1 *The Expression of Number in languages of East Nusantara: An Overview*

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1 Introduction

Speakers refer to number by using numeral words, and so associate the notion 'number' with the words that are used for counting or ranking entities (*one, two, three; first, second, third...*).[2] However, the grammatical category 'number' covers a much wider typological space. It includes such diverse areas as non-numeral quantification (*all*, *many*, *none,...*), the expression of number in nouns and pronouns (*singular, plural, dual, trial...*), and the syntax and semantics of numeral classifiers. In addition, the notion of nominal number needs to be separated from verbal number, a category relating to the semantics of the verb. Verbal number is about how often the action denoted by the verb is performed (i.e. the 'iterative' sense) or in parallel with multiple participants involved (i.e. the 'distributive' sense) (Veselinova 2013). Finally, many languages connect counting and quantification with different culturally significant practices.

Number is a conceptual category with universal relevance, but the means for signaling it are remarkably diverse across the languages of the world (Corbett 2000). Compared to the documentation of cardinal numerals, the wider typology of grammatical number expressions often receives less attention in grammatical descriptions. With this in mind, we organised a workshop to investigate the expression of number in a number of lesser-known Austronesian and Papuan languages spoken in a region referred to as East Nusantara. East Nusantara is the geographical area that is marked by the *Wallace line* in the west (see the dashed line in Figure 1), and includes near Melanesia (cf. Klamer and Ewing 2010). Linguistically and ethnically, this region constitutes the interface between the Austronesian and Papuan worlds. Papuans have lived in this area for more than 40,000 years, whereas Austronesians departed from Taiwan less than 6,000 years ago, and moved into this area sometime during the last 4,000 years. What was originally the Papuan area became largely Austronesianised through the incoming Austronesians, who assimilated with the original populations. However, Papuan languages continued to be spoken in Papua itself, as well as in outlier groups located to the west west and east of Papua proper. The westerly outlier groups of Papuan langugages are spoken in Halmahera (North Moluccas) and the islands

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of Timor, Alor and Pantar. Note that the term 'Papuan' conventionally refers to a cluster of numerous unrelated language families that are non-Austronesian and spoken in New Guinea or its vicinity. 'Austronesian' is used here as shorthand for the Austronesian subgroup of Malayo-Polynesian languages spoken in eastern Indonesia and in East Timor, and neutral the debate about the internal structure of the Malayo-Polynesian subgroup (Blust 1993, Adelaar 2005a, Donohue and Grimes 2008, Blust 2009).

With the exception of Tetun, one of the two official languages of East Timor, none of the Austronesian or Papuan languages in East Nusantara have any official status. Most are spoken by very small speech communities; virtually all of them are severely endangered, being no longer learned by children, and few if any will survive to the end of the 21st Century. The quantity and quality of documentation is increasing, but compared to Africa, Australia, Eurasia, and the Americas, the Papua-Austronesian region is the linguistically least known and least documented area of the world (cf. Hammarström and Nordhoff 2012: 25-26).

The workshop, entitled *Number in East Nusantara,* was one of the panels held at the 12th International Conference on Austronesian Languages, which took place in early July 2012 in Denpasar, Bali, Indonesia. The current volume contains a selection of papers presented at the workshop. All the papers have been reviewed and revised before publication.

The papers in this volume are arranged according to the geographic location of languages discussed, from West to East, as shown on the map in Figure 1. The five Austronesian languages that are discussed in detail are **Sumbawa** (Shiohara), **Tolaki** (Donohue and Edwards), **Helong** (Balle and Cameron), **Uab Meto** (Metboki and Bellamy), and **Papuan Malay** (Kluge). The Papuan languages discussed in this volume belong to two different families. The language **Tobelo** (Holton) belongs to the North Halmaheran branch of the West Papuan family, while **Abui**, **Sawila** (Kratochvíl) **Bunaq**, **Kamang**, **Makalero** (Huber and Schapper) and **Western Pantar** (Holton) belong to the Timor-Alor-Pantar family. Most papers are descriptive, discussing numerals and the expression of number in one or two languages.

Two papers offer a broader comparative perspective. Klamer (this volume) discusses the numeral classifier systems in the Alor-Pantar languages, and offers a wider perspective on how the classifiers found in this Papuan family may relate to those found in Austronesian languages of the area. Huber and Schapper (this volume) observe an etymological relation between verbs meaning 'finish' or 'be finished', aspectual notions to do with completion or completeness, and expressions of universal quantification ('all') in three Papuan languages of the Timor-Alor-Pantar family, suggesting a grammaticalisation path between these categories.

In the remainder of this introductory chapter, we summarize the contributions of the various papers to the number-related topics mentioned in the first paragraph. Numerals as well as non-numeral quantifiers are discussed in §2, the expression of number in nominals in §3, numeral classifiers in §4, and verbal number in §5. Some brief notes on number from an anthropological perspective are given in §6, and on number and language contact in §7. In §8, a table summarizes the features that show a contrast along the genealogical division of Austronesian and Papuan languages of East Nusantara.

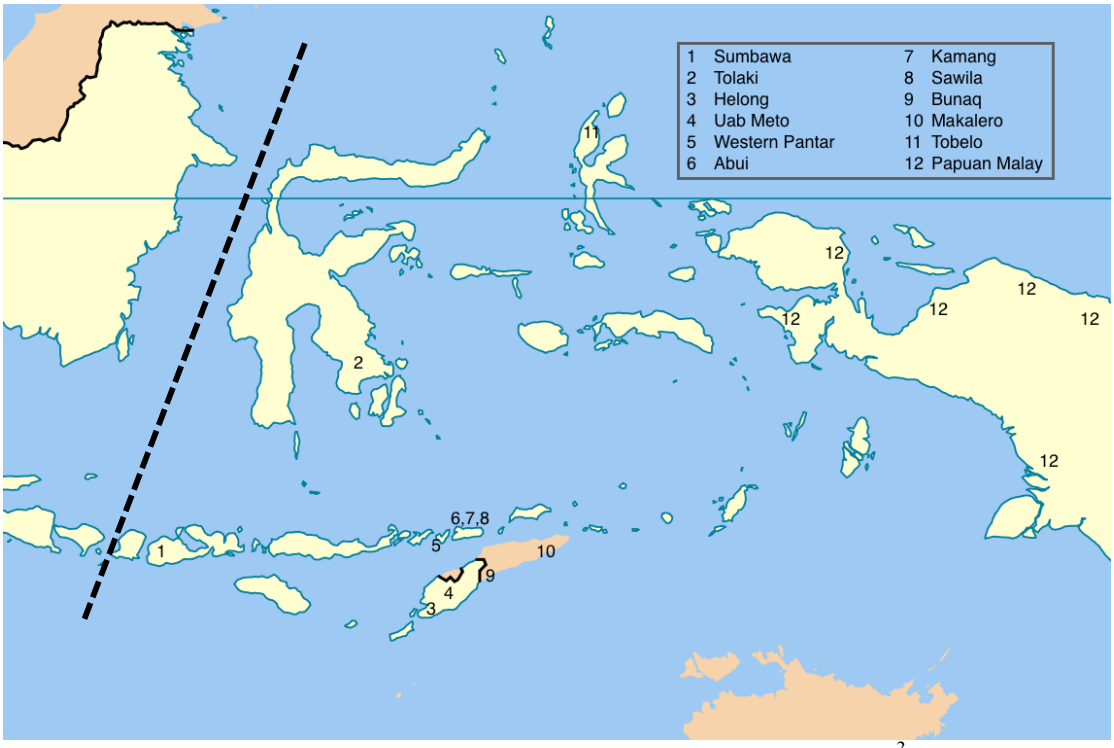

Figure 1: Geographic location of the languages discussed in this volume[3]

2 Numeral and non-numeral quantifiers

The number category is lexically manifested in numerals and non-numeral quantifiers. In the Austronesian family, research has focused on documenting the cardinal number systems, the formal composition of ordinals (the *x*-th), distributives (*x* by *x*), frequentatives (*x*-times) and fractions. In Austronesian, decimal systems predominate, though innovative forms with ternary and quinary bases, as well as complex numeral formations involving additive, subtractive, and multiplicative procedures, and systems mixing various types of bases are also attested (Blust 2009:268-282; Comrie 2013; Schapper and Hammarström 2013). Papuan languages are known in the typological literature on numerals for having body-part tally systems and, to a lesser extent, restricted numeral systems which have no cyclically recurring base (Laycock 1975, Lean 1992, Comrie 2013). Papuan languages are also typologically interesting for the fact that they often make use of bases other than the cross-linguistically most frequent decimal and vigesimal bases, such as quinary (Lean 1992) and senary bases (Donohue 2008, Evans 2009).

2.1 Cardinal numerals

All the Austronesian languages discussed in this volume have a decimal numeral system. The **Papuan Malay** system is analogous to Standard Malay/Indonesian, with some sound changes affecting the word-final codas and schwas (Kluge, this volume). In the other, there is variation in the composition of the numerals above 'ten'. For example, in **Sumbawa** (Shiohara, this volume) the numerals '11' to '19' contain a decade form *olas* (related to Malay/Indonesian *belas*) which simply follows in juxtaposition to the lower

[3] The map is a modification of the Indonesia blank map released and available for public use under Creative Commons license at http://commons.wikimedia.org/wiki/File:Indonesia_blank_map.svg.

numerals 1-9, e.g. *dua olas* 'twelve', lit. '2 10'; the pattern also found in Malay/Indonesian. In contrast, some of the eastern neighbours of Sumbawa, such as Lamaholot (Nagaya 2012) or Alorese (Klamer 2011) form numerals higher than 10 in constructions where the higher numeral precedes the lower one, often including an operator word that signifies addition, e.g. Lamaholot *pulo nẽ'ẽ to'u* 'eleven', lit. '10 + 1' (Nagaya 2012: 162). Languages discussed in this volume show similar patterns. In **Tolaki**, *rua-mbulo* 'twenty' (lit. '2 10') precedes *oruo* 'two' to form *rua-mbulo oruo* 'twenty two', in **Uab Meto** the higher numeral *bo' mese* 'ten' (lit. '10 1') precedes the lower, and the two are linked with a prefix *m-*, e.g. *bo' mese m-mese'* '11', lit. '[10 1] *m*-1' (Metboki and Bellamy, this volume). **Helong** uses the additive marker *beas* to link decades 20 and up with lower cardinals, e.g. *buk dua beas esa* 'twenty two', lit. '[10 2] + 2' (Balle and Cameron, this volume).

The Austronesian pattern of Uab Meto and Helong is also found in the Papuan languages discussed in this volume: in numerals above 10, the decade precedes the lower numeral, and an additive operator links the two, e.g. **Abui** *wal*, in *kar nuku wal jeting-sua* 'eighteen', lit. '[10 1] + [5-3]'. Abui has an etymological quinary base reflected in the forms for 'seven' and 'eight' (cf. *jeting* 'five' *sua* 'three' > *jeting-sua* 'eight'). In **Abui** and **Sawila** (Kratochvíl, this volume) the base is synchronically more transparent than in **Tobelo** and **Western Pantar** (Holton, this volume). A comprehensive overview of the numeral systems of the Alor Pantar languages can be found in Schapper and Klamer (2014).

2.2 Ordinal numerals

Languages discussed in this volume show a regular derivation of ordinal numerals, and suppletive forms for *first* that are in some cases borrowed (as in **Sumbawa**). The distribution of ordinal patterns does not show any geographic bias.

Ordinal numerals in the Austronesian languages are derived by the cognate prefixes *ke-* (**Sumbawa, Helong, Papuan Malay**) and *ko-* (**Tolaki**), apparent reflexes of Proto Malayo-Polynesian **ika-* (Blust 2014). **Uab Meto** ordinal marker *no* diverges from this pattern (Metboki and Bellamy, this volume).

In **Tobelo**, ordinal numerals are composed by adding a prefix *ma-* to the cardinal numeral: *ohotu ma-hange* 'the third night', lit. 'night *ma*-three'. The Alor-Pantar languages use a variety of strategies. Some details for Western Pantar, Sawila, and Abui are given in this volume; Klamer et al. (2014) present an overview of ordinal numerals in the Alor-Pantar languages.

2.3 Distributive numerals

Most languages discussed in this volume derive distributive numerals by reduplication. This is very common cross-linguistically, and it is also a very common strategy found in languages throughout Indonesia (Gil 2013). Most distributives discussed in this volume are created by full reduplication, as in **Helong** and **Papuan Malay.**

Partial reduplication is used in some of the Alor-Pantar languages, such as **Abui** or **Sawila** (Kratochvíl, this volume). When these languages create distributives out of compound numerals with a quinary base, only the second member is reduplicated; i.e., 5 1 'six' > 5 1~**1** 'in groups of six'. A comprehensive discussion of the distributive numerals in the Alor-Pantar languages can be found in Klamer et al. (2014).

2.4 Referential properties of numerals

In many of the languages discussed here, the numeral 'one' can be used with indefinite reference, e.g. **Sawila** *imyaala saaku dana* 'an old man', lit. 'man old one' (Kratochvíl, this volume), and **Papuan Malay**, where *satu* 'one' can be used to encode 'specific indefiniteness' (Kluge, this volume). Some numerals have interpretations that are no longer strictly numeric. For instance, the **Abui** numeral *kar nuku* 'ten' (lit. '[10 1]') can be used as a universal quantifier meaning 'all', and **Sawila** *yaku-tuwo* lit. '2-3' may refer to a quantity of 'several' items (not necessarily 2 or 3). In **Abui**, cardinal numerals can also be used as terms of address. For example, *ayoku* 'two' can also be used to address two people: 'the two of you, you two' (Kratochvíl, this volume).

2.5 Non-numeral quantifiers

Relatively little is known about the forms, origins, developments and grammatical behaviour of non-numeral quantifiers in East Nusantara. Here we focus on universal quantifiers – expressions of concepts such as *every, all*, *each, any* and their morphosyntactic make-up (see Gil 2013). Many languages discussed in this volume seem to treat the universal quantifier 'all' as a predicate (with a person affix referring to the subject) or a nominal element (with a genitive affix). For instance, in **Abui** and **Sawila**, the universal quantifiers may be indexed for person. In Abui, the indexing is triggered by human entities only, while in Sawila it is always obligatory (Kratochvíl, this volume). Similar morphosyntactic marking of universal quantifiers has been also reported for Bantu, South and Mesoamerican languages, as well as some languages of West New Guinea (see Kratochvíl, this volume, for details).

Donohue and Edwards (this volume) compare the syntactic properties of the **Tolaki** universal quantifier (*ina-*)*luwuako* 'all' with the quantifiers *meha* 'some' and *dadio* 'many'. While the first two admit genitive suffixes, *dadio* can be used as an intransitive verb whereby it takes on aspectual marking. Balle and Cameron (this volume) show that in **Helong**, a subset of non-numeral quantifiers admits the 3PL suffix *-s* with specific referents. **Tobelo** derives quantifiers through reduplication of the adverb *mata* 'all' > *ngomi mata~mata* 'we all', or the numeral *moi* 'one' > *moi~moi onyawa* 'each person'. **Western Pantar** has a dedicated universal quantifier *gaterannang* 'all', which carries a fossilized third person possessor prefix *ga-* and may co-occur with the plural number word *marung* (Holton, this volume).

Huber and Schapper (this volume) discuss the relationship between universal quantifiers and aspect-encoding morphemes in **Bunaq**, **Kamang**, and **Makalero**. Although the direction of the grammaticalisation path remains unclear, the authors show that a formal and semantic connection exists between the universal quantifier and the expression of a completed state in these languages.

2.6 Syntactic properties of numeral and non-numeral quantifiers

In the Austronesian languages discussed, the syntactic position of quantifiers is variable. In Tolaki, it always precedes the quantified noun, either occurring outside the NP, or inside the NP it modifies. In **Sumbawa**, quantifiers have a variable syntax where they may precede or follow the noun, depending on the referential properties of the phrase. In the other Austronesian languages in this volume, **Helong** and **Uab Meto,** quantifiers follow the noun. Classifiers (and plural number words if they exist in the language) may occur between the head noun and the non-numeral quantifier. The Papuan languages discussed in this volume also place quantifiers after the head noun, and if they have

classifiers, these also occur between noun and quantifier. **Papuan Malay** shows both orders: apart from the Standard Malay order where the quantifier precedes the noun, Papuan Malay also allows the regional order where the quantifier follow the noun. This latter order is clearly contact-induced (Kluge, this volume).

Generally speaking, Sumbawa numerals pattern in the same way as verbal predicates. In **Tolaki,** numerals can become verbs: they are verbalized with a plural prefix (*tolu* 'three' > *mbe(N)-tolu* 'be three', and the resulting verb is then indexed for its subject, as is standard for all Tolaki verbs.

3 Number in nominals

Here we consider the expression of number in pronouns (§3.1), pronominal agreement or person markers (§3.2) and nouns (§3.3) in the languages discussed in this volume.

3.1 Number in pronouns

Number is commonly distinguished in the pronouns of the languages discussed in this volume. In the Austronesian languages, the original number distinction is usually maintained, as in **Tolaki,** where all pronouns are regular reflexes of the proto Malayo-Polynesian forms, as well as in **Helong** (Balle and Cameron, this volume) and in **Uab Meto** (Metboki and Bellamy, this volume). In **Papuan Malay** (Kluge, this volume) the third person plural pronoun *dorang (*or *dong*) is cognate with similar forms in other Pidgin-Derived Malay varieties (in terms of Adelaar and Prentice 1996; Adelaar 2005b). It is cross-linguistically common to neutralize the singular-plural distinction for the third person (Daniel 2013), as does **Sumbawa** (Shiohara, this volume).

Among Papuan languages discussed here, **Tobelo** and **Western Pantar** distinguish number in all persons (Holton, this volume), while in **Abui** and **Sawila** the distinction is not made consistently in the third person (Kratochvíl, this volume). In the Alor Pantar languages, number is marked in the first and second person by vowel grading: a low vowel (usually /a/) indicates singular, a high vowel (usually /i/) indicates plural.

When more than one participant is involved in an event, some of the languages discussed here can express the exact number of participants by combining numerals with a pronominal form (NUM + PRO, PRO + NUM). In **Helong** (Balle and Cameron, this volume) person suffixes can attach directly to the numeral; in **Abui** and **Sawila**, the pronominal form and the numeral are linked with the morpheme *ning*.

3.2 Number in person / agreement markers

Many of the languages discussed here index the person and number of syntactically privileged arguments (such as subjects) on verbs, and possessors are commonly indexed on nouns. None of the languages displays agreement on all constituents of a noun phrase, of the type commonly found in Romance or Slavic languages (Baerman and Brown 2013). It is more common to have just one, usually the phrase-final constituent, marked for number, as in **Helong** (Balle and Cameron, this volume).

Tolaki distinguishes number in all pronominal clitic paradigms (nominative, absolutive, dative, genitive), but the encoding of number is less strict for inanimate referents. A plural subject always selects a plural verb stem (with a prefix *mbeN-*) to which the pronominal clitic referencing the subject is then added (Donohue and Edwards, this volume). In **Helong**, number agreement shows a split: controllers can be specific objects, and subjects of verbs of motion or posture. Moreover, the plural agreement controlled by the subject

can also target other constituents such as question words and locations. **Abui** and **Sawila** neutralize the number distinction in third person prefixes (Kratochvíl, this volume).

3.3 Number in nouns

In the languages discussed here, the marking of plural number of nouns is generally optional. Nouns without overt number marking are ambiguous between singular and non-singular interpretations. **Sumbawa** expresses nominal number only by numeral or non-numeral quantifiers (Shiohara, this volume). **Tolaki** nouns without quantifiers are also ambiguous in number, but non-singular noun phrases can be marked with the enclitic =*Cako* which attaches to the end of the noun phrase.[4] Tolaki also expresses number in nouns by partial reduplication (Donohue and Edwards, this volume).

In **Helong**, noun phrases can also be marked for plural number with a morpheme *-s*, which seems to have clitic-like properties, attaching to either the head noun, to the numeral following the head noun, or to the deictic at the end of the noun phrase. When plural *-s* attaches to kinship terms and proper names, it induces an 'associative plural' reading (i.e. it refers to *x* and *x*'s associates) (Balle and Cameron, this volume).

Uab Meto has a plural word *in*, which also appears as a suffix *-inu*, to mark plural on nouns. In the data given in Metboki and Bellamy (this volume) it occurs in complementary distribution with numerals. Grimes et al. (2012) report that in other dialects of Uab Meto, associative plurals are expressed with the third person plural pronoun *sin*. It is possible that this form is the diachronic source of the plural word *in* in Uab Meto.

Papuan Malay nouns are morphologically unmarked for number. Common strategies to express nominal plurality are modification with a plural pronoun (e.g. *dorang/dong* '3 PL'), modification with a quantifier, or reduplication of the noun. Plural pronouns combine with relational nouns and proper names to create an associative plural reading. While in other regional Malay varieties only third person pronouns can create associative plurals, in Papuan Malay all plural pronouns may be used in this function (Kluge, this volume).

Tobelo and **Western Pantar** nouns are not marked for number. Tobelo also lacks a plural number word, but in Western Pantar, nominal plurality can be expressed analytically with the plural word *marung*, which cannot co-occur with numerals or classifiers. The human nominalizing morpheme *wala* may function as an associative plural for nouns referring to humans, including proper names (Holton, this volume).

Plural words are commonly used in the Alor-Pantar languages, including **Abui** and **Sawila**. Proto-Alor-Pantar had a plural number word **non*, but many Alor-Pantar languages, including Abui and Sawila, have innovated new plural words. Plural words in the Alor-Pantar languages exhibit a wide variety of different syntactic properties and variable semantics (Klamer, Schapper and Corbett 2014). This is also seen in Abui and Sawila: the Abui plural word *loku* can force 'recategorisation' of mass nouns into count nouns, but Sawila *du* cannot achieve this. To create associative plurals, a dedicated associative marker is used (Kratochvíl, this volume).

4 Numeral classifiers

In many languages of East Nusantara, numeral quantification is closely tied with classifiers; words that provide additional semantic information about the noun class of the quantified entity. Two classifier types are commonly distinguished: *mensural* classifiers that impose units defined by quantity, and *sortal* classifiers that define units in terms of

[4] The initial consonant of this clitic is lexically specified by the word it attaches to.

their kind or internal structure (Lyons 1977: 463). In the languages discussed here, classifiers are free morphemes that occur next to the numeral, but the structure of NPs with classifiers varies. **Tolaki** is the only language where numeral and classifier precede the noun, rendering the order [numeral-classifier]-noun. In **Papuan Malay**, the order of the numeral phrase remains the same, but this phrase may optionally be preceded by the noun, i.e. show the order noun-[numeral-classifier]. In **Helong, Uab Meto, Tobelo, Western Pantar, Abui** and **Sawila** (as well as all the other languages of the Alor-Pantar family), the noun also occurs in initial position, but here, it is followed by a numeral phrase where the classifier precedes the numeral: noun-[classifier-numeral]. (See also § 7).

The lexical sources of classifiers are transparent when they still have independent uses as nouns with meanings like 'fruit', 'seed', 'bunch', 'part', and so on. However, the chapters also report cases where the lexical source of the classifiers is unknown.

Some of the languages discussed in this volume have a dedicated classifier for humans; illustrations are the human classifiers in **Helong** (*at*) and **Uab Meto** (*tuaf*). **Tobelo** has a human classifier prefix *ya-*, which may be in the process of developing further into a human noun class marker.

In **Tolaki**, only two classifiers are found: one (*boto*) can only occur with nouns referring to animals and fruits, and the other (*pu'u* 'tree [trunk]') is only used with nouns for tree types. Tolaki has no classifier for humans (Donohue and Edwards).

Helong has a small inventory of classifiers with transparent lexical sources. In Helong, humans are treated as a separate class, while other nouns (especially food) may be classified according to their arrangement (Balle and Cameron, this volume). **Uab Meto** has a more elaborate classifier inventory than Helong, as it also distinguishes humans from non-humans. Only some of the Helong classifiers are also attested as nouns. There is a large number of sortal and arrangement classifiers with intriguing uses in traditional exchange, such as markets, ceremonies, wedding gifts, etc. (Metboki and Bellamy, this volume).

Tobelo classifiers classify nouns according to their shapes into various types of one-, two-, and three-dimensional objects. Tobelo has no classifier for nouns referring to humans. While Tobelo classifiers are obligatory with enumeration, **Western Pantar** classifiers are largely optional (Holton, this volume). Western Pantar has one general classifier (applicable to humans); the remaining classifiers distinguish various shapes and structures. In his paper, Holton (this volume) also illustrates variation between individual speakers when confronted with the same stimuli.

Abui and **Sawila** have a small set of only two or three classifiers that are used optionally (Kratochvíl, this volume). **Papuan Malay** also has a very reduced inventory of numeral classifiers. Attested is only the common noun *ekor* 'tail', which is used to count animals (Kluge, this volume). In having only one classifier, Papuan Malay is unlike many Austronesian languages spoken in the west (Himmelmann 2005:173).

Klamer (this volume) offers a typological assessment of the classifier systems in East Nusantara with a particular focus on the languages of the Alor-Pantar family. The classifiers of six Alor-Pantar languages are discussed: **Teiwa**, **Western Pantar**, **Adang**, **Klon**, **Abui**, and **Kamang**. The author shows that the systems of these sister languages are all of quite different sizes, and that they make different types of classifications. This is then taken as the evidence that the classifier systems in Alor-Pantar are not inherited and a diachronic mechanism is proposed explaining their development. Although no lexical borrowing of classifiers is attested, it is argued that the innovation of the classifier systems in the languages of the Alor-Pantar family may be considered a case of structural

convergence with neighboring Austronesian languages, which all have classifier systems.[5] Although classifiers are not a feature that is typically found in Papuan languages, parallel development of classifiers can be seen in other Papuan languages that are or were in contact with Austronesian languages, like the Papuan languages in Halmahera (Tidore, Tobelo), the Bird's Head (Mpur, Abun, Tehit, Maybrat, Sougb, Hatam), and Timor (Makalero, Makasae) (for references see Klamer, this volume).

5 Verbal number

Verbal number relates to the number of occurrences of an event denoted by the verb. Verbal number is typically expressed by using either a different lexeme, by reduplication, or by derivation, i.e. affixes with meanings such as 'repeatedly' (Corbett and Fedden 2012). Two types of verbal number are commonly distinguished (Veselinova 2013): *iteratives* indicate the number of repetitions of an event, while *distributives* refer to the number of parallel occurrences of an event; typically carried out by multiple agents.

5.1 Iteratives

Iteratives are usually derived by combining a dedicated marker (which is the translational equivalent of 'times' in English) with a numeral. If the numeral follows the head noun, then it also follows the iterative marker. In **Helong**, iterative expressions are formed with the noun *oe* 'time(s)' and a numeral (e.g. *oe dua* 'twice', lit. 'time two') or the verb *lalis* 'run' and a numeral (e.g. *lalis dua* 'twice', lit. 'run two'). The shape of the verb does not change when it is iterative. Some iterative phrases can also be derived by reduplication in Helong (e.g. *lelo~lelo* 'every day', lit. 'day~day') (Balle and Cameron, this volume). **Uab Meto** expresses iteratives in a similar way, by combining the word *hae* 'time(s)' with a numeral, e.g. *hae' nua'* 'for the second time, twice' (Metboki and Bellamy, this volume). **Western Pantar** and **Tobelo** also express the number of repetitions of an event by combining a lexeme 'time(s)' with a numeral. For example, Western Pantar *me atiga* 'three times' (lit. 'time(s) three'), and Tobelo *hara hinoto* 'twice' (lit. 'time(s) two'). **Sawila** derives iterative verbs with an applicative prefix (Sawila *ma-tuo* 'APPL-three'), while Abui derives an iterative verb that can be inflected for aspect by combining the numeral with a locative proclitic *mi* 'in' and a light verb *ng* 'see': *mi=ng=sui-di* 'three times', lit. IN=SEE=three-get.CONT'. The form of the Abui iterative verb is the same as the form used for distributives (see the next section), except that the numeral base is not reduplicated here.

5.2 Distributives

Tobelo marks distributives with a verbal prefix *koki-* which indicates that an action is carried out by or affects each member of a group individually (Holton, this volume). **Abui** and **Sawila** have a number of constructions to express distributives, distinguishing whether events occurs in parallel, or in parallel and with a maximal effect (Kratochvíl, this volume). In the chapters on the other languages, distributives are not discussed.

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[5] The term 'structural convergence' is used in the sense of Matras (2009:234-274), referring to the development of parallel lexical, grammatical, and conceptual patterns in languages engaged in long-term language contact, which is a defining characteristic of linguistic areas, as in our case is the East Nusantara (Klamer et al. 2008).

6 Number in anthropological-linguistic perspective

Number expressions form the core of various cultural interactions such as payment negotiations (trade, bride price, compensations, debts), religious practices (divination, structure of rituals), as well as traditional time keeping (months of the year, clan genealogies). Compared to the study of numeral forms, relatively little attention has been given to the ethnological study of numbers and indigenous mathematical operations in the Austronesian world; Barnes' (1982) report of the arithmetic of traditional calculations of marriage presentations and debts and the ritual and symbolic roles of numerals in Kedang being a notable exception.

Metboki and Bellamy (this volume) describe the various functions of classifiers in the Amanuban dialect of **Uab Meto**. Their paper presents the classifier system employed in enumeration of animals gifted in ceremonial exchanges such as weddings or welcome parties. The system tracks the birth order and number of siblings of highly valued animals such as cows and pigs. They also discuss the use of numerals and classifiers with kinship terms, with reference to children or siblings, as well as crop planting formulas that indicate the proportion of different crop types that are planted together (e.g. corn with eggplants, or corn with beans).

Kratochvíl and Delpada (2012) described the counting system used in **Abui** bride price negotiations and the calculation of interest. This system is based on *moko* drums, to some extent equivalent of a local currency, and used to play much larger role in the Alorese society (Bernet Kempers 1988:363-366; Laufa 2009; Simanjuntak et al. 2012). The Dutch colonial administration banned the moko-based monetary system in the Alor-Pantar as late as 1913-1914 and imposed its own silver and copper coins based currency to collect taxes destroying a large number of *mokos* in the process (Bernet Kempers 1988:366). The system persisted in the traditional exchanges (bride price and fine payments) but is gradually being abandoned by communities in the Alor archipelago. The reasons often given is shortage of *mokos* and the unsustainable debt levels that borrowing of *mokos* generates (Kratochvíl and Delpada 2008, 2012). The cultural practices associated with counting require further research.

7 Number expressions and language contact

Numeral systems and numerical expressions are susceptible to the kinds of sociolinguistic changes that arise through language contact. Often, the numeral systems of dominant languages replace the systems of other languages, starting with the higher numerals. This process is also at work in the Papuan languages of East Nusantara, where the higher cardinal numbers are often Malay loans, e.g. *ratu* 'hundred' and *ribu* 'thousand'.

The order of the numeral and noun in the noun phrase also shows clear geographical patterns. While the order numeral-noun is found in most of Indonesia and the Philippines, the reverse pattern, noun-numeral, is found in the New Guinea area (Dryer 2013b). The languages discussed in this volume tend to follow the latter pattern, whether they are Austronesian or Papuan, indicating a strong areal signal of the New Guinea type, see also §4. In this respect, **Papuan Malay** is particularly interesting; it has a variable order of noun and numeral, while Standard Malay or Indonesian have a fixed numeral-noun order. Papuan Malay only developed over the last 130 years or so (unlike other Malay varieties in the larger region; Kluge 2014:11), which indicates that a word order change like this can occur in a relatively short period. Another domain where contact appears to have played a role is in the classifier systems. Contact with Austronesian languages has triggered or

enhanced the development of such systems in the Papuan languages of East Nusantara (Klamer, this volume).

8 Summary and conclusions

By way of summary, we present some of the features that have been discussed in this chapter in Table 1. We focus on those features that appear to have different values in the Austronesian and Papuan languages of East Nusantara.

Table 1: Features of number expressions in Austronesian and Papuan languages of East Nusantara (ENUS)

Feature	Austronesian in ENUS	Papuan in ENUS
Numeral system	Decimal	Decimal and quinary
Additive marker in higher numbers	Sometimes	Default
Derivation of ordinals	PMP **ika-*	Variable
Derivation of distributive numerals	Reduplication	(Partial) reduplication
Order in NP	[Numeral-Classifier]-Noun Noun-[Numeral-Classifier] Noun-[Classifier-Numeral]	Noun-[Classifier-Numeral]
Marking of plural nouns	No marking, or Enclitic	Plural number word
Numeral classifier(s)	Inherited[6]	Possibly contact-induced
Non-numeral counting systems	Livestock, planting	Bride price negotiations

While the chapters in this volume only present data on about ten of the several hundreds of languages spoken in East Nusantara, they already give a glimpse of the enormous variety in number expressions found in the area. It is clear that interactions between speakers of Austronesian and Papuan languages resulted in the diffusion of certain structural features in both directions. The indigenous expressions for number as discussed in this volume are currently under pressure from the major languages of interethnic trade and national education, namely Indonesian in Indonesia, and Tetun and Portuguese in East Timor. It is our hope that this volume will contribute to preserving some of the linguistic diversity in the region.

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[6] Blust (2014) reconstructs **buaq* 'fruit' and **batu* 'stone' as classifiers for Proto-Malayo-Polynesian, and **daun* for Proto-Central-Eastern Malayo-Polynesian. This may suggest that classifiers were an areal feature of pre-Austronesian languages in the area; they are contact-induced innovations in Proto-Malayo-Polynesian.

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