

# Mapping meaning to argument structure: The case of Samoan case

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## 3.1 Introduction

The phenomenon of morphological case marking sits at the intersection of several domains of grammar. This paper’s focus is the interaction between morphological case marking (or m-case) and lexical semantics. Why do certain m-cases seem to always signal a consistent sort of thematic role (e.g., agent, goal, instrument)? In providing an answer this question, we can shed light on the tension between the structural and semantic factors which determine m-case.

The case study central to this paper is m-case patterns on the core arguments of Samoan transitive verbs. Samoan is a Polynesian language spoken in Samoa and American Samoa as well as in significant immigrant communities worldwide. A large number of transitive predicates in Samoan demonstrate an ergative-absolutive case marking pattern. For example, in (1), the agent is marked by ergative *e*, while the patient is marked by a boundary high tone attaching to the preceding mora (following Yu 2011).<sup>1</sup>

- (1) *sā fuafua e le mālô le fausia*  
PAST plan ERG the government=ABS the construction  
The government planned the construction. ERG-ABS

On the other hand, a distinct series of transitive predicates, referred to as ‘middles’ in previous work on Polynesian syntax (see e.g., Chung 1978), demonstrates an absolutive-dative case marking pattern. Here, the more agentive argument is marked by the absolutive high tone, while the less agentive argument is marked by dative ‘*i*’.

- (2) *sā tago ané le fōma‘i ‘i lono ulu*  
PAST touch DIR=ABS the doctor DAT his forehead  
The doctor touched his forehead. ABS-DAT

I argue that the choice of case frame as either ERG-ABS or ABS-DAT is determined by the lexical semantics of the verb. The central hypothesis of this paper is that the ERG-ABS frame is selected just in case the verb satisfies two thematic conditions. First, the more agentive argument is a ‘self-directed initiator’, a thematic role corresponding to Cruse’s 1973 notion of agentivity. Second, the less agentive argument cannot be a goal. If either of these conditions is not met, the ABS-DAT frame is selected. Support for this

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1. Incorporating this analysis of absolutive, the notation I use throughout is *a* short/no high tone, *ā* long/no high tone, *á* short/high tone, *â* long/high tone. The absolutive high tone is not orthographically represented in Samoan. Where it is included in this paper, it is placed where Yu’s theory predicts it should go, though further investigation of the examples in this paper need to be undertaken.

hypothesis comes from a coded dataset of Samoan transitive verbs. Using these data, I argue against alternative proposals concerning the semantic factors behind case assignment, including telicity and affectedness.

The theoretical contribution of this paper is to spell out this link between m-case and lexical semantics by providing an Optimality Theoretic account of the mapping of meaning to argument structure. Grammatical case frames like (1) and (2) are those which optimally satisfy a series of constraints on the possible links between m-case and meaning. This theory makes explicit the ways in which m-case assignment is sensitive to the verb’s meaning and the thematic roles borne by core arguments. Ungrammatical case frames associate m-cases with thematic roles in a sub-optimal way. The analysis adds to a body of work in which a syntactic structure serves as the input to an OT-style evaluation, including but not limited to Legendre, Raymond, and Smolensky 1993; Samek-Lodovici 1996; Grimshaw 1997; Bresnan 1998; Woolford 2001.

### 3.2 The semantics of Samoan case

Several previous studies have focused on the semantic distinction between transitive (ERG-ABS) verbs, and so-called ‘middle’ (ABS-DAT) verbs in Polynesian (see, e.g., Chung 1978; Cook 1988; Blume 1998; Ball 2009; Tollan 2018). We also find analyses of related phenomena in unrelated languages, for example, the accusative/partitive distinction in Finnish (Kiparsky 2005; Kratzer 2004, and others). These accounts tend to mark out three semantic factors determining the choice of case marking frame.

- (3) a. Lexical aspect: the temporal boundedness or dynamicity of the event.
- b. Affectedness: the (degree of) change undergone by the patientive argument
- c. Agentivity: the extent and type of control over the event exhibited by the agentive argument.

Below, I argue against lexical aspect and affectedness being relevant in the determination of transitive case-frames in Samoan, though in the following section I argue that agentivity is a necessary but not sufficient condition for ergative case.

In determining these generalizations, I used a sample of 212 Samoan two-argument verbs, collected based on the Samoan translations of Ball’s (2009:225) list of Tongan predicates collected for a similar purpose as well as the Samoan translations of the English transitive verbs discussed in Dowty 1991. The goal was to form a list of Samoan two-argument verbs which spans a wide range of semantic domains.

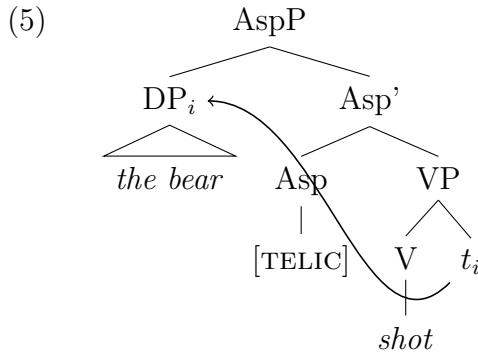
#### 3.2.1 Ergative case and telicity

Finnish also demonstrates a case alternation, in which lexical semantic factors determine the choice of case on a transitive verb’s core arguments. In Finnish, we see a case alternation between partitive or accusative case on the more patientive argument.

- (4) a. Etsi-n {karhu-a | kah-ta karhu-a}  
       seek-1SG bear-PART two-PART bear-PART

- I'm looking for the/a bear / (the) two bears Kiparsky 2005
- b. Tapo-i-n      {karhu-n | kaksi    karhu-a}  
 kill-PAST-1SG bear-ACC two-ACC bear-PART  
 I killed the/a bear / two bears Kiparsky 2005

Various approaches (see especially Kratzer 2004) assume the relevant factor is telicity. Under these approaches, telic predicates are linked with accusative objects while atelic predicates are linked with partitive objects. In terms of a syntactic account, one possible approach is to assume that the internal argument of a telic predicate bears a [+TELIC] feature. This feature has to be checked by moving to Spec,AspP, where it receives accusative case.



Thus accusative case signals the presence of a [+TELIC] feature on a functional head Asp, which is interpreted as imposing an entailment that the event is culminated, as in (6), from Kratzer 2004.

$$(6) \quad [+TELIC] \rightsquigarrow \lambda V.\lambda x.\lambda e.V(x)(e) \wedge \mathbf{culminate}(x)(e)$$

Kratzer's analysis additionally assumes that the culmination conditions for verbs are specified by the verb's semantics, as in (7). In (7-a), the verb *shoot* is lexically specified to culminate just in case the shooting target is hit. In (7-b), composing [+TELIC] with the lexical root *shoot* results in the entailment that the shooting target was hit.

$$(7) \quad \begin{aligned} \text{a. } & \mathit{shoot} \rightsquigarrow \lambda x.\lambda e.\mathbf{shoot}(x)(e) \wedge (\mathbf{culminate}(x)(e) \leftrightarrow \mathbf{hit}(x)(e)) \\ \text{b. } & [+TELIC](\mathit{shoot}) \rightsquigarrow \lambda x.\lambda e.\mathbf{shoot}(x)(e) \wedge (\mathbf{culminate}(x)(e) \leftrightarrow \mathbf{hit}(x)(e)) \wedge \\ & \mathbf{culminate}(x)(e) \\ & = \lambda x.\lambda e.\mathbf{shoot}(x)(e) \wedge \mathbf{hit}(x)(e) \end{aligned}$$

One way of testing Kratzer's notion of telicity for Samoan is with 'before'-phrases. Under Kratzer's theory, [+TELIC] verbs encode for a **culminate** property, while [-TELIC] verbs don't. Assuming 'before'-phrases temporally orient event descriptions, 'before'-phrases with [+TELIC] verbs should orient the culmination point, but not with [-TELIC] verbs (see Beaver and Condoravdi 2003 and Rett 2017).

$$(8) \quad \begin{aligned} \text{a. } & P \text{ before } Q_{[+telic]} \rightsquigarrow \mathbf{before}(P)(\lambda e.Q(e) \wedge \mathbf{culminate}(e)) \\ \text{b. } & P \text{ before } Q_{[-telic]} \rightsquigarrow \mathbf{before}(P)(Q) \end{aligned}$$

- (9) a. Kim left before [Sandy won the game]<sub>[+telic]</sub>. (before the point of culmination)  
 b. Kim left before [Sandy wanted croissants]<sub>[-telic]</sub>. (before the starting point)

Using Kratzer's notion of telicity, outlined above, as a guide, we find that telicity is by no means a necessary condition for the ERG-ABS case frame in Samoan. We find atelic verbs with ERG-ABS, encoding no point of culmination, even with definite objects.<sup>2</sup>

- (10) a. ...*ae le'i tautsi-a e le tamāloá le tama*  
 ...before take.care-ES ERG SPEC man=ABS SPEC child  
 ..before the man took care of the child  
 (↪ before he started/\*finished taking care)  
 b. ...*ae le'i su'e-a e le teine lana fagafao*  
 ...before search-ES ERG SPEC girl her pet  
 before the girl looked for her pet (↪ before she started/\*finished looking)  
 c. ...*ae le'i tautua-ina e le tama lona matai*  
 ...before serve-ES ERG SPEC boy her matai  
 before the boy served his matai (↪ before he started/\*finished serving)

The telicity of the clause is also in part determined by the constitution of the patient (e.g., Krifka 1989 *et seq.*). Telicity alternations triggered by, e.g., number alternations of the patientive argument, do not affect the case frame, further biasing against the hypothesis that the case frame is determined by telicity.

- (11) a. *sā lau mái lou igoa e le fai'āoga*  
 PAST read DIR=ABS your name ERG SPEC teacher  
 The teacher read out your name.  
 b. *sā lau mái igoa e le fai'āoga*  
 PAST read DIR=ABS name ERG SPEC teacher  
 The teacher read out names.
- (12) a. *sā mate mái la'u tupua e le teine*  
 PAST guess DIR=ABS my riddle ERG SPEC girl  
 The girl guessed my riddle.  
 b. *sā mate mái tupua e le teine*  
 PAST guess DIR=ABS riddle ERG SPEC girl  
 The girl guessed riddles.

For this reason, the hypothesis that the telicity of a clause determines the case-frame, based on Kratzer's analysis of Finnish, is unlikely to hold for Samoan.

2. The ergative suffix *-a/-ina* (ES) is triggered by the negative element *le'i*, see Mosel and Hovdhaugen 1992:§18.9.4.6

### 3.2.2 Ergative case and affectedness

Ball 2009 tackles a similar empirical problem in the closely related Polynesian language Tongan. Tongan verbs, analogous to Samoan ABS-DAT verbs, are semantically characterized by Ball as *participant autonomous entity relations*, following a notion from Blume 1998. These verbs encompass (i) verbs with a “destination” or “target” (such as *help* or *look at*), (ii) verbs with a volitional second argument which helps bring about the event (such as *help*), and (iii) verbs with a ‘point of reference’ second argument (such as *look like* and *resemble*).

As an overarching constraint, Ball notes that these verbs demonstrate low affectedness of the second argument, “and in some cases, having a first argument which does not cause a change in the situation”. Ball’s hypothesis that affectedness is a crucial factor follows from Chung 1978 who makes similar claims about the ERG-ABS/ABS-DAT distinction across Polynesian. In order to evaluate the claim that affectedness is a (or *the*) crucial factor in distinguishing verb classes, we need to pin down a particular notion of affectedness.

Beavers 2011 spells out a four level hierarchy of affectedness for transitive verbs. Does *V* entail that the patientive argument undergoes a change? If yes, is the degree of change specified? If no, is there a lexically specified *potential* for change? For Beavers, these notions of affectedness are defined such that the categories are ordered by asymmetrical entailment.

- (13)    **quantized change**  $\models$   
           **non-quantized change**  $\models$   
           **specified potential for change**  $\models$   
           **unspecified potential for change**

If a language has a grammatical phenomenon which is sensitive to a particular category of affectedness, then the phenomenon must also be sensitive to the entailing categories. For example, if a phenomenon is sensitive to *non quantized change*, it must also be sensitive to quantized change. Using this theory to spell out Ball’s 2009 hypothesis, Tongan (or Samoan) grammar must make some divide along this scale of affectedness entailments. For example, one divide could be as follows: ERG-ABS verbs entail *quantized change* or *non-quantized change*, while ABS-DAT verbs entail *specified* or *unspecified potential for change*.

What would be a counterexample to this theory? If we could find a class of ERG-ABS verbs which are *lower on the scale* than some class of ABS-DAT verbs. Tollan 2018 points out that Samoan verbs of searching are ERG-ABS.

- (14)    a.    ‘olo‘o **sā‘ili** e    le    ositāulagá sana matua  
           PROG search ERG SPEC priest=ABS his    text  
           The priest is searching for his text.  
           b.    sā    **tuli** e    le    toá            le    sau‘ai  
           PAST hunt ERG SPEC hero=ABS SPEC ogre  
           The hero hunted for the ogre.

- c. *sā su'e e le tama ā'ogá se tali*  
 PAST look.for ERG SPEC boy school=ABS NSPEC answer  
 The student looked for an answer.

This is surprising given an affectedness-based view of case, as verbs of searching do not entail the absolutive argument even exists (see Tollan 2018:§3), thus cannot entail a change of state. Likewise they fail Beavers' requirement for **specified potential for change**, i.e., they cannot be “force recipients” if they do not exist. They are thus placed in Beavers' most general category **unspecified potential for change**.<sup>3</sup> We find other ERG-ABS verbs which do not impose an existential constraint on their second argument, for example, verbs of restraint and preventing.

- (15) a. *sā tete'e e puleā'ogá le pu'eina o ata*  
 PAST refrain ERG head.teacher=ABS SPEC take-INA GEN picture  
 The head teachers refrained from taking pictures. (↯ *there were pictures.*)  
 b. *sā taofi e le 'au'aunagá se aft*  
 PAST prevent ERG SPEC service=ABS NSPEC fire  
 The service prevented a fire. (↯ *there was a fire.*)

Like verbs of searching, these verbs cannot be understood as imposing an affectedness entailment on their absolutive argument, as the argument need not even exist, let alone be affected. We also find verb which may impose an existential requirement on the absolutive, but nevertheless encode for low affectedness. It cannot be said that these verbs entail that the absolutive is a “force recipient”, encoding any kind of **specified potential for change**.

- (16) a. *na fa'atali mái a'u e lo'u uso matua*  
 PAST wait DIR=ABS me ERG my sibling old  
 My older brother waited for me.  
 b. *na tatao e le leoleó le tagata gaoi*  
 PAST follow ERG SPEC police=ABS SPEC person thief  
 The police followed in the tracks of the thief.

In all of the cases above, we can only reasonably classify these verbs as belonging to Beavers' most general category: **unspecified potential for change**.

Turning to ABS-DAT verbs, do we find verbs which should be placed higher in Beavers' hierarchy? Non-agentive verbs of soiling/smearing are encoded with ABS-DAT. In these cases, both arguments appear to undergo some kind of (non-quantized) change. The absolutive argument becomes covered in the substance denoted by the dative argument. The dative argument is distributed over the location denoted by the absolutive argument.

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3. Beavers' most general category merely entails the patientive individual stands in some relation to an event, i.e., **j** is unspecified for change if  $\exists e \exists \theta[\theta(\mathbf{j}, e)]$ , therefore, there are hardly any semantic constraints on **j** at all.

- (17) a. ‘*Ua panupanú o‘u lima ‘i le siamu*  
 PERF smeared=ABS my.PL hand DAT SPEC jam  
 My hands are smeared with jam. (Milner 1976:175)
- b. ‘*Ua ‘ola‘olá ipu māfolafola ‘i le ga‘o*  
 PERF soiled=ABS dish flat DAT SPEC fat  
 The dishes are soiled with grease. (Milner 1976:163)

We also find ABS-DAT verbs encoding events of receiving, in which case the dative should be understood as having **potential for change**. These verbs can either be agentive or non-agentive. Verbs like *pisi* ‘splash against’ fit Beavers canonical type of force recipient verbs, i.e., they are verbs of ‘surface contact’.

- (18) a. ‘*Ua pisí le vai ‘i lona lima*  
 PERF splash=ABS SPEC water DAT his hand  
 Water splashed against his hand.
- b. ‘*Ua māvae atú ana ‘oloa ‘i lana ulumatua*  
 PERF bequeath DIR=ABS his valuable DAT his son  
 His valuables were left to his oldest son.
- c. ‘*Ua ‘e talusā ‘i le ‘āiga*  
 PERF 2SG bring.trouble DAT SPEC family  
 You have brought trouble to the family.
- d. ‘*Ua aogā le vailā‘au lenei i lo‘u ma‘i*  
 PERF benefit=ABS SPEC medicine good DAT my sickness  
 This medicine has cured my sickness.

Thus we find reasonable cases in which certain classes of ABS-DAT verbs should plausibly be ranked higher on Beavers’ affectedness hierarchy than certain classes of ERG-ABS verbs. These cases are systematic counterexamples to the hypothesis that ERG-ABS verbs encode for a greater level of affectedness than ABS-DAT verbs. Thus ERG-ABS verbs do not necessarily encode for more affectedness than ABS-DAT verbs, rendering it unlikely that affectedness is the crucial factor determining a verb’s case-frame, contra Ball’s analysis.

### 3.3 Agentivity

Previous work on Samoan notes a link between ergative case and agentivity (e.g., Cook 1988; Duranti and Ochs 1990), while other work makes the same association but asserts that it is non-categorical (e.g., Tollan 2018; Mosel and Hovdhaugen 1992). In this section, I explore the link between ergativity and agentivity (especially in relation to Tolland’s 2018 theory), and propose my own refinement: that agentivity is a necessary but not sufficient condition for ergative case in Samoan.

### 3.3.1 Proto-high and proto-low agents

Under Tollan’s 2018 account, Samoan ABS-DAT verbs and ERG-ABS verbs are distinguished by entailments associated with the subject argument. Using a system inspired by Dowty 1991, a verb is classified as ERG-ABS if its subject fits better with the prototypical “High Agent”, and the verb is ABS-DAT if the subject fits better with the “Low Agent”. A participant’s proximity to the prototypical High/Low Agent is determined by how many of the following entailments hold (see Tollan 2018:17).

|      |  |   |
|------|--|---|
| (19) | <p><i>Proto High Agent</i></p> <ul style="list-style-type: none"> <li>- initiator</li> <li>- experiencer</li> <li>- affect on another entity</li> <li>- brings about a change of state</li> <li>- effortful</li> <li>- volitional</li> <li>- concludes an event</li> </ul> | <p><i>Proto Low Agent</i></p> <ul style="list-style-type: none"> <li>- initiator</li> <li>- experiencer</li> <li>- neither affects an entity nor is affected</li> <li>- neither brings about nor undergoes a change of state</li> </ul> |
|------|--|---|

Under Tollan’s system, a participant demonstrating more “proto high agent” entailments than “proto low agent” entailments will be assigned the high agent role, and therefore take ergative case. Like Ball’s analysis, affectedness plays a role in determining case, but the association is not categorical – verbs can fail to entail affectedness but still be encoded as ERG-ABS.

For example, using Tollan’s proposed lexical entailments, we can derive why the ‘searcher’-participant of a verb of searching *su’e* gets ergative case: it is closer to the prototypical “high agent”, deriving the correct result contra Ball’s analysis.

(20) the ‘searcher’-participant of *su’e* (‘search’, ‘look for’):

|   |  |
|---|--|
| <p><i>Proto High Agent</i></p> <ul style="list-style-type: none"> <li>- initiator</li> <li>- effortful</li> <li>- volitional</li> <li>- concludes an event</li> </ul> | <p><i>Proto Low Agent</i></p> <ul style="list-style-type: none"> <li>- initiator</li> <li>- neither affects an entity nor is affected</li> <li>- neither brings about nor undergoes a change of state</li> </ul> |
|---|--|

Under Tollan’s system, the notions of *effort* and *volitionality* play a big role, tipping the scales towards the subject receiving ergative case, even without an affectedness entailment. But we also find ABS-DAT verbs which encode for effortful/volitional participants.

- (21) a. *e ‘au‘auná le taule‘ale‘a ‘i le matai*  
 PRES serve=ABS SPEC untitled.man DAT SPEC matai  
 The untitled man serves the matai.
- b. *‘ia ‘e fesoasoani ‘iate ia*  
 SUBJ 2SG help DAT 3SG  
 You should help him.



- c. *na kisi 'o ia 'i lona atali'i*  
 PAST kiss ABS 3SG DAT his son  
 He kissed his son.
- d. *se'i 'e logo atu 'i le ali'i*  
 OPT 2SG inform DIR DAT SPEC chief  
 You should inform the chief.

When we apply Tollan’s system to the predicates above, we find that the “effortful” and “volitional” properties bias the system towards encoding the predicates as ERG-ABS, rather than as ABS-DAT. For example, the following is an assessment of the ‘helper’ participant of the ABS-DAT verb *fesoasoani*, ‘help’. As the verb is ABS-DAT, we want Tollan’s system to encode the ‘helper’ as a *Proto Low Agent*. Although the entailments for each predicate can be tricky to pin down, the “effortful” and “volitional” properties seem to bias the ‘helper’ argument toward being encoded as a *Proto High Agent*.

(22) the ‘helper’-participant of *fesoasoani* (‘help’):

| <i>Proto High Agent</i> | <i>Proto Low Agent</i> |
|-------------------------|------------------------|
| - initiator             | - initiator            |
| - affect another entity |                        |
| - effortful             |                        |
| - volitional            |                        |
| - concludes an event    |                        |

Thus it appears that a class of agentive predicates is lexicalized with an ABS-DAT case frame, rather than ERG-ABS. In order to clarify the link between agentivity and the case on the more agentive participant, we need to make more precise the notion of agentivity which is relevant to Samoan case.

### 3.3.2 Self Directed Initiators (SDIs)

Leaving aside the question of ABS-DAT verbs for now, does the proposed link between ergative and agentivity play out in the data? To investigate this, I refer to Cruse’s 1973 characterization of four (potentially overlapping) notions of agentivity. Each notion describes an entailment relating to an individual  $x$ ’s participation in an event  $e$ .

- (23)
- Volitive:**  $x$ ’s participation in  $e$  is an act of  $x$ ’s will
  - Effective:**  $x$ ’s participation in  $e$  is an exertion of force, and  $x$ ’s participation **is not** due to  $x$ ’s internal energy (but by virtue of its position, motion, etc.), e.g., projectiles, instruments, etc.
  - Agentive:**  $x$ ’s participation in  $e$  is an exertion of force, and  $x$ ’s participation **is** due to  $x$ ’s internal energy, e.g., animate actors, natural forces, etc.
  - Initiative:**  $x$  initiates  $e$  by virtue of giving a command.

We can immediately discount **effectivity** (b) and **initiativity** (d) as being necessary conditions for ergative. Various ERG-ABS predicates require the internal energy of the

ergative-argument: *va‘ava‘ai* ‘look after’, *lama* ‘ambush’, *māfaufau* ‘devise (a plan)’, and many others, suggesting effectivity is not the right notion encoded by ergative case. Similarly, various ERG-ABS predicates don’t require the ergative to have issued a command: *fofoga* ‘sing’, *lau* ‘read out’, *fa‘aita* ‘make angry’, and many others, discounting initiativity as the relevant notion.

The notion of **volitivity** (a) is more promising. However, Mosel and Hovdhaugen 1992 note that natural forces such as weather events, as well as non-human actors like machines and cars are able to be ergative subjects.

- (24) a. *na tapuni e le matagi le faitoto‘a*  
 PAST close ERG SPEC wind SPEC door  
 The wind closed the door.
- b. *Ai ‘ua vave fafagu a‘u e aveave o le lā oso*  
 probably PERF early wake.up 1SG ERG ray GEN SPEC sun rise  
 I was probably woken up early by the rays of the rising sun.
- c. *e vili e le masini le ogalā‘au*  
 PRES rotate ERG SPEC machine SPEC log  
 The machine rotates the log.
- d. *e fa‘asalalau atu e le ta‘avalé le fe‘au*  
 PRES broadcast DIR ERG SPEC car=ABS SPEC message  
 The car broadcasts the message.

These data suggest volitivity is not a condition for ergative. However, we also find that not all speakers accept cases like (25-a), paraphrasing using locative case.

- (25) a. *%‘ua fa‘apa‘u e le matagi le lā‘au*  
 PERF make.fall ERG SPEC wind=ABS SPEC tree  
 The wind felled the tree.
- b. *‘o le malosi o le matagi ‘ua pa‘u ái le lā‘au*  
 FOC SPEC strong GEN SPEC wind PERF fall LOC=ABS SPEC tree  
 The strength of the wind is why the tree fell.
- c. *‘ua pa‘ú le lā‘au i le malosi o le matagi*  
 PERF fall=ABS SPEC tree FOC SPEC strong GEN SPEC wind  
 The tree fell due to the strength of the wind.

For the set of speakers rejecting (25-a), the notion of volitivity is an additional necessary condition for ergative. Additionally, we observe the following generalization: all ERG-ABS verbs *can* be construed as volitive events, whether or not speakers allow a construal with a non-volitional ergative argument.

We similarly find Cruse’s notion of **agentivity** to be relevant. Cruse provides the following minimal pair to isolate the intended semantic notion of “internal energy”.

- (26) a. The ball rolled across the floor. (*internal energy unspecified*)  
 b. The ball rolled itself across the floor. (*internal energy entailed*)

In (26-b), the addition of ‘itself’ provides an entailment that the active participant (‘the

ball’) is self-directed. Its participation in the event is not being propelled by a distinct individual. I propose here that this notion of self-directed action is relevant for the encoding of Samoan verbs.

(27) **Self Directed Initiator (SDI) hypothesis:**

Samoan ERG-ABS verbs entail that:

- a. the ergative-marked argument denotes an initiating participant
- b. the ergative-marked argument denotes a self-directed participant

The initiator requirement, (27-a), entails that the event comes about by the action or mental state of the ergative argument. This condition excludes non-initiator subjects from having ergative case, such as the subjects in (28).

- (28) a. *‘O le ma‘i e māfua ‘i le lā*  
 FOC SPEC sickness PRES originate DAT SPEC sun  
 The disease is caused by sunlight.
- b. *e so‘o ‘uma ‘i lo lātou tinā*  
 PRES resemble all DAT SPEC.3PL mother  
 They all resemble their mother.
- c. *‘ua tumu le ipu i vai*  
 PERF full SPEC dish LOC water  
 The cup is full of water.

The self-directedness requirement, (27-b), entails that the participant denoted by the ergative argument operates on its own internal energy. This is general enough to include natural forces and machines. However, the definition correctly excludes instrumental and projectile subjects, which are not able to be encoded as ergatives.

- (29) a. *#na tatala e le kî le faitoto‘a*  
 PAST open ERG SPEC key=ABS SPEC door  
 The key opened the door
- b. *#na tipi e le naiŕi le fasipovi*  
 PAST cut ERG SPEC knife SPEC meat  
 The knife cut the meat.
- (30) a. *#‘ua na tā e le pulufaná le tama*  
 PERF already strike ERG SPEC bullet=ABS SPEC boy  
 The bullet struck the boy.
- b. *#‘ua nuti e le papá le fagu*  
 PERF smash ERG SPEC rock=ABS SPEC bottle  
 The rock smashed the bottle.

The definition also correctly excludes predicates denoting involuntary emotions and states, which are lexicalized with ABS-DAT in Samoan.

- (31) a. *E te alofa ‘iate ia*  
 2SG PRES love DAT 3SG

- You love her/him.
- b. ‘*Ua e fa‘amoemoe ‘i le Atua*  
 PERF 2SG trust                    DAT SPEC God  
 You trust in God.
- c. *Sā ‘ou ita ‘i lo‘u uso*  
 PERF 1SG angry DAT my same.sex.sibling  
 I was angry at my brother/sister.

We also correctly exclude predicates which are true by virtue of the position or motion of their participants, i.e., not due to their own self-directed initiation.

- (32) a. *E latalata le fale ‘i le ‘auala*  
 PRES near            SPEC house DAT SPEC road  
 The house is near the road. (Milner 1976:98)
- b. ‘*ua si‘o le fanua ‘i uaea*  
 PERF surround SPEC land    DAT wire  
 The land is surrounded by wire. (Milner 1976:210)

The Self-Directed Initiator (henceforth SDI) hypothesis shares an insight with Tollan’s Dowty-inspired system: agentive notions like effort/volition are determining factors in classifying a verb as ARG-ABS. Crucially, the hypothesis in (27) takes the SDI role to be only a necessary condition for ergative case. It isn’t a sufficient condition for ergative: non-ergative subjects (w/ ABS-DAT verbs) may be SDIs.

### 3.4 Variations of dative

The proposal in the previous section is that the subject must be a self-directed initiator in order to receive ergative case. But this is only a necessary condition: we also see SDI subjects with ABS-DAT verbs, for example *fesoasoani* ‘help’ which assigns the ABS-DAT frame. The task is to spell out the conditions which determine the case frame among verbs which have SDI subjects.

I propose that two-argument verbs whose non-subject argument is a thematic *goal* take an ABS-DAT case frame. This is a sufficient but not necessary condition for the ABS-DAT case frame. We find several examples of ABS-DAT verbs whose non-subject argument *does not* receive a goal-like interpretation.

- (33) a. ‘*Ua aogā le vailā‘au lenei i lo‘u ma‘i*  
 PERF benefit=ABS SPEC medicine good DAT my sickness  
 This medicine has cured my sickness.
- b. ‘*ua si‘o le fanua ‘i uaea*  
 PERF surround SPEC land    DAT wire  
 The land is surrounded by wire. (Milner 1976:210)

However, we find that the ABS-DAT frame is chosen when the non-subject *is* a goal. I interpret the notion of goal as something of a macro-category of thematic roles. In all cases, a participant *x* is a goal just in case *x* is the terminus of some spatio-temporal

path encoded by the event, traversed either by the subject participant, or by some third (possibly non-physical) participant. This notion is sufficiently abstract to incorporate a number of interrelated thematic roles. I intend this notion to cover endpoints of directed motion as in (34-a) in which the subject participant traverses the path. It also covers the addressees of speech events, which describe events of transmission of information, as in (34-b). Also included are beneficiaries and recipients as in (34-c), in which the dative-marked participant represents the end point of a transmission, either of a physical object, or some abstract entity like a favor or service as in (34-c).

- (34)
- a. *'ua 'ou asiasi 'i le falemai*  
 PERF 1SG visit DAT SPEC hospital  
 I have visited the hospital.
  - b. *se'i 'e logo atu 'i le ali'i*  
 OPT 2SG inform DIR DAT SPEC chief  
 You should inform the chief.
  - c. *'ia 'e fesoasoani 'iate ia*  
 SUBJ 2SG help DAT 3SG  
 You should help him.

Having pinned down a sufficient condition for the ABS-DAT frame, namely the assignment of a macro-role of ‘goal’ to the non-subject argument, we are in a position to make a more precise generalization for the semantics of Samoan case.

(35) **Case-thematic role linking:**

- a. ERG-ABS verbs entail initiation by the self-directed action of an individual.
- b. ABS-DAT verbs entail either
  - (i) no initiation by a self-directed action, or
  - (ii) that the dative case-marked argument is a thematic goal/recipient.

The following section explains how this generalization is derived, proposing a particular viewpoint on how lexical semantics interfaces with morphosyntax. The proposal is spelled out using violable constraints linking morphological cases with thematic roles in an Optimality Theoretic framework.

### 3.5 The formal account

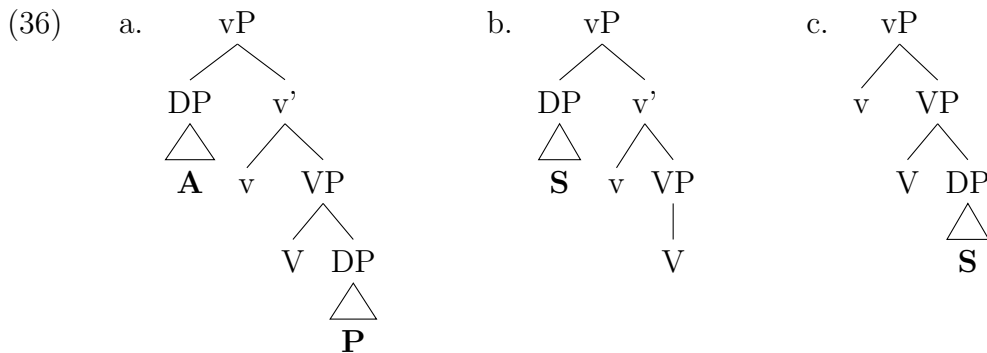
Employing the OT framework (Prince and Smolensky 1993), I take grammatical utterances to be constrained by a set of well-formedness constraints. The ranking determines how conflicts between constraints are to be resolved, with higher ranked constraints taking precedence. As in many versions of minimalism (see e.g., Chomsky 1995; Fox 2000 and Johnson and Lappin 1999; Potts 2001 for critical reviews), I take the narrow syntactic component to be non-deterministic. A derivation may involve multiple, competing structural descriptions, where the winning structure satisfies particular “economy” constraints. However unlike the Minimalist work mentioned above, I take the unique output of a derivation to be the competing candidate which most optimally sat-

isfy the ranked constraints. Ungrammatical forms are understood to satisfy the set of ranked constraints less optimally than the winning candidate.

Following OT terminology, I refer to the set of candidates as GEN. GEN is the output of the narrow syntax. This means that the narrow syntax must be, at least in some instances, non-deterministic. As the narrow syntax is itself constrained by language particular rules, GEN is moderately constrained, and differs from language to language, in a departure from classical OT. Under the system presented in this paper, GEN is very small, differing only by the choice of case-markers.

### 3.5.1 Establishing the candidates

The set of input candidates, GEN, are those ruled in by a broadly minimalist grammar, i.e., well-formed structures are determined by specifying which lexical items can combine (or ‘merge’) with what categories of structures. The syntax follows a mainstream analysis of ergative/absolutive-aligned languages, see, for example, Aldridge 2004 and Legate 2008 as well as Collins 2014, 2017 specifically on Samoan clause structure. (36) demonstrates a transitive structure, with **A** representing the more agentive of the two arguments, while **P** is the less agentive. Sole arguments of intransitives, **S**, are selected in either Spec,vP or Comp,VP depending on whether the verb is lexically specified as unergative or unaccusative, respectively.



The system of morphological-case assignment follows the analysis of Collins and Schuelke 2019. Just like the systems outlined in Aldridge 2004; Legate 2008; Otsuka 2006, 2010, morphological case is determined by abstract features assigned in the narrow syntax. Unlike those works, these abstract features specifically correspond to thematic relations rather than abstract Case features. The features are taken from Kiparsky 1997, employing the notions of “H(ighest) R(ole)” and “L(owest) R(ole)”.

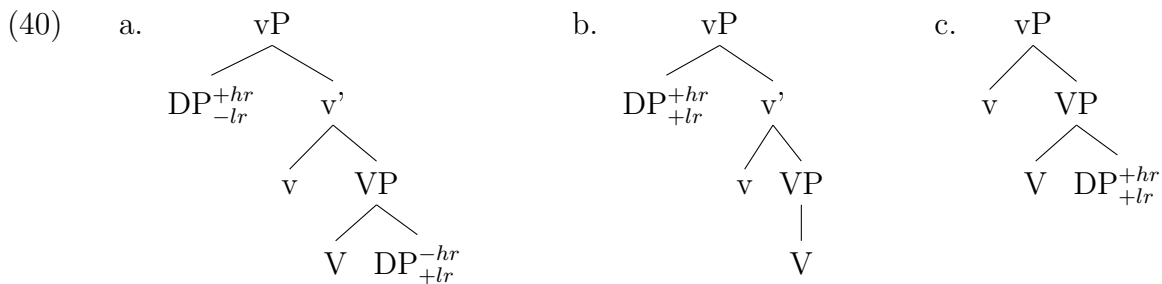
- (37)
- a. [+HR]: a DP with this feature is the thematically highest ranked argument  
[-HR]: all other DP arguments get this feature.
  - b. [+LR]: a DP with this feature is the thematically lowest ranked argument  
[-LR]: all other DP arguments get this feature.

Collins and Schuelke 2019 use a similar mechanism to Marantz 1991 in order to determine the assignment of the features in (37-b). The features are assigned based on rel-

ative c-command within a relevant domain (i.e., a vP). This corresponds to relative thematic ranking, following the understanding of thematic-structural correspondance outlined in, e.g., Kratzer 1996.

- (38) *Assigning highest role features*:  $[-\text{HR}]/[+\text{HR}]$
- To any DP c-commanded by another DP, assign  $[-\text{HR}]$ .
  - Elsewhere, i.e., if there is no c-commanding DP, assign  $[\text{+HR}]$ .
- (39) *Assigning lowest role features*  $[-\text{LR}]/[+\text{LR}]$
- To any DP c-commanding another DP, assign  $[-\text{LR}]$ .
  - Elsewhere, i.e., if there is no c-commanded DP, assign  $[\text{+LR}]$ .

The trees in (36) receive the following feature assignments.



These features determine the range of morphological cases (m-cases) assigned to each DP, according to the mapping rules in (41). The notion of m-cases mapped onto underlying grammatical relations follows directly from prior work, especially Yip, Maling, and Jackendoff 1987, as well as typological/functionalist work (e.g., Comrie 1981).

The characterization of ergative *e* as  $[-\text{LR}]$  in (41-a) determines that ergative is fixed to only appear on the more agentive argument of a transitive clause. Dative *i* is  $[-\text{HR}]$ , and so also only appears in transitive clauses, but on the less agentive argument. This latter characterization corresponds to Tollan’s 2018 observation that Samoan “dative” is better labelled as an accusative case. Though following the terminology of earlier work (see Collins 2014, 2017), I continue using the term dative for *i*.

- (41) a.  $[-\text{LR}] \Rightarrow /e/$  ergative  
 b.  $[-\text{HR}] \Rightarrow /i/$  dative  
 c.  $[\ ] \Rightarrow /H/$  absolutive

This m-case mapping system determines that the case of **S** will always be the absolutive high tone, as neither dative nor ergative apply in the (b) and (c) structures in (40). Thus in these cases, GEN contains just one member, and no OT-style evaluation is necessary.

In transitives, both **A** and **P** are compatible with the absolutive high tone. **A** is also compatible with ergative *e*, while **P** is also compatible with dative *i*. This means that a transitive structure outputs a four-member GEN, as in ???. Throughout, case frames for a transitive clause are abbreviated as in ??, with the case assigned to **A** followed





Below is an example input. It consists of a pair. The first member is a syntactic structure. The DPs in the structure are indexed in order to match them to the semantic representation, the second member of the pair. The semantic representation is a property of events, associating the arguments with particular roles. The higher DP is labelled a **server**, while the lower DP is labelled a **servee**.

$$(44) \quad \left\langle [{}_{vP} DP_x [ v [{}_{VP} V DP_y ]]], \lambda e. \mathbf{serve}(e) \wedge \mathbf{server}(e) = \mathbf{x} \wedge \mathbf{servee}(e) = \mathbf{y} \right\rangle$$

The semantic components of the constraints in (45) are read of this semantic representation. For example, in order to evaluate whether  $\mathbf{x}$  is a self-directed initiator, we ask whether the proposition  $\mathbf{server}(e) = \mathbf{x}$  entails that  $\mathbf{x}$  initiated the serving event, and whether  $\mathbf{x}$  did so using its own internal energy.

With this information available to be evaluated, we are able to posit constraints which penalize improper m-case/thematic role mapping. Like in Legendre, Raymond, and Smolensky 1993, thematic roles and m-cases are linked by material implications. As the thematic and morphosyntactic information is available simultaneously, implications may go in any direction.

- (45) a.  $\text{ERG} \Rightarrow \text{SDI}$ : assign a violation for any ergative DP which is not a self-directed initiator.  
 b.  $\text{DAT} \Leftrightarrow \text{GOAL}$ : assign a violation for any dative DP which is not a goal, and for any goal which is not dative.

### 3.5.3 A Samoan constraint ranking

Given a set of relevant constraints, we can determine a ranking which generates the Samoan pattern of case marking. We first determine that \*CC is ranked above \*MC. Given any sort of semantic input, \*CC will choose the frames ERG-ABS, ABS-DAT, and ERG-DAT over ABS-ABS.

For example, take a relation like *lata* ‘be near’, which assigns neither an SDI-role nor a goal-role. In comparing whether ABS-ABS or ABS-DAT is a better candidate, \*MC will prefer ABS-ABS (due to the absence of marked cases), and UNIQ will choose ABS-DAT (due to a case-mismatch). We observe ABS-DAT in Samoan, as in (46),

$$(46) \quad e \quad \textit{latalatá} \quad \textit{le} \quad \textit{fale} \quad \textit{'i} \quad \textit{le} \quad \textit{'auala}$$

PRES near=ABS SPEC house DAT SPEC road  
 The house is near the road. (Milner 1976:98)

(47) demonstrates a ranking of these constraints generating the right result. We additionally rule out the alternative hypothesis that the emergence of ABS-DAT here is due to some other constraint(s). Both candidates in (47) vacuously satisfy  $\text{ERG} \Rightarrow \text{SDI}$ , due to the absence of an SDI-participant. Further,  $\text{DAT} \Leftrightarrow \text{GOAL}$  wrongly preferences ABS-ABS. Therefore, there is no other constraint which prefers ABS-DAT to ABS-ABS in (47), forming a ranking argument that  $\text{UNIQ} \gg *MC$ .

(47)

| <i>lata</i> : <b>be.near</b> (x,y) |                                      | UNIQ | *MC |
|------------------------------------|--------------------------------------|------|-----|
| a.                                 | ABS <sub>x</sub> -ABS <sub>y</sub>   | *!   |     |
| b.                                 | ☞ ABS <sub>x</sub> -DAT <sub>y</sub> |      | *   |

We can form a totally symmetrical argument that the constraint linking dative and goal-hood ( $\text{DAT} \Leftrightarrow \text{GOAL}$ ) also outranks the constraint penalizing marked cases. Using the same predicate, we find that the second argument (the location, ‘*i le ‘auala* in (46)) is not a goal. Therefore, the bidirectional constraint  $\text{DAT} \Leftrightarrow \text{GOAL}$  should wrongly prefer ABS-ABS, in a which a non-goal is not assigned dative. We therefore form a parallel argument that  $\text{UNIQ} \gg \text{DAT} \Leftrightarrow \text{GOAL}$

(48)

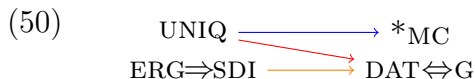
| <i>lata</i> : <b>be.near</b> (x,y) |                                      | UNIQ | $\text{DAT} \Leftrightarrow \text{GOAL}$ |
|------------------------------------|--------------------------------------|------|--|
| a.                                 | ABS <sub>x</sub> -ABS <sub>y</sub>   | *!   |  |
| b.                                 | ☞ ABS <sub>x</sub> -DAT <sub>y</sub> |      | *  |

Finally, the same predicate *lata* can also help us rank the two semantically-sensitive constraints. *lata* assigns neither an SDI-role nor a goal-role. We observe in (46) that ABS-DAT is the appropriate m-case frame. This frame vacuously satisfies the unidirectional implication  $\text{ERG} \Rightarrow \text{SDI}$ , as there is no ergative case. However, it violates the bidirectional  $\text{DAT} \Leftrightarrow \text{GOAL}$ , as a non-goal is assigned dative. This compels us to rank  $\text{ERG} \Rightarrow \text{SDI}$  over  $\text{DAT} \Leftrightarrow \text{GOAL}$ . We cannot attribute this preference for ABS-DAT over ERG-ABS to any other constraint, as both frames violate \*MC, and both satisfy UNIQ.

(49)

| <i>lata</i> : <b>be.near</b> (x,y) |                                      | $\text{ERG} \Rightarrow \text{SDI}$ | $\text{DAT} \Leftrightarrow \text{GOAL}$ |
|------------------------------------|--------------------------------------|-------------------------------------|--|
| a.                                 | ERG <sub>x</sub> -ABS <sub>y</sub>   | *!                                  |  |
| b.                                 | ☞ ABS <sub>x</sub> -DAT <sub>y</sub> |                                     | *  |

The end result is the following ranking of constraints, satisfying the above three sub-orderings. Of the 24 (4!) possible rankings of the four constraints, only five satisfy the proposed rankings in (50).



### 3.5.4 Lexical optimality in action

Using a ranking which satisfies the sub-rankings in (50), we can predict the correct Samoan case patterns based on the thematic roles assigned by verbs. We propose a four-way classification of Samoan verbs. First, verbs can be classified based on whether the more agentive argument is classified as a self directed initiator or not, accounting for the split along the vertical axis in (51). Second, verbs can be classified as to whether the less agentive argument is a goal or not, splitting verbs along the horizontal axis in (51).

|      |             |  |  |
|------|-------------|--|--|
|      |             | [−HR] = GOAL   | [−HR] ≠ GOAL   |
| (51) | [+HR] = SDI | <i>fesoasoani</i> ‘help’,<br>‘ <i>au‘auna</i> ‘serve’      | <i>fa‘aleaga</i> ‘destroy’<br><i>ifo</i> ‘restrain’    |
|      | [+HR] ≠ SDI | <i>taotua</i> ‘come after’<br><i>pisi</i> ‘splash against’ | <i>lata</i> ‘be near’,<br><i>pāgamālie</i> ‘suit, fit’ |

Below is a demonstration of how the verb type categorized in (51) determines the case frame. Note that throughout, as UNIQ and \*MC are constraints on forms, they consistently penalize case frame according to the same pattern, regardless of the lexical semantics of the verb. Thus, the crucial action below lies within the final two columns. Note that the constraint ranking below is just one of five which obeys (50). It is chosen arbitrarily.

Verbs with an SDI-agent but a non-goal patient are assigned ERG-ABS. They satisfy the link between agentivity and ergative case, as the ergative-marked argument takes an SDI-role. The ABS-DAT frame is ruled out as a non-goal is assigned dative.

|      |    |   |      |     |           |            |
|------|----|---|------|-----|-----------|------------|
| (52) |    | <i>fa‘aleaga</i> :<br><b>destroy</b> ( $x_{sdi}, y_{-goal}$ ) | UNIQ | *MC | ERG ⇒ SDI | DAT ⇔ GOAL |
|      | a. | ☞ ERG <sub>x</sub> -ABS <sub>y</sub>                          |      | *   |           |            |
|      | b. | ABS <sub>x</sub> -DAT <sub>y</sub>                            |      | *   |           | *!         |
|      | c. | ABS <sub>x</sub> -ABS <sub>y</sub>                            | *!   |     |           |            |
|      | d. | ERG <sub>x</sub> -DAT <sub>y</sub>                            |      | **! |           | *          |

Verbs with an SDI-agent and a patient with goal-like properties are assigned ABS-DAT. For example, *fesoasoani* ‘help’, whose less agentive participant, the ‘helpee’, is a benefactive which is hypothesized to be a sub-type of goal. As above, both the ERG-ABS and ABS-DAT frames satisfy the implication ERG ⇒ SDI. But, only ABS-DAT satisfies the bidirectional link between dative and goal-status, which penalizes ERG-ABS for failing to assign a goal dative case.

|      |    |  |      |     |           |            |
|------|----|--|------|-----|-----------|------------|
| (53) |    | <i>fesoasoani</i> :<br><b>help</b> ( $x_{sdi}, y_{goal}$ ) | UNIQ | *MC | ERG ⇒ SDI | DAT ⇔ GOAL |
|      | a. | ERG <sub>x</sub> -ABS <sub>y</sub>                         |      | *   |           | *!         |
|      | b. | ☞ ABS <sub>x</sub> -DAT <sub>y</sub>                       |      | *   |           |            |
|      | c. | ABS <sub>x</sub> -ABS <sub>y</sub>                         | *!   |     |           |            |
|      | d. | ERG <sub>x</sub> -DAT <sub>y</sub>                         |      | **! |           | *          |

The analysis so far handles verbs with a self-directed initiator agent. Verbs without such an agent, i.e., those in the bottom two cells of (51), are also handled. These verbs can never be assigned ERG-ABS. This case frame is ruled out by the implicational link between ergative and SDI-status. If an argument is ergative, it must be a self directed initiator. Thus these types of verbs receive ABS-DAT, regardless of whether the less agentive participant is a goal, as in (54), or not, as in (55).

(54)

| <i>taotua</i> : |  | UNIQ | *MC | ERG $\Rightarrow$ SDI | DAT $\Leftrightarrow$ GOAL |
|-----------------|--|------|-----|-----------------------|----------------------------|
| a.              | <b>come.after</b> ( $x_{-sdi}, y_{goal}$ )<br>ERG <sub>x</sub> -ABS <sub>y</sub> |      | *   | *!                    | *                          |
| b.              | <b>come.after</b> ( $x_{-sdi}, y_{goal}$ )<br>ABS <sub>x</sub> -DAT <sub>y</sub> |      | *   |                       |                            |
| c.              | ABS <sub>x</sub> -ABS <sub>y</sub>   | *!   |     |                       |                            |
| d.              | ERG <sub>x</sub> -DAT <sub>y</sub>   |      | **! |                       | *                          |

In (55), ABS-DAT is the winner, even though dative is assigned to a non-goal. The higher ranked constraint linking ergative to SDI-status rules out the ERG-ABS frame.

(55)

| <i>lata</i> : |   | UNIQ | *MC | ERG $\Rightarrow$ SDI | DAT $\Leftrightarrow$ GOAL |
|---------------|---|------|-----|-----------------------|----------------------------|
| a.            | <b>be.near</b> ( $x_{-sdi}, y_{goal}$ )<br>ERG <sub>x</sub> -ABS <sub>y</sub> |      | *   | *!                    |                            |
| b.            | <b>be.near</b> ( $x_{-sdi}, y_{goal}$ )<br>ABS <sub>x</sub> -DAT <sub>y</sub> |      | *   |                       | *                          |
| c.            | ABS <sub>x</sub> -ABS <sub>y</sub>  | *!   |     |                       |                            |
| d.            | ERG <sub>x</sub> -DAT <sub>y</sub>  |      | **! |                       | *                          |

The above analysis shows how the semantics of verbs can optimally link to case frames by a well-chosen set of constraints which link m-cases to particular thematic roles. These constraints are violable, accounting for potential mismatches between thematic roles and m-cases.

### 3.6 Conclusion

This study provides us with a way of understanding how thematic roles link to morphological cases. In particular, the study focuses on the link between ergativity and agentivity, construing the link as a violable constraint. This understanding gives us a way to account for variation in the morphosyntactic encoding of transitive predicates.

The study provides us with many questions still to explore. In particular, the discussion above avoids the Samoan transitivizing affixes *fa'a-* and *-Cia*, both of which have unexplored implications for the analysis presented here. We similarly still need to explore a small class of verbs, termed ‘labile’ by Mosel and Hovdhaugen 1992, which appear to be able to switch between the two case-frames with semantic effects.

Taking stock, this paper proposes a way in which verbal meanings are paired with argument structures, providing an analysis of the link between morphological case assignment and verb semantics. The mapping defines a notion of possible argument structures given a verb’s meaning, based on optimal satisfaction of violable constraints.

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