Alignment

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1 Introduction

This chapter provides an overview of argument coding patterns, or types of alignment, in Papuan languages.[1] We focus here on flagging (i.e. case marking by means of affixes, clitics or adpositions) and indexing (i.e. verb agreement; see Haspelmath 2013, 2019 for terminological considerations). While alignment has been central in typological research over the past decades, there has not been an overview of this topic for Papuan languages since Foley (1986:92–110). As we will show below, the argument coding patterns of Papuan languages show both an incredible diversity — in that the island and its surrounding archipelago are host to all types of systems known to alignment typology — but also surprising unity, as several of the patterns we will discuss cross the boundaries of language families and pervade entire areas.

This chapter overlaps with the chapter on valency change (Olsson, this volume). Both chapters employ the same sample of 62 Papuan languages, with each language representing one independent lineage (i.e. family or isolate, with the TNG subfamilies listed in Pawley and Hammarström (2018) being treated as top-level families). See the Appendix for a list of the 62 languages in the sample.[2] In addition to the languages of the sample, which we use for statistical and areal generalisations, we used a large number of additional languages for additional data (including for the two maps in Fig. 1 and Fig. 2). Throughout the chapter, we employ the established labels S, A and P for the arguments of intransitive and monotransitive clauses, and the labels R and T for the (recipient and theme) arguments of a ditransitive clause (see e.g Siewierska 2003, Haspelmath 2011).

The chapter consists of a main part (§2) addressing alignment in intransitive and transitive clauses, i.e. alignment of S, A, and P, followed by a shorter part (§3) focussing on the alignment of R and T in ditransitive clauses.

2 Alignment in intransitive and transitive clauses

With regards to case marking of core arguments, the vast majority of Papuan languages fall into one of three groups: those that do not use case at all, and those that do not use case, except under special circumstances. A third group has 'regular' case marking, but this is a minority. The second group contains languages described as having 'optional' case marking (or in the case of objects, 'differential' marking), i.e. case marking that is regulated by factors such as discourse prominence and animacy. Although systems of differential or optional case marking include languages in which either marking or non-marking is the default option, our survey makes it clear that among Papuan languages, it is non-marking that is the default and most frequent option. 'Canonical' ergative systems (in which most A arguments are flagged) and accusative systems (in which

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[2]Note that we initially grouped Duna as an isolate and Eibela/Aimele as Bosavi, i.e. not part of TNG. Following (Evans & Fedden this vol, Greenhill this vol) we have placed them back in TNG, which is the affiliation now shown in the table.

most P arguments are flagged) are found in very few Papuan languages. We will also see that systems of case marking show strong areal tendencies in Papuan languages, cross-cutting genetic divisions, but that much of this homogeneity is belied by variation in the details (e.g. in the factors that trigger case marking).

In the remainder of this section, we look at neutral alignment of flagging (§2.1), and different types of nominative-accusative (§2.2), ergative (§2.3) and split-S flagging (§2.4). We then move on to patterns in the indexing of S, A and P on the verb (§2.5), and take a closer look at variants of split-S indexing (§2.6). Finally, we pay special attention to alignment patterns in what we name polyvalent experiencer expressions (§2.7), i.e. expressions that involve an animate experiencer and a condition-denoting nominal of some sort ('hunger hits me' and its ilk).

2.1 Languages without flagging

Languages in which lexical NPs in the core participant roles S, A and P are never marked for case comprise over a third of the languages in our core sample (24/62, or 39%), distributed across all areas of the Papuasphere. Examples of two such languages are Wutung (1) and Daga (2).

(1) *Jenny* *Tanfa* *qwa*
Jenny Tanfa 3SG.F.A>3SG.M.P:hit
'Jenny hit Tanfa.' (Marmion 2010:207)

(2) *tuan* *aopa* *Orogum* *yav-e* *wa-n*
pig up.there Orogum see-3SG.PST.SS say-3SG.S.PST
'Orogum saw a pig up there and told (the people).' (Murane 1974:207)

The incidence of languages without flagging (39%) is lower than the global figure of 52% in Comrie's (2013) survey of case marking, but note that Papuan languages with 'optional' ergative flags (§2.3) and differential object marking (§2.2.2) typically employ flagging only under exceptional circumstances (e.g. in contexts of potential role ambiguity), meaning that most core arguments in such languages likely lack case marking in discourse. The latter type of case marking is represented in more than half of the core sample, which means that more than 90% of the languages of the sample either lack case flags, or use them only sporadically. The overall rarity of case marking in Papuan languages has also been noted by Foley (2000:374).[3]

[3]Foley suggests that broadly, "complex verbal agreement systems of indicating grammatical relationships like subject and object are in complementary distribution with the more elaborated case systems" (Foley 2000:374), but we note that e.g. Yelmek, the Yam languages, and Yélî Dnye are examples of languages with both complex indexing of S/A and P, and obligatory case marking of core arguments. In fact, lack of case marking is more common in the sampled languages that lack indexing (5 out of 14 languages, or 36%) than in languages with indexing for both S/A and P (9 out of 33, or 27%), and we found no statistically significant correlation between the presence or absence of flagging and indexing in the sample.

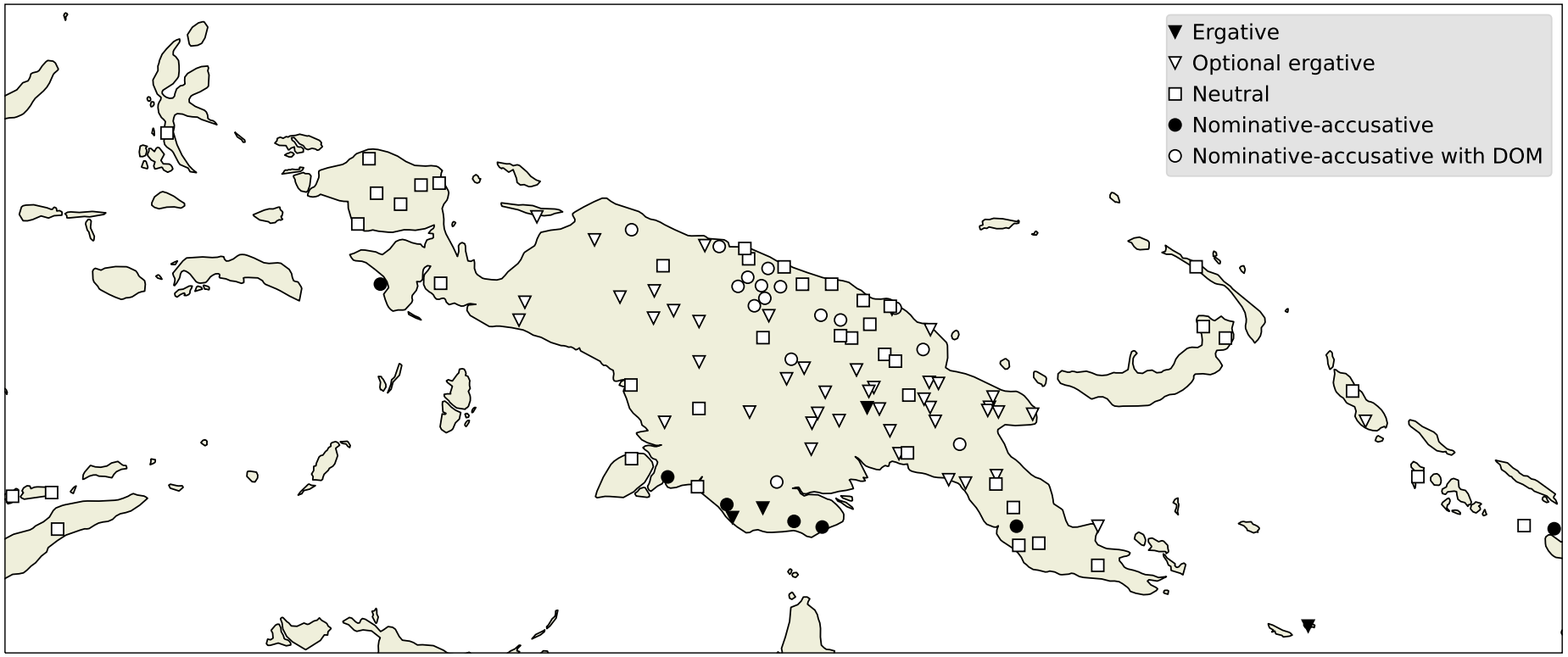

Figure 1: Alignment of case marking in Papuan languages

Flagging is absent in the eastern Indonesian archipelago and the Bird's Head and Neck (although Kalamang on the Bomberai peninsula has a standard accusative case system). Another area with a high concentration of languages without core case marking in the Sandaun and Sepik regions, where families such as Torricelli and Sko are largely devoid of case, while languages in families such as Border, Sepik and Lower Sepik-Ramu either lack case or show differential object marking, another pervasive feature of the Sepik region (§2.2.2). Other languages without case are e.g. the Lakes Plain languages, Asmat languages, most Anim languages, some languages of the Southeast Peninsula (e.g. some Koiarian and Dagan languages), and several languages of the Melanesian archipelago (e.g. Kuot, Bilua and Lavukaleve, and the Baining languages). Languages of the Highlands generally have optional ergatives (§2.3.2), but the Highlands Ok languages (such as Mian and Telefol) and the Simbu subgroup of the Chimbu-Wahgi family have resisted this areal trend, and lack case marking altogether. Papuan languages that lack case marking on NPs typically do not mark case on personal pronouns either; exceptions are Inanwatan (Bird's Head), the Kolopom languages, and Kalam and Kobon, all of which lack case on NPs but have special accusative pronouns for the P role.

2.2 Nominative-accusative flagging

Here, we first address generalized nominative-accusative flagging (§2.2.1), a type of flagging that is very rare in Papuan languages. More common are accusative systems with differential object marking (§2.2.2), although these are concentrated in northern New Guinea. Finally, we show that Papuan languages offer some examples of marked-nominative flagging (§2.2.3). In our 62-language sample, these three types of nominative-accusative systems make up 23% of the languages, which can be compared to the slightly higher proportion of 27% in Comrie's (2013) global survey.

2.2.1 Generalized accusative flagging

Papuan languages in which pronouns and lexical NPs in the P role are automatically marked for accusative case (regardless of e.g. animacy and definiteness) are rare. We find clear examples of such 'generalized' accusative marking only in Kalamang (cf. Visser this vol.), Yelmek, Ende, and Bine (cf. Döhler this vol.). The following examples illustrate generalized accusative case marking with Kalamang *=at* (3), Yelmek *-l* (4) and Ende *=di* (5). In these examples, the P-arguments are inanimate (and, in the first two, indefinite), i.e. the type of P-arguments that are unlikely to display case marking in languages with differential object marking.

(3)

ki	*se*	*kai=at*	*rep?*
2pl	IAM	firewood=OBJ	get

'Did you already get firewood?' (Visser 2022:116)

(4) *ked* *op-l* *woka-ma-n* *ŋuai.*
now money-ACC know-NEG-PURP be:PL
'They didn't know about money.' (Gregor 2020:277)

(5) *ddob* *lla=da* *ngämo* *bin=di* *aiai* *ttaem* *erallo.*
some person=NOM 1SG.POSS name=ACC good call AUX.PRS.3NSG>3SG
'Some people say my name properly.' (Lindsey 2019:199)

We are not aware of any global surveys of generalized accusative case marking, so it is impossible to tell whether its rarity among Papuan languages is unusual or whether it follows the global trend.

2.2.2 Differential object marking

In this section we discuss languages that show variation in the flagging of P, such that the P is either zero-flagged or flagged with a dative or locative case marker, typically depending on inherent features or the referent (e.g. animacy or humanness) or its discourse properties (e.g. definiteness). This phenomenon is known as differential object marking (DOM; e.g. Bossong 1991, Lazard 2001, Aissen 2003).

DOM is particularly common across northern New Guinea: of the 19 sampled languages from this area, 9 (47%) exhibit DOM,[4] with the heaviest concentration in the area around the Sepik river, in families such as Border, Senagi, Sepik and Ndu. Outside its northern hotspot, DOM turns up in the Highlands languages Menya and Oksapmin, and in the Southern New Guinea language Suki (van Tongeren 2023:137–139).

Case marking in Imonda can serve as an illustration of DOM. Non-human Ps are often unmarked, as with 'net bag' in (6a), while human Ps are marked by *-m* (6b), also used for flagging the recipient in a transfer event (therefore, we use the label Dative for *-m*).

(6) a. *udõ* *ka-m* *bas-ai-h-u!*
netbag 1-DAT CLF-give-SG.RECIP-IMP
'Give me the netbag!'

b. *mol-m* *ka-m* *f-ai-h-u!*
daughter-DAT 1-DAT CLF-give-SG.RECIP-IMP
'Give me your daughter!' (Seiler 1985:165)

The extension of the recipient case to mark (among other things) animate P is found in other languages of the Warisic subgroup of Border (Foley 2018:387; Brown 1988), but DOM is absent in other parts of the family, e.g. in Kilmeri (Gerstner-Link 2018).

The triggering factors for DOM are rather diverse (as in descriptions of optional ergative flagging, §2.3.3), and the details sometimes differ even among

[4]The languages of the northern lowlands classified as having DOM are Manambu, Watam, Awtuw, Kwerba, Momu, Yale, Kwomtari, Sentani and Menggwa Dla.

closely related or neighbouring languages. Momu (of the small Baibai-Fas family), for example, is spoken in the immediate proximity of the Border languages (such as Imonda), and likewise has a system of DOM (in fact, involving an identical case marker *=m*), but the principles regulating the use of this case seem to be completely different from those in Border languages. In Momu, animacy and other inherent features of the P appear to be irrelevant for DOM, and the function of *=m* (which Honeyman 2017 labels Oblique) is instead to mark "newness" of the P (Honeyman 2017:140). Examination of the texts in Honeyman's grammar lends some support to this. For example, *=m* is found on the inanimate, non-individuated NP 'food' in (7a), presumably because it introduces a new P, whereas the animate, definite NP '(the) child' in (7b) is unmarked, presumably because the referent has already been the topic of the preceding discourse.

(7) a. *Mu* *kefe* *eru ere* *kwu=m* *a-kaani-si-mu.*
women some and.so food=OBL IMPF-cook-3PL.A-VOL.FUT
'Some women will then be cooking food, …" (Honeyman 2017:572)

b. *Yime* *na-pwe=on-si* *mu* *eru* *baso* *nemkyen.*
man PL-come=see-3PL.A woman that child 1|3SG.A:give.birth
'The men came and saw that the woman had given birth to the child.'
(Honeyman 2017:593)

The conditions for DOM in Momu are unusual, as optional marking of P in Papuan languages with DOM (as well as cross-linguistically) tends to be found on 'unlikely' Ps, i.e. definite, animate or human Ps ('I speared the enemy', rare in spontaneous speech), and be absent on inanimate, non-individuated Ps ('I ate sago', common in spontaneous speech). Because DOM often occurs on low-frequency NP types (such as animate, human Ps), large corpora are necessary to understand the factors governing the use of DOM in actual speech. Language-particular descriptions of DOM are often based on (or at least illustrated by) elicited and/or decontextualized example sentences, and the description may be difficult to evaluate by studying the handful of texts collected in a typical reference grammar, as e.g. human Ps are so rare in natural texts. For example, the detailed description of DOM in Iatmul (Jendraschek 2011, Jendraschek 2012:222–247) describes the use of the Iatmul Dative case *-kak* on pronouns, proper nouns, definite animate Ps, and other targets. In the texts in Jendraschek (2012:487–537), however, we could only find three examples of Dative-marked lexical NPs in the P role,[5] which of course is insufficient for understanding the dynamics of DOM in spontaneous Iatmul discourse. For Iatmul we are lucky to have Jendraschek's insightful descriptions of case marking, but for most other languages one has to do with scattered observations on the use of DOM, which makes our knowledge of such systems in Papuan languages very limited. For other relatively detailed descriptions of DOM, see e.g. Awtuw (Feldman 1986), Kwomtari (Spencer 2008), Manambu (Aikhenvald 2008) and Yalaku (Aikhenvald 2015); and

[5] '…the sky came down, and it took the moon-DAT up'; (2012:532); 'after looking at its reflection-DAT' (2012:534), 'they were angry at their grandchildren-DAT' (2012:535–536). Dative marking is common on pronouns and recipients in Jendraschek's texts.

(in the PNG Highlands) Menya (Whitehead 2004), and Oksapmin (Loughnane 2009).

2.2.3 Marked-nominative languages

A few Papuan languages are so-called marked-nominative languages, and reverse the expected markedness schema of nominative-accusative languages by using a 'zero' flag for the P, and a 'non-zero' flag for the S/A role (see Handschuh 2014 for an overview). These are the Yuat languages Miyak and Biwat of the Sepik area (McElvenny 2007, Foley 2018:229), the Koiarian language Mountain Koiali of the Southeastern Peninsula (Garland and Garland 1975:434), and Savosavo in the Solomon Islands (Wegener 2012:134). Examples (8a–b) illustrate the use of the marked nominative *=na* in Savosavo, which is obligatory on the S/A in most clause types, whereas the P is always zero-coded, as in (8b).

(8) a. *Pa* *ngai* *vaka=na* *ba-i.*
one big ship=NOM come-FINITE
'A big ship has come.' (Wegener 2012:68)

b. *Agni=na* *oma* *ata* *pa* *misu* *l-eghe-i.*
1SG=NOM NEG here one dog 3SG.M.P-see-FINITE
'I didn't see any dog here.' (Wegener 2012:49)

The details of the Savosavo marked nominative are complex, and far from all subjects take the Nominative *=na*. One major source of non-Nominative marking is a type of structure that Wegener analyzes as clausal nominalizations, marked by the nominalizing suffix *-ghu* on the verb. Such nominalizations are often used as independent main clauses. The subject NP in this construction is either flagged by the Genitive case *-va*, as in (9), or unmarked; it is never flagged by the Nominative *=na*.

(9) *no-va* *ghoi* *elu* *qazu* *ghobu=la* *l-ovu-ghu.*
2SG-GEN also ngali.nut ripe.coconut middle=LOC 3SG.M.P-put-NMLZ
'You also put Ngali nut (and) ripe coconut in the middle.'
(Wegener 2012:328)

Unlike optional ergatives (which sometimes extend to mark the intransitive S; see §2.3.4), Savosavo *=na* is not associated primarily with transitive A, nor does it show any of the information-structural correlates of optional ergative marking (such as appearing on focused subjects).

2.3 Ergative flagging

We start this section by considering classical ergative flagging (§2.3.1), which, like the generalized accusative systems discussed in §2.2.3, is rare in Papuan languages. Instead, the canonical Papuan ergative system is the 'optional' type, which we overview in §2.3.2, before focusing on its conditioning factors in §2.3.3.

We then address the use of ergative flags on the S of intransitive clauses (§2.3.4), and finally polyfunctionality of ergative with non-argument roles (§2.3.5). In our 62-language sample, ergative alignment of flagging occurs in 37% of the languages, which is considerable higher than the global rate of 17% found in the survey by Comrie (2013), who also lists New Guinea as one of the world's hotbeds of ergativity.

2.3.1 Standard ergative-absolutive flagging

Papuan languages with thoroughly ergative-absolutive case marking are found in the Yam family of Southern New Guinea, as illustrated with Nmbo in (10).[6] Yam case marking lacks the optionality shown by ergative case markers in other Papuan languages (as discussed below), and extends the ergative-absolutive alignment even to pronouns (which are often aligned on a nominative-accusative basis elsewhere, e.g. in many languages of Australia), as seen in (10b): *yndo* (1SG.ERG) vs. *ynd* (1.ABS).

(10) a. *ama-vem* *mamwi* *ge* *yrst.*
mother-ERG.NSG pig(ABS) DEM 3NSG.A>3SG.P:carry.PFV.PST
'The mothers carried the pig.' (Kashima 2020:181)

b. *yndo* *bä* *ymitan.*
1SG.ERG 3.ABS 1SG.A>3SG.P:IPFV.NPHD.ask
'I am asking him.' (Kashima 2020:123)

Another language with systematic ergative case marking is the Oriomo language Meryam Mir (Piper 1989), spoken in the eastern Torres Strait, but the ergative alignment gives way to accusative alignment in the pronouns, as in the well-known Australian systems. This contrasts with the other Oriomo languages, spoken on the mainland, which have nominative-accusative case alignment. Obligatory ergative alignment of lexical NPs is also found in the isolate Yélî Dnye of Rossell Island (Henderson 1995, Levinson 2022). Pronouns in Yélî Dnye are usually not marked by the Ergative =*ngê* (plural =*y:oo*), except in quotative constructions (Levinson 2022:160–163), as shown on the embedded 1st person pronoun in (11).

(11) *pi* *knî* *y:oo* *apu,* *nê* *ngê* *kî* *nténi* *dî*
people PL PL.ERG QUOT 1SG ERG that food 1SG.IMM.PST
ma.
ate
'People are saying: I ate this food' (Levinson 2022:97)

[6] Kewa languages have been described as having obligatory ergative flagging (e.g. Li and Lang 1979, Yarapea 2006:99), although the sources do not specify whether there are exceptions.

2.3.2 Optional ergative case

The most widespread type of ergative case in Papuan languages is the optional type, i.e. an ergative case that can be omitted from the A without changing the grammaticality or role interpretation of the clause, and whose use correlates with notions such as informational prominence (focus) and volitionality or agency of the A (see McGregor 2009:493–497 for an overview). The label is problematic, as optional ergatives typically are neither optional (but rather governed by complex grammatical and discourse-related factors) nor fully ergative (as they commonly extend to mark at least some intransitive S arguments). For the purposes of this chapter, we treat any pragmatically conditioned case marking of subjects as optional ergativity, although several authors avoid the ergative label. We return to the functions of this type of case marking below.

Languages with optional ergative marking are concentrated in the cordillera, as witnessed in the map in Figure 1 by the white triangles dominating the Highlands from the Weyland Mountains in the west to the Huon Peninsula in the east, and are also frequent in parts of the southern slopes and the southern lowlands (excluding the Trans-Fly). This distribution means that many of the families forming the core of the various proposals of a TNG super-family use optional ergative case marking,[7] such as the Lakes Plain, Dani and Mek families in the west, and Enga-Kewa-Huli, Chimbu-Wahgi, Kainantu-Goroka and Finisterre-Huon families in the east.[8] But optional ergatives are also found in the Highlands and Strickland areas, including Duna and Bosavi as well as the non-TNG Teberan family. Optional ergatives occur sporadically outside the Highlands(-adjacent) area, e.g. in Bauzi and Nimboran in the northwest, in Kaki Ae, Toaripi and Amam in the Southeast Peninsula, and in Motuna in Island Melanesia. The only region of the Papuasphere in which ergative case marking is completely absent appears to be the Wallacea region, (including Timor-Alor-Pantar and North Halmahera) and the Bird's Head, a region in which case marking overall is very rare.

The earliest description of an optional ergative in a Papuan language appears to be Pilhofer's (1933:103–105) discussion of Kâte *-zi* (labelled *Nominativ agentis*, 'Nominative of the agent'), in which it is pointed out that the case marker *-zi* disambiguates the A and P roles in transitive clauses, that it is obligatory in clauses with PAV order, but also that it can occur in intransitive clauses as long as the subject is contrastive or emphatic (1933:105, 125; see Suter 2010:424–427 for a modern assessment). The interest in ergativity among Papuanists only picked up in the late 1970s, as questions about the universality of grammatical relations became popular in linguistics. Early contributions are Li and Lang (1979), who note the absence of any 'deep' (i.e. syntactic) ergative features in Enga, and Whitehead (1981:50), who lists some languages with optional marking of the

[7] In our 62-language sample, optional ergativity occurs in 8 of the 13 sampled TNG languages (62%), and among non-TNG languages in 15 out of 49 sampled languages (31%), but the high turnover rate of the proposed TNG family, with languages frequently losing and regaining membership, means that these numbers are not particularly informative.

[8] Case marking in the Asmat-Awyu-Ok family, which is another core member of TNG, is interesting in this regard as optional ergativity appears to be mainly a lowland phenomenon in this family, found in e.g. Kamoro, probably in Korowai, and in Lowland Ok; whereas the Highland Ok languages (as well as Oksapmin) seem to lack ergative case marking, as noted in §2.1.

A, along with several features that trigger this marking. Like Pilhofer, Whitehead mentions both syntactic (non-initial placement of A, i.e. PAV order) and discourse-pragmatic factors (emphasis and contrast) behind optional ergatives, and also adds the semantic factor of control, i.e. the optional ergative may highlight features such as agentivity or volitionality of the A (or occasionally, the S); we return to these features in the next section.

2.3.3 Factors behind optional ergative marking

Here we will take a brief look at some of the conditioning factors that recur in the Papuan descriptive literature: (i) disambiguation of A and P in transitive clauses, (ii) deviations from standard word order (e.g. PAV instead of APV), (iii) focus, (iv) animacy, and (v) control and volitionality.

The use of ergative marking to disambiguate the two argument roles in a transitive clause ('who hit whom?') is mentioned in many descriptions (e.g. Pilhofer 1933:103 on Kâte, Kulick and Terrill 2019:115 on Tayap, Haiman 1980:361 on Yagaria, Ross and Paol 1978:37 on Waskia, and Priestley 2019 on Kesawai). Explanations of ergative marking based on the need for disambiguation are criticized by Merlan and Rumsey (2001:222) and Suter (2010:427), who find no evidence for more frequent ergative marking (in Ku Waru and Kâte) in contexts of potential A/P ambiguity compared with unambiguous contexts, contrary to what the disambiguation account would suggest.

The main syntactic factor — obligatory or preferred ergative marking in PAV clauses — is described for e.g. Yali (Riesberg 2018:18), Yonggom (Christensen 2010:8), Eibela (Aiton 2016:179) and Ma Manda (Pennington 2016:228). Example (12) shows a Yali PAV-clause, in which the ergative =*en* is obligatory.

(12)

wam	*itno*	*hiyap*	*tu=en*	*ambol=mu*	*wat-tuk.*
pig	DET	woman	DEM=ERG	back=LOC	hit-PROG

'The woman is hitting a pig on the back.' (Riesberg 2018:19)

Some authors point out that PAV order is in turn conditioned by discourse-pragmatic factors, such as topicalization of the P (placed initially) and/or focus on A (placed pre-verbally). In such cases, the ergative marking does not follow from the PAV syntax: it is rather the case that both PAV syntax and ergative marking follow from the discourse-pragmatic constellation (focused A and/or topicalized P). For example, Scott (1986:169) notes that ergative marking on A in Fore is obligatory in an PAV clause with a topicalized P. The common phenomenon of obligatory placement of a focused constituent in the immediately pre-verbal position, combined with automatic ergative marking on focused A, is described for Western Dani (Donohue 2005), Kaluli (Rumsey et al. 2013:138) and Korafe (Farr 1999:103). Conversely, Ku Waru and Duna are two languages in which PAV order shows no association with ergative marking of A (Rumsey et al. 2013), and in these languages there is also no association between focus and the immediately pre-verbal position in the clause (see San Roque 2008:122, Rumsey et al. 2013:149).

Focus (and associated notions such as rhematicity, emphasis, contrast, salience etc.) is probably the most commonly invoked explanation for the use of optional ergatives in the Papuanist literature. In addition to the languages just mentioned

(with PAV order triggered by focused A), focus also features in the descriptions of optional ergatives in Folopa (Anderson and Wade 1988:13), Siane (Potts and James 1988), Kesawai (Priestley 2019:407), Waskia (Ross and Paol 1978:36), Kâte (Suter 2010), Ma Manda (Pennington 2016:228), Nungon (Sarvasy 2014:424) and Motuna (Onishi 2004). The delineation and identification of constituent focus in natural language data is admittedly not a straightforward task, and authors often mention easily identifiable contexts such as replacive and corrective focus ('it was not X, but Y who did it')[9] and interrogative phrases in questions,[10] but also appeal to more general notions of emphasis and highlighting, which are difficult to compare across languages.[11] The examples in (13a–b) illustrate two clear instances of focused A-arguments in Kâte. In (13a), the 1sg subject is in the scope of the restrictive focus particle *sawa* 'only', with which ergative marking on A is strongly preferred. In (13b), the interrogative 'who?' is in the A role; in this example, ergative marking is obligatory.

(13) a. *No-ni* *sawa* *mu-pe* *murâ* *biaŋne* *mi* *e-ocmu.*
1SG-ERG only say-1SG.DS if good not become-FUT.3
'If I tell it alone, it won't be good.' (Suter 2010:432)

b. *Go* *mo-zi* *gaza-jec?*
2SG who-ERG tell.thee-NPST.3SG
'Who told you?' (Suter 2010:434)

Animacy of the A and/or P can affect ergative case marking in several ways. The most straightforward correlation between animacy and ergative marking is that in many languages, an NP in the A role requires ergative marking if its referent is inanimate, as in Fore (Scott 1986:170), Kesawai (Priestley 2019:406) and Korafe (Farr 1999:87); or if it is non-human, as in Waskia (Ross and Paol 1978:37). Ergative marking of the A may also be required whenever the P is animate (as in Kaluli; Rumsey et al. 2013:138) or human (as in Tauya; MacDonald 1990:7). Finally, Anderson and Wade (1988:13), describing Folopa, and Donohue (2005:184), describing Western Dani, identify the relative animacy of A and P as a triggering factor: the ergative case is used when the animacy of A is lower or equal to that of P.

Features relating to agentivity, such as volitionality, intent and control over the event, are less commonly mentioned as triggers for ergative marking than

[9] See e.g. Aiton (2016:360) on Eibela, Anderson and Wade (1988:13) on Folopa, and Suter (2010:430) on Kâte.

[10] The obligatory use of ergative marking on the interrogative pronoun 'who' in the A (and often, S) role is an easily spotted commonality among many Papuan languages with optional ergatives (e.g. Ekari (Drabbe 1952:28), Yaqay (Olsson, this volume), Wiru (Kerr 1967:52), Kesawai (Priestley 2019:411), Ma Manda (Pennington 2016:229), Kâte (Suter 2010:434), although it should be noted that there is no agreement on whether interrogative phrases are truly 'in focus' among theoreticians of information structure.

[11] Riesberg (2018) employs the even broader notion of 'discourse prominence' in her discussion of the Yali optional ergative, because both focus and (contrastive) topic can trigger ergative marking in Yali (2018:33). We note that the examples of ergative-marked topics in Yali come from elicited data, which is perhaps related to the fact that optional ergative marking is especially frequent in elicited sentences.

the previously mentioned factors. Early mentions are for Folopa (Anderson and Wade 1988:9) and Fore (Scott 1986:172); see also the discussion in Foley (1986:108). The observation that ergative case can express the semantic difference between e.g. intentional laughing (with an ergative-marked S) and uncontrolled laughing (without ergative case) is clearly related to the interest in 'split-S' alignment that flourished from the late 1970s onwards. Agentivity also reappears in more recent descriptions of ergativity in e.g. Yonggom (Christensen 2010:9), Yali (Riesberg 2018:34), Tayap (Kulick and Terrill 2019:118) and Nukna (Taylor 2015:188). Though this is interesting, the reliance on elicited and/or cherry-picked example sentences in some discussions of agentivity and ergative case is problematic, so the importance of this function of ergative marking in Papuan languages remains an open question.

2.3.4 Ergative marking of intransitive S

Optional ergatives are occasionally found on the S of intransitive clauses in many Papuan languages. Corpus counts for the occurrence of ergative marking on S suggest that this is present only in a small portion of overt S-arguments: 4% in Yali (Riesberg 2018:25), 5% in Duna (Rumsey et al. 2013:167), 10% in Yonggom (Christensen 2010:28), 12% in Ku Waru (Rumsey 2010:1667), and 12% in Fore (Donohue & Donohue 1997:96). The low corpus counts make it likely that ergative marking of S is underreported in the descriptive literature, as grammarians may prefer to disregard such 'untidy' aspects of grammar. Ergative marking on S is likely more frequent in natural discourse than in elicited data. For Duna (Rumsey et al. 2013:167) it is reported that speakers judge isolated sentences with ergative-marked S as infelicitous, but ergative S is found in contrastive contexts in textual data, as in (14).[12]

(14) *na* *ngui=na* *ri-tia.*
1SG.ERG go.PRS=SPEC say-PFV.VIS.PREVIOUS_EVIDENCE
'"Now *I* am going" [the cat] said.' (Rumsey et al. 2013:167)

Another context in which optional ergative marking might spread to non-A roles is in sequences of tightly-knit verbs, in which the ergative marking seemingly occurs with the S of an intransitive verb, but which rather should be understood as the A of a transitive combination of verbs. This is illustrated in the Numanggang clause in (15), in which the ergative-flagged 'mother' has the double role of S of 'come' and A of 'bring'. See also Farr (1999:104) for a similar example from Korafe.

(15) ... *Maŋ-di* *bu-ŋa* *na-nagi-la* *Mutu-de* *u-gumut.*
mother-ERG come-SS 1SG.P-bring-SS Mutu-DEST go-DP.1DU
'...and Mother came and brought me to Mutu.' (Hynum 2010:138)

[12]The source describes the context as follows: "two animals are trying to retrieve a magic object from an enemy. One of the animals has already tried and failed; now the other states that he is going to make an attempt." (Rumsey et al. 2013:167).

Another context in which optional ergative flagging targets a non-A (or at least a non-typical A) is in the framing of reported speech, in which ergative case is added to the expressions referring to the quoted speaker (i.e. *Mary*-ERG *said:* '…'). Ergative marking on the subject of reported speech expressions has been described for Yonggom (Christensen 2010:37), Ku Waru (Merlan and Rumsey 2001, Rumsey 2010) and Numanggang (Hynum 2010).

The occurrence of optional ergative case on intransitive S is frequently mentioned as a reason why authors prefer to avoid the ergative label.[13]

2.3.5 Polyfunctionality of ergative case flags

Outside argument flagging, ergative case markers often have other functions, such as indicating instruments or ablative source (e.g. McGregor 2009:482). Ergative-instrumental polyfunctionality is the most common pattern in the sample (found in 12 of the 23 languages with ergative flagging), exemplified by e.g. Wiru *-me* 'ERG, INSTR' (Kerr 1967:73), Toaripi *-sa* 'ERG, INSTR' (Brown 1973:320), Motuna *-ki* 'ERG, INSTR, LOC' (Onishi 2004), Kâte *-zi* 'ERG, INSTR' (Suter 2010:436), or the quite multifunctional Ekari *-ka* 'ERG, INSTR, ABL, POSS (a.o.)' (Doble 1987:68, Drabbe 1952:7). Sometimes there is partial homophony, as with the Yélî Dnye (isolate) Ergative *ngê*, which is conflated with the Instrumental in the singular, but not in the plural (Levinson 2022:155).

Among the languages with ergative cases that are separate from the instrumental, we find conflation with locative or possessive cases. Locative-ergative polyfunctionality typically involves ablative 'from', as with Ma Manda *=lû* (Pennington 2016) and Nggem *=en* (Etherington 2002:34).

Polyfunctionality involving possessive (i.e. genitive) and ergative functions (e.g. Fasu *-mo* 'ERG, POSS'; Loeweke and May 1980) has an interesting areal distribution. It is found in several isolates and unrelated families in the southern slopes of the Cordillera, e.g. Fasu (isolate) and in the East Strickland, Bosavi and Teberan families. In the adjacent Highlands it also occurs in some Kainantu-Goroka languages such as Yagaria (Renck 1975:35). Further afield, ergative-possessive polyfunctionality occurs, albeit marginally, in Motuna kinship possessives (Onishi 2004:94). "Dedicated" ergative cases, displaying no polyfunctionality, are found in the Yam languages (such as Komnzo; Döhler 2018:140), and in the isolates Tayap (Kulick and Terrill 2019:109) and Kaki Ae (Clifton 1997:22).

2.4 Split-S flagging

Split-S in case marking is rare cross-linguistically, but is found in the Border family, in Imonda (Seiler 1985) and Waris (Brown 1988:55). These languages, like many other languages of the northern lowlands, exhibit differential object marking (see §2.2.2), and extend the Dative case (*-m* in Imonda and Waris) to transitive P under some circumstances. The Dative case also occurs on the S-argument of a subset of intransitive verbs, e.g. Imonda verbs with meanings such as 'die', 'fall',

[13] Other labels encountered in the Papuanist literature are e.g. Agentive (in Nukna; Taylor 2015), Nominative (in Ma Manda; Pennington 2016), Subject Marker (in Waskia; Ross and Paol 1978:36), Prominent Noun Phrase (in Kesawai; Priestley 2019).

Language	Affiliation	Marker	Type	Other functions	Source
Korafe	Binand.	*-imi*	Optional	INSTR	(Farr 1999)
Eibela	Bosavi	*-jɛ:*	Optional	LOC	(Aiton 2016)
Kaluli	Bosavi	*-jɛ*	Optional	POSS, INSTR	(Rumsey et al. 2013)
Ku Waru	Chimbu-W.	*-n(i)*	Optional	INSTR	(Rumsey 2010)
Umbu-Ungu	Chimbu-W.	*=ne*	Optional	INSTR	(Head 2011)
Nggem	Dani	*=en*	Optional	ABL	(Etherington 2002)
Yali	Dani	*=en*	Optional	ABL, INSTR, a.o.	(Riesberg 2018)
Konai	E. Strickl.	*-hã*	Optional	POSS	(Årsjö 2016)
Toaripi	Eleman	*=sa*	Optional	INSTR	(Brown 1973)
East Kewa	Enga-K.-H.	*-me*	Non-opt.	INSTR	(Yarapea 2006)
Enga	Enga-K.-H.	*-mé*	Optional	INSTR	(Lang 1975)
Kâte	Fin.-Huon	*-zi*	Optional	INSTR	(Suter 2010)
Ma Manda	Fin.-Huon	*=lû*	Optional	ABL	(Pennington 2016)
Nabak	Fin.-Huon	*-aŋ*	Optional	INSTR	(Fabian et al. 1998)
Numanggang	Fin.-Huon	*-di*	Optional	INSTR	(Hynum 2010)
Bauzi	Geelvink B.	*-t*	Optional	INSTR, CAUSE	(Briley 1997)
Duna	isolate	*=ka*	Optional	INSTR, LOC	(Rumsey et al. 2013)
Fasu	isolate	*=mo*	Optional	POSS	(Loeweke and May 1980)
Kaki Ae	isolate	*-ro*	Optional	none	(Clifton 1997)
Tayap	isolate	*=(y)i*	Optional	none	(Kulick and Terrill 2019)
Wiru	isolate	*-me*	Optional	INSTR	(Kerr 1967)
Yélî Dnye	isolate	*=ngê*	Non-opt.	none	(Levinson 2022)
Fore	Kainantu-G.	*-ma*	Optional	POSS	(Scott 1986)
Siane	Kainantu-G.	*-kafo*	Optional	INSTR	(Potts and James 1988)
Yagaria (Hua)	Kainantu-G.	*-mú*	Optional	none	(Haiman 1980)
Yagaria (Move)	Kainantu-G.	*-ma'*	Optional	POSS	(Renck 1975)
N.E. Kiwai	Kiwaian	*-ro*	Optional	none	(Clifton 1990)
Ama	Left May	*-yo*	Optional	INSTR	(Årsjö 1999)
Kesawai	Madang	*=te*	Optional	INSTR	(Priestley 2019)
Mauwake	Madang	*-ke*	Optional	none	(Berghäll 2015)
Tauya	Madang	*-ni*	Optional	INSTR	(MacDonald 1990)
Siroi	Madang	*-nge*	Optional	ABL	(Wells 1979)
Eipo	Mek	*=arye*	Optional	INSTR, ABL, a.o.	(Heeschen 1998)
Nimboran	Nimboran	*=ne*	Optional	INSTR, LOC	(Anceaux 1965)
Yonggom	Ok	*-bed*	Optional	INSTR, LOC	(Christensen 2010)
Ekari	Paniai L.	*=ka*	Optional	INSTR	(Doble 1987)
Motuna	S. Bougain.	*-ki*	Optional	INSTR a.o.	(Onishi 1994)
Folopa	Teberan	*-né*	Optional	POSS	(Anderson and Wade 1988)
Komnzo	Yam	*=f*	Non-opt.	none	(Döhler 2018)
Ngkolmpu	Yam	*-w*	Non-opt.	none	(Carroll et al. 2016)
Nmbo	Yam	*=m*	Non-opt.	none	(Kashima 2020)

Table 1: Some languages with ergative case marking

'slip', 'tremble', 'rot' (Seiler 1985:147), i.e. typical patientive verbs. The P-aligned status of S is also seen below in the use of the Imonda Dual suffix *-ual* (16a), which otherwise marks dual objects, and in the use of the Immediate Future suffix *-i* to form an imperative (16b), instead of the standard imperative suffix *-u*. The same suffix *-i* would be used in 3rd person commands ('Let her go, she may go', Seiler 1985:98; see also Olsson 2021a:303 for the use of 3rd person commands with Coastal Marind patientive verbs).

(16) a. *ehe-m* *iaha-ual-fan.*
3-DAT die-DU-PERF
'They (2) have died'

b. *ne-m* *iaha-i!*
2-DAT die-IMM.FUT
'Die!' (Seiler 1985:146)

2.5 Indexing of S/A and P on the verb

The majority of Papuan languages index at least one argument on the verb, and indexing is geographically widespread in the Papuasphere, as can be seen in Figure 2. Indexing of both arguments of a transitive clause on the verb is common, found in 33 of the languages in our sample, or 53%. In this regard, Papuan languages are similar to the languages of Australia and North America, where indexing of A+P is common (Siewierska 2013b). In our sample, only 14 languages (23%) lack participant indexing (similar to the global rate of 24% in Siewierska 2013a), and these are found e.g. in the Bird's Head (Abun, and in the Konda-Yahadian family), in the Lakes Plain family, in many groups of the wider Sepik area (Border, Sepik languages such as Ambulas, the Ramu subgroup of Lower Sepik-Ramu), in some groups of the southern slopes of the cordillera (Bosavi and Kamula-Elevala languages, Teberan), and in the Kolopom and Eleman families of the New Guinea south coast. Languages that index S/A on the verb, but not P, make up the same proportion of our sample (21%); this is found in most other Bird's Head languages, and is not uncommon in TNG groups (e.g. Greater Awyu, Enga-Kewa, Madang). The reverse situation, where only P is indexed, is quite rare (3 sampled languages, 5%), and confined to the peripheries of the Papuasphere: the Solomon Islands (Savosavo), Cenderawasih Bay (Saweru), and the Timor-Alor-Pantar languages (e.g. Teiwa).

2.5.1 Loci of indexing

There is a clear tendency in Papuan languages to index S/A arguments post-stem, by means of suffixes or enclitics. In 61% of the languages in our sample[14], S/A indexes follow the verb stem, opposed to 28% preceding it. The latter option is found in unrelated languages in three areas: in North Halmahera (Tidore), in the

[14]S/A indexing is attested for 46 languages in our sample: 13 via prefix, 28 via suffix. The remaining 4 languages have more complicated patterns of multiple exponence.

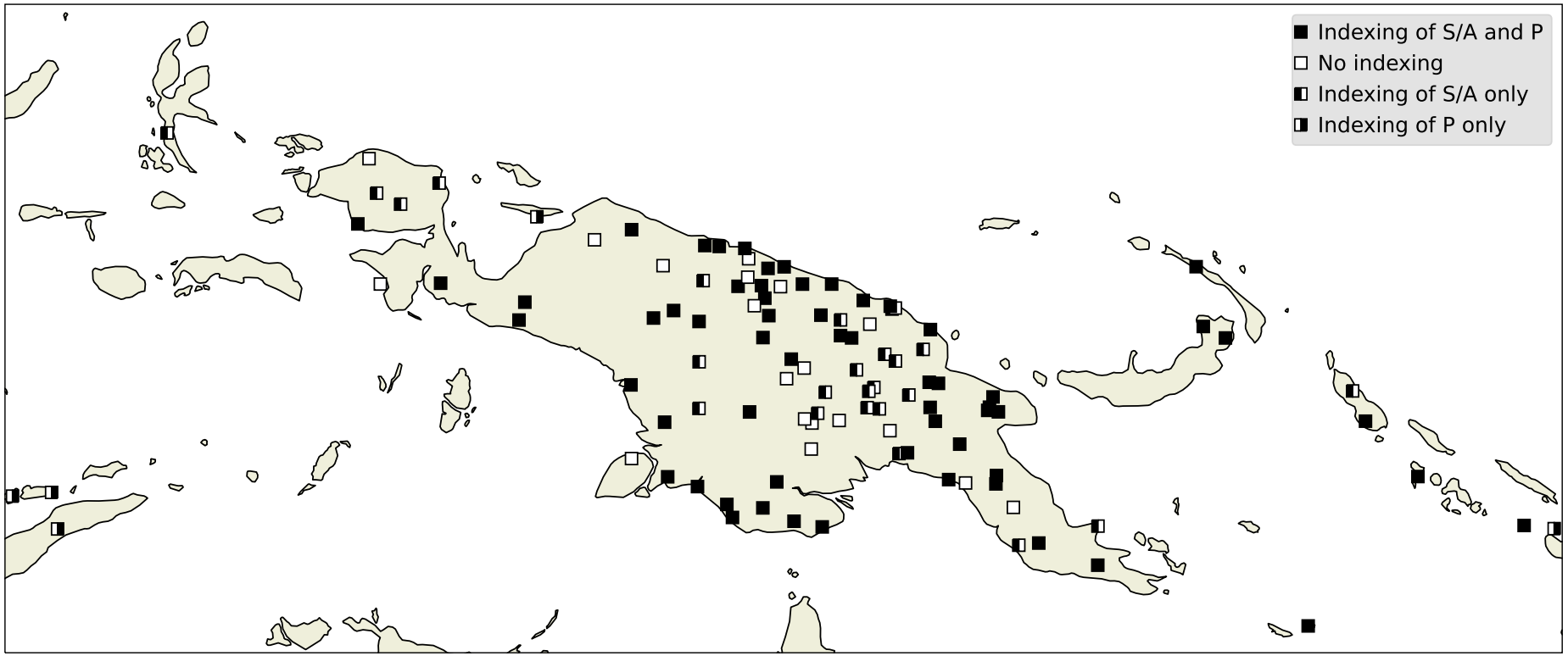

Figure 2: Indexing in Papuan languages

Bird's Head (Hatam, Moskona, Maybrat), and along the Northern Coast (Kwerba, Wutung, Bukiyip). There is no such asymmetry in P-index position: in 53% the index follows the stem, and in 47% the index precedes the stem.[15]

In four languages in the sample, S/A arguments are indexed on both sides of the stem, via multiple exponence. Typically one of the two sites is marginal in the sense that it encodes only a subset of features, or is limited to certain constructions. Thus in Lavukaleve (Terrill 2003), S/A arguments are indexed by prefixes, but there is a special agreement suffix, encoding number and gender but not person, confined to certain focus constructions, and only in present tense (2003:244ff.). Likewise in Inanwatan (de Vries 2004), S/A arguments are indexed by prefixes, but in future tense and for 3rd person only, an additional suffix is used.

In 32 languages in our sample (52%), both arguments of a transitive clause are indexed in the verb. In 15 languages, both arguments occur on the same side with both preceding the stem in 4 languages and both following the stem in 11 languages. The relative ordering of S/A and P indexes shows that S/A rather than P indexes attach to the outer edge of the inflection. This is true for 12 languages, e.g. Kwomtari (Spencer 2008), where the S/A suffix follows the P suffix (17). The opposite structure, with the S/A index closer to the stem, is rarer; confined to 3 languages of our sample. In (18) below, the S/A suffix precedes the P suffix in Manambu (Aikhenvald 2008). This seems to be a cross-linguistic trend, at least when S/A and P are indexed by suffixes (Siewierska and Bakker 1996:149). While this distribution may be caused by diachronic processes specific to the individual language (or language family), there might also be a functional motivation. For example, stem-final changes or stem-adjacent suffixes in languages of the Yam family are polyfunctional in that they express participant number (usually of P), aspect and/or pluractionality. Hence, Yam languages attest that there is a functional overlap between P number and event number, which can be taken as an explanation as to why P indexing occurs closer to the verb stem.

(17) *lufwa-le* *ari-le* *na-te-bule.*
man-GL boy-GL say-3PL.P-2PL.A.IRR
'You (pl) will tell the men and boys." (Spencer 2008:109)

(18) *kuprapə* *ya:b-ad,* *təpə-yakə-tua-d.*
bad road-3SG.M.NOM be.closed-FULLY-1SG.A-3SG.M.P
'It is a bad road, I have closed it off." (Aikhenvald 2008:245)

2.5.2 Lexically restricted indexing of P

P indexing often obeys more complex conditioning factors than indexing of S/A. A few languages have P indexes that are in complementary distribution with a NP expressing the P (so-called pro-indexes; Haspelmath 2013), e.g. the Baining languages Mali and Qaqet (Stebbins 2011:43, Hellwig 2019) and Inanwatan

[15] P indexing is found in 36 languages in our sample: 17 via prefix, 19 via suffix.

(de Vries 2004:36); or P indexes that are optional in the presence of a coreferential NP (as in Yeri; Wilson 2017:403–405). Sometimes, indexing of P depends on pragmatic factors. According to Aikhenvald (2008), P in Manambu (Ndu) can be indexed on the verb if it is more 'topical' than the A; the suffixes used for P may even index non-arguments under the right pragmatic conditions (Aikhenvald 2008:61–67). Here we take a closer look at a conditioning factor that has received special attention in the Papuanist literature: lexically restricted indexing of P, in which only a (more or less arbitrary) subclass of transitive verbs index P.

Lexically restricted indexing of P has been discussed extensively in connection with TNG languages (Suter 2012, 2018; Windschuttel 2018). Several subgroups of the putative TNG family have P prefixes that resemble the pronominal reconstructed for proto-TNG (e.g. 1SG *n-*, 2SG *g-* or *k-*). In some subgroups, these prefixes also share the peculiarity of only occurring on a very small subset of transitive verbs: this is the case in the Dani languages (e.g. Nggem, with 4 prefixing verbs; Etherington 2002:113), in the Huon languages (between 1 and 22 verbs depending on the language; Suter 2018:21), and in Mian (7 verbs; Fedden 2011:265), although it is unclear if this situation holds in other Mountain Ok languages (Fedden 2020); it does not seem to be attested anywhere else in the Asmat-Awyu-Ok subfamily of TNG. In Ipiko, a handful of verbs (including 'see' and 'give') have stems that show the typical TNG prefixes (Zurab Baratashvili, pers. comm.), but this pattern does not seem to be representative of other subgroups of Anim: in Coastal Marind, object affixing is found on ca. 50% of verb stems (Olsson 2021a:224), whereas Yaqay lacks person indexing of objects altogether (Olsson, this volume).

Looking further afield, one finds considerable diversity in the patterning of the inherited TNG P prefixes. For example, in Yagaria, most transitive verbs take P prefixes, but a smaller class (including 'take', 'take off', 'look after', 'cover', 'wrap'; Renck 1975:138) requires an auxiliary to carry the P prefix. This is the opposite situation from Dani and Mian, where the majority of transitive verbs do not allow prefixing. Prefixing of P in the Timor-Alor-Pantar involves complicated conditions and lexical restrictions that vary considerably from one language to another, and often extends to index the S of many intransitive verbs (see §2.6), a state of affairs very unlike that of Highlands TNG languages such as Dani and Mian. The Madang languages have lost the reflexes of the TNG pronominals, but in e.g. Mauwake the (innovated) set of P prefixes are restricted to only 5 verbs (Berghäll 2015:162), just like in more conservative languages like Dani. Lexically restricted P indexing can also be found outside the TNG languages, e.g. in Wutung (Marmion 2010:292), in which only two simplex verbs index P, 'hit' and 'get' (plus 7 compound verbs with P indexing; Marmion 2010:330) and in Kilmeri (Gerstner-Link 2018:386), which has 13 verbs indexing P or R. Patterns in the conditioning of P indexing in Papuan languages is a fascinating and largely open question. See Windschuttel (2018) for a discussion focussing on TNG languages.

2.5.3 Person-based splits and hierarchical indexing

Systems of participant indexes often show multiple alignment types depending on the person. The typical situation is that 3SG is zero-marked (i.e. neutral alignment), whereas 1st and 2nd person S/A participants are marked by overt affixes (i.e. nominative-accusative alignment). More interesting splits have been described for Ama (Årsjö 1999) and for the languages of the Lower Sepik family (e.g. Yimas; Foley 1991), whose indexing systems also involve reference to a person hierarchy.

In Ama, 1SG/PL and 3PL arguments in a transitive clause are indexed by means of separate suffixes for the P and A roles, as in (19). In intransitive clauses with agentive verbs such as 'come', the sole participant is indexed by the same suffix series as the transitive A (19b). But with patientive verbs such as 'die', the S is indexed by the same suffix as transitive P (19c), so Ama alignment of 1SG/PL and 3PL is split-S, with the coding of S based on the semantics of the verb (see further §2.6). The 2nd person makes no role distinction, and indexes any argument by the same suffix, compare *to-mano-**ni*** (PRES-go-2SG) 'you (sg) are going' and *usukuno-ki-**ni*** (fall-REM.PST-2SG) 'You (sg) fell' and *tukolo-i-**ni*** (kill-FUT-2SG) '[they] will kill you' (Årsjö 1999:20, 84, 102); this gives the unusual combination of neutral alignment with non-zero affixes in the 2nd person.

(19) a. *t-aliyoni-moko-no.*
PRES-call-1PL.P-3PL.A
'They are calling us.' (Årsjö 1999:56)

b. *to-ti-noki.*
PRES-come.PL-1PL.EXCL.A
'We (excl.) are coming.' (Årsjö 1999:52)

c. *to-kolikali-moko.*
PRES-die.PL-1PL.P
'We are dying.' (Årsjö 1999:56)

The 3SG affixes are split according to gender: Masculine is always zero (so neutrally aligned), while arguments in the Feminine and Compound genders can be indexed by suffixes, but only in the P and S roles (without any split according to agentivity, unlike 1st person and 3PL), i.e. the two non-Masculine genders exhibit ergative-absolutive alignment. This triply aligned system (with neutral, split-S, and ergative alignment of indexing) additionally comes with a set of bivalent portmanteau suffixes for certain participant constellations (e.g. *-nukuwo* '1.A>2PL.U). This intricate system is completely unique in the Papuan context, and one wonders what other systems are found in the rest of the almost completely unknown Left May family.

Lower Sepik languages have the most complex indexing systems of all Papuan languages (surprisingly, the languages of the other Sepik-Ramu branch, namely Ramu, lack indexing on the verb). The systems of three Lower Sepik languages have been described in detail: Yimas (Foley 1991:193–235), Kopar (Foley 2016:278–286, Foley 2022), and Murik (Foley 2016:271–278); see also the overview in Foley

(2018:216–220). Verb indexing distinguishes the three roles S, A and P, but different person-number combinations distinguish and conflate different roles, giving rise to different alignments. In the third person, the S and P are indexed by one prefix (e.g. Yimas *na-*), and A another (Yimas *n-*), i.e. ergative alignment, whereas the 1st and 2nd person group different person-number combinations either in a tripartite pattern (e.g. Murik 1sg S *ma-*, A *a-*, P *ŋa-*) or in a nominative-accusative pattern (Murik 1pl S+A *e-*, P *ŋe-*). Affix order is not fixed, but regulated according to a person hierarchy (1 > 2 > 3), with the higher-ranking participant placed closest to the verb stem. There are various additional complications, including a competing role hierarchy (P > A), portmanteaux for certain participant constellations (as mentioned above for Ama), and interactions with TAM categories. Foley considers the Lower Sepik indexing systems to be instantiations of so-called direct-inverse alignment (e.g. Foley 2018:217), as found in the Algonquian languages of North America and in Tibeto-Burman languages of the Himalayas. Note, however, that this label fails to do full justice to the Lower Sepik systems, as typical direct-inverse systems involve role-neutral indexes whose functions are disambiguated by the use of special 'inverse' morphology for participant constellations that run counter to the person hierarchy (e.g. 3rd person acting on 1st person; see Jacques and Antonov 2014). The Lower Sepik person indexes are not role-neutral, as we just saw, which makes the indexing unlike typical direct-inverse systems. Yimas lacks inverse morphology, but Foley describes special inverse morphology for Kopar (the prefix *ŋga-*) and Murik (the circumfix *nV-…-ŋa*; Foley 2016:275, 283), which makes these systems more similar to the canonical direct-inverse type.

2.6 Split-S indexing

Indexing systems where the intransitive S exhibits "split" behaviour, and either aligns with the A or P of a transitive verb, are found in several Papuan language families. Split-S has an interesting areal distribution, as it is mainly found in languages spoken on islands off the mainland, i.e. in the Eastern Indonesian and Melanesian archipelagos. On the New Guinean mainland, we only find sporadic examples, e.g. in a few languages of Southern New Guinea (see also §2.4 for split-S aligned flagging in Warisic languages). Papuan languages with split-S show a surprising variety with regards to the factors determining the coding choice of the S argument. We refer to such patterns as split-S here, as other labels found in the literature (agentive-patientive, active, semantic alignment etc.) fail to reflect the diversity of Papuan split-S phenomena.[16] Below, we first consider split-S in-

[16]Various other authors classify other languages as having split-S alignment. Ross (2017) identifies split-S alignment in Meyah, Tayap and Mufian (all on the New Guinea mainland). In Meyah (East Bird's Head), split-S is a rather marginal pattern found with experiential verbs such as 'be sick' and 'be embarrassed', which derive diachronically from two-place expressions of the type 'X approaches Y', e.g. 'embarrassment approaches me', which have univerbated into one-place predicates (Gravelle 2010:16). Aside from these exceptions, Meyah indexing is robustly nominative-accusative, just like the other East Bird's Head languages. Ross classifies the isolate Tayap as split-S, but the data in Kulick and Terrill (2019) clearly shows accusative alignment. The Torricelli language Mufian is also said to be split-S, presumably based on the scant data in Alungum et al. (1978). Siewierska (2013a) classifies West Kewa as split-S, based on the misleading terminology used in Franklin (1971).

dexing in which the conditioning factor is the S-participant's lack of control or volition (§2.6.1), split-S based on the aspectual character of the verb (2.6.2), and finally split-S without any identifiable semantic basis (§2.6.3).

2.6.1 Split-S conditioned by control or volition

We exemplify split-S coding based on the S-participant's lack of control or volition with data from Coastal Marind and Motuna. In Coastal Marind, intransitive verbs whose sole argument is a patient index this participant by means of the stem alternations that usually index the transitive P, while the subject prefixing defaults to 3SG (usually zero). This pattern is attested with at least 31 non-agentive verbs, and includes verbs with the meanings listed in (20a). But is not exceptionless, as shown by the three patientive (or at least not typically agentive) verb meanings listed in (20b). These exceptional verbs behave like standard, agentive, intransitive verbs such as 'dance' (Olsson 2021a:301), which shows that the alignment split is not completely predictable from semantics, although the semantic correlate between patientive/agentive S and alignment in Coastal Marind stands out as unusually straightforward in comparison with other Papuan split-S languages.[17]

(20) a. Some Coastal Marind P-aligned verb meanings (Olsson 2021a:301)
'die', 'fall', 'slip', 'become startled', 'float', 'drown', 'become constipated', 'grow big', 'become dry', 'capsize', 'catch fire', 'lose one's way', 'disappear'

b. Coastal Marind A-aligned non-agentive verbs (Olsson 2021a:301)
'vomit', 'cry', 'yawn'

In Bougainville, split-S has been described in detail for Motuna (e.g. Onishi 1994); see also the discussion of Rotokas in §2.6.3 below. Motuna has a class of 23 intransitive verbs that index the S-argument by means of the object suffixes on the verb (combined with default 3SG subject indexing; Onishi 2000:121). As in Coastal Marind, the P-aligned class consists of non-controlled/non-volitional verbs (21a), while the open, A-aligned verb class is semantically heterogeneous and contains some exceptional verbs with non-controlled semantics (21b).

(21) a. Some Motuna P-aligned verb meanings (Onishi 1994:401)
'agree, want', 'decay', 'be/become full (sated)', 'disagree/not want', 'feel cold', 'hiccup', 'feel shy', 'be/become numb', 'feel painful', 'be/become tasty/sweet', 'be/become lazy', 'be/become afraid'

b. Motuna A-aligned non-agentive verbs (Onishi 1994:403
'fall', 'grow up', 'be/become tired', 'stink'

[17] A complication that arises in the classification of Coastal Marind alignment is that the language uses P-indexing on only about half of its verbs (see §2.5.2), i.e. the language has not only split-S, but also 'split-P'. This means that the 'P-aligned' intransitive verbs are actually aligned with the portion of transitive verbs that index the P. This is a good example of the difficulty in applying broad typological labels without distorting the facts of individual languages.

Outside Coastal Marind (plus other closely related Marindic languages) and Motuna, agentive/patientive split-S is also found in Ama, for which Årsjö (1999:56) cites the three verbs 'die', 'fall' and 'be afraid' as aligning their subject indexing with transitive P. It is interesting to note that P-alignment of verbs meaning 'die' and 'fall' (which are textbook examples of patientive verbs) is vanishingly rare across the Papusphere – despite Papuan languages being famous for their so-called 'experiencer object' expressions (see §2.7).

2.6.2 Split-S conditioned by stativity

Several Papuan languages show split-S alignment in which intransitive verbs with state-like aspectual semantics index the S with P-affixes, whereas dynamic intransitive verbs employ A-affixes (also known as 'active' alignment). As in the case with split-S conditioned by lack of control or volition, which verbs count as stative and dynamic differs between languages and authors (hence the qualification 'state-like'). Clear examples of split-S conditioned by stativity are found in some of the North Halmaheran languages (Holton 2008), which we illustrate here with data from Tobelo (also Holton 2003). Transitive verbs in Tobelo index A and P by means of prefixes, as in *to-mi-ohiki* (1.A-3SG.F.U-wash) 'I washed her'. Dynamic intransitive verbs employ the same A-prefix as transitive verbs (e.g. *to-tagi* 'I go'), whereas stative intransitive verbs such as 'be sleepy' index their sole argument by means of the P-prefix, as in *i-mi-kioko* (3.A-3SG.F.U-be.sleepy) 'she is sleepy' (note the presence of default 3rd person Actor indexing). That the conditioning factor is stativity, and not the control or volitionality of the subject, comes out clearly in the lists of verbs presented by Holton. The A-aligned intransitive verbs include both typical agentive verbs, as in the examples in (22a), and non-agentive verbs, as in (22b); what these have in common is their dynamic aspectual chracteristics. P-aligned verbs, as in (22c), have patientive semantics, but this follows from their stative character.

(22) Tobelo (North Halmahera; Holton 2008:268, 269)

a. Dynamic A-aligned verbs with agentive S
'jump', 'paddle', 'fly', 'run', 'bathe', 'speak', 'dive'

b. Dynamic A-aligned verbs with non-agentive S
'die', 'cry', 'worry', 'yawn', 'snore', 'sneeze', 'laugh', 'vomit', 'drift'

c. Stative P-aligned verbs
'be shivering', 'be asleep', 'be diligent', 'be sick', 'be healthy', 'be numerous', 'be happy', 'be angry', 'be constipated', 'be drunk'

The aspectual basis for Tobelo split-S is reflected particularly nicely in a set of verbs that display 'fluidity', and can alternate between A- and P-aligned indexing, with a concomitant shift between dynamic and state-like meaning. Illustrative examples are *kioko*, with the dynamic meaning 'go to sleep' (A-aligned), and the state-like meaning 'be asleep' (P-aligned); or *lihiti* 'sprain' (A-aligned), vs.

'have a sprain' (P-aligned; see Holton 2008:270 for more examples). Still, the aspectual basis behind the split does not appear to be exceptionless. For example, verbs meaning 'sob' and 'faint' are not state-like (judging from Holton's English glosses), yet index their S by means of the P prefixes, and the verb 'be good' has a stative meaning, yet uses the A-prefixes for its sole argument. Nevertheless, North Halmaheran languages such as Tobelo and Galega provide the clearest instances of aspect-based split-S among Papuan languages.

The aspectual splits found in North Halmaheran languages can be contrasted with the less clear-cut split-S patterns found in e.g. Mali (Stebbins 2011:41), or in the Yam languages of Southern New Guinea. The Yam languages have small classes of intransitive verbs that index the S-argument in the Undergoer prefix, instead of the Actor suffix. Evans (2015) (for Nen), Siegel (2017) (for Nama) and Döhler (2018) (for Komnzo) identify aspectual characteristics as the correlate behind the indexing split, with state-like verbs (such as Nen 'be', 'be wedged', 'be up high'; Nama 'stay', 'be in a heap', 'sleep' etc.) taking the Undergoer prefix. Carroll (2016:137), on the other hand, finds no aspectual basis for split-S alignment in the Yam language Ngkolmpu, and concludes that the Ngkolmpu indexing patterns are largely idiosyncratic and must be lexically specified. Even in Komnzo (Döhler 2018:194), many of the P-aligned intransitive verbs are not truly stative (in a Vendlerian sense; the list includes e.g. 'shout', 'jump', 'forget' and 'grow'), except for 41 stative/resultative positional verbs (e.g. 'be submerged') derived from corresponding caused-position verbs ('submerge'). Compared to North Halmaheran languages, the aspectual basis behind split-S alignment in Yam languages appears to be a tendency rather than a determinant.

Other examples of mainland languages with aspect-based split-S alignment are found in the Arapeshan subgroup of the Torricelli family. In Bukiyip Arapesh, intransitive verbs that index their subject in the suffix (otherwise used for indexing the transitive P) include 'be afraid', 'be ashamed', 'be ripe', 'be strong', 'be heavy', 'shiver' (Conrad and Wogiga 1991:31, 33). The corresponding class in the coastal Bukiyip Arapesh dialect described by Fortune (1942:65–67) is more diverse, and includes e.g. 'slip and fall' (and some of these patientive expressions are actually compounds of the experiential expression type *hunger-hits-me*; Fortune 1942:65), so the aspectual basis of the split is perhaps a matter of degree in this group.

2.6.3 Split-S without semantic basis

In addition to splits based on agentivity and aspect — which, as we have just seen, are often tendencies rather than rules — we find split-S systems without any discernable semantic basis at all (e.g. Ngkolmpu, §2.6.2), or involving multiple semantic subpatterns, each of limited generality. In the extreme case, a split-S system without semantic basis effectively amounts to a system of two arbitrary inflectional classes, one A-aligned, the other P-aligned. Here we will take a brief look at such systems from the extreme ends of the Papuasphere: in the TAP languages (e.g. Fedden, Brown, Corbett, et al. 2013, Fedden, Brown, Kratochvíl, et al. 2014, Walker et al. 2023; cf. §2.5.2), and in Rotokas.

As the indexing of P is itself split (as in Coastal Marind), the label 'P-aligned' does not do justice to the facts of prefixing intransitive verbs in the TAP lan-

guages. A further complicating factor is that some TAP languages have multiple series of P-prefixes, which are variously analyzed as providing fine semantic distinctions (as in Abui; see Kratochvíl and Saad, this volume) or simply as constituting arbitrary inflectional classes (as in Kamang; Schapper 2014).

Some TAP languages, such as Abui and Kamang, have been claimed to have semantically based split-S (e.g. Fedden, Brown, Corbett, et al. 2013:40), but despite considerable scholarly efforts there appears to be no agreement on the basis for the splits. Consider indexing of S in Kamang. In (23), we list examples of verbs with state-like meanings that are P- and A-aligned respectively (23a–b), and in (23c–d) verbs with non-volitional, patientive meanings with P- and A-alignment. These are clearly not semantically aligned, and as we are unable to see any other semantic patterns among other Kamang verbs, it seems the split-S in Kamang (and perhaps in other TAP languages) lacks a semantic basis and is simply arbitrary.

(23) Some Kamang intransitive verbs (from Schapper and Manimau 2011 and Fedden, Brown, Kratochvíl, et al. 2014)

a. State-like, P-prefixing:
-maitan 'hungry', *-laita* 'shy', *-biee* 'angry', *-beei* 'can, be able', *lai* 'happy'

b. State-like, no indexing:
kawaa 'bent, curved', *faatei* 'cold (of people)', *ilukui* 'itchy', *paisang* 'bright', *sing* 'unhappy'

c. Patientive, P-prefixing:
-bo'ra 'die (of humans)', *-ook* 'shiver', *-iwei* 'vomit', *-tan* 'collapse', *-pan* 'forget'

d. Patientive, no indexing:
ipaa 'die (animals, plants)', *kawaila* 'fall', *fasinta* 'sneeze', *saara* 'burn'

Let us now consider Rotokas, whose split-S phenomena have been dealt with in depth by Robinson (2011). The verbal morphology of Rotokas involves two sets of suffix series (used to index subjects and to mark TAM). Transitive verbs always use one series, labelled β, as in *kopa-**re-va*** (swallow-3SG.M$_{\beta}$-REM.PST$_{\beta}$) '(the crocodile) swallowed (her)'. Most intransitive verbs also take the β-series of suffixes (e.g. *tori-**re-va*** [run.away-3SG.M$_{\beta}$-REM.PST$_{\beta}$] 'he ran away'), but a large portion of intransitive verbs take a different series, the α-series (e.g. *ava-**ro-epa*** [go-3SG.M$_{\alpha}$-REM.PST$_{\alpha}$] 'he went'). Rotokas does not index P on the verb, so one cannot say that some S-arguments are P-aligned, rather the indexing is A-aligned (using the β-series from transitive verbs) or non-A-aligned (using the α-series). The fact that the A-aligned class is much smaller (with 66 attested verbs) than the non-A-aligned class (385 attested verbs; Robinson 2011:163) is another important difference from more typical split-S systems, in which the non-A-aligned class is always much smaller than the other class of intransitive verbs.

Robinson shows that there is some systematicity to the Rotokas α- and β-patterns. For example, intransitive verbs derived throught the use of valency-reducing morphology (such as the Reflexive-Reciprocal prefix *ora-*) always take

the α-series (e.g. *ora-tario-pa-a-i* [RR-chase-CONT-3PL$_\alpha$-PRES$_\alpha$] 'they are chasing each other'; Robinson 2011:193–195). Another (more limited) tendency is that among motion verbs, those that encode manner of motion ('swim', 'limp', 'fly') occur with the β-series, whereas those that are unspecified for manner ('go', 'return', 'enter') occur with the α-series (Robinson 2011:211).[18]Apart from such tendencies, the overall picture that emerges is that Rotokas intransitive verbs fall into two inflectional classes without any semantic basis (although valency changing constructions reveal that the α- and β-patterns are correlated with valency in other parts of the system).

The indexing systems surveyed in this section provide a good illustration of the diversity that can hide behind a broad typological label such as 'split-S'. The many facets of split-S in Papuan languages make this an interesting testing ground for theories about the diachrony of alignment and the impact of language contact (especially, perhaps, with Austronesian languages) on alignment.

2.7 Polyvalent experiencer expressions

A particularly interesting clause type with regards to alignment is what we here refer to as *polyvalent experiencer expressions*, by which we mean constructions that express bodily and mental phenomena that affect humans and other sentient beings, such as emissions (sweating, bleeding), sensations (pain, hunger), emotions (anger, happiness) and cognitive processes (forgetting, dreaming), and which involve at least two nominal expressions, one of which denotes the animate experiencer, the other the associated condition (or cause). The presence of an additional nominal is what distinguishes these expressions from patientive intransitive verbs, as discussed in the sections on 'split-S' (§2.4, §2.6). It is clear that polyvalent experiencer expressions are very widespread in Papuan languages, but it is impossible to estimate whether they are present in all areas and families, and to what degree they are a central part of a language's lexicon – we leave this for future investigation.[19]

The verb in polyvalent experiencer expressions is often semantically 'light' (i.e. meaning simply 'do' or 'affect'; see Riesberg and Olsson, this volume), but may also be semantically specific (e.g. 'feel hunger', 'hit/kill'). Some languages also have a smaller number of trivalent expressions, adding e.g. a noun denoting a body part (see e.g. Pawley, Gi, et al. 2000:165 and Olsson 2021a:447 for expressions of the shape 'me stomach rumbling.noise does'). Here we restrict the discussion to bivalent expressions, which are more common.

That Papuan languages are often interesting in this regard has been widely known since Foley's discussion of Kalam data from Pawley (Foley 1986:121–123,

[18]Robinson's criteria for determining whether a motion verb encodes manner seem somewhat unclear, however, as the set of β-verbs includes 'descend', 'enter jungle', 'go to garden', 'go into, penetrate', 'stop', 'run away, flee' and 'appear, come out', none of which appears to have a clear manner component, judging from their English glosses.

[19]We note that European languages often use one-place expressions for this domain (e.g. 'sweat', 'be hungry'), with the main examples of polyvalent expressions being limited to transitive possessive constructions ('have pain' etc.). For languages of the Pacific region, polyvalent experiencer expressions are also found in Australian languages, e.g. Murrinhpatha (Walsh 1987) and Iwaidja (Evans 2004), and in some Oceanic languages of Vanuatu, e.g. Mwotlap (François 2005) and Daakaka (von Prince 2017).

190–194), which Pawley later developed into a detailed study of the semantic and grammatical parameters of such constructions (Pawley, Gi, et al. 2000). Pawley divides bivalent experiencer expressions in Kalam into *subject-* and *object experiencer* types, according to whether the experiencer exhibits the morphosyntactic properties of the A or P of a standard transitive clause, respectively.

We discuss various argument properties in §2.7.1–2.7.3, and show that a typical pattern is that the experiencer shares morphological properties (such as flagging and indexing) with the P, but syntactic properties with the S/A. In §2.7.4, we touch briefly on subject experiencer expressions.

2.7.1 Argument flagging

In languages with flagging of A and/or P, we find variation with regards to the flagging of the experiencer and condition NPs, but the most common patterns are that case marking is omitted altogether, or that the condition NP is marked as the A (in ergative languages) or that the experiencer is marked as the P (in marked-accusative languages). As we will see in §2.7.2, the tendency to code the experiencer as P and the condition as S/A also recurs in verb indexing.

Let us first consider languages with (optional or obligatory) ergative case marking. Here, the condition NP may or may not be treated like other inanimate A arguments, which often attract ergative flagging. For Western Dani, Donohue (2005:197) reports that the condition NP cannot be flagged with the ergative case. This is possible in other languages, where the condition NP receives the same case that is otherwise used for canonical subject NPs, as illustrated for Nmbo with the ergative case on *kruvr* 'coldness' in (24).

(24) *kruvr-am* *de* *w-ivo-ø.*
cold-ERG already 1SG.P-finish-3SG.A
'I was cold.' (lit. 'Coldness already finished me.') (Kashima 2020:182)

While nominative-accusative languages are rare among Papuan languages (§2.2.3), one such example comes from Bine. In (25), the condition NP *pita* 'sickness' is flagged with the nominative, while the experiencer NP *iŋga* is flagged with the accusative.

(25) *iŋga-ne* *pita-te* *kie* *dw-omn-ige.*
younger.sibling-ACC.SG sickness-NOM.SG night 3SG.FEM.P-hold-3SG.A
'The younger sister got sick at night.' (lit. 'Sickness held her.')
(Döhler, own fieldwork)

In these languages (and in most constructions discussed in this section) the experiencer is indexed as the P on the verb, which matches the lack of nominative or ergative case on this NP. We are not aware of any exceptions to this pattern, although we would not exclude this possibility (e.g. involving an experiencer under constituent focus, which is a common use of optional ergative flags). A counterexample is perhaps provided by Yélî Dnye, in which a singular experiencer (treated by indexing as the P) is marked by *=ngê*, which is identical to the

ergative, but a separate form in the plural leads Levinson to consider this a distinct 'Experiencer' case (Levinson 2022:301).

Continuing with the flagging of the experiencer, we first note that Papuan languages with generalized accusative flagging of P are not common (see §2.2.1), but it is found in Yelmek (Gregor 2020:275), Suki (van Tongeren 2023:249) and Ende (Lindsey 2019:167). Experiencer expressions in these languages require accusative marking of the experiencer NP, as in (26) from Suki.

(26)

abi=k	*umde*	*baye*	*maga=t*	*rugye-ma-ø-ø.*
father=ACC	also	big	fear=REAL	overcome-2/3SG.P-PST.PFV-2/3SG.A

'Father also got really scared.' (lit. 'Big fear also overcame father.')

(van Tongeren 2023:249)

The experiencer does not show flagging in languages with ergative-absolutive alignment, since the absolutive case is unmarked in all languages of our sample. We note that pronouns in these languages are always drawn from the absolutive set. For example, the Nmbo example above in (24) can be expanded with *ynd* (1SG.ABS) in clause initial position; see also example (32) from Tayap below.

Languages with differential object marking (§2.2.2) differ in their treatment of the experiencer. In Imonda, the experiencer in bivalent expressions such as 'be crazy' (expressed as 'craziness affects me' etc.) patterns with other human Ps and appears with the dative flag *-m* (Seiler 1985:147). The opposite situation is found in Oksapmin and Menya. In these languages, an overt experiencer NP occurs in topic position without the object marking normally found on human Ps, i.e. Oksapmin *=nuŋ* (Loughnane 2009:328) and Menya *=e* (Whitehead 2004:85). Flagging of experiencers is an interesting facet of DOM that we leave for future research.

2.7.2 Argument indexing

The experiencer is almost always indexed by means of P indexes in languages with such marking on the verb. Examples below are from Eipo (27), Kwomtari (28), and Nabak (29). As case marking tends to be rare in Papuan languages, P-indexing is often the most obvious way in which the experiencer is treated as the object of the clause.

(27)

nakina	*taleb-ma-ni-l.*
sickness	seize-DUR-1SG.P-3SG.A:PRES

'I am sick.' (lit. 'Sickness seizes me.') (Heeschen 1998:141)

(28)

gife	*le-o-la-lee.*
hunger	do-1/2SG.P-PRES.DUR-3SG.A

'I am hungry.' (lit. 'Hunger does me.') (Spencer 2008:104)

(29) *kiŋgagat* *n-aik-ge.*
fear 1SG.P-find-3SG.A:PAST
'I was afraid.' (lit. 'Fear found me.') (Fabian et al. 1998:97)

As the condition NP and the S/A indexing on the verb in experiencer constructions are usually invariant 3SG, there is no way of confirming that the condition NP truly is the controller of the S/A index (and not, for example, a non-argument adjunct that triggers default 3SG indexing on the verb). Yaqay (Anim) is a rare language in which the condition NP can be shown to be the controller, as the S/A prefixes reflect gender membership of the condition noun — see examples (11a–b) in the sketch of Yaqay (Olsson, this volume).

Despite the variation found in the coding patterns for experiencer expressions, we may conclude that flagging and indexing overlap to a large degree. The main exceptions to this generalization are languages in which flagging treats the condition NP as A, while indexing treats the experiencer NP as S/A. One such example is Wiru, which marks the condition NP with the ergative case, but indexes the experiencer as the S/A (of the verb 'die, fall ill'), e.g. *niti-me tu-k-u* (cold-ERG die-PRES-1SG.SBJ) 'I am cold' (Kerr 1967:78). A second example is Ku Waru, for which Merlan and Rumsey (2001) describe several clause types. One of these types consists of an ergative-marked condition NP and an unmarked experiencer NP, the latter indexed in the verb. Thus, the coding pattern in the experiencer clause in (30a) deviates from standard transitive clauses in Ku Waru, in which the indexing on the verb tracks the ergative-marked participant, as shown in (30b).

(30) a. *na* *engl-n* *kolkur.*
1SG hunger-ERG die.PRS.PROG.1SG
'I am hungry.' (lit. 'I am dying of hunger.')

b. *na-ni* *kera* *laima-yl* *tud.*
1SG-ERG bird cassowary-DEF hit/kill.PFV.1.SG
'I killed the cassowary.' (Merlan and Rumsey 2001:219)

It should also be pointed out that rather than aligning with the S/A or P, the nominal expressions in polyvalent experiencer expressions may simply lack the coding properties of standard arguments. For Barupu, Corris suggests that condition NPs should "be seen as forming complex predicates with the verb rather than functioning as arguments of it" (2005:110). For Haruai, Comrie (1993) suggests that the experiencer NP has no identifiable syntactic role at all. Example (31) looks at first sight like an object experiencer expression, but *yön* is the intransitive verb 'be hot, cook' (as in 'the vegetables cooked'; cf. transitive *wr* 'cook sth.'), so the experiencer must be regarded as an extraclausal topic, rather than as an argument.

(31) *n* *nayö* *yön-a.*
1SG sun cook-DECLAR[3SG.PRS]
'I am sunburnt.' (lit. 'With respect to me, the sun is hot.')
(Comrie 1993:319)

2.7.3 Syntactic properties

Several descriptions note that the constituent order in experiencer expressions deviates from canonical transitive clauses. In some languages with standard APV order, the animate experiencer occurs initially, giving apparent PAV order. This is witnessed by the Tayap experiencer clause in (32), which has all the trappings of a standard transitive clause (ergative marking on the condition NP, P agreement with the experiencer), except that the experiencer NP is placed in the initial position in which overt S/A arguments usually occur. See also example (30a) from Ku Waru above.

(32) *ŋa* *kandaw=i* *ni-tin.*
1SG.ABS illness=ERG.FEM do-3SG.FEM.A>1SG.P
'I'm sick.' (lit. 'Illness is affecting me.') (Kulick and Terrill 2019:114)

A second syntactic phenomenon that may treat the experiencer as the more subject-like participant is switch-reference, as found in many Highlands languages. In Amele, the switch-reference system does not track the condition NP 'hunger' of the second clause in (33), even though it is indexed as the subject in the auxiliary verb. Instead, the same-subject marker on the medial verb 'come up' tracks the (object) experiencer of the second clause. The same observation has been made for Yagaria (Renck 1975: 144) and Kalam (Pawley et al 2000: 164).

(33) *ija* *bi-bi-g* *wen* *te-i-a.*
1SG come.up-1SG-SS hunger 1SG.P-3SG.A-PST
'As I came up I became hungry.' (lit. 'I came up and hunger did me.')
(Roberts 1987:166)

Other phenomena in which the experiencer NP is indexed as a P, but treated as the S/A by the syntax are e.g. the binding of reflexives in Kesawai (TNG Madang; Priestley 2019:358) and the use of the Coastal Marind 'Orientation' prefixes (Anim; Olsson 2021a:302). The fact that the experiencer NP may show properties associated with S/A, while being identified as the P by morphology, points to the importance of notions such as animacy and topicality for the emergence of syntactic subjecthood (see further Malchukov 2008).

2.7.4 Subject experiencer expressions

Although the typical constellation in Papuan polyvalent experiencer expression is that the experiencer is treated as the P and the condition as the S/A — either by indexing or by case, if not by both — we do find the reverse pattern, with the experiencer patterning with S/A, and the condition with P. These constructions are then subject experiencer constructions, as in 'I experience hunger' or English *I have a headache*.

The only Papuan language known to have this as its dominant option seems to be Dla (de Sousa 2006:321). Pawley, Gi, et al. (2000:176–181) show that subject experiencer expressions appear as a minor pattern alongside object experiencer counterparts in Kalam, and suggest that there are semantic factors explaining why some experiencers are cast as S/A. For example, the non-controlled events of sleeping and dreaming may be conceptualized as controlled activities because of their association with the controlled act of lying down (Pawley, Gi, et al. 2000:181).

Other examples are Coastal Marind 'be afraid', expressed as 'do with fear' (Olsson 2021b:332) with a comitative applicative construction, and Nama 'get angry' expressed as 'become with anger' (Siegel 2023:50), whereby the condition is flagged with the comitative case (*nèkw-afè* anger-COM). Standard transitive clauses are found in Yélî Dnye for 'be happy' which is expressed as 'find joy' (Levinson 2022:304), and Komnzo 'be shocked/surprised', which is expressed as 'grab the shock/surprise' with the condition zero-flagged (as with all absolutive NPs), while the experiencer receives the ergative case (34). The indexing also codes the condition as the P ('shock/surprise' is non-singular) and the experiencer as the S/A.

(34)

yase=f	*kwa*	*zünizüni*	*e-fath-wr-ø.*
animal=ERG.SG	FUT	shock(ABS)	2|3NSG.P-hold-NDU-2|3SG.A

'The animal will be shocked.' (lit. 'The animal will hold the shocks.')

(Döhler, own fieldwork)

The semantic basis underlying subject vs. object experiencer constructions is a fascinating area that has yet to be explored.

3 Alignment in ditransitive clauses

In the final section of this chapter, we survey ditransitive coding patterns. We first look at the most commonly found options in §3.1, before addressing rarer patterns: secundative alignment in flagging (§3.2), tripartite alignment in indexing (§3.3) and indexing of all three arguments in one verb (§3.4).

3.1 Distribution of alignment patterns

We follow recent typological practice (e.g. Siewierska 2003, Malchukov et al. 2010) and refer to the major alignment patterns holding between the recipient (R) and theme (T) in ditransitive constructions, compared to the P of a monotransitive construction, as *indirective* and *secundative*. In indirective alignment, the R is treated differently from the T and the P (e.g. the R takes a dative adposition or case, as in *I gave food to the students*). In secundative alignment, the T is treated differently from R and P (e.g. marked by a special adposition, as in *I provided the students with food*). A third option is *neutral* alignment, i.e. that the R, T and P receive the same marking (typically, being zero-marked). The expression of 'give' has been studied in detail in a sample of 72 Papuan languages by

Reesink (2013). Reesink's study is mostly focused on participant indexing on the verb, whereas we look at both indexing and flagging. A fourth option – absent from our sample – is *tripartite* alignment, in which R, T, and P receive different marking.

Two of the most common patterns of alignment are illustrated by the examples from Abun and Kaki Ae in (35) and (36), with monotransitive verbs in (a) and ditransitive verbs in (b). In Abun, there is no participant indexing on verbs (neutral alignment), but the preposition *nai* flags the R in a ditransitive construction (35b), differentiating it from the zero-marked T (and the zero-marked P in 35a), so alignment of flagging is indirective. In Kaki Ae, there is no flagging of P, T or R (36a–b), so alignment of flagging is neutral. Kaki Ae indexes the transitive P in a suffix on the verb (36a), but in a ditransitive construction it is the R that controls this suffix (as in 36b). This means that the R behaves like the P of a transitive clause, so alignment of indexing is secundative.

(35) Abun (isolate): neutral indexing, indirective flagging

a. *Marinus me kwem.*
Marinus see canoe
'Marinus saw the canoe.' (Berry and Berry 1999:27)

b. *Nggon ne syo suk-ne nai an hi im.*
girl DEM give NOM-DEM to 3SG POSS mother
'The girl gave those things to her mother.' (Berry and Berry 1999:83)

(36) Kaki Ae (isolate): secundative indexing, neutral flagging

a. *Aiparo-ro nao erea-ne-ha.*
pig-ERG 1SG see-1SG.P-3SG.A
'The pig sees me.' (Clifton 1997:21)

b. *Era aiparo oki ofe ini-e-ha.*
3SG pig one 2PL give-2PL.R-3SG.A
'He gave you (pl) one pig.' (Clifton 1997:35)

Alignment patterns in ditransitive constructions in Papuan languages largely follow the tendencies that have been identified cross-linguistically (Haspelmath 2005). A rough comparison between the percentages in Haspelmath's sample of ditransitive alignment systems and those found in our Papuan sample is provided in Table 2. Two noteworthy differences are that neutral flagging is slightly more common in Papuan languages (reflecting the general rarity of flagging of core arguments) and that neutral indexing is considerably less common in Papuan languages (reflecting the commonality of indexing of objects).

In accordance with the cross-linguistic pattern, indirective alignment of flagging (seen in Abun in (35)) is strongly preferred over secundative flagging (which in fact is vanishingly rare in Papuan languages). Within indexing, secundative alignment (seen in Kaki Ae in (36)) is more common than indirective alignment (although both are common). Neutral alignment, which is the overall most common pattern (especially in flagging), was seen in Abun indexing (35b) and Kaki

	Flagging:		Indexing:	
	Haspelmath (2005)	Our sample	Haspelmath (2005)	Our sample
Indirective	53%	44%	15%	19%
Secundative	5%	5%	20%	38%
Neutral	41%	48%	65%	41%
Tripartite	1%	0%	1%	0%

Table 2: Comparison between proportion of ditransitive alignment systems in Haspelmath's (2005) global sample and our 62-language sample

Ae flagging (36b), and is shown for both indexing and flagging in Abawiri (37) and Haruai (38) below.

(37) Abawiri: neutral indexing, neutral flagging

dì *késai* *dȳi* *bòb-i-ro.*
food small person give-INCMP-NPST
'A little food will be given to the people.' (Yoder 2020:448)

(38) Haruai: neutral indexing, neutral flagging

nagö *an* *hön* *yabw-ö!*
2SG 1PL pig show-2SG[IMP]
'Show us the pig!' (Comrie 1993:322)

In languages in which both indexing and flagging is non-neutral, there are two possibilities: either the alignment patterns match, so that e.g. both indexing and flagging are indirective, or the two systems are differently aligned. The second option is the more common and is represented in 10 languages of our sample, all of which have secundative indexing and indirective flagging. This is seen in Komnzo (39) and Eipo (40), which use special flagging for R, but standard object affixes for indexing the R on the verb.

(39) Komnzo: secundative indexing, indirective flagging

nzun *nafa-emoth* *zwä-r-a-th* *fof* ...
1SG.DAT 3.POSS-sister(ABS) 1SG.R-give-PST-3PL.A EMPH
'They gave me their sister (...)' (Döhler 2018:205)

(40) Eipo: secundative indexing, indirective flagging

kilape *an-ak* *areb-ke-ak.*
women 2SG-DAT give-2SG.R-3PL.A-PST
'The women have given it to you.' (Heeschen 1998:173)

Matching indexing and flagging occur in 5 languages, all of which align indexing and flagging indirectively: these are Nimboran, Ama, Tayap, Lavukaleve and Yélî Dnye. Example (41) illustrates indirective flagging and indexing in Lavukaleve. The R is flagged by the postposition *na*, while the verb indexing treats the R differently from P by leaving it unindexed (instead, the first prefix on the verb indexes the T).

(41) Lavukaleve: indirective indexing, indirective flagging

o-tum	*na*	*a-na*	*e-o-ne-ge*	*fi.*
3SG.POSS-husband(M)	M.SG.ART	3SG.M-in	3SG.N-3SG.A-give-ANT	3SG.N.FOC

'... she gave it [the food (=N-Gender)] to her husband.' (Terrill 2003:228)

3.2 Secundative flagging

One source of secundative flagging is serial verb constructions (SVCs) in which the T is introduced by a verb such as 'take' (as in 'take money give father'), i.e. a T-type SVC in the terminology of Margetts and Austin (2007:421). Of the many Papuan languages that make heavy use of SVCs, it appears that few employ SVCs to express 'give sth. to sb.'. An exception is Timor-Alor-Pantar languages, where T-type SVCs are widespread (Klamer and Schapper 2012). The Teiwa example in (42) illustrates the use of the verb 'come' to introduce the T, which is a common option alongside 'take' in the Timor-Alor-Pantar family. The Ulwa example in (43) shows a T-type SVC from the Sepik region.

(42)

Uy	*ga'an*	*u*	*sen*	*ma*	*n-oma'*	*g-an.*
person	3SG	DIST	money	come	1SG-father	3SG-give

'That person gave money to my father.' (Klamer 2010:177)

(43)

Alma	*mï*	*lamndu*	*ma=tï*	*Kongos*	*ma=na-n.*
Alma	3SG	pig	3SG.P=take	Kongos	3SG.P=give-PRF

'Alma gave a pig to Kongos.' (Barlow 2018:286)

Secundative alignment of flagging involving case markers and adpositions is very rare in Papuan languages. Occasional instances are found in Baining languages such as Qaqet and Mali. The Qaqet verb that Hellwig (2019) treats as the most neutral transfer verb (*quarl* 'present sb. with sth.') marks the T argument by means of the purposive preposition *te* (44a), which also occurs in e.g. 'search for X', but note that other verbs used to express transfer show indirective flagging, e.g. 'put' in (44b). Similar variation is found in Mali (Stebbins 2011).

(44) a. *nyi=quarl* *gia=qalat-ki*
2SG.A.NPST=present 2SG.POSS=younger.sibling-SG.FEM
***te**=ama=kontaina-ki=a!*
PURP=ART=container-SG.FEM=DIST
'Give your little sister the container now!' (Hellwig 2019:250)

b. *nyi=rek* *ama=qalun-em*
2SG.A.NPST=hold/put ART=singapore.taro-SG.REDUCED
barek *gi-ia-ka=a!*
BEN 2SG.POSS-other-SG.M=DIST
'Give the half singapore taro to your friend now!' (Hellwig 2019:222)

The rarity of secundative flagging raises an important methodological issue, because there are in fact many languages, particularly in the Sepik region, that use the same case marker to flag the transitive P and the ditransitive R, while leaving T unmarked. Secundative alignment is defined by the identical treatment of P and R, at the exclusion of the T, so according to this definition, many languages of the Sepik should be classified as secundative. A brief look at one language, Dla (of the small Senagi family), which has been claimed to have secundative flagging, will show that this analysis is misleading, and that classifying it as indirective better captures the facts of Dla and similar languages.

De Sousa (2006) describes Dla as having an object case marker *=mbo* that marks the direct object, as in (45a), as well as the R of 'give' (45b), which de Sousa indentifies as secundative alignment (2006:294).

(45) a. *yo* *sihafa* *dia=**mbo*** *hwahwa-aha-hi.*
1 2SG:GEN name=OBJ know-1SG-PRES:CONT
'I know your name.' (de Sousa 2006:306)

b. *Wauni=**mbo*** *seru* *sa-mba-u-ø.*
Wauni=OBJ food give-2SG.A-3SG.P-IMP
'Give all the food to Wauni.' (de Sousa 2006:39)

But the data in (45) abstracts away from the fact that Dla has differential object marking. The use of the clitic *=mbo* in monotransitive clauses such as (45a) is optional, and can have a disambiguating function according to de Sousa (2006:213), e.g. in clauses with two arguments with human referents. Counting the object NPs in the four texts in de Sousa's grammar shows that the use of *=mbo* in natural speech is much rarer there than in his example sentences: of the 52 object NPs that I could identify, 48 (or 92%) were zero-marked. This suggests that rather than an object case, *=mbo* is better understood as a dative flag, whose main role is the flagging of R (this analysis is also provided by Foley 2018:377 in his discussion of the Dla data). The extension of dative cases to mark prominent P arguments is typical of differential object marking in the Sepik region (and elsewhere, cf. Spanish *a*). This means that Dla is better classified as showing indirective alignment with 'give', as R is flagged by the dative case marker *=mbo*, and the majority of P arguments are zero-marked.

3.3 Tripartite indexing

Possible examples of tripartite alignment, in which neither the R or the T is treated like the P, can be found in Dagan languages such as Kanasi (Siewierska 2003:347) and Daga.[20] In Daga, P is indexed by a suffix on transitive verbs, but the verb *-n* 'give' indexes only the R, but in a prefix (46a). however, such prefixation is not found with other ditransitive verbs, such as 'teach', which uses standard suffixing to index R (46b), so it is probably best to consider the prefixation on 'give' a marginal exception rather than a tripartite alignment pattern.[21]

(46) a. *mani* *nu-n-en.*
money 1PL.R-give-3SG.PST
'He gave us money.' (Murane 1974:134)

b. *ne* *oaise* *mame* *wadia-g-ian.*
1SG news this teach-2SG.R-1SG.PRS.DUR
'I teach you this news.' (Murane 1974:135)

3.4 Triple indexing in ditransitive clauses

Triple indexing of all three arguments in a ditransitive clause (i.e. A, T and R) occurs in a few Papuan languages. In Yimas, this occurs with 'give' (47) and the three other basic ditransitive verbs 'tell', 'show' and 'rub on', which index the gender and number of the T in a prefix, and (in the third person) the R by means of a special Dative affix (Foley 1991:208–215, also Reesink 2013:241–243). In Coastal Marind, the generic verb *og* 'give, do' does not index the T (only the R), but more specific ditransitive verbs, such a 'put'-verbs (which are commonly used to express transfer, e.g. 'they put me a jerrycan' etc.) and 'send', illustrated in (48), index person, number and gender of the T by means of stem changes, while the R controls person and number in the Dative verb prefix. Outside transfer verbs, triple indexing is very common in Coastal Marind discourse, as e.g. bene- and malefactors and possessors are indexed along with the P (e.g. 'they hit me the head'). The same pattern of triple indexing in transfer, benefactive clauses, and other similar 3-participant events, is also found in Suki (Evans et al. 2018:728) and Bine (Döhler, this volume).

(47) [...] *tpuk* *ku-mpɨ-ŋa-k-nakn.*
sago.pancake(X) X.SG.OBJ-3DU.AGT-give-IRR-3SG.DAT
'...and they gave him some sago.' (Foley 1991:461)

[20] Haspelmath (2005:12) identifies tripartite indexing in the Border language Imonda, probably based on the use of a classifying prefix on the verb 'give', which tracks shape-based features of the T. We do not consider Imonda to have tripartite indexing, because such classifying prefixes also track the P participant of several non-transfer verbs (e.g. 'hang up'; Seiler 1985:123), so this feature is not unique to the ditransitive T.

[21] The two examples of 'give' in Pappenhagen's sketch of Kanasi (Pappenhagen 1986:110) appear to involve stem suppletion for the recipient, which further underlines the exceptionality of this pattern in the language.

(48) *surat* *mak-o-ikalen* *Simon.*
letter(III) FUT:1.A-3SG.DAT-send:3SG.III.U Simon
'I will send a letter to Simon.' (Olsson 2021a:207)

In Mian, triple indexing occurs with the verb 'give', which indexes the T in a classificatory prefix (reflecting sex- and shape-based features), and person-number of R in a suffix (Fedden 2010). 'Give' in Amele has suppletive stems for person-number of the R (just like a number of other languages of eastern New Guinea; Reesink 2013:235–239) while the T is indexed in a suffix (e.g. *it-ad-ei-a* [give.me-3PL.OBJ-3SG.SBJ-PST] 'he gave me those [pigs]'; Roberts 1998:25). Triple indexing is attested sporadically in other languages, e.g. on the ditransitive verb 'withhold' in Mairasi (Peckham 1982, see also Reesink 2013:244), shown in (49), and in some Torricelli languages, such as Kamasau (Sanders & Sanders 1994:16) and Bukiyip (Conrad and Wogiga 1991:32).

(49) *sika* *nasinggi-om-nai-nambi.*
cat withhold-1SG.SBJ-3SG.DIROBJ-3SG.INDIROBJ
'I prevent him from playing with the cat.' (lit. 'I withhold the cat from him.') (Peckham 1982:80)

4 Conclusion

We close this chapter by mentioning some key issues in Papuan alignment systems for future research.

Firstly, we have seen that optional and differential flagging and indexing (discussed in §2.2.2, §2.3.2 and §2.5.2) are ubiquitous across the Papuasphere, but research on the conditioning factors (let alone issues such as diachrony or inter-community variation) behind these phenomena remains in its infancy. The challenge for the Papuanist community will be to overcome the reliance on simplistic labels and cherry-picked illustrative examples, and embrace the probabilistic understanding of such phenomena that is made possible by work on carefully annotated corpora of naturalistic data.

Secondly, the prevalence of phenomena in specific regions (such as optional ergativity in the Highlands) and across the Papuasphere (such as P-indexing), as well as the relative rarity of certain phenomena (such as nominative-accusative flagging) raises questions about the diachronic and contact dynamics that have given rise to the distributions that we see today. It is interesting to note that all the major phenomena discussed in this chapter show areally skewed distributions, and each of the major geo-physical subregions of New Guinea has some characteristic alignment features (i.e. optional ergatives in the Highlands, lack of case in Wallacea, DOM in the northern lowlands), with Southern New Guinea standing out as the only 'anti-area' in which all types of alignment are found. We hope that the findings in this chapter will stimulate further interest in the origins of such patterns.

References

Aannestad, Aidan, Carl Campbell, and Jody Campbell (2020). *Towards a grammar of the Yale language: taking another look at archived field data*. Ukarumpa: Unpublished Manuscript, Summer Institute of Linguistics.

Aikhenvald, Alexandra Y. (2008). *The Manambu language of East Sepik, Papua New Guinea*. Oxford: Oxford University Press.

Aikhenvald, Alexandra Y. (2015). "Differential case in Yalaku". In: *Oceanic Linguistics* 54.1, pp. 240–269.

Aissen, Judith (2003). "Differential Object Marking: Iconicity vs. Economy". In: *Natural Language & Linguistic Theory* 21.3, pp. 435–483.

Aiton, Grant (2016). "A grammar of Eibela: A language of the Western Province, Papua New Guinea". PhD thesis. James Cook University.

Alungum, John, Robert J. Conrad, and Joshua Lukas (1978). "Some Muhiang grammatical notes". In: *Miscellaneous papers on Dobu and Arapesh*. Ed. by Richard Loving. Workpapers in Papua New Guinea Languages 25. Ukarumpa: Summer Institute of Linguistics, pp. 89–130.

Anceaux, J. C. (1965). *The Nimboran language: Phonology and morphology*. Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde 44. The Hague: Nijhoff.

Anderson, Neil and Martha Wade (1988). "Ergativity and control in Folopa". In: *Language and Linguistics in Melanesia* 19, pp. 1–16.

Arka, I Wayan et al. (2015). "Constructed middles in Marori: an LFG analysis". In: *Proceedings of the LFG15 Conference*. Ed. by Miriam Butt and Tracy Holloway King. CSLI publications, pp. 5–25.

Årsjö, Britten (1999). "Words in Ama". MA thesis. Uppsala Universitet.

Årsjö, Britten (2016). *Konai reference grammar*. URL: `sil.org/resources/archives/65677`.

Barlow, Russell (2018). "A grammar of Ulwa". PhD dissertation. University of Hawai'i.

Berghäll, Liisa (2015). *A grammar of Mauwake*. Studies in Diversity Linguistics 4. Berlin: Language Science Press.

Berry, Keith and Christine Berry (1999). *A Description of Abun: A West Papuan Language of Irian Jaya*. Pacific Linguistics, Series B 115. Canberra: Australian National University.

Bossong, Georg (1991). "Differential object marking in Romance and beyond". In: *New analyses in Romance linguistics*. Ed. by Dieter Wanner and Douglas A. Kibbee. Current issues in linguistic theory 69. Amsterdam: Benjamins, pp. 143–170.

Bradshaw, Robert (2007). *Fuyug grammar sketch*. Data Papers on Papua New Guinea Languages 53. Ukarumpa, Papua New Guinea: SIL-PNG Academic Publications. URL: `https://www.sil.org/resources/archives/23773`.

Briley, David (1997). "Four grammatical marking systems in Bauzi". In: *Papers in Papuan linguistics No. 2*. Ed. by Karl J. Franklin. Pacific Linguistics: Series A 85. Canberra: Research School of Pacific and Asian Studies, Australian National University.

Bromley, Myron H. (1981). *A Grammar of Lower Grand Valley Dani*. Pacific Linguistics: Series C 63. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Brown, Herbert A. (1973). "The Eleman Language Family". In: *The Linguistic Situation in the Gulf District and Adjacent Areas, Papua New Guinea*. Ed. by Karl J. Franklin. Vol. 26. Pacific Linguistics: Series C. Canberra: Research School of Pacific and Asian Studies, Australian National University, pp. 281–376.
Brown, Robert (1988). "Waris case system and verb classification". In: *Language and linguistics in Melanesia* 19.1–2, pp. 37–80.
Carroll, Matthew J. (2016). "The Ngkolmpu language: With special reference to distributed exponence". PhD thesis. Australian National University.
Carroll, Matthew J., Nicholas Evans, I Wayan Arka, Christian Döhler, Eri Kashima, Volker Gast, Tina Gregor, Julia Miller, Emil Mittag, Bruno Olsson, Dineke Schokkin, Jeff Siegel, Charlotte van Tongeren, and Kyla Quinn (2016). *Yamfinder: Southern New Guinea lexical database*. Accessed: August 20, 2017. URL: `http://www.yamfinder.com`.
Christensen, Steve (2010). "Yongkom discourse: ergativity and topic". In: *Papers on six languages of Papua New Guinea*. Ed. by Joan Hooley. Pacific Linguistics 616. Canberra: Research School of Pacific and Asian Studies, Australian National University, pp. 1–39.
Chung, Kyung-Ja and Chul-Hwa Chung (1996). "Kuot grammar essentials". In: *Two non-Austronesian grammars from the islands*. Ed. by John M. Clifton. Data Papers on Papua New Guinea Languages 42. Ukarumpa: Summer Institute of Linguistics, pp. 1–75.
Clifton, John M. (1990). "Case marking strategies in Kope". In: *Work Papers of the Summer Institute of Linguistics, University of North Dakota* 34, pp. 1–19.
Clifton, John M. (1995). "How many Transitivisers are in Kope?" In: *Discourse Grammar and Typology. Papers in honor of John W. M. Verhaar*. Ed. by Werner Abraham, Talmy Givón, and Sandra A. Thompson. Amsterdam: Benjamins, pp. 49–63.
Clifton, John M. (1997). "The Kaki Ae language". In: *Materials on languages in danger of disappearing in the Asia-Pacific Region No 1: Some endangered Languages of Papua New Guinea: Kaki Ae, Musom, and Aribwatsa*. Ed. by Stephen A. Wurm. Pacific Linguistics Series D 89. Canberra: Research School of Pacific and Asian Studies, Australian National University., pp. 3–65.
Comrie, Bernard (1993). "Some remarks on causatives and transitivity in Haruai". In: *Causatives and Transitivity*. Ed. by Bernard Comrie and Maria Polinsky. Studies in Language Companion Series 23. Amsterdam: Benjamins, pp. 315–325.
Comrie, Bernard (2013). "Alignment of Case Marking of Full Noun Phrases". In: *The World Atlas of Language Structures Online*. Ed. by Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: `https://wals.info/chapter/98`.
Conrad, Robert J. and Kepas Wogiga (1991). *An outline of Bukiyip grammar*. Pacific Linguistics C 113. Department of Linguistics, Research School of Pacific Studies, Australian National University.
Corris, Miriam (2005). "A grammar of Barupu: A language of Papua New Guinea". PhD thesis. Sydney: University of Sydney.

Cowan, H. K. J. (1965). *Grammar of the Sentani language*. Verhandelingen van het Koninklijk Instituut voor Taal-, Land-, en Volkenkunde 47. The Hague: Nijhoff.
de Sousa, Hilário (2006). "The Menggwa Dla language of New Guinea". PhD thesis. University of Sydney.
de Vries, James A. and Sandra A. de Vries (1997). "An Overview of Kwerba Verb Morphology". In: *Papers in Papuan Linguistics 3*. Ed. by Andrew Pawley. Pacific Linguistics: Series A 87. Canberra: Research School of Pacific and Asian Studies, pp. 1–35.
de Vries, Lourens J. (2004). *A short grammar of Inanwatan: an endangered language of the Bird's head of Papua, Indonesia*. Vol. 560. Pacific Linguistics. Canberra: Canberra: Research School of Pacific and Asian Studies, Australian National University.
Doble, Marion (1987). "A Description of Some Features of Ekari Language Structure". In: *Oceanic Linguistics* 26.1/2, pp. 55–113.
Döhler, Christian (2018). *A grammar of Komnzo*. Studies in Diversity Linguistics 22. Berlin: Language Science Press.
Dol, Philomena (2007). *A Grammar of Maybrat*. Pacific Linguistics 586. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Donohue, Cathryn and Mark Donohue (1997). "Fore Case Marking". In: *Language and Linguistics in Melanesia* 28, pp. 69–98.
Donohue, Mark (2001). "Split intransitivity and Saweru". In: *Oceanic Linguistics* 40.2, pp. 321–336.
Donohue, Mark (2005). "Configurationality in the Languages of New Guinea". In: *Australian Journal of Linguistics* 25.2.
Drabbe, Petrus (1952). *Spraakkunst van het Ekagi*. The Hague: Nijhoff.
Dutton, Tom (2003). *A Dictionary of Koiari, Papua New Guinea, with Grammar Notes*. Vol. 534. Pacific Linguistics. Canberra: Australian National University.
Etherington, Paul Anthony (2002). "Nggem Morphology and Syntax". MA thesis. Darwin: Northern Territory University.
Evans, Nicholas (2004). "Experiencer objects in Iwaidjan languages". In: *Non-nominative Subjects - Volume 1*. Ed. by Peri Bhaskararao and K. V. Subbarao. Amsterdam: John Benjamins, pp. 169–192.
Evans, Nicholas (2015). "Valency in Nen". In: *Valency classes in the world's languages*. Ed. by Andrej L. Malchukov and Bernard Comrie. Berlin: De Gruyter Mouton, pp. 1069–1116.
Evans, Nicholas, I Wayan Arka, Matthew Carroll, Yun Jung Choi, Christian Döhler, Volker Gast, Eri Kashima, Emil Mittag, Bruno Olsson, Kyla Quinn, Dineke Schokkin, Jeff Siegel, Philip Tama, and Charlotte van Tongeren (2018). "The languages of Southern New Guinea". In: *The languages and linguistics of the New Guinea area: A comprehensive guide*. Ed. by Bill Palmer. Berlin: De Gruyter Mouton, pp. 641–774.
Fabian, Grace, Edmund Fabian, and Bruce Waters (1998). *Morphology, Syntax and Cohesion in Nabak, Papua New Guinea*. Pacific Linguistics: Series C 144. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Farr, Cynthia J. M. (1999). *The interface between syntax and discourse in Korafe: A Papuan language of Papua New Guinea*. Pacific Linguistics C 148. Canberra: Research School of Pacific and Asian Studies, Australian National University.

Fedden, Sebastian (2010). “Ditransitives in Mian”. In: *Studies in ditransitive constructions: A comparative handbook*. Ed. by Andrej Malchukov, Martin Haspelmath, and Bernard Comrie. Berlin: De Gruyter Mouton, pp. 456–485.
Fedden, Sebastian (2011). *A grammar of Mian*. Berlin: Mouton de Gruyter.
Fedden, Sebastian (2020). “Grammaticalization in Mountain Ok (Papua New Guinea)”. In: *Grammaticalization scenarios: Cross-linguistic variation and universal tendencies. Volume 2: Grammaticalization Scenarios from Africa, the Americas, and the Pacific*. Ed. by Walter Bisang and Andrej Malchukov. Berlin: De Gruyter Mouton, pp. 1007–1041.
Fedden, Sebastian, Dunstan Brown, Greville Corbett, Gary Holton, Marian Klamer, Laura C. Robinson, and Antoinette Schapper (2013). “Conditions on pronominal marking in the Alor-Pantar languages”. In: *Linguistics* 1 (51), pp. 33–74.
Fedden, Sebastian, Dunstan Brown, František Kratochvíl, Laura C. Robinson, and Antoinette Schapper (2014). “Variation in pronominal indexing: lexical stipulation vs. referential properties in Alor-Pantar languages”. In: *Studies in Language* 38.1, pp. 44–79.
Feldman, Harry (1986). *A grammar of Awtuw*. Pacific Linguistics B 94. Canberra: Australian National University.
Foley, William A. (1986). *The Papuan languages of New Guinea*. Cambridge Language Surveys. Cambridge: Cambridge University Press.
Foley, William A. (1991). *The Yimas Language of New Guinea*. Stanford: Stanford University Press.
Foley, William A. (1999). “Grammatical relations, information structure, and constituency in Watam”. In: *Oceanic Linguistics* 38.1, pp. 115–138.
Foley, William A. (2000). “The languages of New Guinea”. In: *Annual Review of Anthropology* 29, pp. 357–404.
Foley, William A. (2016). “Direct versus Inverse in Murik-Kopar”. In: *Explorations of the Syntax-Semantics Interface*. Ed. by Jens Fleischhauer, Anja Latrouite, and Rainer Osswald. Düsseldorf: DUP.
Foley, William A. (2018). “The Languages of the Sepik-Ramu Basin and Environs”. In: *The Languages and Linguistics of the New Guinea Area: A Comprehensive Guide*. Ed. by Bill Palmer. Berlin: De Gruyter Mouton, pp. 197–431.
Foley, William A. (2022). *A Sketch Grammar of Kopar: A Language of New Guinea*. Pacific Linguistics 667. Berlin, Boston: De Gruyter Mouton. DOI: doi : 10 . 1515/9783110791440.
Fortune, R.F. (1942). *Arapesh*. New York: J.J. Augustin.
François, Alexandre (2005). “A typological overview of Mwotlap, an Oceanic language of Vanuatu”. In: *Linguistic Typology* 9, pp. 115–146.
Franklin, Karl James (1971). *A Grammar of Kewa, New Guinea*. Pacific Linguistics C-16. Canberra: Australian National University.
Garland, Roger and Susan Garland (1975). “A grammar sketch of Mountain Koiali”. In: *Studies in languages of central and south-east Papua*. Ed. by Tom E. Dutton. Pacific Linguistics: Series C 29. Canberra: Australian National University, pp. 413–470.
Gerstner-Link, Claudia (2018). *A Grammar of Kilmeri*. Pacific Linguistics 654. Berlin: de Gruyter.

Gravelle, Gilles (2010). *Meyah: a language of West Papua, Indonesia*. Pacific Linguistics 619. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Gregor, Tina (2020). "A documentation and description of Yelmek". PhD thesis. Australian National University.
Haiman, John (1980). *Hua: A Papuan Language of the Eastern Highlands of New Guinea*. Amsterdam: Benjamins.
Handschuh, Corinna (2014). *A typology of marked-S languages*. Studies in Diversity Linguistics 1. Berlin: Language Science Press. DOI: 10.17169/langsci.b18.10.
Haspelmath, Martin (2005). "Argument marking in ditransitive alignment types". In: *Linguistic Discovery* 3.1, pp. 1–21.
Haspelmath, Martin (2011). "On S, A, P, T, and R as comparative concepts for alignment typology". In: *Linguistic Typology* 15.3, pp. 535–567.
Haspelmath, Martin (2013). "Argument indexing: A conceptual framework for the syntactic status of bound person forms". In: *Languages across boundaries: Studies in memory of Anna Siewierska*. Ed. by Dik Bakker and Martin Haspelmath. Berlin: de Gruyter, pp. 197–226.
Haspelmath, Martin (2019). "Indexing and flagging, and head and dependent marking". In: *Te Reo: Journal of the Linguistic Society of New Zealand* Issue in Honour of Frantisek Lichtenberk.1, pp. 93–115.
Head, June (2011). *A grammar of Umbu-Ungu*. Ukarumpa: Summer Institute of Linguistics.
Heeschen, Volker (1998). *An Ethnographic Grammar of the Eipo Language. Spoken in the Central Mountains of Irian Jaya (West New Guinea), Indonesia*. Mensch, Kultur und Umwelt im zentralen Bergland von West-Neuguinea 23. Berlin: Reimer.
Hellwig, Birgit (2019). *A grammar of Qaqet*. Mouton Grammar Library 79. Berlin: De Gruyter Mouton.
Henderson, James (1995). *Phonology and Grammar of Yele, Papua New Guinea*. Pacific Linguistics: Series B 112. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Holton, Gary (2003). *Tobelo*. Languages of the World/Materials 328. München: Lincom, p. 99.
Holton, Gary (2008). "The rise and fall of semantic alignment in North Halmahera, Indonesia". In: *The Typology of Semantic Alignment*. Ed. by Mark Donohue and Søren Wichmann. Oxford: Oxford University Press, pp. 252–276.
Honeyman, Thomas (2017). "A grammar of Momu, a language of Papua New Guinea". PhD thesis. Australian National University.
Hynum, David (2010). "Ergative in Numanggang". In: *Papers on six languages of Papua New Guinea*. Ed. by Joan Hooley. Vol. 616. Pacific Linguistics. Canberra: Research School of Pacific and Asian Studies, Australian National University, pp. 129–156.
Jacques, Guillaume and Anton Antonov (2014). "Direct/inverse systems". In: *Language and Linguistics Compass* 8.7, pp. 301–318.
Jendraschek, Gerd (2011). "Questions on transitivity: Iatmul and beyond". In: *Studies in Language* 35.3, pp. 555–587.

Jendraschek, Gerd (2012). “A grammar of Iatmul”. Habilitationsschrift: University of Regensburg.
Kashima, Eri (2020). “Language in my mouth: Linguistic variation in the Nmbo speech community of Southern New Guinea”. PhD thesis. Australian National University.
Kerr, Harland B. (1967). “A preliminary statement of Witu grammar: the syntactic role and structure of the verb”. MA thesis. University of Hawai’i at Mānoa.
Klamer, Marian (2010). *A Grammar of Teiwa*. Mouton Grammar Library 49. Berlin: Mouton de Gruyter.
Klamer, Marian and Antoinette Schapper (2012). “‘Give’ Constructions in the Papuan-Languages of Timor-Alor-Pantar”. In: *Linguistic Discovery* 10.3. DOI: 10.1349/PS1.1537-0852.A.421.
Kulick, Don and Angela Terrill (2019). *A Grammar and Dictionary of Tayap: The Life and Death of a Papuan Language*. Pacific Linguistics 661. Berlin: De Gruyter.
Lang, Adrianne (1975). *The semantics of classificatory verbs in Enga (and other Papua New Guinea languages)*. Pacific linguistics B 39. Canberra: Australian National University.
Lazard, Gilbert (2001). “Le marquage différentiel de l’objet”. In: *Language typology and language universals: An international handbook, Vol. 2*. Ed. by Martin Haspelmath, Ekkehard König, Wulf Oesterreicher, and Wolfgang Raible. Berlin: De Gruyter Mouton, pp. 873–885.
Levinson, Stephen C. (2022). *A Grammar of Yélî Dnye: The Papuan Language of Rossel Island*. Pacific Linguistics 666. Berlin, Boston: De Gruyter Mouton. DOI: 10.1515/9783110733853.
Li, Charles and Rainer Lang (1979). “The syntactic irrelevance of an ergative case in Enga and other Papuan languages”. In: *Ergativity: Towards a Theory of Grammatical Relations*. Ed. by Franz Plank. Academic Press: Academic Press, pp. 307–324.
Lindsey, Kate L. (2019). “Ghost elements in Ende phonology”. PhD thesis. Stanford University.
Lindström, Eva (2002). “Topics in the grammar of Kuot: A non-Austronesian language of New Ireland, Papua New Guinea”. PhD thesis. Stockholm: Stockholm University.
Loeweke, Eunice and Jean May (1980). “General grammar of Fasu (Namo Me)”. In: *Grammatical studies in Fasu and Mt. Koiali*. Ed. by Don Hutchisson. Vol. 27. Workpapers in Papua New Guinea Languages. Ukarumpa: Summer Institute of Linguistics, pp. 5–106.
Loughnane, Robyn (2009). “A grammar of Oksapmin”. PhD thesis. University of Melbourne.
MacDonald, Lorna (1990). *A Grammar of Tauya*. Mouton Grammar Library 6. Berlin: Mouton de Gruyter.
Malchukov, Andrej (2008). “Split intransitives, experiencer objects, and ‘transimpersonal’ constructions: (Re-)establishing the connection”. In: *The typology of semantic alignment*. Ed. by Mark Donohue and Søren Wichmann. Oxford: Oxford University Press, pp. 76–100.
Malchukov, Andrej, Martin Haspelmath, and Bernard Comrie (2010). “Ditransitive constructions: A typological overview”. In: *Studies in ditransitive con-*

structions: A comparative handbook. Ed. by Andrej Malchukov, Martin Haspelmath, and Bernard Comrie. Berlin: Mouton de Gruyter, pp. 1–64.
Margetts, Anna and Peter K. Austin (2007). "Three-participant events in the languages of the world: towards a crosslinguistic typology". In: *Linguistics* 45.3, pp. 393–451.
Marmion, Douglas E. (2010). "Topics in the Phonology and Morphology of Wutung". PhD thesis. Australian National University.
McElvenny, James (2007). *Notes on the Mudukumo language of the Yuat River, East Sepik Province, PNG*. Unpublished manuscript, Department of Linguistics,University of Sydney.
McGregor, William B. (2009). "Typology of Ergativity". In: *Language and Linguistics Compass* 3.1, pp. 480–508. DOI: 10.1111/j.1749-818x.2008.00118.x.
Merlan, Francesca and Alan Rumsey (2001). "Aspects of ergativity and reported speech in Ku Waru". In: *The boy from Bundaberg: Studies in Melanesian linguistics in honour of Tom Dutton*. Ed. by Andrew Pawley, Malcolm D. Ross, and Darrell Tryon. Canberra: Pacific Linguistics, pp. 215–231.
Murane, Elizabeth (1974). *Daga Grammar: From Morpheme to Discourse*. Publications in Linguistics 43. Norman, Oklahoma: The Summer Institute of Linguistics.
Obata, Kazuko (2003). *A Grammar of Bilua: A Papuan Language of the Solomon Islands*. Canberra: Pacific Linguistics.
Olsson, Bruno (2021a). *A Grammar of Coastal Marind*. Mouton Grammar Library 87. Berlin: De Gruyter Mouton.
Olsson, Bruno (2021b). *Petrus Drabbe's Coastal Marind texts: Edited and annotated by Bruno Olsson*. Parts I & II. Language & Linguistics in Melanesia: Texts in the Languages of the Pacific series. URL: https://www.langlxmelanesia.com/tilp.
Onishi, Masayuki (1994). "A grammar of Motuna (Bougainville, Papua New Guinea)". PhD thesis. Canberra: Australian National University.
Onishi, Masayuki (2000). "Transitivity and valency-changing derivations in Motuna". In: *Changing valency: Case studies in transitivity*. Ed. by Robert M. W. Dixon and Alexandra Y. Aikhenvald. Cambridge: Cambridge University Press, pp. 115–144.
Onishi, Masayuki (2004). "Instrumental subjects in Motuna". In: *Non-nominative Subjects: Volume 2*. Ed. by Peri Bhaskararao and Karumuri V. Subbarao. Typological Studies in Language 61. Benjamins, pp. 83–102.
Pappenhagen, Ronald W. (1986). "Kanasi: A brief grammar sketch". In: *Work Papers of the Summer Institute of Linguistics, University of North Dakota Session* 30.5, pp. 106–132.
Pawley, Andrew (1966). "The structure of Karam: a grammar of a New Guinea Highlands language". PhD thesis. Auckland: University of Auckland.
Pawley, Andrew, Simon Peter Gi, Ian Saem Majnep, and John Kias (2000). "Hunger acts on me: The grammar and semantics of bodily and mental process expressions in Kalam". In: *Grammatical analysis in morphology, syntax and semantics: Studies in honor of Stanley Starosta*. Ed. by Videa P. De Guzman and Byron W. Bender. Oceanic Linguistics Special Publications 29. Honolulu: University of Hawai'i Press, pp. 153–185.

Pawley, Andrew and Harald Hammarström (2018). “The Trans New Guinea family”. In: *The languages and linguistics of the New Guinea area: A comprehensive guide*. Ed. by Bill Palmer. Berlin: de Gruyter, pp. 21–195.
Peckham, Lloyd (1982). “Mairasi verb morphology”. In: *Workpapers in Indonesian Linguistics*. Ed. by Marit Kana. Vol. 1. Workpapers in Indonesian Linguistics. Jayapura: Summer Institute of Linguistics, pp. 75–95.
Pennington, Ryan (2016). “Ma Manda: A Papuan language of Morobe Province, Papua New Guinea”. PhD thesis. James Cook University, p. 657.
Pilhofer, Georg (1933). *Grammatik der Kâte-Sprache in Neuguinea*. Beiheft zur Zeitschrift für Eingeborenen-Sprachen 14. Hamburg: Reimer.
Piper, Nick (1989). “A Sketch Grammar of Meryam Mer”. MA thesis. Australian National University.
Potts, Denise M. and Dorothy James (1988). “Split ergativity in Siane: a study in markedness”. In: *Language and Linguistics in Melanesia* 18, pp. 71–108.
Priestley, Carol (2019). *Koromu (Kesawai): Grammar and Information Structure of a New Guinea Language*. Pacific Linguistics 658. Berlin: De Gruyter Mouton.
Reesink, Ger P. (1999). *A Grammar of Hatam, Irian Jaya, Indonesia*. Pacific Linguistics C 146. Canberra: Australian National University.
Reesink, Ger P. (2013). “Expressing the GIVE event in Papuan languages: A preliminary survey”. In: *Linguistic Typology* 17, pp. 217–266.
Renck, Günter L. (1975). *A Grammar of Yagaria*. Pacific Linguistics Series B 40. Canberra: Australian National University.
Riesberg, Sonja (2018). “Optional ergative, agentivity and discourse prominence: Evidence from Yali (Trans-NewGuinea)”. In: *Linguistic Typology* 22.1, pp. 17–50.
Roberts, John R. (1987). *Amele*. Croom Helm Descriptive Grammar Series. London: Croom Helm.
Roberts, John R. (1998). “GIVE in Amele”. In: *The Linguistics of Giving*. Ed. by John Newman. Vol. 36. Typological studies in language. Amsterdam/Philadelphia: Benjamins, pp. 1–33.
Robinson, Stuart P. (2011). “Split Intransitivity in Rotokas, a Papuan Language of Bougainville”. PhD thesis. Nijmegen: Radboud University.
Ross, Malcolm (2017). “Languages of the New Guinea Region”. In: *The Cambridge Handbook of Areal Linguistics*. Ed. by Raymond Hickey. Cambridge: Cambridge University Press, pp. 758–820.
Ross, Malcolm and John Natu Paol (1978). *A Waskia Grammar Sketch and Vocabulary*. Pacific Linguistics: Series B 56. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Rumsey, Alan (2010). “‘ Optional’ ergativity and the framing of reported speech”. In: *Lingua* 120, pp. 1652–1676.
Rumsey, Alan, Lila San Roque, and Bambi B. Schieffelin (2013). “The acquisition of ergative marking in Kaluli, Ku Waru and Duna (Trans New Guinea)”. In: *The acquisition of ergativity*. Ed. by Edith L. Bavin and Sabine Stoll. Trends in Language Acquisition Research 9. Amsterdam: Benjamins, pp. 133–182.
San Roque, Lila (2008). “An introduction to Duna grammar”. PhD thesis. Australian National University.
Sanders, Arden G. and Joy Sanders (1994). *Kamasau (Wand Tuan) Grammar: Morpheme to Discourse*. Ed. by Arden Sanders and Joy Sanders. Unpublished doc-

ument. URL: http://www.sil.org/pacific/png/abstract.asp?id=47683.
Sarvasy, Hannah (2014). “A Grammar of Nungon: A Papuan Language of Morobe Province, Papua New Guinea”. PhD thesis. James Cook University.
Schapper, Antoinette (2014). “Kamang”. In: *Papuan languages of Timor-Alor-Pantar: Sketch grammars*. Ed. by Antoinette Schapper. Vol. 1. Pacific Linguistics. Berlin: Mouton de Gruyter, pp. 223–274.
Schapper, Antoinette and Marten Manimau (2011). *Kamus Pengantar bahasa Kamang-Indonesia-Inggris*. UBB Language and Culture Series: A 7. Kupang: Unit Bahasa dan Budaya.
Scott, Graham K. (1986). “On ergativity in Fore and other Papuan languages”. In: *Papers in New Guinea Linguistics No. 24*. Ed. by D. Laycock, W. Seiler, L. Bruce, M. Chlenov, R.D. Shaw, S. Holzknecht, G. Scott, O. Nekitel, S.A. Wurm, L. Goldman, and J. Fingleton. Pacific Linguistics A 70. Canberra: The Australian National University, pp. 167–175.
Seiler, Walter J. (1985). *Imonda, a Papuan Language*. Pacific Linguistics B 93. Canberra, Australia: Research School of Pacific and Asian Studies, Australian National University.
Siegel, Jeff (2017). “Transitive and Intransitive Verbs in Nama, a Papuan Language of Southern New Guinea”. In: *Oceanic Linguistics* 56.1, pp. 123–142.
Siegel, Jeff (2023). *A Grammar of Nama: A Papuan Language of Southern New Guinea*. Pacific Linguistics 668. Berlin: De Gruyter Mouton.
Siewierska, Anna (2003). “Person agreement and the determination of alignment”. In: *Transactions of the Philological Society*. Vol. 101. 2, pp. 339–370.
Siewierska, Anna (2013a). “Alignment of Verbal Person Marking”. In: *The World Atlas of Language Structures Online*. Ed. by Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: https://wals.info/chapter/100.
Siewierska, Anna (2013b). “Verbal Person Marking”. In: *The World Atlas of Language Structures Online*. Ed. by Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. URL: https://wals.info/chapter/102.
Siewierska, Anna and Dik Bakker (1996). “The distribution of subject and object agreement and word order type”. In: *Studies in Language* 20.1, pp. 115–161. DOI: 10.1075/sl.20.1.06sie.
Spencer, Katharine (2008). “Kwomtari Grammar Essentials”. In: *Kwomtari Phonology and Grammar Essentials*. Ed. by Murray Honsberger, Carol Honsberger, and Ian Tupper. Data Papers on Papua New Guinea Languages 55. Ukarumpa: SIL-PNG Academic Publications, pp. 53–183.
Stebbins, Tonya N. (2011). *Mali (Baining) grammar*. Vol. 623. Pacific Linguistics. Canberra: Research School of Pacific and Asian Studies, Australian National University, p. 437. ISBN: 9780858836297.
Suter, Edgar (2010). “The optional ergative in Kâte”. In: *A journey through Austronesian and Papuan linguistic and cultural space: papers in honour of Andrew K. Pawley*. Ed. by John Bowden, Nikolaus P. Himmelmann, and Malcolm Ross. Vol. 615. Pacific Linguistics. Canberra: Research School of Pacific and Asian Studies, Australian National University, pp. 423–437.

Suter, Edgar (2012). “Verbs with pronominal object prefixes in Finisterre-Huon languages”. Special issue of *Language & Linguistics in Melanesia*, Part I.
Suter, Edgar (2018). “Comparative morphology of the Huon Peninsula languages (Papua New Guinea)”. PhD thesis. Cologne University.
Taylor, Matthew A. (2015). *Nukna Grammar Sketch*. Data Papers on Papua New Guinea Languages 61. Ukarumpa: Summer Institute of Linguistics.
Terrill, Angela (2003). *A Grammar of Lavukaleve*. Mouton Grammar Library 30. Berlin, New York: Berlin: Mouton de Gruyter. DOI: 10.1515/9783110923964.
Tida, Syuntarô (2006). “A grammar of the Dom language: A Papuan Language of Papua New Guinea”. PhD thesis. Kyoto University.
van Staden, Miriam (2000). “Tidore: A Linguistic Description of a Language of the North Moluccas”. PhD thesis. Leiden: University of Leiden.
van Tongeren, Charlotte (2023). “A grammar of Suki”. PhD thesis. Canberra: Australian National University.
Visser, Eline (2022). *A grammar of Kalamang*. Comprehensive Grammar Library 4. Berlin: Language Science Press.
von Prince, Kilu (2017). “Dozing eyes and drunken faces. Nominalized psych-collocations in Daakaka (Vanuatu)”. In: *Studies in Language* 41.2, pp. 502–520.
Walker, Katherine, Pegah Faghiri, and Eva van Lier (2023). “Argument indexing in Kamang”. In: *Studies in Language*. DOI: https://doi.org/10.1075/sl.21077.wal.
Walsh, Michael (1987). “The impersonal construction in Australian languages”. In: *Language topics: essays in honour of Michael Halliday*. Ed. by R Steele and T Threadgold. Vol. 1. Amsterdam: John Benjamins, pp. 425–438.
Wegener, Claudia (2008). “A grammar of Savosavo, A Papuan language of the Solomon Islands”. MPI series in psycholinguistics 51. PhD thesis. Nijmegen: Radboud Universiteit Nijmegen, pp. xxiii+373.
Wegener, Claudia (2012). *A Grammar of Savosavo*. Mouton Grammar Library 61. Berlin: de Gruyter.
Wells, Margaret A. (1979). *Siroi Grammar*. Pacific Linguistics B 51. Canberra: Research School of Pacific and Asian Studies, Australian National University.
Whitehead, Carl A. (1981). “Subject, object and indirect object: towards a typology of Papuan languages”. In: *Language and Linguistics in Melanesia* 13.1/2, pp. 32–63.
Whitehead, Carl R. (2004). “A Reference Grammar of Menya, an Angan Language of Papua New Guinea”. PhD thesis. Ann Arbor: University of Manitoba.
Wilson, Jennifer (2017). “A grammar of Yeri: A Torricelli language of Papua New Guinea”. PhD thesis. State University of New York at Buffalo.
Windschuttel, Glenn A. (2018). “Object verbs: Link from Timor-Alor-Pantar to Trans-New-Guinea. An exploration of their typological and historical implications”. PhD thesis. University of Newcastle.
Yarapea, Apoi Mason (2006). “Morphosyntax of Kewapi”. PhD thesis. Australian National University.
Yoder, Brendon (2020). “A grammar of Abawiri, a Lakes Plain language of Papua, Indonesia”. PhD thesis. University of California at Santa Barbara.

Appendix

Table 3: The 62 languages included in the survey

Language	Affiliation	Glottocode	Region	Source
Abawiri	Lakes Plain	foau1240	North Lowlands/Sepik	(Yoder 2020)
Abun	isolate	abun1252	Bird's Head	(Berry and Berry 1999)
Ama	Left May	amap1240	North Lowlands/Sepik	(Årsjö 1999)
Awtuw	Sepik	awtu1239	North Lowlands/Sepik	(Feldman 1986)
Bauzi	Geelvink Bay	bauz1241	North Lowlands/Sepik	(Briley 1997)
Bilua	isolate	bilu1245	Solomon Islands	(Obata 2003)
Bukiyip	Torricelli	buki1249	North Lowlands/Sepik	(Conrad and Wogiga 1991)
Daga	TNG > Dagan	daga1275	Southeastern Peninsula	(Murane 1974)
Dom	TNG > Chimbu-Wahgi	domm1246	Highlands	(Tida 2006)
Duna	TNG	duna1248	Highlands	(San Roque 2008)
Eibela, Aimele	TNG > Bosavi	aime1238	Highlands	(Aiton 2016)
Eipo	TNG > Mek	eipo1242	Highlands	(Heeschen 1998)
Ekari	TNG > Paniai Lakes	ekar1243	Highlands	(Doble 1987)
Ende	Pahoturi River	ende1235	Trans-Fly	(Lindsey 2019)
Enga	TNG > Enga-Kewa-Huli	enga1252	Highlands	(Lang 1975)
Fasu	isolate	fasu1242	Highlands	(Loeweke and May 1980)
Fuyug	isolate	fuyu1242	Southeastern Peninsula	(Bradshaw 2007)
Grass Koiari	Koiarian	gras1249	Southeastern Peninsula	(Dutton 2003)
Haruai	Piawi	haru1245	Highlands	(Comrie 1993)
Hatam	Hatam-Mansim	hata1243	Bird's Head	(Reesink 1999)
Inanwatan, Suabo	Inanwatan	suab1238	Bird's Head	(de Vries 2004)
Ipiko	TNG > Anim	ipik1244	Southeastern Peninsula	Z. Baratashvili, p.c.
Kaki Ae	isolate	kaki1249	Southeastern Peninsula	(Clifton 1997)
Kalam	TNG > Madang	kala1397	Highlands	(Pawley 1966)
Kilmeri	Border	kilm1241	North Lowlands/Sepik	(Gerstner-Link 2018)
Komnzo	Yam	wara1294	Trans-Fly	(Döhler 2018)
Konai	East Strickland	kona1242	Highlands	(Årsjö 2016)
Korafe	TNG > Binanderean	kora1294	Southeastern Peninsula	(Farr 1999)
Kuot	isolate	kuot1243	New Ireland	(Chung and Chung 1996, Lindström 2002)
Kwerba	Greater Kwerba	nucl1595	North Lowlands/Sepik	(de Vries and de Vries 1997)
Kwomtari	Kwomtari-Nai	nucl1593	North Lowlands/Sepik	(Spencer 2008)
Lavukaleve	isolate	lavu1241	Solomon Islands	(Terrill 2003)
Lower Dani	TNG > Dani	lowe1415	Highlands	(Bromley 1981)
Ma Manda	TNG > Finisterre Huon	sauk1252	Huon Peninsula	(Pennington 2016)
Manambu	Ndu	mana1298	North Lowlands/Sepik	(Aikhenvald 2008)
Marori	isolate	moro1289	Trans-Fly	(Arka et al. 2015)
Maybrat	isolate	maib1239	Bird's Head	(Dol 2007)
Menggwa Dla, Dla	Senagi	dera1245	North Lowlands/Sepik	(de Sousa 2006)
Menya	Angan	meny1245	Highlands	(Whitehead 2004)
Momu	Baibai-Fas	fass1245	North Lowlands/Sepik	(Honeyman 2017)
Moskona	East Bird's Head	mosk1236	Bird's Head	(Gravelle 2010)
Motuna, Siwai	South Bougainville	siwa1245	Bougainville	(Onishi 1994)
Nimboran	Nimboran	nucl1633	North Lowlands/Sepik	(Anceaux 1965)
Northeast Kiwai	Kiwaian	nort2930	Trans-Fly	(Clifton 1995)
Oksapmin	TNG > Asmat-Awyu-Ok	oksa1245	Highlands	(Loughnane 2009)
Qaqet	Baining	qaqe1238	New Britain	(Hellwig 2019)
Rotokas	North Bougainville	roto1249	Bougainville	(Robinson 2011)
Savosavo	isolate	savo1255	Solomon Islands	(Wegener 2008)
Saweru	Yawa-Saweru	sawe1240	North Lowlands/Sepik	(Donohue 2001)
Sentani	Sentanic	nucl1632	North Lowlands/Sepik	(Cowan 1965)
Tayap	isolate	taia1239	North Lowlands/Sepik	(Kulick and Terrill 2019)
Teiwa	Timor-Alor-Pantar	teiw1235	Timor-Alor-Pantar	(Klamer 2010)
Tidore	North Halmahera	tido1248	North Halmahera	(van Staden 2000)
Toaripi	Eleman	toar1246	Southeastern Peninsula	(Brown 1973)
Ulwa	Keram	yaul1241	North Lowlands/Sepik	(Barlow 2018)
Watam	Lower Sepik-Ramu	wata1253	North Lowlands/Sepik	Foley 1999
Wiru	isolate	wiru1244	Highlands	(Kerr 1967)
Wutung	Sko	wutu1244	North Lowlands/Sepik	(Marmion 2010)
Yélî Dnye, Yele	isolate	yele1255	Island Melanesia	(Levinson 2022)
Yagaria (Move)	TNG > Kainantu-Goroka	yaga1260	Highlands	(Renck 1975)
Yale	isolate	yale1246	North Lowlands/Sepik	(Aannestad et al. 2020)
Yelmek	Bulaka River	yelm1242	Trans-Fly	(Gregor 2020)