Nexus and juncture types of complex predicates in Oceanic languages: functions and semantics[1].

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In previous research on Oceanic languages (Bradshaw 1982, Foley & Olson 1985, Durie 1997, Crowley 2002), core serialization was under focus and the nuclear type was often analysed as co-lexicalization, compounding or grammaticalization. This paper will show that the nuclear template constitutes a genuine type of complex predicates, which are compatible with right or left-branching (VO or OV) word orders. The analysis will develop as follows:

Sections 1 to 3 will assess their various types (symmetrical ~ co-ranking or asymmetrical ~ modifying), their distinctive features, functions and semantics, the classes of predicates involved, their argument structure and ordering principles.

Section 4 will discuss some of their functions, focusing on modification.

Section 5 will outline the type of evolution and the structural compression to which they are submitted.

1. Towards a definition of complex predicates

Complex predicates are identified by various criteria which help restrict this domain.

1.1. Criteria of complex predicates

1) They comprise a sequence of predicates which constitute one single predication;
2) they form one single prosodic entity, without any pause between them;
3) they share the same tense, aspect and mood (marked on V_1 or V_2 only or on all verbs), the same illocutionary force and polarity; all predicates are under equal scope of a negation marker;
4) they do not evidence any loss of stress pattern or phonological form and no loss of morpho-syntactic or semantic properties;
5) they are lexically autonomous and have predictable semantics (thus excluding co-lexicalized compounds).

1.2. Types of dependencies between complex predicates

Dependency can be defined (i) as *operator dependency* (under the scope of the same TAM, polarity and illocutionary operator(s)), (ii) as relations of *dominance* in asymmetrical head-modifier hierarchical structures or (iii) as relations of *governance* between constituents.

This study will focus on relations of *dependency* and *dominance* between nuclei or cores, and will exclude relations of *governance* (such as complementation) which involve clausal juncture.

1.2.1. Nuclear and core junctures

The notions of nucleus and core and the layered structure of the clause are used in the sense defined by Foley & Van Valin (1984: 77), Van Valin & LaPolla (1997).
The nucleus or predicate is defined as having propositional content; these terms are used in avoidance of the category of verb, which is not valid in many Oceanic languages, mostly

Polynesian. The core comprises the nucleus and its arguments (direct or oblique). Adjuncts belong to the periphery of the core.

[CLAUSE [CORE He [NUCL **talked**] to her] [ADJUNCT OF CORE in the library]]

Table 1. Nuclear and core-layer serialization

Nuclear-layer serialization	Core-layer serialization
sVV(o) [I run catch (him)]	a) same-subject: **sV sV(o)** 　　　　　[I run I catch (him)] b) switch-subject: **sVo (s)V** 　　　(o = s) [I strike <u>him</u> (<u>he</u>) dies]
one single set of arguments	verbs share at least one inner argument

Each layer is also delimited by a set of *operators* which have scope over it. Aspect is a nuclear-layer operator, modality and negation are core-layer operators, tense, illocutionary force and clausal negation are clause-layer operators (Foley & Van Valin 1984: 208ff, Van Valin & LaPolla 1997: 40-52). Complex predicates must share the operators at all levels, nuclear, core and clause layer; in RRG, such *operator dependency* makes them cosubordinate.

Cross-linguistically, the core type, with its same- or switch-subject subtypes, seems to be the most widespread. In Oceanic languages, both the nuclear and core types are common.

Table 2. Complex predicates with Same Subject (SS) and Different Subject (DS) constructions

	Saliba	Teop	Paamese	Mwotlap	Anejoü	Nêlêmwa & Northern N.C. languages	Southern N.C. languages	Pileni	East Uvean	Samoan Tahitian
Nuclear layer (with underlying same or different subject)	SS	SS or DS	SS	SS or DS	infre-quent	SS or DS	(+)	SS	SS	SS
Core layer	SS	*	SS or DS	(rare)	*	*	*	SS or DS	*	*

1.2.2. Nexus: symmetrical & asymmetrical predicates

Nuclear and core junctures further subdivide into the symmetrical (co-ranking) and asymmetrical[2] (hierarchical) constructions.

– *Symmetrical* predicates are co-ranking, they belong to an open class, none of them determines the semantic or the syntactic property of another predicate of the sequence. They generally refer to sequential actions done by the same agent as well as action-goal.

Nêlêmwa (New Caledonia)

(1) [CLAUSE [CORE *I   u*   [NUCL *â*]] [NUCL ***kuut   mwadu***]] [CORE [NUCL ***axi***] *axamalileny ebai nu   malileny*]]
　　　　　3SG PFT　　leave　　stand　down.there　　　　see　these2.DEICT then coconut these2.DEICT
　　'He leaves, stands down there, sees these two coconuts.' (Bril 2004: 169)

Paamese (Vanuatu)

(2) *Meatin   kail* ***avalus   aumai***.
　　meatine   kaile a-valusi   au-mai
　　person   PL   3PL.R-row   3PL.R-come
　　'The people rowed hither.' (Crowley 2002: 60)

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[2] I will use these terms rather than "coordination" (co-ranking) or "subordination" (hierarchized).

– *Asymmetrical* predicates are hierarchized and headed; they do not obligatorily share the same subject (3, 4). The scope of the modifying predicate (to the right of the head in VO languages) is either on the main verb or on one of the arguments of the main verb (in the depictive type).

In (3, 4), the core juncture exhibits Crowley's 'ambient' type in which the third person singular subject of the modifying nucleus refers back to the event expressed by the first nucleus. Note that the negation bears on the complex core juncture in (3).

Numbami (Austronesian, Huon Gulf family, Morobe province, Papua New Guinea)

(3)   [CLAUSE [CORE *Na-iye*]   [MOD.CORE *ni-wou*]   ***kote***].
           1SG.IR-sleep   **3SG**.IR-anew   NEG
           'I will not sleep anymore.' (Bradshaw 1993: 153)

Paamese

(4)   *Inau   namuasik   gaih.*
    inau   na-muasi-ko   ø-gaiho
    1SG   1SG.R-hit-2SG   **3SG**.R-hard
    'I hit you hard.' (Crowley 2002: 61)

1.2.3. Semantics of complex predicates

The *asymmetrical* type expresses modification or circumstances (manner, location, direction, etc.), while the less frequent *symmetrical* subtype expresses sequential, purposive, consecutive actions or cause-result (§4.2, 4.3). Among the semantics of modification, manner of action is predominant in Oceanic languages; the other frequent meanings include posture, property, value, overlapping actions; some include Aktionsart (inceptive and terminative) and modality, comitative or comparative functions (§4.4).

1.3. Distinctive features of symmetrical and asymmetrical predicates

What are the distinctive features of symmetrical and asymmetrical predicates ?

1.3.1. Semantic ambiguity with activity verbs

Since many Oceanic languages lack any distinctive finite vs. nonfinite verb morphology or can altogether dispense with redundant finite verb forms, and since the V_2 slot may host either the next action in the sequence (1) or the modifying verb (4), a lot of functional and semantic fuzziness is involved with activity verbs. Thus, (5) in Pileni may read either as 'he paddled (and) searched' or 'he paddled searching':

Pileni (Solomon Islands, Polynesian outlier)

(5)   *Na   no   ua   hehega   na   ko   matu   tuohine na.*
    3SG   TA   paddle   search   DEM   TOP 1PL.EXCL.POSS sister   DEM
    'He has paddled here in search of our sister.' (Næss 2004: 233)

In Nêlêmwa, the V_2 *kuut* is interpreted as modifying in (6), but only on semantic grounds, for nothing distinguishes it formally from *kuut* in the sequential construction in (1) for example. Only the semantic class of the verbs contributes to the syntactic and semantic interpretation: when the V_1 is an activity verb, followed by a V_2 indicating posture, the V_2 is interpreted as modifying and expresses manner of action.

Nêlêmwa (New Caledonia)

(6)   *Hli   u   **not**   **kuut** mwadu.*
    3DU   PFT   watch   stand down.there
    'They watch standing down there.' (Bril 2002: 192)

But sequences of activity verbs are semantically ambiguous and their interpretation rests on semantic and contextual inferences: thus *i walem gi* (lit. (s)he walk cry) may be interpreted as '(s)he walks and cries' or as '(s)he walks crying'.

1.3.2. Distinctive features of stative verbs

Yet, in some languages, when the modifying verb is stative, some distinctive features signal its modifying function: they are (i) transitive concord, (ii) reduplication and (iii) adverbial derivation.

(i) Transitive concord appears on the stative modifying verb in the nuclear juncture [sVVo]. It is marked by a transitivizing suffix (Nêlêmwa (7), Pileni (8), Paamese), by an applicative suffix (Saliba (9)), or by a causative derivation on V_2 (Tigak (10)). The concord marker appears on the last nucleus of the complex.

In (7), the stative V_3 shows transitive concord (*yoo-lî*); the complex has a single set of arguments, although the stative V_3 *yoo-lî* has a different logical subject. The negation marker has scope on the whole complex:

Nêlêmwa (New Caledonia)

(7)   *Kio   i   tâlâ   mwemwelî   yoo-lî   vhaa   Nêlêmwa.*
      [CLAUSE [CORE **Kio** *i* [NUCL *tâlâ   mwemwelî*] [MOD.NUCL *yoo-lî*]   *vhaa   Nêlêmwa*]].
      NEG   3SG   hear.TR   know.TR   be.good-TR   talk   Nêlêmwa
      'He doesn't understand the Nêlêmwa language very well.' (Bril 2004: 172)

Pileni

(8)   *Kolu-no   maoli   la   khoulua   kip-**ina**   themu-**ina**.*
      2DU-TA   true   DEM   2DU   keep-TR   quiet-TR
      'If you are telling the truth, keep it quiet.' (Næss 2004: 236)

Saliba (Milne Bay, Papua New-Guinea)

(9)   *Ye   he-kata-namwa-namwa-**i**-gai.*
      3SG   CAUS-learn-RED-good-APP-1EXCL.O
      'She teaches us properly.' (Margetts 2004: 71)

(ii) The causative derivation of the stative V_2 acts as a valency-increasing device (10, 11)

Tigak (New Ireland)

(10)   *Ga   vis   **a-takteak-i**.*
      [CLAUSE [CORE *Ga*   [NUCL *vis*] [MOD.NUCL ***a-takteak***]-*i*]].
      3SG.PAST   hit   CAUS-hard-3SG
      '(S)he hit him/her hard.' (Beaumont 1979: 76-77, in Crowley 2002: 135)

Hoava (Western Solomons)

(11)   *Koni   ome   **va**-leani-a   goe.*
      FUT   see   CAUS-good.**TR**-3SG   2SG
      'You will see it well.' (Davis 2003: 162)

(iii) Adverbial derivation on a stative V_2

In some languages such as Nalik and Teop, the modifying function of a stative V is marked by a prefix which originally derives from one of the two causative prefixes reconstructed in Oceanic languages:

Nalik (New Ireland)

(12)   *Ga   na   do-dor   **fa**-mumut.*
      1SG   FUT   RED.speak   CAUS-small
      'I will speak a little.' (Volker 1998: 75-77, in Crowley 2002: 132)

Teop (Bougainville)

(13) [CLAUSE [CORE *Ean   toro* [NUCL *vaa-mate*] [MOD.NUCL ***va-mataa***]   *e   toa*]].
           2SG   must   CAUS-be.dead   ADV-be.good ART chicken
      'You must kill the chicken properly.' (Reinig 2004: 100)

(14) [CLAUSE [CORE *O   tae   kahi na* [NUCL *avuhu*] [MOD.NUCL ***va-hata***]   *kurusu nana*]].
           ART excrement dog   REAL   smell   ADV-be.bad very   IMPF:3SG
      'The dog's excrements smell very bad.' (Reinig 2004: 100)

But when the verb complex is conventionalized, the predicates are just juxtaposed:

(15) *O   mimi te   kahi na   avuhu hata   maa-na.*
      ART urine PREP dog   REAL smell be.bad DIR-IMPF:3SG
      'The dog's urine smells awful.' (Reinig 2004: 101)

(iv) Reduplication of the modifying verb, usually expresses manner (Saliba, Kwaio, Paamese, Fijian).

Saliba

(16) *Ku-hedede-**nogo-nogowai** !*
      2SG-tell-RED-slow
      'Speak slowly !' (Margetts 1999: 135)

Kwaio (Malaita, Solomon Islands)

(17) *ŋai e   toʔoru **alo-alo**.*
      3SG 3SG stay   RED.be.quiet
      '(S)he sat quietly.' (Keesing 1985: 136)

Fijian
lako-v-a qasiqasi 'fetch it crawling' (*lako-v-a* 'fetch it', *qasi* 'crawl'; Schütz 1985: 232)
kani tokotoko 'eat squatting', *lave dokidoki* 'carry lying' (Pawley & Sayaba n.d.)

2. Productivity and distribution of types

The distribution of types is highly variable among Oceanic languages as shown in Table 3.

— In Western Oceanic [W. Oc.] languages, both core and nuclear complex predicates are common, though core juncture tends to be more widespread (Crowley 2002), yet many Western Oceanic languages only display the nuclear type (Nalik, Tigak, Nakanai [New Britain], Tawala [Milne Bay, Papua New Guinea], and some show residual core serialization (Saliba).

— In Eastern Oceanic [E. Oc.] languages, the core type is much less frequent except in the Northern and Central Vanuatu[3] subgroups, where both core and nuclear junctures are variably attested. But in the Southern Vanuatu subgroup, complex predicates are infrequent or non-existent.
In Hoava (Western Solomon), the nuclear juncture is dominant; in Kwaio (Solomon Islands), New Caledonia and Fiji, only the nuclear juncture is attested. In northern New Caledonian languages such as Nêlêmwa, the nuclear type is productive, whereas it is much more infrequent in southern languages where complex verbs have evolved into compounds and become incorporated (Ozanne-Rivierre & Rivierre 2004).

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[3] In Mwotlap, the asymmetrical nuclear juncture is dominant and the core juncture is rare, whereas in neighbouring Araki, core juncture is pervasive (François 2002: 189-200); in Lewo (Early 1993: 65-67), Paamese (Crowley 1987: 68, 78-79) and Namakir (Sperlich 1993: 108-109), core juncture is dominant and nuclear juncture involves either non-autonomous V_2s (as in Paamese), or tends towards verb incorporation (as in Lewo) with highly morphologized V_2 which constitute a class of verbal suffixes.

This has often led to the analysis of complex predicates in the nuclear juncture as grammaticalized or lexicalized forms; but the following data will suggest that this is over-generalized.

— Polynesian languages are generally non-serializing and complex nuclei are not very productive except in Samoan and Pileni (a Polynesian outlier). Where attested, they mostly express modification (Samoan, East Uvean) and only modification in Tahitian, where coincident actions such as 'he drives (while) telephoning' require deranked prepositional phrases (lit. he drives with the telephoning) and where sequential actions require clausal coordination (Paia & Vernaudon 2004). But in Samoan, predicates in the nuclear juncture may express either sequential or coincident actions indicating manner of action, and the meaning and function of the complex will be disambiguated by the semantics of the predicate and by contextual inferences.

In (18), the predicates ('cry and talk') refer to coincident activities. In (19), the first two predicates also have an overlapping reading ('cry and sob'), while the posture predicate in the V_3 slot is modifying and expresses manner of action ('she cried and sobbed leaning'). But nothing except position and semantics indicates the different functions.

Samoan

(18) [CLAUSE [CORE *'O   lea   na* [NUCL ***tagi***] [NUCL ***tautala***] *ai   loa   le   tuna iā   Sina*]].
           PRES DEM TAM   cry   talk   ANAPH then ART eel   DEM Sina
      'And so, the eel cried and spoke to Sina ...' (Mosel & So'o, 1997: 135, in Mosel 2004: 275)

(19) *...a   'o   **tagi   masūsū   fa'alagolago** mai Saraiatea   i   lo'u   fatafata.*
         but TAM   cry   sob   lean   hither Saraiatea at   my   chest
      '... Saraiatea leaned crying and sobbing against my chest.' (Mosel 2004: 272)

3. Functions and semantics of complex predicates and distribution over types

Complex predicates are polyfunctional constructions whose interpretation rests on various factors: verb or predicate classes, syntactic slots and contextual inferences. Some of these meanings make up a semantic continuum with fuzzy boundaries between them.

These functions may be mapped onto one to four different construction types (see Table 3). Modification or circumstances are marked by the *asymmetrical* type, while the less frequent *symmetrical* type expresses sequential, consecutive or purposive actions. Cause-result is variably assigned to one or the other of these subtypes.

1) In the languages with core and nuclear complex predicates, the core juncture tends to express sequential and purposive actions while the nuclear juncture mostly achieves adverbial modification (manner, circumstances); but these are not fully predictable tendencies. For instance, sequential and purposive actions are expressed by core juncture in Saliba, but by nuclear juncture in Pileni (though this might result from elliptical coordinate clauses and gapping). Loniu (Admiralties) even shows the reverse pattern: core juncture has modifying or case-marking functions, while the nuclear juncture marks sequential actions (Hamel 1994: 106-133).

In Paamese (Vanuatu), the core juncture expresses modification, purpose, temporal or spatial limit, accompanitive, similative, comparative, and aspectual meanings (progressive, habitual, terminative). Core and nuclear junctures have partially overlapping functions for manner, direction and cause-result (Crowley 2002: 55-92, 208-214); yet, they differ in terms of integration, for only the nuclear type may be nominalized as a complex entity: *seluusi mearu* 'speak soft' may be nominalized as *seluusi mearu-ne* 'whispering' (lit. speech soft, ibid. 2002: 83). They also differ in terms of autonomy, for some V_2 have undergone some degree of specialization (ibid. 2002: 96-98) and are less autonomous in the nuclear than in

the core juncture, while remaining genuine verbal constituents, as proved by various criteria (ibid. 2002: 85).

Table 3. Asymmetrical and symmetrical core ou nuclear complex predicates.

		Nuclear layer		Core layer	
		asymmetrical	symmetrical	asymmetrical	symmetrical
W.Oc	Loniu (Manu Islands, Admiralties)		sequential	modification (direction, location, comparative) action-result	purpose
	Saliba (Milne Bay Province)	modification (manner, direction, terminative)	(+) action-result	(+) manner/path of motion, inchoative, modal	sequential, purpose
	Tigak (New Ireland)	modification	sequential, purpose	*	*
	Teop (Bougainville)	modification, (quality, manner, coincidence, terminative) action-result	sequential, purpose	*	*
Poly-nesian outlier	Pileni (Solomon Is.)	manner	(+) sequential, purpose	(+) Aktionsart (inceptive, terminative)	sequential action-result
E.Oc	Paamese (Vanuatu)	modification (manner, direction) action-result (non-autonomous V_2)		modification (manner, direction, location, posture, comparative) aspect action-result	purpose
	Mwotlap (Vanuatu)	modification (quality, manner, coincidence, purpose) action-result	*	(rare) purpose	*
	Anejom (Vanuatu)	modification	*	*	*
	Nêlêmwa (New-Caledonia)	modification (quality, manner, coincidence, direction, terminative)	sequential, purpose action-result	*	*
Poly-nesian	Samoan	modification (quality, manner, coincidence, comparative) action-result	(+) sequential, purpose	*	*
	Tahitian	modification	*	*	*
* non-existent; (+) infrequent or sporadically attested.					

2) In the languages with only nuclear juncture, sequential events or purpose are generally marked by the symmetrical type (Teop, Nêlêmwa, Pileni, East Uvean, Samoan), while modification is marked by the asymmetrical type.

3) Finally, at the other end of the cline, Mwotlap, Anejom and Tahitian only use the asymmetrical nuclear juncture for modification. In Mwotlap, the nuclear juncture is highly polysemic (expressing cause-result, purpose, coincidence, manner of action, direction, location, endpoint or time-limit, comparison, quantification).

3.1. Types of nuclei, ordering principles and structural slots

Foley & Olson (1985: 41-43) have sketched a cline of frequency for types of verb occurring in complex predicates, with active intransitive verbs (of motion, direction, stance, posture, manner) ranking first, transitive verbs at the lowest point and stative verbs in the middle (manner, quality). Most Oceanic languages verify this hierarchy, though with some variations.

(+ frequent)   (– frequent)
ACTIVE INTRANSITIVE VERBS   >   STATIVE VERBS   >   TRANSITIVE VERBS

In Paamese, the core juncture mostly hosts intransitive verbs of motion or posture, while the nuclear juncture hosts a few other active intransitive verbs and transitive verbs. Stative verbs are shared over both types (Crowley 1987: 50, 69; Crowley 2002: 170-171).

(core layer)   (nuclear layer)
INTRANSITIVE VERBS   >   STATIVE VERBS   >   TRANSITIVE VERBS
(motion or posture)

In Nêlêmwa, complex verbs are frequent but mostly restricted to active or motion verbs and stative verbs; the latter only appear in the asymmetrical subtype, while active intransitive or transitive verbs appear in both, though more frequently in the symmetrical subtype.

Table 4. Distribution of verb types over the nuclear layer in Nêlêmwa.

FREQUENCY	frequent ⟷ infrequent		
VERB TYPES	motion & active verbs →	stative verbs →	Aktionsart, modal verbs
SEMANTICS	sequential or simultaneous actions	modification, manner, qualification	inchoative, terminative
	manner		(un)able, know, try
	purpose, endpoint		
	result (infrequent)		

3.2. Ordering principles and syntactic constraints: iconic ordering vs parametric settings

Is the linear order of complex predicates a logical-cognitive or purely syntactic process, consistent with the basic word order parametre of a given language ?

One would expect verb ordering to be sequential and logically iconic for symmetrical complexes referring to sequential, purposive actions or cause-result, but subject to the syntactic order of modification (head-adjunct) in asymmetrical constructions; this prediction is verified in the languages considered here. Aktionsart (inceptive or terminative) verbs also tend to be iconically ordered and modal verbs ('try, able, hope, expect') tend to be in the slot left of the main verb. Bi-directionality is thus common in asymmetrical constructions.

In VO languages with head-modifier order and nuclear juncture, both sequential and modifying complex verbs have a unique template $[(S)V_1V_2(O)]$, in which V_2 can either be the next sequential action or the modifier of V_1. Semantic interpretation is thus based on the semantic type of the nuclei, on the syntactic slots devolved to modification, and on contextual inferences.

In Nêlêmwa, the modifying verb in the V_2 slot may have a slightly more abstract meaning: *bwage* 'go back, return' has a reversive reading, as in *fhe bwage* 'give back' (*fhe* 'take, carry'), *no bwagi* 'look back, look behind'; *â* 'go, leave' has a dispersive reading in the V_2 slot, as in *wâlem â* 'walk from place to place', in contrast with *â wâlem* 'go walking', or *mu â* (*mu* 'stay', *â* 'leave') 'live from place to place' vs. *â mu* 'go settle'.

The modifying predicate tends to be to the right of the main verb, irrespective of language type and word order (SVO Mwotlap, VOS Nêlêmwa, even SOV Saliba). Saliba, like other Austronesian languages in contact with OV Papuan languages, has mixed ordering features (SOV with nominal arguments and sVo with pronouns, Margetts 2004)[4]. But, in nuclear juncture, instead of the expected [$_{modifier}$V $_{main}$V] order of OV languages, the modifying V$_2$ is to the right of the main verb [V$_{main}$ V$_{modifier}$], as are adverbs. The ordered slots are as follows: [head–result–direction–adverbial or aspectual]. Terminative Aktionsart is also iconic (action-finish).

Even in Papuan languages whose SOV order does not result from contact, such as Kalam (Pawley 1987) or Haruai (Comrie 1995), sequential, action-goal or cause-result complex predicates also tend to be logically and sequentially ordered, as in Haruai (21), but note that the quantifier 'little' abides by the [modifier-head] parametre.

(20) *Nöb'-ak^w hömlö   **rmal rag**   <u>wl</u>   **nm-öŋ**-a.*
    man-that   banana   cut   carry   little   eat-PAST.3SG-DECL
    'That man cut some bananas, brought them (and) ate a little.' (Comrie 1995: 34)

Compare with cosubordination in clause-chaining with the same-subject marker -*ön*:

(21) *Nöb'-ak^w hömlö rmal-**ön**   rag-**ön**   <u>wl</u>   nm-öŋ-a.*
    man-that banana cut-SS   carry-SS   little   eat-PAST.3SG-DECL
    'That man cut some bananas, brought them (and) ate a little.' (Comrie 1995: 36)

Durie (1997: 330-339) and Carstens (2002) have shown that complex predicates often contradict the parametric settings of a language and favour the time-iconic sequencing of predicates, in contrast with complement clauses which are highly sensitive to the VO or OV parameters.

3.3. Argument structure and argument ordering

Argument ordering in complex predicates results from a compromise between (i) the constraints of a matrix verb's logical structure (i.e. the number and type of arguments it subcategorizes for), (ii) the constraints on the argument structure of the complex predicate (which may be different from that of its parts), and (iii) the Thematic Hierarchy[5]. Argument structure may thus be compositional, shared or fused.

3.3.1. Argument-sharing vs. argument fusion

Argument-sharing is a good discriminating test to identify the type of complex predicates (Foley & Olson 1985), though subject to much language-specific variation, since neither subject nor object-sharing are universally obligatory. Yet, in most cases, subject-sharing distinguishes symmetrical constructions from asymmetrical ones.

a) *Core juncture*

— In the *symmetrical core juncture,* argument structure is generally compositional (i.e. is the sum of its parts), each verb has its own set of arguments (with same subjects) and the cores are ordered sequentially or logically.

    Saliba

(22) [$_{CLAUSE}$ [$_{CORE}$ *Ku-sae*] [$_{CORE}$ *tamowai   ku-wase-sagu-i-di !*]]
          2SG-go.up   people   2SG-search-help-APPL-3PL.O
    'Go up and help search the people.' (Margetts 1999: 140)

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[4] There are other mixed ordering features: GEN-N; DEM-N; but N-ADJ; N-NUMERAL; V-ADV. Complement clauses and other subordinate clause (of volition, purpose) also follow the main clause.
[5] Agent > instrument > patient > goal > locative > comitative > beneficiary, etc.

Argument structure may be inclusory with verbs like 'help' and a V$_2$ referring to a joint activity (23) whose participants are cross-referenced on V$_2$'s subject index:

(23) [$_{\text{CLAUSE}}$ [$_{\text{CORE}}$ *Kabo ya   **sagu-i-go***]   [$_{\text{CORE}}$ *keke **ta   gabu-ø***]].
              TAM 1SG   help-APPL-2SG.O   cake **1INCL** bake-3SG.O
     'I'll help you bake a cake.' (Margetts 2004: 82)

Co-agentive constructions are thus distinct from associative constructions (24):

     Paamese

(24) [$_{\text{CLAUSE}}$ *Inau* [$_{\text{CORE}}$ *nimun   si:n*] [$_{\text{CORE}}$ *hetal   tonik*]].
         inau   ni-muni   siine   he-tali   tonike
         1SG   1SG.DIST.FUT-drink gin   3SG.DIST.FUT-accompany tonic
     'I will drink gin with tonic.' (Crowley 2002: 41)

— In the *asymmetrical core juncture* expressing manner of action, ordering generally abides by the head-modifier parametre and the V$_2$ has a third person subject index which refers to the event that is being specified (Crowley's 'ambient' type).

     Loniu (Manu Islands, Admiralties)

(25) [$_{\text{CLAUSE}}$ [$_{\text{CORE}}$ *Suʔu tɔ   lɔs*] [$_{\text{MOD.CORE}}$ ***ilɛ   ya   ɛy***]].
              3DU NS.STAT fall   **3SG**.go through PRO
     'They were falling through it.' (Hamel 1994: 125)

     b) *Nuclear juncture*

In the nuclear juncture, argument structure ranges from shared arguments in symmetrical constructions to a set of fused arguments in asymmetrical constructions.

— Shared arguments in *symmetrical* nuclear juncture
     Subject-sharing is obligatory and distinguishes symmetrical from asymmetrical constructions.

     Teop

(26) *Me-nam   paa   rosin tagihu.*
         [$_{\text{CLAUSE}}$ *Me-*[$_{\text{CORE}}$ *nam   paa*   [$_{\text{NUCL}}$ *rosin*] [$_{\text{NUCL}}$ *tagihu*]]].
             and-   1EXCL PAST   flee   go.to.bush
     'And we fled into the bush.' (Reinig 2004: 98)

Object-sharing only applies to transitive verbs with the same patient (SV$_{\text{tr}}$.V$_{\text{tr}}$.O). If a sequence comprises verbs with different valency, the intransitive verb (often a motion verb) obligatorily precedes the transitive verb (SV$_{\text{intr}}$.V$_{\text{tr}}$.O), as in (27), irrespective of the language's basic order, VO (as in Nêlêmwa, Pileni) or OV as in Saliba (SV$_{\text{intr}}$. OSV$_{\text{tr}}$.), see (22).

     Nêlêmwa

(27) [$_{\text{CLAUSE}}$ [$_{\text{CORE}}$ *Ma   u*   [$_{\text{NUCL}}$ *oda*] [$_{\text{NUCL}}$ *uya*]] [$_{\text{CORE}}$ *tu   axaleny   Boovalan*]].
             1DU.EXCL PFT   go.up   arrive   find   this.man Boovalan
     'We went up, arrived, found this Boovalan.' (Bril 2004: 173)

Sequences of the type *<V$_{\text{tr}}$ V$_{\text{intr}}$> are ungrammatical in Nêlêmwa, but are allowed in languages with applicative affixes such as Hoava (29). They are also allowed in Teop or Mwotlap where they trigger argument restructuring (see §3.3.2).

— Fused argument structure in *asymmetrical* nuclear juncture
     In asymmetrical nuclear juncture, two or more verbs differing in their respective argument structure make up a complex nucleus whose argument structure is not compositional, but different from that of each constituent verb. Thus, the verb complex has a set of arguments based on the argument structure of the main verb, and the modifying verb (stative or intransitive) fuses into it, and is marked for transitive concord if V$_1$ is transitive, using one of

various devices, a transitive suffix as in Nêlêmwa (28) or Pileni (8), an applicative suffix as in Saliba (9) or a causative derivation as in Tigak (10) and Hoava (11) (see §1.3.2).

(28) [CLAUSE [CORE *Hla* [NUCL *diya*][MOD.NUCL *hââhuux-e*]   *mwa eli*]].
  3PL   do   be.recent-**TR**   house that.ANAPH
  'They built this house recently.' (Bril 2004: 177)

Example (28) shows argument fusion, since the underlying subjects of each predicate are different. Similarly, in Hoava (29), the applicative[6] suffix on the last verb, the directional verb *la* 'go away', licenses the patient for the whole complex :

  Hoava (Western Solomons)

(29) [CLAUSE [CORE [NUCL *Naqala*] [NUCL *gore*]   [NUCL *la-**ni**-a*]   *sa   beha*] [CORE ADJ *pa   hore*]].
  carry   go.down   go.away.**APP**-3SG ART.SG basket   PREP canoe
  'Carry the basket down to the canoe.' (Davis 2003: 165)

3.3.2. Argument-restructuring

In Teop and Mwotlap, sequences with a transitive verb followed by an intransitive verb in the V$_2$ slot <V$_{tr}$ V$_{intr}$> are also allowed, but involves some restructuration which goes beyond argument fusion.

  Teop

(30) [CLAUSE [CORE [NUCL *Hoa*] [MOD.NUCL *gunaha*]   *o   sinivi*]   [CORE ADJUNCT *vo   tahii*]].
  push   go.down ART canoe   GOAL sea
  'Push the canoe down to the sea.' (Reinig 2004: 98)

In Mwotlap, argument restructuring is required to fit the obligatory SVO template. The V$_2$ specifies the manner, motion, direction of V$_1$, the posture in which the action is done, or it expresses the endpoint or purpose of V$_1$. In (31), two intransitive verbs make up one complex transitive predicate expressing cause-result, with a single argument structure [sVVo] in which the subject of V$_1$ is the subject of the complex, while the underlying subject of V$_2$ appears as the object of the complex.

(31) [CLAUSE [CORE *Ne-lem̄* [NUCL *mi-yip*]   [MOD.NUCL *hal-yak*]   *na-kat*]].
  ART-wind   PFT-blow   fly-away ART-cards
  'The wind blew the cards away.' (François 2004: 119)

Argument restructuring may signal some undergoing grammaticalization. Mwotlap might thus evidence a transitional stage in the compression from a former core to a nuclear juncture such as < the wind blows the cards fly away >, with the incipient grammaticalization of V$_1$ as a lexical causative verb or the grammaticalization of V$_2$ as a directional modifier, depending on which structural slot tends to grammaticalize first.

To a limited extent, English shows similar centripetal constructions which attract the nuclei to some adjacent positions [SVOV > SVVO], as in *he pulled the flap open* vs *he pulled open the flap*, where V$_1$ behaves as a lexical causative verb and *open* indicates the result, or as in *he let the blanket fall* vs. *he let fall the blanket* where *let* functions as a causative verb licensed by the AUX-V pattern.

Left-branching Saliba (OV) shows a similar evolution. With some types of verbs and functions, the core juncture (32) vies with the nuclear juncture (33). This structural change in juncture triggers the reordering of the predicates as well as some other syntactic changes: the obligatory inclusory subject pronoun on the second core in (32) disappears in (33), and the inverted position of the predicates might indicate that *sagu* 'help' takes the other nucleus *bosa-halusi* 'basket-weave' as a dependent nucleus in a cosubordinate structure.

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[6] In Hoava, the transitivizing devices vary with verb classes and types of objects.

(32) [CLAUSE [CORE *Lalaita ku **sagu-i-ø***]   [CORE *kwa bosa-halusi!*]]
               Lalaita   **2SG** help-APPL-3SG.O   **2PL**   basket-weave
      'Help Lalaita basket-weave !' (Margetts 2004: 82)

(33) *Lalaita ku   bosa-halusi-sagu-i-ø!*

      [CLAUSE [CORE *Lalaita   ku* [NUCL *bosa-halusi*]-[NUCL ***sagu***]-*i-ø!*]]
               Lalaita   2SG   basket-weave-   help-APPL-3SG.O
      'Help Lalaita basket-weave !' (Margetts 2004: 83)

4. Some functions of complex predicates

As previous studies have often focused on the case-marking and argument-expanding function of complex predicates, these functions will be briefly touched and the bulk of the analysis will bear on purposive, resultative constructions and on some of their various modifying functions (adverbial, depictive and quantifying). When these functions are not distinguished morphologically, except sometimes by the type of juncture (nuclear or core), the reading crucially depends on the semantics of the predicates, or on the illocutionary force of the sentence, as we shall see.

4.1. Case-role marking and argument expansion

The case-marking and argument-expanding function of complex predicates have been extensively studied, particularly in African languages which only allow two arguments per verb (Sebba 1987). Austronesian languages tend to avoid three argument verbs and resort to complex predicates for argument-expanding functions. Mwotlap (François 2004) and Nêlêmwa (Bril 2004) do use complex predicates especially for case-roles which are lower down in the hierarchy, and which are not otherwise marked by adpositions or other morphological markers. Yet, neither scarce morphology nor the gap-filling function of complex predicates constitute decisive factors triggering and justifying such constructions.

   Jabêm (Western Oceanic, Papua New Guinea) displays very rich verbal morphology and complex predicates (Bisang 1995: 138). Aikhenvald (1999) makes a similar remark about various Amazonian languages. Haitian has three argument verbs as well as argument-expanding complex verbs (Déchaine 1989: 239). In Sranan and Saramaccan (Atlantic Creoles, Sebba 1987: 213-215), in some Amazonian languages, in Alamblak (Papuan, Bruce 1988), in Thai (Foley & Olson 1985), prepositions are shown to coexist with complex predicates, though with slightly different semantic and syntactic properties. In Alamblak (Bruce 1988: 37-38), serial causatives express indirect causation (lit. 'the wind blew me cold'), whereas derived causatives express a more direct causation (such as 'he made her enter'). Thai is also reported to have both an instrumental preposition *dûay* '(along) with, too' and a serial construction with the verb *Ɂaw* 'take' which highlights the instrument, whereas the prepositional instrument is out of focus (Foley & Olson 1985: 54).

   The verbs which have argument expanding or case-role marking functions are known to grammaticalize into adpositions or coverbs (Bisang 1996: 521-524), but there is an intermediate stage during which these verbs still head verbal arguments rather than prepositional adjuncts and this is amply exemplified in Oceanic languages (see Durie 1988, 1997, Crowley 2002, Bril & Rivierre (eds) 2004).

4.2. Action–purpose~goal

   Sequential actions of the type 'he came and told me' and action-goal such as 'he came to tell me' are expressed by core juncture (Saliba, Loniu) or nuclear juncture (Teop, Nêlêmwa, Hoava, Pileni, East Uvean). In most purposive constructions, the V$_1$ is a motion verb, in other cases, subordinate constructions are often used.

– Core juncture

In OV Saliba, the symmetrical core juncture expresses sequential or purposive meanings.

(34) [CLAUSE [CORE *Se   sae*] [CORE *kwateya se kuma-ø*]].
          3PL go.up   yam   3PL plant-3SG.O
      'They went up to plant yams.' (Margetts 2004: 75)

In Loniu (35), besides the two activity verbs (*huti* 'take', *yɛtiŋi* 'split'), two motion verbs function as operators: *mɛ* 'come' acts as a sequential or purposive operator, and *la* 'go' marks instrumental case. *La* 'go' is also an all-purpose case-marker indicating direction-location, change of state, result, time-limit, reason, theme (Hamel 1993: 127-132). The sequences of core junctures in (35) are thus hierarchized: core$_1$ and core$_2$ are cosubordinate, and core$_3$ is an adjunct to core$_2$ with instrumental case-marking function.

Loniu

(35) [CLAUSE [CORE1 *Iy   huti kɛtuŋ*] [CORE2 [NUCL *imɛ*]   [NUCL *yɛtiŋi*] *palan*] [CORE3 *ilɛ   ɛy*]].
          3SG take club   3SG.come   split   head-3SG   3SG.go PRO
      'He took the club to split his head with it.' (Hamel 1993: 129)

– Nuclear juncture

In Teop and Nêlêmwa, sequential actions and action-goal are marked by nuclear juncture.

Teop

(36) [CLAUSE [CORE [NUCL *No*] [NUCL *gono*] *o   rapisi*]].
          go   get   ART   knife
      'Go and get the knife.' (Reinig 2004: 102)

Nêlêmwa

(37) [CLAUSE [CORE *I* [NUCL *tho*] [NUCL *yaagi*]   *pwaxi-n*]].
          3SG   cry   look.for child-POSS.3SG
      'She cries to find her child / cries looking for her child.' (Bril)

In Mwotlap, Samoan and Tahitian, nuclear juncture only marks action-goal, and sequential actions require complex clauses.

Mwotlap

(38) [CLAUSE [CORE [NUCL *Gengen*] [NUCL *maymay*] *na-taybē!*]].
          AO.eat.RED   strong   ART-body.2SG
      'Eat well to strengthen your body!' [lit. eat strong your body] (François 2004: 119)

In Hoava and Samoan, a causative prefix increases the valency of an intransitive or stative V$_2$ to license the patient of the complex nuclei; the underlying subject of the V$_2$ appears as the patient of the complex nuclei.

Hoava (Western Solomons)

(39) [CLAUSE [CORE *Rao* [NUCL *hitu*]   [NUCL **va**-*taloa*]-*gi   tu*]].
          1SG   chase.out   CAUS-leave-TR.3PL REST
      'I chased them out to make them leave.' (Davis 2003: 161)

Samoan

(40) [CLAUSE [CORE1 *Suga alu*] [CORE2 [NUCL *e   tapena*] [NUCL **fa'a**-*lelei*] *le   fale*]].
          girl go   TAM tidy.up   CAUS-good ART   house
      'Girl, go and tidy up the house so that it looks good.' (Mosel 2004: 277)

Since the same syntactic template expresses sequence or purpose, what selects the right interpretation ? Essentially verbal semantics and the illocutionary force of the clause. A motion verb followed by an activity verb (34, 36) selects the purposive reading; whereas two activity verbs allow either the purposive or overlapping readings (37). Injunctive mood (40)

also favours the purposive over the sequential reading, or the purposive over the resultative reading (54).

4.3. Cause-result constructions

Languages display various strategies for resultative constructions. In Loniu and Pileni, they are expressed by core juncture and in Saliba, Teop, Mwotlap and Samoan by nuclear juncture. As before, the cause-result reading crucially depends on semantic association, such as a V_1 of activity and a V_2 expressing accomplishment or a change of state.

a) *Core juncture*

In the core juncture, the argument structure of cause-result complex predicates is compositional; each predicate has its argument structure in switch-subject constructions [s_X vo$_Y$ (s_Y)v], with the possible evolution of V_2 as a non-autonomous, resultative predicate, requiring the support of another verb as in Numbami (Bradshaw 1993: 138). In Paamese, cause-result may be expressed by core (41) or nuclear juncture (42), but while *mate* in (41) is an autonomous verb, the verb *vinii* 'kill' in the nuclear juncture (42) is not fully autonomous, and only appears in complex predicates (Crowley 2002: 96). Note that the discontinuous negation marker (*-ro-* …*-tei*) only appears on V_1 in the core juncture (though it has scope on both cores), but brackets the complex nuclei in the nuclear juncture.

(41) *Irosaltei   vuas   he:mat.*
[CLAUSE [CORE *i-ro-sali-tei   vuasi*] [CORE *hee-mate*]]
3PL.DIST.FUT-**NEG1**-spear-**NEG2** pig   3SG.DIST.FUT-die
'They will not spear the pig to death.' (Crowley 2002: 83)

(42) *Irosal   vini:tei   vuas.*
[CLAUSE [CORE *i-ro-*[NUCL *sali*]   [NUCL *vinii*]*-tei   vuasi*]]
3PL.DIST.FUT-**NEG1**-spear   kill-**NEG2**   pig
'They will not spear the pig to death.' (Crowley 2002: 83)

b) *Nuclear juncture*

When cause-result is expressed by the compact SVVO nuclear juncture, various adjustments in argument structure are required. Basically, the underlying subject of the V_2 becomes the patient of the complex. Often, the V_1 behaves as a causative verb while V_2 indicates the result.

(43) [CLAUSE [CORE *Na-lo* [NUCL *ni-hey*] [NUCL *simsim*] *n-aes*]].
ART-sun   AO-shine   melt.RED ART-ice
'The sun melts the ice (by shining).' (François 2004: 119)

In Teop, cause-result constructions behave as a subtype of modification, with the V_2 marked by the prefix *va-*, just like manner modification (but unlike sequential, purpose or directional V_2).

(44) [CLAUSE [CORE [NUCL *Tasu*] [NUCL ***va-mate***]   *e   kahi*]*, ha!*]
stone   ADV-be.dead ART dog   INTERJ
'Stone the dog to death !' (Reinig 2004: 101)

In Saliba, cause-result complex predicates show argument-sharing with transitive activity verbs (45) or argument-fusion with intransitive or stative V_2 (46). Because of the same-subject constraint, the underlying subject of V_2 appears in the patient slot of the complex and a causative prefix increases the valency of an intransitive or stative V_2 (46, 47).

(45) *Ye   koi-kesi-di.*
3SG   hit-break-3PL
'(S)he broke them by hitting.' (Margetts 1999: 99)

(46) *Ye   tabe-**he**-dudulai-uyo-**i**-ya-ma.*
  3SG pull-**CAUS**-straight-back/again-**APP**-3SG.O-hither
  'He pulled it straight again.' (Margetts 2004: 71)

(47) *Ye   sikwa-**he**-beku-dobi-**ei**-ø.*
  3SG poke-**CAUS**-fall-go.down-**APP**-3SG.O
  'He poked it down. / He made it fall down by poking it.' (Margetts 2004: 70)

  Various Oceanic languages display similar constructions with a causative prefix.

  Tigak

(48) *Ga koŋ **a**-tuk-i.*
  3SG.PAST hold CAUS-stand-3SG
  '(S)he held it up.' (Beaumont 1979: 82-83, in Crowley 2002: 134)

  In Tawala, a causative prefix glossed "effective" has a similar function (Ezard 1997):

(49) *Bada-na ipa   i-na-houna   **i**-dumalu me-ya ...*
  man-DEF IRR 3SG-POT-put **EFF**-be.straight REFL-CPY[7]
  '(So that) the man might make himself right.' (Ezard 1997: 129)

  Hoava

(50) [_{CLAUSE} *Ego,* [_{CORE} *naní sa*]] [_{CLAUSE}, [_{CORE} [_{NUCL} *nani*] [_{NUCL} ***va**-paho*]-*e*]].
  well eat.TR.3PL PRO.3SG   eat CAUS-empty-TR.3PL
  'Well, he ate them, ate and emptied them / ate them empty.' (Davis 2003: 161)

  In Nêlêmwa, complex verbs with a causative prefix on V₂ (51) express a direct result, while complex clauses mark looser consecutive relations (as in some African languages, Lord 1975: 28). Complex verbs are thus an intermediate stage between the highly integrated morphological expression of causation, semi-grammaticalized causative verbs, and multi-clausal constructions.

(51) *Hla   khi **pa**-maxa-e.*
  3PL hit FACT-be.dead-3SG
  'They struck him dead.' (Bril 2002: 168)

  In Fijian (52), the complex has purposive or resultative reading :

(52) *E a: vosa-k-a **vaka**-maðala-**tak**-a.*
  3SG PAST talk-**TR**-3SG CAUS-clear-**TR**-3SG
  '(S)he explained it.' (lit. talk make clear) (Schütz 1985: 248)

  In Samoan (53), the construction is also ambiguous, *lamu fa'a-malū* may be purposive 'chew to soften' or resultative 'he chewed it soft'. As in (40), the T.A.M value of the clause is a disambiguating factor; the injunctive mood in (54) selects the purposive reading.

  Samoan

(53) ...[_{CLAUSE} [_{CORE} *e fa'a-aogā*] [_{CORE} *e* [_{NUCL} *lamu*] [_{NUCL} ***fa'a**-malū*] *ai mea 'ai*]].
  TAM CAUS-used   TAM chew CAUS-soft ANAPH thing eat
  '[molars are broad and big teeth which] are used to chew the food soft.' (Mosel 2004: 276)

(54) *Tipi **fa'a**-pa'ū le lā'au.*
  cut CAUS-fall ART tree
  'Cut the tree down.' (Mosel 2004: 277)

4.4. Depictive and other adverbial complex verbs

Adverbial and depictive constructions are both modifying: the former modifies a predicate, while the latter modifies an argument of the main predicate. Are these two types formally distinguished ?

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[7] CPY marks the object enclitic of a condition verb with the same referent as the subject prefix.

4.4.1. Depictive constructions

Apart from East Uvean (Wallis), which sometimes distinguishes the depictive function, most of the langages under study (Teop, Samoan, Mwotlap, Tawala, etc.) do not.

In East Uvean, the depictive function of V₂ is signalled only on some thirty verbs and only in the plural, it is marked by partial reduplication indicating number agreement with the plural subject of V₁ (55). In all other cases, the depictive and adverbial functions are not distinguished. Compare the depictive function of *māsisiva* (55), with the adverbial function of of *māsiva* (55'):

(55)　*'E　natou　nonofo　**māsisiva**.*
　　　N.SPEC　3PL　　PL.RED.stay　PL.RED.be-poor
　　　'They live poor.' (lit. live being poor) (Moyse-Faurie 2004: 209)

(55')　*'E natou nonofo **māsiva*** 'they live poorly'.

Most other languages do not make any distinction. In Teop, the adverbial (56) and depictive (57) constructions are both marked by the prefix *va-* which signals an adverbial function and are thus categorized as subtypes of modification:

(56)　[CLAUSE [CORE *E　amoba　na*　[NUCL ***hio***]　[NUCL ***va-tamaka***]　*nana*]].
　　　　　　　　ART　widow　REAL　　sit　　　　ADV-be.sad　　IMPF.3SG
　　　'The widow is sitting sadly.' (Mosel/Spriggs 1999c, in Reinig 2004: 100)

(57)　*A　kaveo　kuri-n-e　　bubuu　na　**hoa va-bebeahu**　kurusu.*
　　　ART　nail　　hand-POSS-ART　granny　REAL　grow　ADV-be.long　　very
　　　'The fingernails of granny grew very long.' (Reinig 2004: 100)

But the prefix *va-* in Teop does distinguish asymmetrical predicates *hio va-tamaka* 'be sitting sadly', from symmetrical predicates *hio tamaka* 'be sitting and crying'.

In Samoan, depictive and adverbial constructions are also formally similar. The secondary predicate modifies the argument of the main predicate (depictive 58) or the main predicate itself (58'). Other similar examples are *lele tauaso* (lit. fly be.blind) 'fly blind'; *tupu maualuga* (lit. grow high) 'grow high' (Mosel 2004: 278-282).

(58)　*'Ole'ā　'ai ola　'oe.*
　　　TAM　　eat live　2SG
　　　'You are going to be eaten alive.' (Moyle 1981: 52, in Mosel 2004: 281)

(58')　*moe 'umi* 'sleep long' (sleep be.long) (Mosel 2004: 278).

In Mwotlap, depictive and adverbial constructions are not formally distinguished either.

(59)　[CLAUSE [CORE *Imam*　[NUCL *ma-hag*]　[MOD.NUCL *qaqa*]　*ēwē*]　[PERIPH *l-ēm̄*]].
　　　　　　　　Dad　　　　PFT-sit　　　　　stupid　　just　　　in-house
　　　'Dad is staying idly at home.' (François 2004: 110)

In Tawala (Ezard 1997: 125-128), the nuclear juncture has sequential or modifying functions, and depictive predicates (60) behave like other types of modifying predicates (compare (60) with (49)); the V₁ controls the transitive concord on V₂, marked by the causative ('effective') prefix on V₂.

(60)　*Ta-gale-na　　　**i-dumalu-ya**.*
　　　1PL.INCL-see-LIG　EFF-be.straight-3SG
　　　'We regard him as a good bloke.' (Ezard 1997: 130)

4.4.2. Comparative modification

In Paamese, comparative constructions behave like other adverbial constructions, using the core 'ambient' juncture, either with a copula V₂ (61) or with a non-fully autonomous verb *suvali* 'resemble' (62, 63).

Paamese

(61) *Kail   aselūs   vē   unaun.*
     kaile   a-seluusi   vee   unaune
     3PL   **3PL**.R-speak   **3SG**.R-**COP**   crazy.person
     'They are speaking crazy.' (Crowley 1987: 54)

(62) *Kūmoni   hesuvalinau.*
     ki-umoni-e   he-suvali-nau
     2SG.DIST-do-3SG   **3SG**.DIST-resemble-1SG
     'Do it like me.' (Crowley 1987: 50)

(63) *Kaik   koselūs   suval   ēhon   kail.*
     kaiko   ko-seluusi   suvali   eehono   kaile
     2SG   **2SG**.R-speak   **3SG**.R-resemble child   PL
     'You speak like a child.' (Crowley 1987: 54)

In Samoan (64), comparative constructions also behave as a subtype of adverbial construction:

(64) *...e   māfaufau   fa'a-tamaitiiti   le   tagata   matua.*
     TAM   think   SIM-child   ART   person   adult
     '... the adult person thinks like a child.' (Mosel 2004: 280)

4.4.3. Quantifying modification

Quantifying predicates generally apply adverbially or depictively; but numeral predicates behave differently from quantifiers.

In Paamese, numeral predicates appear in the core 'ambient' juncture with adverbial (65) or depictive function (66), in which case it has scope only on the patient of V_1.

(65) *Nu:moni   heha:rel.*
     [CLAUSE [CORE *ni-umoni-e*]   [MOD.CORE *he-haa-relu*]].
             1SG.DIST.FUT-do-3SG   **3SG**.DIST.FUT-MULT-three
     'I'll do it three times.' (Crowley 2002: 81)

(66) *Kai   hesa:ni   helu.*
     kaie   he-saani-e   he-lue
     3SG   3SG.DIST.FUT-give-3SG   **3SG**.DIST.FUT-two
     'He will give two of them.' (lit. he'll give it it's two) (Crowley 2002: 80)

Quantifiers appear in the nuclear juncture (67 to 69) and show transitive concord with a transitive V_1; their adverbial or depictive function is somewhat fuzzy, and their scope is as much on the main nucleus as on one of its arguments, selected in accordance with the basic orientation of the first nucleus (towards the agent or the patient).

(67) *Namun   mau**n**   oai.*
     [CLAUSE [CORE [NUCL *na-muni*]   [MOD.NUCL *mau-**ni***]   *oai*]].
                 1SG.R-drink   be.whole.**TR** water
     'I drank the water by myself.' (lit. drink whole the water) (Crowley 2002: 117)

(68) *Ina   nelah   pilu**n**   pūk   onak.*
     [CLAUSE *inau*   [CORE [NUCL *na-lahi*]   [MOD.NUCL *pilu-**ni***]   *puuke   ona-ku*]].
              1SG   1SG.R-carry   stick.together-**TR** book   POSS-1SG
     'I carried my books together (i.e. in one hand).' (Crowley 1987: 63)

(69) *Nian   kese**n**   auhus.*
     *ni-ani   kese-**ni**   auhu-se.*
     1SG.DIST.FUT-eat   only.**TR**   yam-only
     'I will only eat the yam.' (Crowley 2002: 119)

In Hoava, quantifiers and numerals alike appear in the nuclear juncture with a causative derivation (like stative modifiers).

(70) [CLAUSE [CORE [NUCL *La*] [NUCL *valusa*] [MOD.NUCL ***va-soku***] *ga-da*   *makasi*]].
            go   fish   CAUS-many ED.POSS-1PL.INCL bonito
      'Go and fish to make our bonito plentiful.' (Davis 2003: 162)

(71) [CLAUSE [CORE [NUCL *Boka*][NUCL *vagi*] [MOD.NUCL ***va-soku***] [MOD.NUCL ***va-karua, hike***]]].
            able   take   CAUS-many   CAUS-two three
      '(We) are able to take many, two, three.' (Davis 2003: 162)

But an ordinal sequential verb *sua* 'be first' just shows transitive concord:

(72) [CLAUSE [CORE [NUCL *La*] [NUCL *ome*] [MOD.NUCL *suá*[8]]   *sa*   *gugusu*] [PERIPH *pa Tonima na*]].
            go   see   be.first.**TR**.3SG ART.SG village   PRP T.   DEM
      'Go and see first the village at Tonima.' (Davis 2003: 169)

In Samoan, the multiplicative form of numerals is marked by the causative prefix *fa'a-* (73), while quantifiers are simply postposed to the item under its scope, with adverbial function when it is a predicate (74, 75) or with depictive function when it is a noun (76):

(73) *'Ua   tagi   **fa'a**-lua le   tama'ita'i.*
       TAM   cry   CAUS-two ART   lady
      'The lady's crying a second time.' (lit. cry make two) (Mosel 2004: 283)

(74) *'o   lo'u fia*[9] *pule   **to'a-tasi** o   mea   a   le   'āiga   potopoto.*
       PRES my   want control HUM-one POSS thing POSS ART family extended
      'My wish to control alone the affairs of the extended family.' (Mosel 2004: 288)

(75) *'Ua   folo   **'ātoa**   Fitilo'ilo'i.*
       TAM   swallow   whole   Fitilo'ilo'i
      'She swallowed Fitilo'ilo'i whole.' (Moyle 1981: 116, in Mosel 2004: 283)

(76) *... lenei tagata **'ātoa**   'ua   na   foloina.*
           this   person whole   TAM   3SG   swallow
      '[going around with her stomach about to burst from] this entire person she had swallowed.' (ibid.)

In Nêlêmwa, depictive constructions are infrequent, since nominal modification is mostly marked by relative clauses or other types of complex clauses. Yet a few such constructions appear with the restrictive predicate *hada* 'only, alone', the distributive predicate *pexagiik* 'separately, on one's own', the collective modifier *wuung* 'together' (which is the lenified form of the verb *fuung* 'gather'). As with other types of modifying predicates, the V₂ shows transitive control with V₁ and only the basic orientation of the main verb towards the agent (77), or the patient (78), or semantics inferences, distinguish the depictive function from the adverbial function of the quantifier.

(77) *Hla   **diya wuuge**   fagau   mwa   eli.*
       3PL   do   together.TR body   house   this.ANAPH
      'They built the wall of the house together.' (Bril 2002: 193)

(78) *Hla   **hnaxi wuuge**   shâlaga   malaaleny.*
       3PL   tie   together.TR crab   these.DEICT
      'They tied these crabs together.' (Bril 2004: 180)

In (79), the transitivized quantifier *hade* may either be depictive with scope on the agent (he alone) or adverbial with scope on the verb (only eat).

(79) *I   pwâ   khuxi   **hade**   miit.*
       3SG a.little eat.TR only.TR meat
      'He ate the meat alone.' or 'He only ate the meat.' (Bril 2002: 65)

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[8] Transitivity is marked by stress on the final vowel.
[9] *fia* 'want' is a modal particle.

When *hada* is postposed to the patient (80) and beyond the control of the main verb, it shows no transitive concord; it has scope either on the patient (the meat only), or adverbial scope on the verb and its patient (only eat the meat):

(80) *I   pwâ   khuxi   miit   **hada**.*
      3SG   a.little   eat.TR   meat   only
      'He ate the meat only.' or 'He only ate the meat.' (Bril 2002: 66)

In Hoava, the modifier *eke* 'alone'[10] also shows transitive concord with V_1.

(81) ***Tavete eke-a***   *qa   sa   pu   nana   isa.*
      make   alone.TR-3SG   REST   3SG   REL   POSS.3SG   PRO.3SG
      '(He) made alone that which was his.' (Davis 2003: 169)

4.5. Complex predicates with time-limit function

In such constructions, the V_2 specifies the time-limit of the event expressed by V_1. These highly compressed constructions may sometimes be rephrased as two-clause constructions.

Mwotlap

(82) *Kōyō   mō-bōw   liwo kē.*
      3DU   PFT-bring.up   big   3SG
      'They brought him up (till he was big).' (François 2004: 122)

Tawala

(83) *Hi-eno   malitom.*
      3PL-sleep   be.daybreak
      'They sleep till daytime.' (Ezard 1997: 125)

In Nakanai, the autonomous verb *kara* 'go as far as, reach' specializes as a time or space boundary marker in complex predicates, with the meaning 'until, as far as'.

(84) *Amiteu   pou   kara   (te)   la   maulavi.*
      1PL.EXCL   sit   go.as.far.as   PREP   ART   afternoon
      'We stayed until the afternoon.' (Johnston 1980: 190)

In Nêlêmwa, *uya* 'arrive, reach' has a similar function:

(85) *Co!   me   oome   uya-ve   ni   yeewa-t   hleny.*
      well!   and   come.here   reach-DIR   in   time   this.DEICT
      'Well ! and (time) has passed until now.' (Bril 2002: 439)

In Numbami and Loniu, these constructions appear in the asymmetrical core 'ambient' juncture:

Numbami

(86) [CLAUSE [CORE *Ja-mu*]   [CORE *ja-mêng   malac*] [CORE *ê-ndêng   ocsalô*]].
                 1SG.IR-return   1SG.IR-come   village   **3SG**.IR-reach   forenoon
      'I will come back to the village before noon.' (Bradshaw 1993: 156)

Loniu

(87) [CLAUSE [CORE *ɲanɛ   suʔu   itɔ   tuwani*] [CORE *ilɛ   mɛʔisan*]].
                 mother   3DU   3SG.STAT   cook   **3SG**.go   done
      'Their mother would cook until it was done.' (Hamel 1994: 130)

(88) *Iy   i-tɛʔɛŋani   i-wɛnɛy   aŋ   malimɛh.*
      3SG   3SG-wait   **3SG**-be.sufficient   day   five
      '(S)he waited until the fifth day.' (Hamel 1994: 169)

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[10] *eke* is derived from the numeral *keke* 'one' (< *ka-eke*); it is also used in numbers over ten *manege eke* 'eleven', *lima-navulu eke* 'fifty-one' (Davis 2003: 67).

In Pileni, time-limit and degree are also marked by core-layer juncture:

(89)   [$_{\text{CLAUSE}}$ [$_{\text{CORE}}$ *Lha-ko   khaikhai*] [$_{\text{CORE}}$ *ko   lāvoi*]].
             3DU-TA   RED.eat   TA   be.good
        'They ate until they were full.' (lit. they ate, it was good) (Næss 2004: 240)

5. Discussion

As shown in Table 3, the functions most commonly compressed into complex predicates, are modification, sequential and action-goal actions, and in a lesser degree cause-result. They are sometimes marked by one single, highly polyfunctional syntactic template (with core or nuclear juncture), and their reading is contextual and inferential, often based on the semantic type of verb: stative, posture, motion or direction V$_2$s tend to have modifying functions, whereas activity V$_2$s tend to be modifying when they refer to overlapping actions, but co-ranking when they refer to sequential or purposive actions.

5.1. Factors favouring complex predicates

These factors are just statistical tendencies found in the Oceanic languages under study.
- Complex predicates are favoured by scanty inflectional morphology (Foley & Olson 1985: 51), which also contributes to their syntactic and functional fuzziness.
- Symmetrical verbs with same-subjects, especially those referring to sequential actions, are prone to compression and adjacency through gapping and ellipsis of shared arguments, for reasons of discourse economy and topic continuity. Relations of entailment and semantic proximity in sequential or consecutive actions and action-goal also favour formal compression (Nêlêmwa).
- Asymmetrical predicates with modifying function also favour adjacency, but it is then a purely structural template, in keeping with the head-modifier template. The modifying function of these predicates often correlate with a reduced class of adverbs (Nêlêmwa, Mwotlap), no adverbs (Pileni) or derived deverbal adverbs (Teop, Hoava, Nêlêmwa, Samoan).
- Complex predicates often have case-marking and valency-expanding functions, especially for participants lower down on the semantic hierarchy (*give* > beneficiary, *take* > comitative, *follow, measure* > according to, etc.).

5.2. Syntactic constraints on complex predicates

The limits imposed on complex predicates vary cross-linguistically, yet there are some robust features with some general validity:
- Different TAM markers generally bar serialization and trigger multiclausal constructions.
- Argument structure restricts compression: the same-subject constraint is rather weak as subjects may be similar or different, even in the nuclear type (ex. 28, 30, 31), but the constraints are often stronger on objects in the nuclear juncture (less so in the core juncture), since only one object is allowed for the whole complex. When they are different, one of them is left unmentioned if already referential, otherwise a two-clause construction is required (Mwotlap, Nêlêmwa).
- Semantic distance or contradictory notions finally restrict compression, triggering the need for core or clausal junctures and conjunctive markers. Although Talmy (2000) reports that Mandarin allows serial constructions for antifulfillment (90) when the context allows; such

constructions are much more restricted and require a clear context, the expected and default relation being one of logical consequence between the two events[11].

Mandarin

(90) *Wǒ   bǎ   chèn-yī xǐ   zāng le.*
     1SG   OBJ   shirt   wash dirty PERF
     'I washed the shirt [in the river], but it came out dirtier.' (Talmy 2000, vol.2: 276)

5.3. Tightness of linkage: from complex clauses to complex predicates

Languages display various degrees of compression on the cline towards more syndesis or more desententialization (Lehmann 1988: 210-213, Croft 2001: 352-353). Foley & Van Valin (1984: Chap. 6) have suggested the following correlation between tightness of linkage and semantic integration, ordered from tight linkage (single event) to weak linkage (distinct events); in bold italics are the types found in the Oceanic languages surveyed.

> ***causative*** > ***aspectual*** > psych action > ***purposive*** > jussive > perception > propositional attitude (love, hate) > cognition > indirect discourse > ***temporal adverbial*** > conditionals > ***simultaneous actions*** > ***sequential actions*** (+/-overlapping) > ***action–action*** (unspecified)

In Oceanic languages, apart from adverbial modification (*manner*, *direction*) and circumstances (*location*, *time*), nuclear or core juncture most commonly express *sequential* and *overlapping actions*, *purpose*, *cause-result*, *time-limit*, *Aktionsart* and in a lesser degree *modality*.

5.4. Tightening linkage: from core to nuclear juncture

The pathways towards tight linkage and clause fusion go from syndetic to asyndetic coordination, then from symmetrical core juncture [**s**V(o) **s**V(o)] to symmetrical nuclear juncture [sVV(o)], through gapping, ellipsis and argument fusion. Tightness of linkage varies with semantic or pragmatic integration.

In Pileni and Teop where subject gapping is common and with few available morphosyntactic or prosodic tests, it is often difficult to distinguish core-serialization from asyndetic coordination or subordination.

In Nêlêmwa, only same-subject sequential and purposive actions are prone to tightened linkage from clausal to nuclear juncture, from conjoined clauses *hla thege me hla oga hî pwiak* 'they run and they leave this fishing-net' to conjoined nuclei, *hla thege me oga hî pwiak* 'they run and leave this fishing-net' and on to a complex predicate *hla thege oga hî pwiak* 'they run leaving this fishing-net' which expresses immediate sequence~consequence or coincidence, whereas conjoined clauses refer to different events with some time gap between them, possibly expressing purpose. As in a variety of languages, complex predicates and two-clause constructions have different meanings (see Foley & Olson 1985: 19-22).

SOV Saliba shows some undergoing compression from core to nuclear juncture by moving the nominal object (O) out of its core to make it the argument of the whole complex [O sV sV] as in (92), although this is not a case of topicalization. A further step towards adjacency would be reached by gapping the subject pronoun of V_2 in (92), yielding a nuclear juncture [O sVV]. Other cases of compression from core to nuclear juncture are shown in (32, 33).

(91) [CLAUSE [CORE *Ya   dobi*]   [CORE *Sioni   ya   kita-ø*]].
             1SG go.down   Sioni 1SG see-3SG.O
     'I go down and see Sioni.' (Margetts 2004: 75) [sV OsV]

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[11] I'm grateful to Toshio Ohori for bringing that to my attention and to Chang Jung-Hsin for comments on these constructions.

(92) [CLAUSE [CORE *Sioni ya lao*] [CORE *ya kita-ø*]].
          Sioni 1SG go   1SG see-3SG.O
  'I go down and see Sioni.' (Margetts 2004: 77) [O sVsV]

Various such stages may coexist synchronically with different functions and meanings (Saliba, Pileni, Paamese, Lewo). In the process of compression from core to nuclear juncture, the V$_2$s often loose their autonomy and gradually grammaticalize or become co-lexicalized compounds (Paamese); Lewo has reached the point where most V$_2$s now tend to behave as deverbal adjuncts.

Compression occurs not only at clause or predicate level, but also at word level, resulting in compounding and lexicalization, and then in grammaticalized or morphologized entities (Lehmann 1988). The general tendency is for symmetrical adjacent nuclei to develop into co-lexicalized compounds, adpositions and case-markers, affixes or conjunctive markers, while asymmetrical nuclei tend to grammaticalize into adjuncts or adverbs. In Southern New Caledonian languages, former complex predicates have thus been eroded into compounds, adpositions or affixes, while newer serial verbs have been refected (Bril 2004, Ozanne-Rivierre & Rivierre 2004).

Another tendency is to incorporate non-verbal items into the head-modifier template at nuclear juncture, triggering possible transitive concord on items which are not initially verbs or deverbal modifiers, as with the nominal modifier *right* or *left* (93), or the intensifying noun *saaso* 'self' (94) in Paamese.

      Paamese

(93) *Nagur   matu:n a:i.*
    *na-guri   matu:-**ni** aai*
    1SG.R-take right-**TR** stick
    'I took the stick in my right hand.' (Crowley 2002: 116)

(94) *Na-gilel   sa:sokuni.*
    *na-gilela   saaso-ku-**ni**-e*
    1SG.R-know   self-1SG-**TR**-3SG
    'I realized it by myself.' (Crowley 2002: 117)

6. Conclusion

Complex predicates have been shown to be polyfunctional syntactic templates whose functions and meanings are possibly disambiguated by morphological features, by argument structure, by verb classes and verbal semantics, by illocutionary mood at clause level or by contextual inferences (§5).

Coexistent patterns of complex predicates with a similar function often show different degrees of conventionalization and slightly different meanings; they are also the synchronic manifestation of various stages of an ongoing process of compression and morphological attrition. This often applies cross-linguistically and accounts for their striking similarity of functions and meanings.

Abbreviations

ADV	adverbial marker	CLASS	classifier
AGT	agent	COORD	coordinator
ANAPH	anaphoric	CONN	connector
AO	aorist	CONTR	contradiction
APPL	applicative	COP	copular predicate
ART	article	DECL	declarative
ASS	assertive	DEICT	deictic
ASSOC	associative	DEF	definite marker
CAUS	causative	DEM	demonstrative
		DEPEND	dependency marker

DIR	directional		PFT	perfective
DIST	distant mood		PL	plural
DU	dual		PONCT	punctual
EXCL	exclusive		POSS	possessive
ED.POSS	edible possessive classifier		POT	potential
FACT	factitive		PREP	preposition
FR	free form		PRES	presentative preposition
FUT	future		PRO	inanimate oblique pronoun
HUM	numeral classifier for humans		PROG	progressive
IMPF	imperfective		R	realis
INCL	inclusive		REAL	realis
INTENS	intensifier		RED	reduplication
INTERJ	interjection		REFL	reflexive marker
IRR	irrealis		REST	restrictive particle
ITER	iterative		SIM	similative marker
LIG	ligature		SS	same subject
LOC	locative		TA	tense-aspect
MOD	modifying		TOP	topicalization marker
MULT	multiplicative		TR	transitive
NEG	negation		VIRT	virtual/irrealis
NS	non-singular		V	verb
N.SPEC	non-specific tense aspect marker		VP	verb phrase.
O	object			

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