAMA follows it. Blocking relationships like this are found elsewhere in the Kayardild inflectional system, for example between the two complementization features (Round 2013: 88–90).

features; the semantic interaction with **CASE**:PRIVATIVE would uniformly be one between **CASE**:PRIVATIVE and **POLARITY** values; and the semantic compositionality and freedom of combination of TAM and **POLARITY** values would be principled, as opposed to being a curious accident as in Round's analysis, where the sole 'negative' **TAMA** feature happens also to be the most freely combinable in this manner. It is, of course, a frequent and expected situation to find negation cross-cutting with TAM. In Sects. 4–5, we discuss how organizing NONVERIDICAL in the **POLARITY** feature also allows us to better evaluate Kayardild's other **TAMT** features in relation to our question of whether we are dealing with one feature or two.

A.4 The semantics of present tenses

In this section we argue, contrary to Round's (2013) analysis, that Kayardild has only two distinct, present-like TAM types, not three. The issue here hinges upon (non)equivalences between TAM types in Kayardild's complementized clauses, which we abbreviate as c-clauses, and its uncomplementized full clauses, which we abbreviate as u-clauses. The key observational fact is that in c-clauses there is just one pattern of present-like TAM inflection, which we can call PRESENT-c, and in u-clauses there are two, which we refer to here as PRESENT-u1 and PRESENT-u2. In terms of their TAM feature values, Round (2013) analyses all three as distinct, whereas Evans (1995a) treats PRESENT-c and PRESENT-u2 as equivalent, and thus distinguishes only two types. The feature values assigned to the PRESENT-u1, PRESENT-u2 and PRESENT-c by Round and Evans are summarized in Table A.1.

As we see in Table A.1, Evans' and Round's analyses are entirely parallel to one another with respect to the features **TAMV/TAMT**, which group together PRESENT-c and PRESENT-u2. The analyses differ with respect to **MODAL CASE/TAMA**, where Round (2013: 115) presents syntactic and semantic arguments for recognising a distinct **TAMT**:PRESENT feature value for PRESENT-c. Earlier, in Sect. 3.4, we discussed reasons why Round's syntactic arguments can be set aside, and consequently our argumentation in this section focuses on semantics. First, however, let us review the inflectional forms involved. In Table A.2 we list the morphomic exponents of these present-like TAM types, on thematic and athematic stems. Example sentences are in (A.7)–(A.9) below.

Table A.1 Feature values assigned to Kayardild's three present-like clause types

	Evans (1995a)		Round (2013)	
	TAMV	**MODAL CASE**	**TAMT**	**TAMA**
PRESENT-u1	ACTUAL	LOCATIVE	ACTUAL	INSTANTIATED
PRESENT-c	IMMEDIATE	LOCATIVE	IMMEDIATE	PRESENT
PRESENT-u2	IMMEDIATE	LOCATIVE	IMMEDIATE	INSTANTIATED

Table A.2 Morphomic exponents of Kayardild's three present-like clause types

	On thematic stems	On athematic stems
PRESENT-u1	none	μLOC
PRESENT-c	μLOC	μLOC
PRESENT-u2	μLOC	μLOC

Comparing Tables A.1 and A.2, we see that Evans' feature values exactly follow the pattern implied by the exponents. Round (2013) departs from this in the case of the athematic stems. Our argument here will be that Round was correct to depart from a strictly form-based assignment of feature values, but incorrect to set up a three-way featural contrast between PRESENT-u1, PRESENT-u2 and PRESENT-c. We can begin the argument with example sentences.

Sentence (A.7) illustrates PRESENT-u1, which has a default non-future meaning. The verb *dalwanija* has no overt marker of **TAMV/TAMT**, and consists morphologically of the verb stem followed by a termination (glossed T).

(A.7) *Muthaya*   *wuranki*   *bilda*   *dalwanija*   *barrngkay.*
       muṯa+ki-a   wuṟan+ki-a   pi-l-ta   ṯalwani-c-a   parŋka+ki-a
       much-μLOC-T   food-μLOC-T   3-PL-T   {dig up-J}-T   lily-μLOC-T
       much-INS   food-INS   3-PL   {dig up}   lily-INS
       'They dug up a lot of food, lily roots.' [E251.ex.6-36]

Sentence (A.8) illustrates PRESENT-u2, which conveys an 'immediate' present, denoting fleeting events occurring right at the point of utterance (Evans 1995a: 256–258).

(A.8) *Ra-rung-ka*   *bi-l-da*   *budii-j-iy-a*
       south-μALLC-T   3-PL-T   {run away-J}-μLOC-T
       south-ALLC   3-PL   {run away}-IMM

       kuujuu-j-i-ring-ki-.
       {swim-J}-{μLOC-μALL}-μLOC-T
       {swim}-{DIRT}-INS
       'They're running away to the south to swim.' [R2005-jul-08]

Sentence (A.9) illustrates PRESENT-c, the sole present-like TAM type in c-clauses. In (A.9), PRESENT-c conveys a simultaneity between the event of the subordinate clause and that of the matrix clause.

(A.9) *Ngada*   *marinmarriijarr,*   *dathinkurrka*
       ŋaṯ-ta   maṟin-mari-i-c+ŋara   ṯaṯin+kurka-ø
       1SG-T   self-{hear-μMID-J}+ǔCONS-T   that-{μLOC.μOBL}-T
       1SG   self-{hear-MID}-PAST   that-{PRES-SEJ}

       thungalurrka   *kamburijurrk.*
       ṯuŋal+kurka-ø   kampuṟi-c+kurka-ø
       thing-{μLOC.μOBL}-T   {speak-J}-{μLOC.μOBL}-T
       thing-{PRES-SEJ}   {speak}-{IMM-SEJ}
       'I heard myself speaking on that thing (the radio).' [E491.ex.12-8]

Evans (1995a: 511–512) and Round (2013: 115) both observe that PRESENT-c differs semantically from PRESENT-u1 and PRESENT-u2. Evans places this observation in the context of the tense semantics of subordinate c-clauses more generally. He notes that for all of Kayardild's TAM types which occur both in u-clauses and c-clauses, the semantics in subordinate c-clauses shifts, and in most cases is understood as relative to the matrix clause (Evans 1995a: 512). By this logic, it is appropriate to

identify PRESENT-c with one of the two u-clause present-like tenses, PRESENT-u1 and PRESENT-u2. On this point, we agree with Evans.[41] However, Evans matches PRESENT-c with PRESENT-u2, the 'immediate' present which shares the same exponents. In contrast, we draw attention to a second use of c-clauses, which is not as subordinate clauses but as topicalized main clauses, as in (A.10). In (A.10) we see that PRESENT-c, now in a main clause, has a general non-future meaning quite equivalent to PRESENT-u1.

(A.10) *Barrunthawurrka*   *ngijuwa*   *kurrijurrka*   *ni,*
      parun̪t̪a+kurka-ø   ŋicu+pa-ø   kuri-c+kurka-ø   ŋi-a
      yesterday-{μLOC.μOBL}-T 1SG-μSEJ-T {see-J}-{μLOC.μOBL}-T 3SG-T
      yesterday-{PRES-SEJ}   1SG-SEJ   {see}-{IMM-SEJ}   3SG

      yakuriya burldija   *kamarruru.*
      jakuɻi-a   puɻt̪i-c-a   kamar+kuɻu-a
      fish-T   {hit_with_projectile-J}-T   stone-μPROP-T
      fish   {hit_with_projectile}   stone-PROP
      'Yesterday I saw him throw a stone at a fish.' [W1960]

Our conclusion from this is that Kayardild has a default non-future TAM type, which we identify with PRESENT-u1 and PRESENT-c, and label ACTUAL (following both Evans' and Round's practice when labelling it in u-clauses). In subordinate c-clauses, where all tense meanings are 'shifted', the ACTUAL TAM type is used as a simultaneous tense. In addition, Kayardild possesses an IMMEDIATE present (PRESENT-u2), which occurs only in u-clauses.

A.5 Parsimony and the analysis of apprehensive clauses

Many Australian languages possess an APPREHENSIVE category of TAM, which is used to refer to undesirable events which should be avoided (Dixon 1980: 380, Blake 1987: 136). Kayardild has three putative apprehensive TAM types. In this section we show that only two are well motivated, and of them, one appears to be restricted to complementized clauses. The third is rare and is ambiguous in the sense of Sect. 3.1.

Sentences (A.11)–(A.13) illustrate **TAMT**:APPREHENSIVE in combination with what appears at first to be **TAMA**:EMOTIVE, **TAMA**:FUTURE and **TAMA**:INSTANTIATED.

(A.11) *Dathina*   *wanku*   *baanyarra*   *ngijininj.*
      t̪at̪ina   wanku-a   paː-c-ɲara-ø   ŋicu-iɲ-in̪t̪a-ø
      that.T   shark-T   {bite-J}-μAPPR-T   1SG-μPOSS-μOBL-T
      that   shark   {bite}-APPR   1SG-POSS-EMO
      'That shark might bite me.' [E204.ex.5-20]

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[41]Round (2013: 115) does not explicitly take this context into account, though his primary concern is with the syntactic issue, whose status we have reinterpreted (Sect. 3.4).

(A.12) *Dankiya*   *rikaya*   *dulki,*   *jungarray,*   *malantha*
        ṯan+ki-a   ṟika+ki-a   ṯulk+ki-a   cuŋara+ki-a   mala-inṯa-ø
        this-μLOC-T   cold-μLOC-T   place-μLOC-T   big-μLOC-T   sea-μOBL-T
        this-LOC   cold-LOC   place-LOC   big-LOC   sea-SEJ

     wanjiinyarrantha   *ngakuluwanjuunth!*
     waɲciː-c+ɲara-inṯa-ø   ŋa-ku-lu+paɲ+kuu-inṯa-ø
     {ascend-J}-μAPPR-μOBL-T   1-2-PL-μPOSS-ɲ̃PROP-μOBL-T
     {ascend}-APPR-SEJ   1-2-PL-ø-FUT-SEJ
     '(Even) in this cold place up high the sea might climb up to us.' [W1960;
     R112.ex.5-43]

(A.13) *Thararra*   *kalinyarra*   *wambaliya,*   *naanyarr.*
        ṯaṯar-a   kali-c-ɲara-ø   wampal+ki-a   ŋaː-c-ɲara-ø
        ember-T   {jump-J}-μAPPR-T   bush-μLOC-T   {burn-J}-μAPPR-T
        ember   {jump}-APPR   bush-INS   {burn}-APPR
     '(Look out), the embers are jumping into the bush, it might burn.'
     [E405.ex.10-16]

Apprehensive clauses such as (A.13), with **TAMA**:EMOTIVE, represent the norm and occur many dozens of times in our corpus. The other two require comment.

Apprehensive clauses with **TAMA**:FUTURE are restricted. In complementized apprehensives, **TAMA**:FUTURE is used as frequently as **TAMA**:EMOTIVE. Our corpus contains six instances of the former and five of the latter,[42] and from this small set of sentences, we were able to identify no obvious semantic difference between them.[43] The relative frequencies of **TAMA**:FUTURE and **TAMA**:EMOTIVE in uncomplementized clauses are starkly different. In uncomplementized clauses, our corpus contains many dozen instances of **TAMA**:EMOTIVE but only two putative examples of **TAMA**:FUTURE, one of which we will discount.[44] The other is (A.14), cited by Evans (1995a: 3,405).[45]

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[42]Evans (1995a: 132) states that in complementized clauses the usual **TAMT**:EMOTIVE (his OBLIQUE **MODAL CASE**) 'is replaced by' **TAMT**:FUTURE (his PROPRIETIVE **MODAL CASE**) but our evidence does not support this.

[43]Evans (1995a: 405) suggests that by using **TAMA**:FUTURE 'the speaker stresses his certainty of being able to effect an unpleasant retaliation', but the same connotation is absent in clauses like (A.12).

[44]The discounted example is (a), which is cited by Evans (1995a: 132) along with a corresponding **TAMA**:EMOTIVE version and a complementized version (Evans 1995a: 132); it contains an unexpected form *balanyarra* (expected *balanharra*), and we suspect it may be linguists' construction, or uttered by a speaker of non-classical Kayardild.

(a) *Ngada*   *balanyarra* (sic)   *ngumbanju.*
     ŋaṯ-ta   pala-ṯ-ɲara-ø   ŋuŋ+paɲ+kuu-ø
     1SG-T   {hit-J}-μAPPR-T   2SG-μPOSS-ɲ̃PROP-T
     1SG   {hit}-APPR   2SG-ø-FUT
    'I will hit you.' [E95:132.ex.4-11]

[45]Example (A.14) is also minimally different from a complementized version recorded by Wurm, thus it may be a linguist's construction, or uttered by a speaker of non-classical Kayardild.

(A.14)   *Nyingka*   *ngudina*   *wangalk*,
         ɲiŋ+ka   ŋuti-c-ŋaŋ-ø   waŋalk+ka
         2SG-T   {throw-J}-μNEG-T   boomerang-T
         2SG   {throw}-NEG.IMP   boomerang

         ngada   *ngumbanju*   *burldinyarr.*
         ŋaṯ-ta   ŋuŋ+paɲ+kuu-ø   puʈi-c-ɲara-ø
         1SG-T   2SG-μPOSS-ɰ̃PROP-T   {throw-J}-μAPPR-T
         1SG   2SG-ø-FUT   {throw}-APPR
         'Don't you throw the boomerang, or I'll throw one at you.' [E205.ex.10-15]

Example (A.14) is ambiguous. In (A.14) the putative **TAMT**:FUTURE inflection is
marked by μPROP, however Kayardild also uses μPROP to inflect intended objects of
actions for **CASE**:PROPRIETIVE (Evans 1995a: 148). We suggest that in (A.14) the
'intentional object' analysis is correct. According to that analysis, the **TAMA** value of
the second clause in (A.14) is EMOTIVE, and therefore the same as all other attested
uncomplementized apprehensives. In (A.14) **TAMA**:EMOTIVE is not overtly marked,
but its overt absence is as predicted, since intentional objects sit higher in the syn-
tactic tree (A.14) than VP$_\gamma$, to which **TAMA**:EMOTIVE attaches (Round 2013: 116,
272–273).

Next we consider apprehensives with putative **TAMA**:INSTANTIATED, which is
realized by μLOC. Sentence (A.13) above, with putative **TAMA**:INSTANTIATED, is
cited at two places in Evans (1995a: 3, 405). Example (A.15) is a sentence with
identical form recorded by Wurm, except for an extra suffix on the final word. A
discussion of (A.15) will allow us to raise a number of issues relevant to the more
complex case of (A.13), so we begin with it.

(A.15)   *Thararra*   *kalinyarra*   *wambaliya*
         ṯaɻar-a   kali-c-ɲara-ø   wampal+ki-a
         ember-T   {jump-J}-μAPPR-T   bushfire-μLOC-T
         ember   {jump}-APPR   bushfire[46]-COMP

         naanyarranth.
         ŋaː-c-ɲara-iṉṯa-ø
         {burn-J}-μAPPR-μOBL-T
         {burn}-APPR-SEJ
         'The embers are jumping (out of the fire); we may get a bushfire here.'
         [W1960]

The final word of (A.15) is inflected for **SEJUNCT** complementization (glossed
SEJ), one of Kayardild's two complementization features.[47] This tells us that (A.15)
contains two clauses, the first uncomplementized and the second complementized.
The most straightforward account of the word *wambaliya* in (A.15) is as a focal-
ized subject DP which sits inside the second, complementized clause. Focus DPs
inflect for the second of Kayardild's complementization features, plain **COMPLE-**

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[46]The root *wambal-* is polysemous. In (A.15) the speaker used it as a translation of the English 'bushfire'.
In (A.13) it appears to mean 'bush'.

[47]Regarding these features, see our earlier footnote, 27.

MENTIZATION (glossed COMP). Focus DPs in Kayardild can occur within complementized clauses or can be freestanding. They are reported in Evans (1995a: 141–142) only in relation to freestanding instances, but are discussed at some length in Round (2013: 95–96). For current purposes, it should be noted that the COMP feature which marks words in focus DPs is realized by the same μLOC suffix that realizes **TAMA**:INSTANTIATED. In addition, focus DPs escape all inflection for TAM, due to their high syntactic position, cf. (19). Consequently, in sentence (A.15) both clauses can be analysed as regular apprehensives. Their **TAMA** value is not INSTANTIATED but EMOTIVE. The regular, **TAMA**:EMOTIVE value receives no overt realization, because neither clause in (A.15) contains a DP below VP$_\gamma$, the VP node to which **TAMA**:EMOTIVE attaches.

Let us now return gradually to Evans' example, (A.13). Sentence (A.13) does not contain a complementized clause, so its analysis will be different to (A.15). Our corpus contains just three other clauses whose structure is parallel to (A.13), that is, clauses that are uncomplementized apprehensives, accompanied by a DP marked with μLOC. We may begin with example (A.16), which is revealing.

(A.16)   *Kaburrbaya*   *niya*   *naanyarra,*
         kapurpa+ki-a   ɲi-a   ɲaː-c-ɲara-ø
         coals-μLOC-T   3SG-T   {burn-J}-μAPPR-T
         coals-LOC   3SG   {burn}-APPR

         kurrija   *karrngija*   *ngumbanda*   *kunawun,*
         kuri-c-a   karɲi-c-a   ŋuŋ+paɲ-ta   kunawuna-ø
         {look at-J}-T   {keep doing-J}-T   2SG-μPOSS-T   child-T
         {look at}   {keep doing }   2SG-POSS   child

         yaluluntha   *karnanyarranth*
         jalulu-inṯa-ø   kaɲa-c+ɲara-inṯa-ø
         flame-μOBL-T   {burn-J}-μAPPR-μOBL-T
         flame-SEJ   {burn}-APPR-SEJ

         'He's close to the fire and will get burnt. Watch your child, or he'll get burnt in the flames.' [W1960]

Of the three clauses in (A.16), both the first and last are apprehensives. The final clause is a regular apprehensive. Its **TAMA**:EMOTIVE value is realized on the location denoting DP *yaluluntha* 'in the flames'. This is normal in Kayardild, where location denoting DPs typically inflect for **TAMA** (Round 2013: 116, 146–150). In the first clause though, the location denoting DP *kaburrbaya* is inflected with μLOC, which we might at first suppose is a realization of **TAMA**:INSTANTIATED. However, Evans' (1995a: 3) claim was that apprehensives with **TAMA**:INSTANTIATED should denote undesirable events already taking place. This is not true in the first clause of (A.16); the event of the child's burning lies, hopefully to be averted, in the future. Thus, either we must weaken our claim about the semantics of **TAMA**:INSTANTIATED apprehensives, or seek another analysis. Two other analyses are possible.

The first alternative analysis of (A.16) is that in *kaburrbaya* the μLOC is a marker of LOCATIVE **CASE** and that *kaburrbaya* modifies the subject. Two semantic interpretations would be available for the sentence: either as 'he, at the fire, might burn', or 'he, in the fire, might burn'. On the first reading, the LOCATIVE DP refers to the

subject's current location, and in terms of scope, the 'undesirability' conveyed by the clause pertains solely to the clausal predicate 'burn'. On the second reading, 'undesirability' scopes over the whole clause, including the to-be-averted location of the subject 'in the fire'. As we will see soon, the second interpretation is always available in these examples; the first is not. Returning to the mechanics of inflection, because it modifies the subject, the DP *kaburrbaya* would not inflect for TAMA, cf. (19), and correspondingly, one could safely assume that (A.16) is a regular apprehensive clause with TAMA:EMOTIVE. We do not see any realization of EMOTIVE because there are no DPs in the right position to inflect for it.

A second alternative analysis of (A.16) is that in *kaburrbaya* the μLOC is a marker of COMP, and the DP *kaburrbaya* is a freestanding focus DP, syntactically outside of the rest of the clause. Freestanding focus DPs are often used in Kayardild to draw attention to the existence of the DP's referent (Round 2013: 95). In this case, one would assume the addressee is already aware of the existence of the fire, so the focus DP analysis is perhaps doubtful.

In sum, there are three potential analyses of (A.16). First, *kaburrbaya* is inflected for TAMA:INSTANTIATED; if this is so then we need to revise the putative semantics of TAMA:INSTANTIATED apprehensives, so that they do not refer solely to events that are already occurring. Second, *kaburrbaya* is LOCATIVE modifier of the subject, denoting either 'at the fire' (outside the scope of 'undesirable') or 'in the fire' (under the scope be 'undesirable'). Third, *kaburrbaya* is a focus DP, though this is perhaps doubtful. Let us turn next to (A.17) and (A.18).

(A.17) *Dathinki*   *ngambuya*   *barjinyarra*   *kunyaa*   *kunawun*
        ʈaṯin+ki-a   ŋampu+ki-a   paɻci-c-ɲara-ø   kuɲa-a   kunawuna-ø
        that-μLOC-T   hole-μLOC-T   {fall-J}-μAPPR-T   small-T   child -T
        that-INS   hole-INS   {fall}-APPR   small   child
        '(Look out for) that hole, the small child might fall (into it).' [W1960]

(A.18) *Ngada*   *jara*   *naanyarra*   *warrkuy*,
        ŋaṯ-ta   ca-ɻa   ŋaː-c-ɲara-ø   warku+ki-a
        1SG-T   foot-T   {burn-J}-μAPPR-T sun-μLOC-T
        1SG   foot   {burn}-APPR   sun-INS

        rajurrinangku   *dulku*   *ngithalkuruwuru.*
        ɻacuri-c-ŋaŋ+kuu-ø   ʈulk+kuu-ø   ŋiṯalkuɻu+kuɻu-ø
        {walk-J}-μNEG-ɰPROP-T   sand-ɰPROP-T   hot-ɰPROP-T
        {walk}-NEG-POT   sand-FUT   hot-FUT
        'I can't walk on the hot sand, it's so hot in the sun my feet would burn.'
        [W1960]

Just like (A.16), sentences (A.17) and (A.18) are three-way ambiguous. The DPs marked with μLOC denote locations or environmental conditions, and so can be interpreted in various ways. The first is that μLOC realizes TAMA:INSTANTIATED, provided, as before, that we relax the semantic conditions on TAMA:INSTANTIATED apprehensives. It could also be realizing CASE:LOCATIVE, in which case it modifies the subject, though interestingly in these instances, this only works if we interpret the

DP in question as falling under the scope of 'undesirable': 'in the hole', 'in the sun'. And μLOC could be a realization of COMP, marking a freestanding focus DP. This seems plausible in (A.17) where the speaker is calling attention to the existence of the hole, but perhaps less so in (A.18), where calling attention to the sun seems less likely. Let us now examine the final example in our corpus, namely our example from Evans (1995a), repeated here in (A.19).

(A.19) *Thararra* *kalinyarra*   *wambaliya,*   *naanyarr.*
          ṯaṟar-a kali-c-ɲara-ø   wampal+ki-a   ŋaː-c-ɲara-ø
          ember-T {jump-J}-μAPPR-T   bush-μLOC-T   {burn-J}-μAPPR-T
          ember   {jump}-APPR   bush-INS   {burn}-APPR
          '(Look out), the embers are jumping into the bush, it might burn.'
          [E405.ex.10-16]

In (A.19), the DP marked with μLOC once again denotes a location, and so is three-way ambiguous for the same reasons as above (in this case the location is a destination, though that is no cause for concern; in Kayardild destinations are most often inflected the same as static locations).

In sum, there are just four known clauses which are similar to (A.19), including (A.19) itself. If we wish to argue that μLOC in those clauses realizes TAMA:INSTANTIATED, then we will need to relax the semantic definition of TAMA:INSTANTIATED apprehensives. Moreover, all four of the DPs which putatively inflect for TAMA:INSTANTIATED are DPs that denote locations (or DPs which Kayardild grammar treats as locations); conversely, none of the attested apprehensive clauses in Kayardild which contain direct objects use TAMA:INSTANTIATED. There is a simple and parsimonious account of this. Namely, Kayardild does not possess TAMA:INSTANTIATED apprehensive clauses. The DPs in our four examples above, which are marked by μLOC, are DPs in the LOCATIVE CASE. The one proviso, is that the 'undesirable' meaning in apprehensive clauses must be understood as (at least potentially) taking scope over the entire clause, including the subject DP and its modifiers.

To summarize Appendix A.5, we began with three putative apprehensive TAM types in Kayardild. The first, with TAMA:EMOTIVE is widely attested. The second, with TAMA:FUTURE is restricted to complementized clauses. Judging from a small set of examples, its semantics are not distinct from clauses which use TAMA:EMOTIVE. The third type, with putative TAMA:INSTANTIATED is attested in four tokens. In all of these, the μLOC suffix which would mark TAMA:INSTANTIATED is also consistent with two alternative analyses, of which the most convincing is that μLOC marks CASE:LOCATIVE. We conclude that the simplest and most unproblematic analysis of the data is that Kayardild has just two apprehensive TAM types, one with TAMA:EMOTIVE and one, restricted to complementized clauses, with TAMA:FUTURE.

A.6 The counterfactual use of non-future potentials

In this section we draw attention to the fact that the combination of TAMA:INSTANTIATED and TAMT:POTENTIAL is used only in counterfactual clauses. This is relevant for our analysis in Sect. 5 of the semantic compositionality of TAM.

Between examples (A.20) and (A.21)[48] the TAM contrast appears to be one of tense; the former is a future (negative) potential and the latter a non-future (negative) potential. The TAM features involved, following Round (2013), are {**TAMA**:FUTURE & **TAMT**:POTENTIAL} in (A.20) and {**TAMA**:INSTANTIATED & **TAMT**:POTENTIAL} in (A.21); and both sentences are negated.

(A.20)   *Ngada*   *kurrinangku*   *malawu*   *(balmbiwu)*
         ŋaṯ-ta   kuri-c-ŋaŋ+kuu-ø   mala+kuu-ø   palmpi+kuu-ø
         1SG-T   {see-J}-μNEG-μ̃PROP-T   sea-μ̃PROP-T   tomorrow-μ̃PROP-T
         1SG   {see}-NEG-POT   sea-FUT   tomorrow-FUT
         'I won't (be able to) see the sea (tomorrow).' [E404.ex.10-12]

(A.21)   *Ngada*   *kurrinangku*   *malay*   *(barrunthay).*
         ŋaṯ-ta   kuri-c-ŋaŋ+kuu-ø   mala+ki-a   paruṉṯa+ki-a
         1SG-T   {see-J}-μNEG-μ̃PROP-T   sea-μLOC-T   yesterday-μLOC-T
         1SG   {see}-NEG-POT   sea-INS   yesterday-INS
         'I could not see the sea (yesterday).' [E404.ex.10-13]

The full story, however, is more subtle. Firstly, if we search for positive polarity counterparts to (A.20) we find them in abundance, but positive counterparts to (A.21) are not attested. Instead, positive polarity non-future potentials in Wurm's corpus are translated into Kayardild with the TAM categories not of (A.21), but of (A.20), as seen in the second clause of (A.22).

(A.22)   *Ngada*   *kurrija*   *ngumbanji*,
         ŋaṯ-ta   kuri-c-a   ŋuŋ+paɲ+ki-a
         1SG-T   {see-J}-T   2SG-μPOSS-μLOC-T
         1SG   {see}   2SG-Ø-INS

         ngada   *wuuju*   *ngumbanju.*
         ŋaṯ-ta   wuː-c+kuu-ø   ŋuŋ+paɲ+kuu-ø
         1SG-T   {put-J}-μ̃PROP-T   2SG-μPOSS-μ̃PROP-T
         1SG   {put}-POT   2SG-Ø-FUT
         'If I had seen you (yesterday) I would have given (it) to you.' [W1960]

As for clauses with **TAMA**:INSTANTIATED & **TAMT**:POTENTIAL, the total number in our corpus is just five, and all appear in counterfactual contexts. In (A.21) above, counterfactuality is entailed by the presence of the negation feature, and in (A.23)–(A.24) by Kayardild's counterfactual particles *maraka* and *mara*.

(A.23)   *Maraka*   *ngudiju*   *bangay.*
         maɻaka-ø   ŋuti-c+kuu-ø   paɲa+ki-a
         CNTRFCT   {throw-J}-μ̃PROP-T   turtle-μLOC-T
         CNTRFCT   {throw}-POT   turtle-INS
         '(They) could have thrown the turtle (overboard, to lighten the boat), but didn't.' [E259.ex.9-252]

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[48]These repeat our earlier examples (6) and (7), but with glossing following Round (2013).

(A.24) *Mara*   *ngada*   *barndiju*   *barrunthay.*
        maɻa-ø   ŋaṯ-ta   paṉṯi-c+kuu-ø   paruṉṯa+ki-a
        CNTRFCT   1SG-T   {block-J}-ɰ́PROP-T   yesterday-μLOC-T
        CNTRFCT   1SG   {block}-POT   yesterday-INS
        'I could have prevented him from going yesterday (but didn't).' [E1984]

In sum, it appears at first glance from (A.20) and (A.21) that {**TAMA**:INSTANTIATED & **TAMT**:POTENTIAL} simply marks the non-future potential, however it is conspicuous that all attested uses of this TAM type are counterfactuals. Moreover, the absence of any non-counterfactual clauses marked by {**TAMA**:INSTANTIATED & **TAMT**:POTENTIAL}, and the use of other TAM categories to mark the non-counterfactual non-future potentials in our corpus, suggest that the usage of {**TAMA**: INSTANTIATED & **TAMT**:POTENTIAL} was infelicitous in anything but counterfactual clauses. Faced with such evidence, a reasonable conclusion is that {**TAMA**:INSTANTIATED & **TAMT**:POTENTIAL} was a dedicated counterfactual TAM type in Kayardild, with the proviso that it seems to have appeared only in clauses where other elements also contributed a counterfactual meaning.

A.7 Summary

In Appendix A.1 we introduced our corpus and outlined our reasons for exercising care with respect to the representativeness of examples which lack a known, associated audio recording. In Appendix A.2 we gave syntactic arguments for the removal of Round's (2013) **TAMA**:NEGATORY value from the inventory of athematic TAM values, and in Appendix A.3 observed that Round's NONVERIDICAL value could viably be moved from the **TAMT** feature to **POLARITY**. In Appendix A.4 we simplified Kayardild's present tense TAM system and removed Round's (2013) **TAMA**:PRESENT. In Appendix A.5 we simplified Kayardild's range of apprehensive clauses, noting the apparent semantic equivalence of apprehensives that use **TAMA**:FUTURE and **TAMA**:EMOTIVE; and reanalysing all putative tokens of **TAMA**:INSTANTIATED clauses. In Appendix A.6 we found that the combination of **TAMA**:INSTANTIATED and **TAMT**:POTENTIAL has a consistently counterfactual usage. At the end of this process, a revised list of eleven **TAMT** and fifteen **TAMT** values is given in (A.25)–(A.26).

(A.25) Values of TAMT (revised list)
        ACTUAL, ANTECEDENT, APPREHENSIVE, DIRECTED, DESIDERATIVE, HORTATIVE, IMMEDIATE, IMPERATIVE, INCIPIENT, NONVERIDICAL, PAST, POTENTIAL, PRECONDITION, PROGRESSIVE, RESULTATIVE

(A.26) Values of TAMA (revised list)
        ANTECEDENT, CONTINUOUS, DIRECTED, EMOTIVE, FUNCTIONAL, FUTURE, INCIPIENT, INSTANTIATED, PRECONDITION, PRIOR, ZERO[49]

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[49]The final value here, which has no overt phonological realization, is labelled zero. In Round's constraint-based analysis of Kayardild's realizational morphology, it is important to make the difference between 'ZERO' **TAMA** (which blocks the overt realization of **TAMT** on the same word) and no **TAMA** at all, which would not do so (Round 2013: 234, fn. 6). One advantage of adopting a one-feature analysis is that the

These are the values we consider in Sects. 4–8. That discussion leads us in turn to the conclusion that Kayardild can best be analysed with a single feature for TAM.

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entire apparatus of TAM blocking becomes unnecessary. Rather than requiring TAMA and TAMV to block one another in different ways on different stems, it would suffice to state that a single TAM feature in the general case receives exponence on both stem types (thematic and athematic), and that for some values of the feature one or other stem type carries no overt exponent.

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