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Lexical flexibility in Oceanic languages

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Abstract: While word classes are language-specific categories, lexical flexibility remains under discussion. This article investigates this phenomenon in a balanced sample of 36 Oceanic languages, a genetic group that has figured prominently in this debate. Based on a systematic survey of the morphosyntactic behavior of a range of semantic word types in three propositional functions, it is shown how lexical flexibility can be measured and compared across languages and constructions. While Oceanic flexibility is pervasive in some respects, lexical categorization in these languages does not qualitatively deviate from relevant typological tendencies.

Keywords: adjective, conversion, lexical flexibility, morphology, Oceanic languages, semantics, syntax, word classes

1 Introduction

LEXICAL FLEXIBILITY refers to the possibility, in a particular language, to use one or more groups of lexemes in more than one function, without any morphosyntactic adaptations, and without semantic shift.¹ Among functional-typologists (but not generativists, see, e.g., Baker 2003), word classes are widely recognized to be language- and construction-specific rather than universal categories (Croft 2001; Cristofaro 2009; Haspelmath 2012). Nevertheless, pervasive lexical flexibility – in particular the (lack of a) distinction between major word classes like nouns and verbs – remains a topic for discussion (see Evans & Levinson 2009: 434; Croft 2009). While the (non-)existence of languages without any noun/verb distinction is probably the most controversial aspect of this debate, it is in fact part of a broader problem, namely the meaningful crosslinguistic comparison of

¹ A more elaborate version of this definition will be given in Section 2.1.

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word classes across languages, and the place and status of lexical flexibility in such a typological spectrum.²

An important part of the empirical backdrop of the lexical flexibility debate is taken up by Austronesian languages³ and more specifically by Oceanic languages, which constitute a fourth-level subgroup of the Austronesian family.⁴ The claims that have been made concerning major word classes in individual members of this genetic group vary greatly. On the one hand, some languages are argued not to make any distinction between categories of content words. This holds, for instance, for some Polynesian languages like Tongan (Churchward 1953; Broschart 1997; Völkel 2017) and Samoan (Mosel & Hovdhaugen 1992), but also for Mekeo, an Oceanic language of the Western branch (Jones 1998), and for other (non-Oceanic) Malayo-Polynesian languages such as Riau Indonesian (Gil 2013). On the other hand, for various Oceanic languages clearly distinct language-specific classes of nouns and verbs are proposed, although in some cases these classes are shown to be strongly multifunctional (see, e.g., Mosel (2017) on Teop, Western Oceanic), emphasizing the importance of defining lexical flexibility in relation to particular constructions. Moreover, some Oceanic languages, e.g., the New Caledonian languages Nêlêmwa and Caac, display a combination of flexible and functionally differentiated word classes (Bril in press, 2017; Cauchard 2017). Finally, in the generative framework case studies of particular languages are adduced in support of

² I use the term *WORD CLASS* in the same way as Haspelmath (2012: 110–111), namely as a language-specific category. Haspelmath also gives a useful overview of other commonly used terms such as “part of speech” and “lexical category”. Note that “word class” is a synonym for “lexeme class” (see Haspelmath 2012: 122–124), meaning that inflection is in principle not defining for classification (even though it may be used as a diagnostic for classification in individual languages).

³ Besides Austronesian languages, Munda languages have also featured prominently in the lexical flexibility debate, see, e.g., Evans & Osada (2005), Hengeveld & Rijkhoff (2005), Peterson (2005, 2013), Rau (2013).

⁴ The genealogical relation between Austronesian and Oceanic is as follows: Austronesian > Malayo-Polynesian > Central-Eastern Malayo-Polynesian > Eastern Malayo-Polynesian > Oceanic (Lewis et al. (eds.) 2014). As this section shows, lexical flexibility extends beyond the Oceanic subfamily to other Malayo-Polynesian languages, e.g., Tagalog (Himmelman 2007) and the Flores languages (Arka 2014). Ross (2004: 492) states that “the major typological divide within the Austronesian family is not between Oceanic and the rest, but between innovating Central/Eastern Malayo-Polynesian and the conservative rest – the rest being Western Malayo-Polynesian and Formosan languages”.

hypothesized universal categories of nouns and verbs (see Chung (2012) on the Malayo-Polynesian language Chamorro, and the commentaries by Croft & van Lier (2012) and van Lier (2012)).

In response to this range of language-specific analyses, which are based on distinct methodologies and have diverging outcomes, the present study provides a first systematic, quantitative overview of various aspects of lexical flexibility across the Oceanic family, using a balanced sample of 36 languages (see Section 2.2.1 and the Appendix for details). The reason for concentrating on Oceanic languages is mainly a practical one: wanting to provide an in-depth account of lexical flexibility in a group of related languages, I decided to densely sample a relatively small genetically defined group – Oceanic consists of 513 languages, according to *Ethnologue* (Lewis et al. (eds.) 2014) – rather than having fewer languages from a larger grouping. I show how lexical flexibility can be measured and how it relates to worldwide typological studies of major word classes and the constructions that define them. Thus, in view of the extant debate on lexical flexibility, I assess whether and how much lexical classification in Oceanic languages differs from relevant crosslinguistic tendencies. Specifically, I show that such differences are a matter of degree rather than kind: while Oceanic lexical flexibility is relatively extreme in certain respects, the underlying functional principles of lexical categorization are crosslinguistically well-established (cf. Foley 2014). Moreover, this study further substantiates the idea, advanced in recent literature, that flexibility is not an “all-or-nothing” property of languages (van Lier & Rijkhoff 2013; Bisang 2013; Floyd 2014: 1501–1502). Rather, it is a gradable phenomenon that can obtain to different degrees at various levels of the grammatical system. Even when focusing on the lexeme level, flexibility varies along several dimensions, some of which are explored in the present study.

The article is organized as follows: Section 2 provides theoretical and methodological preliminaries. Section 2.1 outlines the theory of word classes proposed by Croft (2001) and defines the phenomenon of lexical flexibility in terms of this theory. Section 2.2 explains the composition of the language sample and presents the design of the data collection. In Section 3 I formulate three specific research questions, each of them assessing a dimension of variation in lexical flexibility, in the context of existing typological research. The answers to these research questions are offered in Section 4. Finally, Section 5 summarizes the main results, draws conclusions, and indicates directions for further research on Oceanic languages and beyond.

2 Theoretical and methodological preliminaries

2.1 Theoretical background: Croft's word class typology and lexical flexibility

In order to compare word classes across languages and constructions, Croft (2001) defines nouns, verbs, and adjectives as typologically prototypical combinations of a particular meaning and a particular propositional function. As can be seen in Table 1, a prototypical verb, in any language, is a word that combines event meaning with predicative function; a prototypical noun denotes a person or an object and has referential function; and a prototypical adjective is a property-denoting word functioning as a modifier. The empty cells in Table 1 correspond to (relatively) non-prototypical combinations of meaning and function. For instance, while the function of predication may be carried out not only by an event word, but also by a person/object word or a property word, the latter two situations are predicted to be conceptually relatively marked, compared to the former. Conversely, of course, an event word may be used in the functions of reference or modification, but this is again predicted to be relatively marked.

Table 1: Typological prototypes of verbs, nouns, and adjectives (adapted from Croft, 2001: 88).

		Propositional function		
		Predication	Reference	Modification
Meaning	Event	verb		
	Object/person		noun	
	Property			adjective

More specifically, Croft shows that the conceptual (non-)prototypicality of particular combinations of meaning and function correlates crosslinguistically with relative morphosyntactic markedness. He makes a distinction between two types of marking: structural coding and behavioral potential.⁵ The first term refers to dedicated markers that indicate a lexeme's

⁵ Structural coding has also been called "function-indicating morpho-syntax" in Croft (1991) and corresponds to what Hengeveld (1992, and later publications, see Hengeveld (2013) for a recent overview) calls "further measures". Note further that behavioral potential is not restricted to inflection: free-standing grammatical markers and argument structure properties are also included.

propositional function. It is predicted that, in any language, a non-prototypical combination of meaning and function is marked by at least as much structural coding as a prototypical combination. The second type of marking, behavioral potential, involves markers expressing categories such as tense or number, which are associated with a specific function, but do not mark it as such. Behavioral potential displays a reversed pattern of relative markedness, compared to structural coding: in any language, a prototypical combination of lexical meaning and propositional function is predicted to have at least as much behavioral potential as a non-prototypical combination (Croft 2001: 90–91).

In terms of Croft's theory, lexical flexibility can be defined as the possibility to use a certain semantic type of lexeme (or group of lexemes) in one or more non-prototypical function(s), without any difference in morphosyntactic markedness, relative to the marking found when the lexeme is used in its prototypical function. Consider example (1), from Mekeo (Western Oceanic, Papuan Tip).⁶ In (1a), we find a prototypical meaning-function combination: an event word functioning as a predicate. If we compare this to (1b) and (1c), which involve a person word and a property word in predicative function, respectively, we see no difference in markedness: there is no structural coding in the form of a copula (or any other overt predication marker or verbalizing element); and in both cases the same behavioral potential is displayed: a prefix indexing person and number of the S argument.⁷

- (1) Mekeo (Western Oceanic, Papuan Tip)
- a. *E-kia*
3SG-recoil
'It (a prawn) recoils.' (Jones 1998: 277)
 - b. *E-papie*
3SG-woman
'S/he is/has become a woman.' (Jones 1998: 99)
 - c. *E-isava*
3SG-sick
'S/he is/has become sick.' (Jones 1998: 100)

⁶ Throughout the article, I will provide only the first- and second-order subgroups (within the Oceanic subfamily) to which languages belong. For more detailed genealogical classification the reader is referred to the Appendix.

⁷ I use the following terminology to refer to argument roles: S is the sole argument of a monovalent predicate, A is the more agent-like argument, and P the less agent-like argument of a bivalent predicate (Bickel et al. 2014 and references therein).

With this general definition of lexical flexibility in place, two further remarks are necessary. First of all, the formulation “without ANY difference in morphosyntactic markedness” actually defines the upper limit of lexical flexibility, in two senses. One pertains to the distinction between structural coding and behavioral potential. It may be the case that a non-prototypical meaning-function combination triggers no structural coding, but does not display the (full range of) behavioral potential found in a prototypical construction. For instance, in Whitesands the word *asoli* ‘big’, when used in predicative function, does not take person, number, or tense marking (2a), in contrast with most other property words, such as *akaku* ‘small’ (2b), and event words, such as *aŋhati* ‘talk’ (2c), which do display this behavioral potential. In terms of structural coding, however, all three items behave alike: they do not require a copula to be used as predicates.

(2) Whitesands (Central-Eastern Oceanic, South Vanuatu)

a. *rahak nima asoli*

my house big

‘My house is big.’ (Hammond 2009: 41)

b. *ya-am-akaku*

1EXCL-PST.SG-small

‘I was small.’ (Hammond 2009: 61)

c. *na-am-ot-aŋhati*

2-PST-PL-talk

‘you were all talking’ (Hammond 2015: 35)

I regard the situation in (2a) as exemplifying the lower limit of lexical flexibility: there is no structural coding to mark the non-prototypicality of the meaning-function combination, yet the behavioral potential belonging to its prototypical counterpart is not adopted. In other words, I see the absence of (additional) structural coding as the minimal condition for a construction to count as a form of lexical flexibility.⁸ If in addition there is (some) behavioral potential, as in (2b), this increases the degree of flexibility, because it makes the construction more similar to the construction found in the case of a prototypical meaning-function combination, such as the one in (2c).

Notably, the Whitesands examples show that Croft’s three large semantic lexeme types – events, things/persons, and, in this particular case,

⁸ This corresponds to Hengeveld’s approach, where the presence/absence of “further measures” accompanying the use of a lexeme in a particular function defines that lexeme’s (lack of) flexibility.

properties – do not necessarily have internally homogeneous morphosyntactic characteristics: based on their behavioral potential in predicative function, Whitesands *asoli* ‘big’ is assigned to a different word class than *akaku* ‘small’. In fact, this not only shows that property words need not behave alike, but also that the same may hold for a more narrowly defined semantic group, such as “words denoting dimensions” in the case of Whitesands: while ‘big’ and ‘small’ are conceptually very closely linked, they represent morphosyntactically distinct categories. I return to the issue of semantic subclasses below, with particular reference to property words (Sections 3.3 and 4.3).

A further important aspect of the definition of flexibility relates to what Evans & Osada (2005: 367) have termed the “compositionality criterion”. This criterion states that “any semantic differences between the uses of a putatively ‘fluid’ [i.e., flexible – EvL] lexeme in two syntactic positions (say, argument and predicate) must be attributable to the function of that position”. The compositionality criterion distinguishes flexibility from *CONVERSION*, a lexical derivational process that, like flexibility, involves no overt formal change, but unlike flexibility results in output forms with non-productively derivable semantics. As I have argued elsewhere (Don & van Lier 2013; van Lier 2012), non-compositionality does not imply that meaning shifts accompanying conversion cannot be regular in any sense. On the contrary, there are many crosslinguistically recurrent patterns of semantic shift. Consider, for instance, the shift from an object word to a word denoting an action typically performed with that object, such as in English (*the/a*) *hammer* versus (*to*) *hammer*. This type of regular semantic shift is also described for Oceanic languages and members of the larger Austronesian family, including Teop (Western, Meso-Melanesian; see Mosel 2017) and Chamorro (Chamorro, Guam; see Chung 2012; van Lier 2012). An example from Teop of the object-to-action shift is *araa* ‘fishing rod or line’ versus ‘fish/catch with a rod or line’. Chamorro has, for instance, *se’si* ‘knife’ versus ‘to stab (with a knife)’. Notably, both languages exhibit, next to conversion, flexibility; in the latter cases there is no shift from one semantic category to another, neither regular nor more idiosyncratic.⁹

In this section I defined lexical flexibility within Croft’s framework of functional-typological word classes, looking to the (non-)occurrence of structural coding and/or behavioral potential in a particular combination of semantic meaning and propositional function. Following Evans & Osada’s

⁹ Note that the criterion of semantic compositionality is widely, but not universally adopted by researchers of lexical flexibility (cf. Foley 2014).

(2005) criterion of compositionality, lexical flexibility was further distinguished from conversion in allowing for fully predictable, compositional semantic increment only. The next section outlines the methodological design of the present study.

2.2 Methodology: Language sampling and data collection

2.2.1 Language sampling

This article is based on data from a balanced sample of 36 Oceanic languages. The sample was composed by applying the Diversity Value technique (Rijkhoff et al. 1993; Rijkhoff & Bakker 1998; Bakker 2011) to the Oceanic family tree (as represented in *Ethnologue*, see Lewis et al. (eds.) 2014). This technique involves computing so-called diversity values (henceforth DVs) for the nodes in a language family tree. These DVs reflect the degree of internal complexity of subgroups under the nodes and as such determine by how many languages each particular subgroup should be represented in the sample, given a certain desired sample size. The formula that computes DVs takes into account both the width (how many branches) and the depth (how many more levels further down the tree) of diversification under a specific node in the tree, under the assumption that higher splits represent older stages of diversification and should therefore contribute more to the DV than lower, younger splits.

For the present study, I used as a starting point a desired sample size of 40 Oceanic languages.¹⁰ In a first step, I calculated the number of languages to be selected from each of the six main subgroups of the Oceanic family (Admiralty Islands, Central Eastern Oceanic, Saint Matthias, Temotu, Western Oceanic, and Yapese – an isolate within the family, i.e., the only language of the sixth Oceanic subgroup). This procedure was repeated for each next level of subgrouping, until all 40 languages were distributed. When there was a choice between multiple languages in a given subgroup, availability and quality of descriptions were decisive. Finally, in four cases there was no (good) description for any language in the relevant subgroup, bringing the intended 40 language sample down to the actual number of 36. Full information about the DVs and the composition of the language sample can be found in the Appendix.

¹⁰ See Section 1 for some considerations concerning the choice of genetic grouping and sample size.

2.2.2 Data collection

For each of the 36 languages in the sample, I collected data on the distributional behavior of a range of semantic types of lexemes in three propositional functions. Specifically, I distinguished 21 semantic subtypes, evenly spread over the three major semantic types used in Croft's theory (see Section 2.1): 7 types of event words (or what one may call "semantic verbs"), 7 types of object/person words (or "semantic nouns"), and 7 types of property words (or "semantic adjectives"). These 21 classes, with some illustrative examples, are listed in Table 2.

Table 2: Semantic subgroups.

Major types	Subtypes	Examples
Event words	monovalent stative	'die', 'fall'
	monovalent active	'run', 'swim'
	bivalent active with animate P	'meet', 'help'
	bivalent active with inanimate P	'break', 'build'
	bivalent emotions	'love', 'hate'
	bivalent perception	'see', 'hear'
	bivalent propositional attitude/utterance	'know', 'think', 'say'
Property words	dimensions	'big', 'small'
	values	'good', 'bad'
	physical properties	'hard', 'cold'
	human propensities	'kind', 'clever'
	age	'young', 'old'
	colors	'black', 'red'
	experiential states	'happy'/'sad', 'hungry'
Object/person words	proper names	'John'
	persons	'man', 'woman'
	kin terms	'mother', 'father'
	body parts	'head', 'leg'
	natural kinds	'dog', 'tree'
	artifacts	'house', 'canoe'
	locations	'village', 'beach'

The inventory of semantic classes in Table 2 is the outcome of various considerations. Firstly, these classes were selected so as to cover a wide range of subtypes of the three broader categories of events, objects/persons, and properties, rather than just the most prototypical instantiations of these categories. The choice of categories builds on earlier functional-typological studies. Some of this

work, in particular Foley (2014), specifically targets lexical flexibility, but most studies have other primary goals, such as the Leipzig Valency Classes project (Hartmann et al. 2013), Dixon's work on property words (Dixon 1982, 2004), and studies in the framework of Natural Language Semantics (Goddard & Wierzbicka 2014 and references therein). While trying to cast the net widely enough for an explorative study like the present one, I also left out certain potentially relevant subcategories, because too little information turned out to be available across the sample languages. This happened, for instance, with the categories of speed words and substances (or what are commonly called "mass nouns" in the literature).

For each of the 21 semantic classes in each language, I assessed combinability with a range of grammatical features, each associated with one of the three propositional functions. Regarding the function of predication, I considered both the use of structural coding and the expression of behavioral potential (cf. Section 2.1). More specifically, I distinguished between three main types of predication strategies. The first possibility is the obligatory use of a copula, i.e., structural coding. While the use of a copula usually implies the expression of "verbal" features (such as person and TAM),¹¹ predicatively used lexemes adopting this strategy are unable to carry these features themselves and hence do not show any behavioral potential. The second expression strategy is a "zero" strategy, meaning that there is no copula, but also no expression of any "verbal" behavioral potential. As explained in Section 2.1, the zero strategy represents the lower boundary of flexibility. The third strategy involves no structural coding and the expression of "verbal" behavioral potential by the predicate lexeme.¹² This represents the highest degree of flexibility. Notably, specific semantic lexeme groups may alternate between two strategies (in particular between the copula and the zero strategy, or between the zero and the "verbal" strategy). Finally, specific sets of lexical items may be completely unable to function as predicates, and hence they combine with none of the predication strategies.

With regard to behavioral potential, I do not differentiate between distinct types of "verbal" features (e.g., between person, tense, and mood) for two main reasons. First, I am particularly interested in the behavioral

¹¹ As is well known, not all copulas inflect for "verbal" features. Note that I use quotation marks around "verbal", to indicate that the relevant features are those associated with prototypical event-denoting predicates, without making *a priori* claims about the existence of a separate lexical class of verbs in any particular language.

¹² Notably, this does not need to involve morphological boundedness: in many Oceanic languages "verbal" features are expressed (partly) in the form of freestanding particles.

potential of lexemes that are semantically not prototypical predicates: property words and object/person words. There are few cases in which such non-verbal predicates adopt only a part of the behavioral potential of prototypical event-denoting predicates, e.g., where a property-denoting or object-denoting predicate can express person but not aspect. Second, it is often difficult to separate verbal features in individual languages, be it for formal or for functional reasons. For example, predicative event words in Oceanic languages commonly take grammatical markers (preverbal particles or prefixes) that express both person/number of the S/A argument and mood in a portmanteau form, as does *u-* in (3) from Manam:

- (3) Manam (Western Oceanic, North New Guinea)

(*ŋáú*) *u-píle*

1SG 1SG.REAL-speak

'I spoke.' (Lichtenberk 1983: 112)

Also functionally TAM markers are not always easily classifiable as tense, aspect, or mood markers. A typical example involves the use of markers glossed as "IRREALIS", for the expression of future tense, as in (4) from Neverver:¹³

- (4) Neverver (Central Eastern Oceanic, Remote)

Nim-gav nokhos t-ng

1SG.IRR-rake garden POSS-1SG

'I'm going to rake my garden.' (Barbour 2012: 194)

Turning to the propositional functions of reference and modification, I considered the following types of structural coding: for reference, I looked at whether or not specific semantic lexeme groups need to be nominalized in order to fulfill this function. Notably, I excluded (overt) lexical derivational strategies, which are characterized by semantic shift (cf. Section 2.1). Thus, nominalization in this article covers only cases of overtly marked ACTION NOMINAL CONSTRUCTIONS (Koptjevskaja-Tamm 1993), which retain the event semantics of the original lexeme, rather than producing a new lexeme with an object/person meaning.

As for structural coding of the modifier function, I distinguish two main types of marking. One possibility is the use of a "finite" relative clause,

13 In fact, while the (IR)REALIS labels are commonly used in the Oceanic descriptive tradition (and IRREALIS is also commonly employed to convey future tense), there are reasons to argue that reality status does not constitute a typologically valid category (de Haan 2012).

expressing the grammatical features associated with prototypical event-denoting predicates in main clauses, such as person and TAM categories. In Oceanic languages relativization is often not marked by a relative pronoun or any other overt relativizer. In such cases, only the presence of person/TAM categories marks the construction as a relative clause. Consider example (5) from Wuvulu: while some property concepts can be used as modifiers without any morphosyntactic marking, as in (5a), others must take the form of a finite relative clause, without a relativizer, but with expression of person/number and mood, as in (5b).

- (5) Wuvulu (Admiralty Islands, Western)
- a. *hemea rama'a hafelo*
 ART person bad
 'a bad person' (Hafford 1999: 111)
- b. *hemea rama'a i-na-pududu*
 ART person 3SG-REAL-stupid
 'a stupid person' (Hafford 1999: 153)

While relativization is the most commonly adopted strategy with property and event words that cannot modify without structural coding, in a few cases the action nominalization construction used for non-prototypical reference is also employed for non-prototypical modification. This is illustrated below for Erromangan: (6a) shows the (bracketed) action nominalization in referential function, and (6b) shows the same marker, *n-*, appearing on a modifying property word belonging to the subclass of colors:

- (6) Erromangan (Central-Eastern Oceanic, South Vanuatu)
- a. *co-nor-oc* [*n-ta-i* *nomu*]
 3SG.SBJ.FUT-be.unable-2SG NMLZ-kill-CONST fish
 'You will be unable to kill fish.' (Crowley 1998: 266)
- b. *Kokeml-ante ra hai nur n-telemte*
 1PL.INCL.PRS-live LOC INDF place NMLZ-green
 'We live in a green place.' (Crowley 1998: 146)

Apart from relativization or nominalization, the other main type of structural coding of the modifier function is what I will call ASSOCIATIVE marking. This term subsumes several slightly different types of constructions, including possessive marking in the form of affixes or (cliticized) postpositions (see *ŋa-* in (7a) and *=ŋga* in (7b), both from Bukawa), oblique prepositions (see *nyine* in (8) from Drehu), and attributive particles (see *a* in (9) from Tinrin):

- (7) Bukawa (Western Oceanic, North New Guinea)
 a. *a ɲa-mlic*
 tree POSS-skin
 ‘tree bark (lit., tree-its-skin)’ (Eckermann 2007: 95)
lau [têm dīndec]=ŋga
 people time this=of
 ‘people of this time/generation’ (Eckermann 2007: 110)
- (8) Drehu (Central-Eastern Oceanic, Remote)
penisel nyine cinyiany
 pencil for write
 ‘pencil for writing/to write with’ (Moyse-Faurie 1983: 171)
- (9) Tinrin (Central-Eastern Oceanic, Remote)
wage a harru
 flower ATTR nice
 ‘nice flowers’ (Osumi 1995: 77)

Notably, for the functions of reference and modification no behavioral potential was taken into account. Regarding reference, for many languages it proved difficult to obtain detailed and complete information about the distribution of such categories as determiners and number markers over the semantic subgroups distinguished in Table 2. Only fairly broad generalizations are clearly discernable, such as the relatively restricted distribution of number (which in Oceanic languages is uncommonly marked grammatically anyway) compared to other “nominal” categories. For instance in Bukawa (Western Oceanic, North New Guinea) only a small class of words, consisting mainly of kinship terms and some person words, can be marked for plural with the enclitic=*i* (e.g., *dōwa=i* ‘elder brothers’, *bawhê=i* ‘girls’, *sêŋom=i* ‘young (wo)men, disciples’; Eckermann 2007: 28). Likewise, no behavioral potential was considered for the function of modification. In part, this is due to the fact that prototypical modifiers in Oceanic languages generally do not show many distinctive features, in the form of, e.g., agreement with the head of the referential phrase.¹⁴ For another typical

¹⁴ Although in some Oceanic languages there is a (small) subgroup of property words that can show a form of person and/or number agreement when the head has a plural referent, for instance, through possessive indexation or reduplication, e.g., Lote (Western Oceanic, North New Guinea) *sa* ‘tall.SG’ vs. *sa-sase* ‘tall.PL’ (Pearson & van den Berg 2008: 21).

“adjectival” feature, namely combinability with comparative/superlative morphosyntax, not enough detailed data were available.

Before turning to the research questions, some general remarks on the data collection are in order. First, it is important to state from the outset that the selected 21 semantic classes do not always show internally consistent behavior in individual languages. This holds especially for semantic classes belonging to the superclass of property words. We already saw that in Whitesands the words for ‘big’ and ‘small’, both members of the semantic class of dimension words, belong to different word classes.¹⁵ Also, not uncommonly certain concepts are lexicalized twice: once as a property-denoting word used only for modification (an adjective) and once as a state-denoting word used only for predication (a verb). An example comes from Tinrin (Central-Eastern Oceanic, Remote), which has an adjective *nrôô* ‘old’ and a verb *bêêrî* ‘be old’ (Osumi 1995: 77, 78). Moreover, in some cases individual languages have word classes containing lexical items that are difficult to locate with respect to the semantic classes used in this study. For instance, Kokota has a three-member class of property words that cannot be used predicatively: *mata* ‘wild’, *ohai* ‘tame’, and *tove* ‘old’ (Palmer 2009: 94). While the latter item clearly belongs to the ‘age’-class, the other two items are not so easily semantically classifiable.

Second, and in relation to the above, I provide some details concerning my coding of the data. Basically, I used an ordinal scale of measurement with three levels, which can be roughly described as “yes”, “no”, and “sometimes”. More specifically, “yes” stands for “this semantic type of word occurs in combination with this grammatical category, in this propositional function”. Conversely, “no” stands for non-combinability of the semantic class with the relevant feature in a particular function. The third option, “sometimes”, may reflect one of two situations. First, it can mean that “some items belonging to this semantic category do combine with the grammatical category, while others do not”. Note that, for lack of sufficient information, I did not attempt to quantify the proportion of lexemes in a semantic class that behave one way or another. Alternatively, “sometimes” can mean that a grammatical feature appears only under certain circumstances. For example, as mentioned above, relativizers can often be omitted. Another example comes from Kwamera (not part of the sample used for this study, but closely

¹⁵ Similar cases are found in Teanu (Temotu, Utupua-Vanikoro), where ‘ripe’ behaves like an adjective but ‘unripe’ like a verb, and, likewise, the human propensity word ‘beautiful’ is an adjective, but ‘clever’, from the same semantic subclass, is a verb (François 2009: 115; François & Ponsonnet 2013: 186). I thank Alexandre François for these references.

related to Erromangan and Whitesands), where person words (including kinship terms) used as predicates take person/number and aspect marking only in the context of negation, which is expressed by a suffix attached to a dummy event word *o* ('do, make'). Compare (10a) with (10b):

(10) Kwamera (Central-Eastern Oceanic, South Vanuatu)

a. *Iema fa r-pk-o-mha remú-k*
man that 3SG-SEQ-do-NEG father-1SG.POSS

'That man is not my father.' (Lindström & Lynch 1994: 28)

b. *Iema fa remú-k*
man that father-1SG.POSS

'That man is my father.' (Lindström & Lynch 1994: 29)

A final point concerns the coding of missing data. In some cases, I could not find information for a particular language on a specific semantic class of words, say color terms. If I had evidence that this language had multiple form classes of property words (e.g., dimension, value, and age words in class 1 versus physical properties, human propensities, and experiential states in class 2), I would code the color terms as missing information (NA). If, on the other hand, I had no evidence for differential behavior of subtypes of property words, I would assume that the color terms behave in the same way as all other property words.

This subsection outlined my methodological choices and some of their potential consequences for the picture emerging from this study. With these issues in mind and the theoretical framework in place, in the next section I present the research questions addressed in the remainder of this article.

3 Research questions

This study measures lexical flexibility along three dimensions, corresponding to three research questions. First, I look at the degree to which propositional functions can be expressed by different semantic word types (Section 3.1). Second, I investigate which coding strategies are used to express the function of predication with semantic word types not prototypically associated with that function, i.e., with property words and object/person words (Section 3.2). Third, I consider in detail the expression of modification by means of different semantic types of property words (Section 3.3). Each of the three hypotheses is formulated in light of existing worldwide typological studies of lexical categories and their defining constructions.

3.1 Flexibility of propositional functions

The first question addresses what can be described as the flexibility of propositional functions. Specifically, this question asks to what extent each of the three propositional functions (predication, reference, and modification) can be fulfilled by lexical items of different semantic types, without the need for structural coding. As such, this question approaches flexibility not from the perspective of the functional possibilities of the lexeme, but rather from the perspective of the relative openness of the functional slot to be filled by different types of lexemes.

According to previous typological research on word classes, the function of predication is privileged in relation to the function of reference, since referring expressions can only be created by predicating properties of an entity. Also, the optional function of modification is secondary in relation to both reference and predication (Hengeveld & van Lier 2010: 137). Given this hierarchical ordering of propositional functions, I expect predication to be the most open or flexible function, followed by reference, and finally modification. This is schematically represented in (11):

(11) predication > reference > modification

The hypothesis will be tested by calculating for each propositional function the proportion of semantic lexeme types ($n = 21$) that can fulfill it without additional structural coding across the languages of the sample ($n = 36$).

3.2 Non-verbal predication strategies

The second research question concerns the use of structural coding and behavioral potential (in the form of “verbal” features) with so-called non-verbal predicates in the sample languages (Hengeveld 1992; Stassen 1997).¹⁶ In this study, the term “non-verbal” is understood semantically: it includes (subtypes of) property words and object/person words, as represented in Table 2 (Section 2.2.2).

The morphosyntactic expression of non-verbal predication has been intensively studied from a worldwide typological perspective (Hengeveld 1992; Wetzler

¹⁶ As already mentioned in Footnote 11, I use quotation marks on “verbal” features to emphasize that I do not assume the presence of a lexical class of verbs. Rather, this term is used as a short-cut to refer to features associated with prototypical event-denoting predicates. For reasons of readability, quotation marks are omitted in what follows, but my intention remains the same.

1996; Stassen 1997, 2013a, b). These studies show that predicative property words are crosslinguistically more likely than predicative object/person words to adopt the behavioral potential associated with event word predicates. Moreover, within individual languages the possibility for predicative object/person words to express verbal features implies that property words can do this too (e.g., Stassen 1997: 126). These findings are explained in terms of Givón's (1984) Time Stability Hierarchy, on which events rank lowest, followed by properties, followed by objects. Since verbal features such as tense and aspect are tailored to the semantics of event predication, such features are in general less likely to occur in combination with concepts higher in time-stability. However, since property words rank closer to events than objects, predicative property words are more compatible with verbal features than predicative object words. Similarly, the high degree of time-stability of object words makes them less prototypical predicates than intermediately time-stable property words. Hence, predicative object words are more likely to require structural coding, in the form of a copula, than predicative property words. Language-internally, the requirement of a copula for property word predicates implies copula use with object word predicates (e.g., Hengeveld 1992: 201).

In the present study, I predict that Oceanic languages will be relatively extreme in terms of their flexibility to express verbal features with non-verbal predicates, and in allowing the absence of structural coding. This hypothesis will be tested by calculating the proportions of the various types of object/person and property words (14 types in total) across the sample languages that adopt certain non-verbal predicative expression strategies, as discussed in Section 2.2.2. The results for the Oceanic language family will be compared with those found in worldwide typological surveys of non-verbal predication (Stassen 2013a, b). While I predict Oceanic flexibility to be well above average, the difference is expected to be one of degree rather than kind (see Section 1): in line with suggestions in earlier studies, Oceanic languages should not contradict crosslinguistic generalizations (Stassen 1997: 429–443).

3.3 Flexibility of semantic classes

The third research question addresses lexical flexibility in Oceanic languages by looking in detail at a subgroup of semantic lexeme types: property words (cf. Table 2). Specifically, this question asks to what extent each of the seven property word types can be used for modification without additional structural coding, across the 36 sample languages. As is common in flexibility research to date, this research question takes the lexeme as a point of departure, assessing

its ability to fulfill a particular propositional function, without morphosyntactic adaptation. Yet, the question posed here expands on existing work by separately considering a set of fine-grained semantic subtypes of property words, rather than looking at the superclass as a whole. In addition, while most studies of flexibility focus on the use of semantic lexeme types in their non-prototypical function(s), I will investigate the morphosyntactic coding of property words in their presumably most prototypical propositional function: modification. My motivation for zooming in on property words is twofold. First, property words (or semantic “adjectives”) have received less attention than event words and object words (or “nouns” and “verbs”) in the debate surrounding lexical flexibility. Second, property words in and across Oceanic languages display a relatively wide range of morphosyntactic variability, thus providing an interesting area of microvariation in lexical flexibility (Ross 1998).

Crosslinguistically, it has been known since Dixon (1982) that certain subtypes of property words are more likely than others to be lexicalized as “core adjectives”, i.e., as words that modify without structural coding. Dixon (2004: 3–4) recognizes four core semantic types, namely words denoting dimensions, age, values, and colors. “Peripheral” semantic types, on the other hand, typically include physical properties, human propensities, and speed words. Comparing Dixon’s classes with the inventory in Table 2 above, some discrepancies can be seen in the peripheral types. Specifically, I treat Dixon’s “corporeal properties” (e.g., ‘sick’, ‘tired’) as EXPERIENTIAL STATES rather than as a subtype of physical properties. The reason for this is that many items in the class of physical properties refer to relatively time-stable concepts, such as ‘strong’, ‘heavy’, and ‘soft’. In contrast, Dixon’s corporeal properties rather seem to include states that tend to be more temporary. Along similar lines, I have assigned some concepts belonging to human propensities in Dixon’s list to my class of experiential states. This again involves typically temporal properties, such as ‘ashamed’, as opposed to more permanent human characteristics, such as ‘clever’ or ‘kind’. Finally, as mentioned above, speed words were not analyzed in this study, due to insufficient comparative data.

Ross (1998) shows that Oceanic property words show variable morphosyntactic behavior: while some languages have a class of property words that modify without structural coding, in other languages attribution of properties is predominantly or exclusively expressed with “nominal” structural coding (i.e., a form of associative marking, see (7) to (9) above) or with “verbal” structural coding (relativization). Moreover, many Oceanic languages display multiple classes of property words. Despite this diversity, Ross signals some commonalities that are relevant for the present study. First, he finds that in Oceanic languages with small, closed subclasses of property words, these classes tend to include

Dixon's core adjectives. Second, the morphosyntactic behavior of these small classes is both less "nouny" and less "verby" compared to the larger classes of property words, for instance, because they do not take possessive suffixes or because they are unable to function as independent predicates.

In the present study, I investigate to what extent my sample languages follow the crosslinguistic tendencies observed by Dixon and signaled for Oceanic by Ross. Specifically, the seven subtypes of property words will be ranked according to their relative flexibility, measured as their ability to be used as modifiers without structural coding. This ranking is expected to reflect Dixon's distinction between core and peripheral adjectives. This third prediction is the last of my set of research questions. The results are presented in the next section.

4 Results

4.1 Flexibility of propositional functions

The first hypothesis predicts that propositional functions can be ordered according to their flexibility on a hierarchy of the form: predication > reference > modification, with degree of flexibility decreasing from left to right. Flexibility was operationalized as the degree to which each propositional function can be fulfilled by different semantic lexeme types without the need for (additional) structural coding. Table 3 shows the percentages of the 21 semantic lexeme types across the 36 languages (i.e., a total of 756 data points) that can fulfill each of the three propositional functions (i) without structural coding, (ii) sometimes with and sometimes without structural coding (this is the second row labeled "split/alternating"),¹⁷ or (iii) with structural coding only, or not at all.¹⁸ The fourth line indicates the percentage of data points for which information could not be obtained.

Table 3 shows that predication is the most flexible of propositional functions, accepting 92.1% of the lexeme types across the languages without structural coding. Reference is already much less flexible, with an acceptance rate of

¹⁷ As was mentioned in Section 2.2.2, in situations of type (ii), the presence or absence of structural coding may depend either on subclassification within the semantic category in question (e.g., two types of dimension words), or on the construction type (e.g., a copula only in the context of negation).

¹⁸ I have collapsed these two options into one category, because there are very few cases in which a particular semantic class of words cannot fulfill a particular propositional function at all, i.e., not even when accompanied by structural coding.

Table 3: Flexibility of propositional functions.

		Propositional functions		
		Predication	Reference	Modification
Expression	Without structural coding	92.1%	46.7%	27.5%
	Split/alternating	5.7%	9.0%	13.4%
	With structural coding or not at all	1.2%	36.5%	51.3%
	Unclear (NA)	1.0%	7.8%	7.8%

46.7%, and modification is the least flexible with 27.5%. Conversely, only 1.2% of lexeme types across languages are either not permitted to function as predicates at all, or do so only in the company of structural coding, i.e., with a copula. This percentage increases to 36.5% for reference and to 51.3% for modification: in more than half of the cases the modifier function is accessible with structural coding only (if at all). The difference in flexibility between the three functions is statistically significant: a χ^2 test yields a p -value of < 0.00000000000000022 .¹⁹ According to the Contingency Coefficient, which is 4.8, this is a strong effect.²⁰ Figure 1 visualizes this result.

In order to get an impression of the types of constructions behind the figures in Table 3 and Figure 1, consider Mangap-Mbula. Examples (12) and (13) illustrate the expression of predication, reference, and modification by bivalent event words with an inanimate P argument (12), and by person words (13).

¹⁹ One potential problem with performing a χ^2 test on these data is that for each propositional function a part of the data points come from the same language (i.e., one data point per semantic class). While in principle one can assume that the behavior of one semantic class within a particular language is not dependent on the behavior of the next semantic class in the same language, there may be a higher chance for certain semantic classes within a particular language to behave alike than across different languages.

²⁰ The Contingency Coefficient (CC) estimates the effect size independently of the sample size, yielding a value between 0 and 1. A CC value of approximately 0.1 indicates a small effect, around 0.3 is a medium effect, and from 0.45 upwards is a large effect (Everitt 1977). For my data, comparing the observed frequencies with the expected ones (as calculated by the χ^2 test), it becomes clear that the reported strong effect is mainly due to the very low number of semantic classes across languages that predicate only with structural coding (or not at all) and to the general low level of flexibility of the modifier function. For reference, the differences between observed and expected frequencies are relatively small.

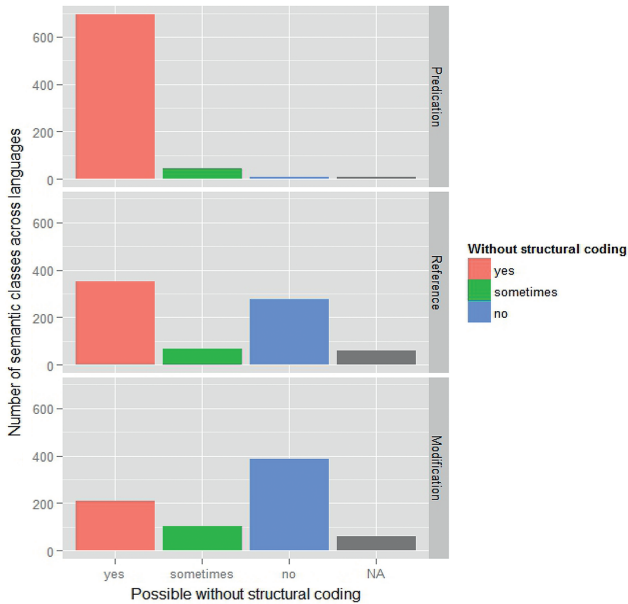


Figure 1: Relative flexibility of propositional functions to be expressed by 21 semantic classes across 36 Oceanic languages.

The first semantic lexeme type predicates without structural coding (‘cut off’ in (12a)), refers only when nominalized with a suffix (‘build’ in (12b)), and modifies only in the form of a relative clause (‘look after’ in (12c)). The second semantic class lacks structural coding in the functions of predication (‘teacher’ in (13a)) and reference (‘person’ in (13b)), but as a modifier must be accompanied by a locative preposition (‘old person’ in (13c)):

(12) Mangap-Mbula (Western Oceanic, North New Guinea)

a. *WuT’ koTo*

2SG.cut.off sago.palm.leaves

‘You cut off sago palm leaves.’ (Bugenhagen 1996: 390)

b. *To nuumu po-ŋa-na i-map.*

then house build-NMLZ-GEN.3SG 3SG-end

‘Then the house building is finished.’ (Bugenhagen 1996: 266)

c. *tomtom ta i-mborro stua ti*

person REL 3SG-look.after store this

‘the person who looks after this store’ (Bugenhagen 1996: 265)

- (13) Mangap-Mbula (Western Oceanic, North New Guinea)
- a. *Nu tisa*
 NOM.2SG teacher
 ‘You are a teacher.’ (Bugenhagen 1995: 191)
- b. *Ni i-re tomtom ta*
 NOM.3SG 3SG-see person ART
 ‘He saw a man.’ (Bugenhagen 1995: 215)
- c. *pa mbulu kizin kolman pakan*
 OBL custom LOC.3PL old.person some
 ‘about the customs of some old people’ (Bugenhagen 1995: 210)

Turning back to Table 3 (and Figure 1), it is noteworthy that the percentages for the split and alternating expression strategies (third row) also reflect a hierarchy: they increase from predication (5.7%) to reference (9.0%) and to modification (13.4%). Especially for modification this internal variability reflects that, as already mentioned, many of the sample languages display multiple formal classes of property words, differentiated by (among other things) the ability to modify without structural coding. For instance, in Mangap-Mbula dimension words such as *molo* ‘long’ are used as unmarked modifiers (see (14a) below), while physical property words like *mbol* ‘be strong’, must be either nominalized or relativized to perform this function (see (14b) and (14c), respectively):

- (14) Mangap-Mbula (Western Oceanic, North New Guinea)
- a. *buza tio molo*
 knife LOC.1SG long
 ‘my long knife’ (Bugenhagen 1995: 106)
- b. *koronj mbol-ŋa-na*
 thing be.strong-NMLZ-GEN.3SG
 ‘something strong’ (Bugenhagen 1995: 106)
- c. *koronj ta i-mbol kat*
 thing REL 3SG-be.strong very
 ‘something that is really strong’ (Bugenhagen 1995: 107)

Moreover, as indicated in Section 2.2.2, sometimes the relevant subclassifications of property words crosscut the predetermined semantic groupings listed in Table 2. In Whitesands, as discussed above, the boundary between two property word classes crosscuts the semantic group of dimension words: while *asoli* ‘big’ modifies without structural coding (15a), *akaku* ‘small’ can fulfill this function only in the form of a relative clause (15b):

(15) Whitesands (Central Eastern Oceanic, South Vanuatu)

a. *n-etemi asoli mən u*

PL-man big PL PROX

‘these big men’ (Hammond 2015: 29)

b. *tem t-akaku*

person 3SG-NPST-small

‘the small(est) person’ (Hammond 2015: 100)

Finally, the last row of Table 3 shows that more data points were unclear with respect to the expression of reference and modification (7.8%) than for predication (1%). For reference, this relatively high amount of missing information is mostly due to issues of semantic shift of property words used in this function: often, the only cases described involve those which result in a person/thing interpretation (‘one with property X’, ‘X one’; where ‘X’ is the relevant property denoted by the base word). As for modification, the lack of data pertains to the use of object/person words in this function. Apart from possessive constructions, often no information is provided about the possibility to use these words as (unmarked) modifiers.

In sum, the data in Table 3 (and Figure 1) confirm the predicted flexibility hierarchy of propositional functions, with structural coding increasing from predication via reference to modification. Moreover, the overall degree of flexibility of the function of predication is shown to be very high. This phenomenon, sometimes referred to as OMNIPREDICATIVITY, is attested not only in the Oceanic family, but also in several Amerindian languages.²¹ The present study shows how (relative) omnipredicativity can be quantitatively assessed using a fine-grained set of semantic variables. Also, approaching flexibility from the perspective of functions (rather than lexemes) indicates that predication with non-action-denoting lexemes is more common than reference or modification with lexemes that do not denote objects or properties, respectively. This is at least the case for Oceanic languages; the method described here can be used for comparative analyses involving other language groups, including worldwide samples (cf. Section 5). Awaiting such studies, the here-attested hierarchy of propositional functions suggests that flexibility in Oceanic languages is constrained by the same tendencies that are relevant for lexical classification in broader typological samples (cf. Section 3.1).

²¹ The term “omnipredicative” was coined by Launey (1994, 2004). For examples of individual omnipredicative Amerindian languages see, e.g., Beck (2013) on Lushootseed; Vapnarsky (2013) on Yucatec Mayan; Haude (2009) on Movima. See Evans & Osada (2005) for a discussion of omnipredicativity in the larger context of lexical flexibility.

While many semantic lexeme types in many sample languages can function as predicates without structural coding, this leaves open the question of their behavioral potential in this function. This topic is addressed by the second research question concerning predicative expression strategies adopted by semantically non-verbal predicates.

4.2 Non-verbal predication strategies

According to Section 3.2, and based on crosslinguistic generalizations, Oceanic predicative property words are hypothesized to more readily adopt verbal behavioral potential and to be less likely to require structural coding than predicative object/person words. At the same time, I expect the overall use of non-verbal predication strategies in Oceanic language to reflect a relatively high degree of flexibility, compared to findings from worldwide typological investigations.

As discussed in Section 2.2.2, I distinguish between three main types of predicative expression strategies, as well as alternations between these strategies. Together this yields the possibilities listed in the leftmost column in Table 4. “Non-predicativity”, i.e., the complete inability to be used as a predicate, is subsumed under obligatory copula use, as there are only very few cases of the former (see Footnote 18). Columns 2 and 3 of Table 4 give the percentages of predicative “nouns” (i.e., the seven subtypes of object/person words) and predicative “adjectives” (i.e., the seven subtypes of property words) across the 36 sample languages that adopt each of the predicative expression strategies.²²

Table 4: Non-verbal predication strategies.

Expression strategy	Predicative “nouns”	Predicative “adjectives”
Copula/non-predicative	3.4%	2.2%
Copula/zero	8.3%	4.0%
Zero	52.4%	9.1%
Zero/verbal features	21.4%	22.6%
Verbal features	12.5%	57.3%
Unclear (NA)	2.0%	4.8%

²² For the sake of readability, in the remainder of this discussion I omit the quotation marks with “nouns” and “adjectives”, but I still use both terms in the semantic sense: as short-cuts to refer to the seven types of person/thing words and the seven types of property words, without making any claims concerning the presence or absence of language-specific word classes.

In line with well-established crosslinguistic tendencies, predicative adjectives in Oceanic languages are more likely to express verbal features than predicative nouns. Clearly, the preferred strategy for predicative nouns is the zero strategy (52.4%), while predicative adjectives prefer the expression of verbal features (57.3%). The alternation between zero and verbal expression is about equally popular with both categories (21.4% for nouns and 22.6% for verbs). Not surprisingly, given the results for the first hypothesis (see Table 3), the percentages for copula/non-predicative and copula/zero strategies are generally low, and, as expected, they are even lower for adjectives than for nouns. Note also that, in general, the percentages for predicative nouns form a curve, when going top-down through Table 4 (disregarding the unclear cases), with the zero strategy as the peak in the middle. This means that for predicative nouns in Oceanic languages the main source of flexibility lies in their ability to predicate without structural coding (no copula), but without behavioral potential. For predicative adjectives, the percentages steadily increase from top to bottom in Table 4, peaking at the most flexible expression strategy, where structural coding is lacking and behavioral potential is expressed.

To illustrate some of the constructions behind Table 4, consider once more Mangap-Mbula. In this language, all seven subclasses of semantic nouns adopt the zero strategy (see (13a) above). The same holds for four out of seven subclasses of property words, including dimension, as shown in (16a). Two other classes of property words, namely physical property words and colors, do express verbal features (person/number marking of the S/A argument), as shown in (16b). For a final subcategory of property words, human propensities, no information could be found.

(16) Mangap-Mbula (Western Oceanic, North New Guinea)

a. *Ingi molo*

this.one long

‘This one is long.’ (Bugenhagen 1995: 191)

b. *Ingi i-mbol som*

this.one 3SG-strong NEG

‘This one is not strong.’ (Bugenhagen 1995: 106)

Looking to worldwide crosslinguistic studies of non-verbal predication, we face a problem of comparability: these studies use coding systems different from the present study. Specifically, in the chapters on non-verbal predication of the *World atlas of language structures online* (Stassen 2013a, b) one data point corresponds to one language. In the present article, one data

point represents a semantic subgroup of property words in a particular language. Nevertheless, both percentages give a quantified impression of how common it is for predicative property words to adopt verbal behavioral potential. Worldwide, we see that 39.1% of Stassen's 386 languages adopt the "verbal" expression strategy. Compared to the 57.3% of data points for Oceanic languages (see Table 4), in the latter the verbal strategy seems to be relatively strongly represented. This is confirmed if we count all languages in the Oceanic sample that exclusively use the verbal strategy, i.e., with all semantic subtypes of property words: this happens in 19 languages, i.e., 52.8% of the total sample. Also, when we add the cases of mixed zero/verbal expression to those with verbal expression – those cases that have at least some possibility to display verbal behavioral potential – the Oceanic percentage is higher (79.9% when counting semantic classes in individual languages, cf. Table 4, or 88.9% when counting "whole" languages) than the percentage of languages in Stassen's sample with verbal or mixed encoding (65.8% in total).

Turning to predicative nouns, Stassen (2013b) shows that the mandatory use of a copula is attested in 54.7% of his sample languages. In Table 4 above, across the Oceanic language sample the percentage of semantic noun types that require a copula to predicate is only 3.4%. Even when we add the Oceanic cases of alternation between a copula and a zero strategy, we reach a mere 11.7%. This percentage reflects the coding strategies found in only four languages: Nevever (Central-Eastern Oceanic, Remote), Erromangan (Central-Eastern Oceanic, South Vanuatu), Mato, and Manam (both Western Oceanic, North New Guinea). This clearly shows that copula use with predicative nouns is very uncommon in Oceanic languages, compared to the worldwide picture.

While the results for predicative nouns and adjectives in the Oceanic family reveal distinct morphosyntactic patterns, the results for both categories show that Oceanic languages are comparatively extreme in their degree of lexical flexibility, as evidenced by the unmarked expression of predication and by the adoption of grammatical features typically associated with that function.

4.3 Flexibility of property word subclasses

The third and final research question concerns the flexibility of different types of property words, measured as their ability to be used as modifiers without structural coding. Table 5 shows for each of the seven semantic types

Table 5: (Un)marked modification by different semantic types of property words.

Semantic class	Modification without structural coding?			
	Yes	Sometimes	No	Unclear
Dimension	27	6	3	–
Value	24	7	5	–
Age	24	6	6	–
Color	24	4	6	2
Physical property	23	7	6	–
Human propensity	20	4	7	5
Experiential state	7	4	12	13

of property words in how many of the 36 sample languages they can be used as modifiers without or with structural coding. In addition, it shows the number of languages with a split in a semantic class: this corresponds to the “sometimes” category. Finally, I report the number of languages for which coding of a particular class was unclear. These counts are especially high for human propensities and experiential states. For human propensities, this seems to be due to the fact that Oceanic languages often do not lexicalize these: rather than saying ‘a happy person’, for instance, an expression like ‘a person with good insides’ may be used (e.g., Bugenhagen 1995: 282). For experiential states, the unclear cases represent missing data: experiential states are often not well-described in my sources and their intermediate time-stability makes it difficult to assess whether or not they are treated as monovalent stative verbs.

The counts in Table 5 reflect Dixon’s distinction between “core adjectives” (dimension, value, age, and color words) and “peripheral adjectives” (physical properties, human propensities, and experiential states), even though the differences between many categories are small, including the divide between color words (a “core” type) and physical properties (a “peripheral” type).

In addition to this two-way division between “core” and “peripheral”, I used Spearman’s rank-order correlation to further determine the relation between the semantic types of property words – assuming that the types can be ranked in terms of time-stability – and the way these words are coded when used as modifiers. The ordering in (17) yielded the optimal result: a weak but statistically significant positive correlation (Spearman’s $\rho = 0.2050402$, $p = 0.001692$):²³

²³ Spearman’s correlation coefficient is a value between 0 and 1 (for positive correlations) and values between 0.2 and 0.3 indicate a weak correlation.

- (17) dimension > color > value > age > physical property > human propensity > experiential state

As an illustration of the distinction between different formal classes of property words consider (18) from Tinrin, where (18a) shows unmarked modification by a value word, while the physical property word in (18b) requires structural coding in the form of an attributive marker.

- (18) Tinrin (Central-Eastern, Remote)
- a. *tro hau*
 true demon
 ‘a real demon’ (Osumi 1995: 95)
- b. *wage a harru*
 flower ATTR nice
 ‘nice flowers’ (Osumi 1995: 77)

While the overall pattern emerging from the Oceanic language sample is in accordance with crosslinguistic generalizations motivated in terms of time-stability, it is important to realize that this does not hold for each individual language. There are various cases where language-specific formal categories of property words do not reflect any semantic regularity. We have already seen an example of this: the split in dimension words in Whitesands (see (15) above). The fact that *asoli* ‘big’ belongs to the class of “core adjectives”, while *akaku* ‘small’ does not, cannot be explained in terms of time-stability. Similarly, Manam has three formal classes of property words that do not reflect any semantic classification. This is clearly shown by the fact that, within the class of color terms the words for ‘blue’ and ‘brown’ belong to class I, ‘green’ to class II, and ‘red’, ‘white’, and ‘yellow’ to class III. Similar splits occur in the class of dimension words, where ‘huge’ belongs to class I, ‘big’ to class II, and ‘tiny’ to class III (Lichtenberk 1983: 322–323). These examples indicate that individual language patterns may well deviate from the pattern that emerges from the sample considered in its totality, perhaps for formal and/or historical reasons.

This discussion of flexibility of property words rounds off the results section. In general, systematic investigation of a balanced language sample shows that the distributional behavior of specific semantic word types reflects a relatively high degree of flexibility across the Oceanic family. This is particularly true for the expression of predication with semantically non-verbal lexemes. At the same time, especially the analysis of property words shows that flexibility is also a highly diverse phenomenon, which varies depending on specific languages and constructions. Notwithstanding their overall high degree of flexibility and their

internal diversity, Oceanic languages are shown not to violate the principles of lexical classification that have been signaled in worldwide investigations. In the final section, I briefly summarize these main findings and point out some directions for future research.

5 Summary, conclusions, outlook

The main objective of this study was to measure lexical flexibility across the Oceanic language family, in the context of existing claims concerning Oceanic word classes as well as worldwide typological studies of lexical categorization. Taking Croft's functional-typological theory of word classes as a point of departure, I quantitatively assessed lexical flexibility from various angles, using a method that allows for systematic crosslinguistic comparison, and is based on language-internal variation, rather than on the assignment of categorical morphosyntactic values to whole languages.

Three specific research questions were posed: about the flexibility of propositional functions; about the flexibility of verbal grammatical behavior displayed by non-verbal predicates; and about the flexibility of different semantic types of lexemes, focusing on subtypes of modifying property words. Regarding the first hypothesis, the three propositional functions of predication, reference, and modification were ranked on the hierarchy of flexibility re-presented in (19), with the percentages of unmarked expression of each function given between brackets:

(19) predication (92.1%) > reference (46.7%) > modification (27.5%)

This hierarchy confirms generalizations based on worldwide typological research of lexical classification. Yet, it shows a comparatively very high degree of flexibility in Oceanic languages, regarding the function of predication; a phenomenon known as omnipredicativity.

Concerning the use of structural coding and behavioral potential to express non-verbal predication, I found that predicative property words are more likely to adopt verbal features and less likely to require copulas than predicative object/person words. Moreover, a comparison with data from the *World atlas of language structures online* (Dryer & Haspelmath (eds.) 2013) suggested that the verbal expression strategy is relatively pervasive with property words in Oceanic languages, while the zero strategy (no copula, but also no verbal features) is comparatively common with object/person words. This corroborates the general

picture of a strongly flexible predication function in Oceanic languages, emerging from the first research question. The Oceanic situation reflects the extreme ends of crosslinguistically well-established markedness tendencies.

The final research question focused on flexibility of semantic subclasses of property words, measured as their ability to function as modifiers without structural coding. The relation between the semantic type of property word and its (lack of) coding when used for modification is best described by the hierarchy in (20), with chances of unmarked modification decreasing from left to right:

- (20) dimension > color > value > age > physical property > human propensity > experiential state

This hierarchy reflects Dixon's distinction between core and peripheral adjectival concepts, and is as such in line with crosslinguistic semantic tendencies. Notwithstanding this general pattern, the data also display the strongly language- and construction-specific nature of property word classes in Oceanic languages.

To conclude, this first systematic overview of lexical flexibility in Oceanic languages makes clear that this phenomenon is an important but also a highly diversified feature of the family. I shows how lexical flexibility – defined broadly as the possibility to use a certain semantic class of lexemes in more than one function without any structural adaptation or semantic shift – can be approached from different perspectives, including propositional functions, structural coding, behavioral potential, and semantic microvariation. Importantly, each of these dimensions lends itself to quantitative measurement, which can be compared with degrees of flexibility in other languages or groups of languages. This allows interpreting analyses of word classes in individual Oceanic languages in relation to their genetic grouping (see Section 1), and placing the overall flexibility of the Oceanic family in the context of crosslinguistic patterns of lexical categorization. While a full-fledged quantitative comparison with worldwide typological data is beyond the scope of the present study, the Oceanic language family was found to occupy a relatively extreme position on a continuum of flexibility. This continuum in itself, however, is constrained by robust, functionally motivated typological tendencies.

In order to further substantiate these conclusions, future research on lexical flexibility should expand beyond the Oceanic languages, while maintaining and fine-tuning the multivariate approach outlined in this study. To overcome the problem of lacking detail in descriptive grammars, a lexical-typological

methodology could be adopted (Nichols et al. 2004). This would involve using an inventory of selected translational equivalents, rather than pre-established semantic groups, as in the present study. While such an approach has limitations of its own – it inevitably leads to exclusion of many concepts and also poses significant challenges for data collection – the data for those concepts included in the inventory would hopefully be more complete, and this might ultimately result in a richer typology of lexical categorization in general, and lexical flexibility in particular.

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Abbreviations: 1/2/3 = 1st/2nd/3rd person; ART = article; ATTR = attributive; CONST = construct suffix; EXCL = exclusive; FUT = future; GEN = genitive; INCL = inclusive; INDF = indefinite; IRR = irrealis; LOC = locative; NEG = negation; NMLZ = nominalizer; NOM = nominative; OBL = oblique; PL = plural; POSS = possessive; PROX = proximal; PRS = present; PST = past; REAL = realis; REL = relative; SBJ = subject; SEQ = sequential; SG = singular.

Appendix: Composition of language sample

In the triplets, the first figure indicates the Diversity Value, the second the total number of languages in a subphylum, and the third the number of branches in a subphylum.

First-level subphylum	Second-level subphylum	Third-level subphylum	Fourth-level subphylum	Number of languages in sample	Languages
Admiralty Islands (3, 31, 2)				3→2	
	Eastern (3.5, 28, 3)			2→1	
		Manus		1	Loniu
		Paktong		1→0	<i>missing</i>
		Southeast Islands			
	Western (1, 3, 1)			1	Wuvulu
Central-Eastern Oceanic (21.28, 228, 3)				15→14	
	Remote (18.67, 193, 5)			11→10	
		Central Pacific (4.75, 44, 2)		2	
		East Fijian-Polynesian		1	Marquesan
		West-Fijian-Rotuman		1	Rotuman
	Loyalty Islands (1, 3, 1)			1	Drehu
	Micronesian (3.89, 20, 2)			2→1	
		Nauruan (isolate)		1→0	<i>missing</i>
		Micronesian proper		1	Ponapeian
	New Caledonian (5.33, 29, 3)			2	Nêlêmwa, Tinrin
	North & Central Vanuatu (7.83, 97, 3)			4	
		East Santo (2, 5, 2)		1	Sakao
		Malekula Interior (3, 12, 3)		1	Neverver
		Northeast Vanuatu-Banks Islands (5.5, 80, 5)		2	Tamambo, Northeast Ambae
	South Vanuatu (3, 9, 3)			2	Erromangan, Whitesands
		Southeast Solomonian (3.62, 26, 2)		2	
		Gela-Guadalcanal		1	Lengo
		Malaita-San-Cristobal		1	Longgu
St. Matthias (1, 2, 1)				1	Mussau
Temotu (2, 10, 2)				1	Engdewu
Western Oceanic (27.96, 241, 3)				19→17	
	Meso-Melanesian (9.13, 71, 3)			6→5	
		Bali-Vitu (1, 2, 1)		1	Vitu
		New Ireland (9.69, 65, 5)		4→3	Nalik, Kokota, Barok, <i>missing</i>
		Willaumez (1, 4, 1)		1	Nakanai
North New Guinea (15.28, 106, 4)				9→8	
		Huon Gulf (7.1, 31, 4)		3	Bukawa, Labu, Hote
		Ngero-Vitiaz (9.08, 44, 2)		4	
		Ngero (2, 6, 2)		1	Kove

(continued)

(continued)

First-level subphylum	Number of languages in sample	Languages
Second-level subphylum		
Third-level subphylum		
Fourth-level subphylum		
	3	Mangap-Mbula, Lote, Mato
Sarmi-Jayapura Bay (2, 13, 2)	1→0	<i>missing</i>
Schouten (2.5, 16, 2)	1	Manam
Papuan Tip (5.25, 64, 2)	4	
Nuclear (5.33, 44, 3)	2	Tawala, Saliba
Peripheral (3.99, 20, 2)	2	
Central Papuan	1	Mekeo
Kilivila-Louisiades	1	Kilivila
Yapese (isolate)	1	Yapese

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