



# Split ergativity based on nominal type

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Received 17 May 2013; received in revised form 30 May 2014; accepted 4 June 2014  
Available online

## Abstract

This paper argues that split ergativity based on nominal type is a morphological phenomenon, not a syntactic one. We use three tests to identify the source of this type of split ergativity as morphological syncretism: (i) case agreement, (ii) syntactic ergativity, (iii) coordination. We illustrate the complex patterns of attested splits, demonstrating that analyses positing a single dichotomy (e.g. between first and second person pronouns versus all other nominals) are insufficient. A morphological syncretism analysis is provided whereby ergative case is deleted in featurally-marked contexts.

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Keywords: Ergativity; Split ergativity; Person hierarchy; Animacy hierarchy; Case; Syncretism

## 1. Introduction

Silverstein's seminal (1976) paper identified a person/animacy hierarchy whereby nominals higher on the hierarchy (e.g. 1st and 2nd person pronouns) are more likely to be marked with accusative case, whereas those lower in the hierarchy (e.g. inanimates) are more likely to be marked with ergative case. Silverstein's hierarchy (1976:122) is reproduced in 1, and illustrated with data from Maragny (Maric: Queensland, Australia)<sup>1</sup> (Breen, 1976, 1981). In Maragny, pronouns inflect according to a nominative-accusative case marking pattern, 2, whereas nominals inflect on an ergative-absolutive pattern, 3.

(1)

Acc		Erg		
		_____		
+tu		-tu		_____
		+ego		-ego
				'pronouns'
-----				
		+proper		_____
				-proper
				+human
				-human
				+animate
				-animate
				...
				'nouns'

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<sup>1</sup> We have used the classification of Australian languages from Ethnologue. See Dixon (2002) for an alternative.

- (2) a. matya ngaya balganngandala yurdi  
before 1sg.NOM hit.Hab.Past meat.ABS  
“I used to kill a lot of kangaroos” (Breen, 1981:307)
- b. matya inda nganha wa:la  
before 2sg.NOM 1sg.ACC give.Past  
“You gave me [money] before” (Breen, 1981:306)
- c. ngaya nhunu wabanhi  
1sg.NOM always come.PRES  
“I always come here” (Breen, 1981:306)
- (3) a. nguda-nggu yurdi gamba:nhi  
dog-ERG meat.ABS bury.Rec.Past  
“The dog buried the meat” (Breen, 1981:307)
- b. nguda balga:nhi warngulinhi-ngga  
dog.ABS hit.RecPast bark.Pres-LOC  
“He hit the dog because it was barking” (Breen, 1981:319)
- c. nguda nguna:labanhi  
dog.ABS lie.about.Pres  
“There’s dogs lying around everywhere” (Breen, 1981:323)

In this paper, we examine how person/animacy-based split case marking is synchronically encoded in the grammar, focussing on the distribution of ergative case.<sup>2</sup> Note that the question of grammatical encoding is logically distinct from any potential diachronic and/or functional explanations for the appearance of the pattern (see for example Silverstein, 1976; Moravcsik, 1978; Dixon, 1979; Comrie, 1989; DeLancey, 1981; Du Bois, 1987; Garrett, 1990; Dixon, 1994). For example, suppose it true, following Garrett (1990), that ergative case appears only on inanimates in some languages because the ergative is diachronically reanalysed from an instrumental; we still need to ask how the synchronic grammar of the language encodes the synchronic fact that ergative appears only on inanimates. Or suppose, following Dixon (1979), that elements higher on the hierarchy are more likely to be transitive agents<sup>3</sup> and that it is “most natural and economical to ‘mark’ a participant when it is in an unaccustomed role” (1979:86)<sup>4</sup>; we must still ask how that marking (or lack thereof) is accomplished in the grammar. Thus, we largely leave diachronic and functional considerations aside, since our focus is elsewhere, although we do point out when the data presented impacts such proposals. Specifically, the question we seek to answer is: do nominals fail to bear ergative case morphology because a syntactic mechanism ensures that they do not have ergative case, or because a morphological mechanism ensures that their ergative form is nondistinct (e.g. syncretic with the nominative/absolute)?<sup>5</sup> We argue the latter.

This type of analysis has been explicitly proposed in more descriptive or typological work, by Blake (1977), Goddard (1982), and Comrie (1991) (*inter alia*) (although not all, see McGregor, 2010). And yet, in the theoretical linguistics literature, this type of analysis has not been widely adopted.<sup>6</sup> Instead, researchers posit various syntactic mechanisms to ensure that DPs high on the hierarchy are not assigned ergative case (see for example Jelinek, 1993; Jelinek and Carnie,

<sup>2</sup> We limit ourselves to languages in which ergative is marked on the DP, rather than marked solely through agreement. The relationship between agreement and case is often complex, resulting in additional indeterminacies for a language without case marking on the DP. See also Keine (2010) for relevant discussion of the interaction between case and agreement and morphological impoverishment.

<sup>3</sup> In some ergative languages, ergative marking is extended to a subset of intransitive thematic subjects, while in others ergative marking is extended to non-agentive thematic subjects (e.g. experiencers). We abstract away from such complications here, since our interest is in the morphological realization of ergative case features, rather than the varying conditions of ergative case feature assignment crosslinguistically.

<sup>4</sup> Although see Wierzbicka (1981) for a criticism.

<sup>5</sup> The case which is found on the intransitive subject and transitive object in some ergative systems is called NOMINATIVE by some researchers; other researchers reserve NOMINATIVE for the case on subjects, intransitive in ergative languages and both intransitive and transitive in nominative languages, and instead use ABSOLUTE for the case found on the intransitive subject and transitive object. Since the case on the transitive object is not our focus here, we use these terms largely interchangeably.

<sup>6</sup> Exceptions are Legate (2008) on a handful of Australian languages, whose general approach we build on here, and the Optimality-Theoretic approaches of Aissen (1999), Malchukov (2008), Woolford (2008), and Keine (2010) (thank you to an anonymous reviewer for bringing Keine’s work to our attention) which assume a morphological approach (we return to comparisons with OT approaches in section 4). An interesting case is Kiparsky (2008). On the one hand, when criticizing the approach of Garrett (1990), Kiparsky states quite clearly the (to our minds) correct position that “high-D nominals do *not* lack ergative case; rather, they have ergative/nominative syncretism, hence *ergative nominals with no overt case marking*—a very different thing” (2008:35, *emphasis original*). On the other hand, Kiparsky’s own analysis is couched in terms of case assignment to syntactic projections: “Ergative case is assigned to projections of the category N, and not to projections of the category D” (2008:43), hence it seems appropriate to include it with other syntactic analyses.

2003; Carnie, 2005a; Alexiadou and Anagnostopoulou, 2006; Merchant, 2006; Kiparsky, 2008; Coon and Preminger, 2012). Here we present arguments that the morphological analysis is correct.

We begin in section 2 with explicit arguments for a morphological, rather than syntactic, explanation of person/animacy-based splits, from case agreement, syntactic ergativity, and coordination. In section 3, we argue from attested patterns of person/animacy-based ergative splits that Silverstein's hierarchy is a tendency rather than a universal, and therefore that the hierarchy should not be hardwired into the grammar. We also argue that morphological markedness plays a crucial role in producing ergative splits, yielding the tendency to obey Silverstein's hierarchy, but that other factors may also play a role, yielding exceptions to the hierarchy. Section 3 also illustrates the complexity of the patterns to be analysed, which has been consistently underestimated in work on the phenomenon. As early as 1981, Silverstein complains of oversimplification of his work, and that trend has continued. Often, researchers posit an explanation for a split at one point in the hierarchy, while neglecting others: Garrett (1990) focusses on ergative marked only on inanimates; Kiparsky (2008) focusses on ergative marked only on pronouns<sup>7</sup>; Jelinek and Carnie (2003), Alexiadou and Anagnostopoulou (2006), and Coon and Preminger (2012) focus on ergative marked on all DPs except 1st and 2nd person pronouns. Furthermore, although Silverstein (1976) included an extended discussion of number features, subsequent researchers have consistently ignored the role of number in the phenomenon.<sup>8</sup>

In section 4, we propose a specific morphological analysis, and contrast the approach in this paper with alternatives in more detail.

Before beginning, we would like to emphasize that generalizations and data presented in this paper have been verified through consultation of grammars or native speakers. In the process of researching this paper, we discovered that in many instances generalizations regarding split ergative patterns in the secondary literature were either incorrect or oversimplified to such a degree as to be misleading. Often these claims appeared to be taken from other secondary sources, rather than returning to the original grammars. We have pointed out a few errors in footnotes, but cannot undertake a full corrective here.

## 2. Evidence for a morphological source

In this section we use three tests to demonstrate that split ergativity based on nominal type in a wide range of languages must have a morphological, rather than syntactic source.<sup>9</sup> Syntactic analyses are discussed in more detail in section 4.2; here we briefly preview to make clear the relevance of the data presented in this section. One class of syntactic analyses claims that a DP bearing ergative case appears in a lower syntactic position than a DP without ergative

<sup>7</sup> Kiparsky does consider extensions of his analysis to other cut-off points. Recall from footnote 6 that Kiparsky proposes that ergative is only assigned to DPs, not NPs. He suggests that the ability to head DP is extended in some split ergative languages to elements lower in the hierarchy. He does not provide evidence from such languages for this assertion, but does cite Longobardi's (1994, 2001) work on Italian N-to-D raising. We should also point out that Kiparsky's chart (2008:34) of the distributions of ergative and accusative case marking in several Australian languages is not accurate. The table appears to be partially based on a table in Blake (1977:14) that indicates the distribution of accusative case in several Australian languages, but with ergative incorrectly added in the complement set of the accusative.

<sup>8</sup> The exception is Woolford (2008), which adopts a hierarchy based on those Silverstein uses in his discussion of exemplar languages.

(i) 1pl > 1sg > 2pl > 2sg > 3hum.pl > 3hum.sg > 3anim.pl > 3anim.sg > 3inanim.pl > 3inanim.sg

Both Woolford (2008) and Kiparsky (2008) also cite Silverstein's discussion of Aranda, where 1sg is the only pronoun is marked ergative (see section 3 below); Woolford notes that although constraints could be written to generate this pattern, they would equally generate the reverse of the Silverstein hierarchy; Kiparsky speculates that the 1sg is a noun rather than a pronoun (consistent with his overall approach, see footnote 6). Note also that Woolford (2008) follows Silverstein (1976) in describing Aranda as having no ergative marking on animate nouns. Silverstein cites Strehlow (1942a,b), however, Strehlow in fact provides ergative forms for animates (note that Strehlow refers to the ergative as NOMINATIVE II) (see for example the declensions of various noun types on p94–97); also, Wilkins (1989) states for Mparntwe Arernte (Aranda) that ergative appears on both animates and inanimates (see e.g. sections 3.1, 3.2, 4.1). A possible source of the confusion is that case marking is suffixed to the final element in the DP, and the third person pronoun may appear finally in the DP as a definiteness marker. Since the third person pronoun does not take ergative morphology, the result is that definite DPs will bear no ergative morphology (see Wilkins (1989) sections 3.7.3, 4.2.1 for discussion). Hence the lack of a distinction between nominative and ergative in Strehlow's 1942:101–102 declension of 'the good child' is due to the final third person pronoun, not to a lack of ergative morphology on animates.

<sup>9</sup> Languages are chosen based on availability of relevant data. Additional data on other languages may reveal the need to recognize a dichotomy between languages that pattern like those discussed here, in which the split has a morphological source, and languages that pattern differently, in which the split has a syntactic source. We would consider that an interesting result, but as of yet, we have found no such languages. Relatedly, a reviewer asks about differential object marking and the distribution of accusative case in Silverstein's hierarchy. Interestingly, there, we do find a dichotomy between two types of languages, as discussed in Legate (2005). In many Australian languages, differential accusative case marking patterns with the ergative as having a morphological source; see Blake (1977), Goddard (1982), Legate (2005, 2008). On the other hand, in other standard differential case marking languages (Legate, 2005 discusses Hindi and Spanish), the split has a syntactic source. Discussion of this dichotomy is beyond the scope of this article.

case (e.g. Jelinek, 1993; Jelinek and Carnie, 2003; Carnie, 2005a; Merchant, 2006). Another class of syntactic analyses claims that the clause containing a transitive subject without ergative case has distinct functional projections from a clause containing a transitive subject with ergative case (e.g. Alexiadou and Anagnostopoulou, 2006; Coon and Preminger, 2012). On a morphological analysis, in contrast, the syntactic structure is uniform; it is only the morphology that differs. The tests used in this section come from case agreement, coordination, and syntactic ergativity.

Our primary test, in that it will be applicable in the widest range of languages, is case agreement. Case agreement occurs when, in addition to the primary expression of case on the DP (wherever it may be), other, typically modificational, elements must bear the same case. This standard test has been used for example to disambiguate syncretic forms in Latin (see e.g. Calabrese, 2008), and to identify the case marking of null elements like PRO (see e.g. Sigurðsson, 1991; Landau, 2006). In 4a, we see case agreement in Latin on the third declension adjective *tristis* ‘sad’ disambiguating between syncretic genitive and dative on the first declension noun *puellae* ‘girl’ and the fifth declension noun *diei* ‘day’ (while the third declension noun *regis/regi* ‘king’ shows distinct genitive and dative forms); in 4b from Icelandic the case agreement appears on a floating quantifier; and in 4c from Djapu (Yuulngu: Northern Territory, Australia) (Morphy, 1983) we see a pattern of complete case agreement whereby every element of the DP is marked for case, here the locative.

- (4) a. *tristis puellae / regis / diei* versus  
sad.GEN girl.GEN king.GEN day.GEN  
*tristī puellae regī / diei*  
sad.DAT girl.DAT king.DAT day.DAT  
‘of the sad girl/king/day’ versus ‘to the sad girl/king/day’  
(Calabrese, 2008:168)
- b. *Strákarnir vonast til að PRO vanta ekki alla í skólann.*  
the.boys.NOM hope for PRO.ACC to.lack not all.ACC in the.school  
‘The boys hope not to be all absent from school.’ (Sigurðsson, 1991:331)
- c. *ga ṛunhal-yi ṛanapurṛ nhina-ny yukurra wāṛṇa-ṛur ṛurṛṅṅitj-ṛur / yāku-ṛur*  
and there.LOC-Anaph 1plExclNOM sit.UNM-Pro lie.Unm place-LOC shade-LOC name-LOC  
*Balkpalk-ṛur wāṛṇa-ṛur*  
vegetable.species-LOC place-LOC  
‘And we were sitting at that shady place, at the place called Balkpalkpuy’ (Morphy, 1983:140)

In some languages, this case agreement results in case-stacking: an interior case marking the function of the DP itself, and an exterior case agreeing with the element that DP modifies (see Plank, 1995 for a survey); 5 illustrates with data from Kayardild (Tangic: Queensland, Australia) (Evans, 1995).<sup>10</sup>

- (5) *Maku-ntha yulawu-jarra-ntha yakuri-naa-ntha dangka-karra-nguni-naa-ntha mijil-nguni-naa-ntha*  
woman-COBL catch-PAST-COBL fish-MABL-COBL man-GEN-INST-MABL-COBL net-INST-MABL-COBL  
‘The woman must have caught fish with the man’s net’ (Evans, 1995:115)

On a syntactic analysis, a DP without ergative case is expected to trigger non-ergative case agreement – the DP was not assigned ergative case and so cannot trigger ergative case agreement.<sup>11</sup> On a morphological analysis, a DP without ergative case can trigger ergative case agreement – the DP is assigned ergative case, but this case is not morphologically realized. In languages with case agreement, then, we can use modifiers to probe for the case assigned to a DP.

A second test comes from coordination, in those languages for which each conjunct (at least optionally) bears the case expected of a non-coordinated DP in that position.<sup>12</sup> Consider coordination in such a language of a DP-type that bears overt ergative with a DP-type that does not, and for concreteness take as an example ‘the teacher and I’ in a language in which nominals bear an ergative morpheme, but 1st person pronouns do not. If the (non)appearance of ergative is due to distinct syntax, we expect either: (a) the coordination to be ungrammatical, since the two conjuncts have distinct syntactic requirements; (b) the whole to have the syntax associated with 1st person, and thus both conjuncts to bear non-ergative case; (c) the whole to have the syntax associated with non-1st person, and thus both conjuncts to bear ergative case.

<sup>10</sup> MABL = modal ablative, COBL = complementizing oblique.

<sup>11</sup> The prediction is slightly more complex in the system of Merchant (2006), with the result that only a subset of the case agreement data are relevant, specifically those in which the modifier is not low in the clause. See section 4.2 for discussion.

<sup>12</sup> For other possibilities, including one or both conjuncts bearing a default case, see e.g. Johannessen (1998) and Schütze (2001).

What should not be possible is for “teacher” to bear ergative while “I” does not, as this would require half of a coordination construction to have a distinct syntax from the other half. If the (non)appearance of ergative is due to the morphology, on the other hand, we expect precisely that: the ergative case will be realized as ergative morphology on “teacher” but non-ergative on “I”, just as it is generally in the language.

A third test comes from syntactic ergativity. As is well known, in a subset of ergative languages, syntactic processes (typically relativization) are sensitive to the case borne by a DP, distinguishing the ergative from the nominative/absolutive. 6 illustrates with data from Tongan (Polynesian: Tonga) (Otsuka, 2000); relativization of the absolutive intransitive subject and transitive object uses a simple gap strategy, whereas relativization of the ergative transitive subject requires a resumptive pronoun.<sup>13</sup>

- (6) a. e fefine [OP<sub>i</sub> [na'e 'alu t<sub>i</sub> ki Tonga]]  
 def woman PAST go to Tonga  
 ‘the woman who went to Tonga’ (Otsuka, 2000:116)
- b. e fefine [OP<sub>i</sub> ['oku 'ofa'i 'e Sione t<sub>i</sub>]]  
 def woman PRES love ERG Sione  
 ‘the woman whom Sione loves’ (Otsuka, 2000:116)
- c. \*e siana [OP<sub>i</sub> [na'e langa t<sub>i</sub> 'a e fale]]  
 def man PAST build ABS def house  
 ‘the man who built the house’ (Otsuka, 2000:117)
- d. e siana [OP<sub>i</sub> [na'a ne<sub>i</sub> langa 'a e fale]]  
 def man PAST 3sg build ABS def house  
 ‘the man who built the house’ (Otsuka, 2000:117)

We leave aside the analysis of syntactic ergativity, which should not affect its use as a diagnostic test here. On a syntactic account of split ergativity based on nominal type, a DP that does not bear ergative case in transitive subject position has the syntax of a nominative/absolutive and does not have ergative case in the syntax. Therefore, it should pattern with other nominatives/absolutives for tests of syntactic ergativity. On a morphological account of split ergativity based on nominal type, a DP that does not bear ergative case in transitive subject position has the syntax of an ergative and does have ergative case in the syntax. Therefore, it should pattern with other ergatives for tests of syntactic ergativity.<sup>14</sup>

We should note that due to the particular constraints of the tests, it is not possible to use all three tests on all languages; typically, data will only be available for one of the tests. Some languages may lack case agreement, or there may be no available data with the relevant configuration: often an adjective or relative clause modifying a pronoun – a possible, but perhaps infrequent construction. Regarding coordinate structures, some languages may exhibit case marking only on the entire DP rather than its conjuncts, or the translation of coordination with a pronoun may be accomplished through one overt DP plus plural agreement, rather than an overt coordinate structure. Finally, some languages lack syntactic ergativity, or again there may not be available data on a relative clause modifying an e.g. first or second pronoun, which would indicate relativization of a nominal with the appropriate features for no ergative case marking.

We organize this section in terms of language family. The morphological analysis advocated here has previously been proposed for Australian languages (see Blake, 1977; Goddard, 1982; Legate, 2008, *inter alia*), thus we begin there. In subsequent subsections, we demonstrate that this analysis is equally required in several language families outside of Australia.

## 2.1. Australia

In this section we remind the reader of the type of evidence that has led some previous researchers to conclude that split ergativity in Australian (especially Pama-Nyungan) languages must have a morphological source (see Blake, 1977; Goddard, 1982; Legate, 2008, *inter alia*). Other researchers who have not adopted this position for Australian languages have typically not engaged with these data (although see section 4 below for discussion of Merchant, 2006).

<sup>13</sup> We have retained Otsuka’s annotation of the examples.

<sup>14</sup> Note that we must tread with care here. If a DP-type without ergative morphology does pattern with non-ergatives, it may be that the test is not a test of syntactic ergativity *per se*, but rather a test that is sensitive to the surface form of the DP.

We begin with the familiar instance of Dyirbal (Dyirbalic: Northeast Queensland, Australia) (Dixon, 1972). In Dyirbal, first and second person pronouns show a nominative-accusative case marking pattern, whereas nominals distinguish ergative from nominative, and accusative is obligatory for the word ‘who’, optional for human nouns and proper names, and impossible for other nominals. Dyirbal is an excellent exemplar in that both the case agreement and syntactic ergativity tests are applicable. Case agreement is found both on nominals modifying the first/second person pronoun and on relative clauses modifying the pronoun. Examples follow. The first two illustrate that the first person singular nominative pronoun *ŋaɟa* triggers ergative agreement on the modifier *wuygi* ‘old’<sup>15</sup> when in transitive subject position, but triggers zero nominative/absolutive agreement on this modifier when in intransitive subject position. The second two involve a relative clause modifying the first person singular nominative pronoun *ŋaɟa*,<sup>16</sup> when the pronoun occurs in transitive subject position, the relative clause registers ergative agreement, whereas when the pronoun occurs in intransitive subject position, the relative clause is in the unmarked nominative/absolutive.<sup>17</sup>

- (7) a. *ŋaɟa wuygi-ŋgu balan ɟugumbil balga-n*  
I.NOM old-ERG NCII.there.ABS woman.ABS hit-NFut  
‘I, old, hit the woman.’ (Mel’čuk, 1979:54)
- b. *ŋaɟa wuygi bani-ŋu*  
I.NOM old.ABS come-NFut  
‘I, old, came.’ (Mel’čuk, 1979:54)
- c. *ŋaɟa [wayŋɟi-ŋu]-ru balan ɟugumbil buɾa-n*  
I.NOM go.uphill-Rel-ERG NCII.there.ABS woman.ABS see-NFut  
‘I saw woman as I was going uphill.’ (Dixon, 1972:133)
- d. *ŋaɟa [wayŋɟi-ŋu] miyanda-ŋu*  
I.NOM go.uphill-Rel.ABS laugh-NFut  
‘I laughed as I went uphill.’ (Dixon, 1972:133)

As is well known, Dyirbal exhibits syntactic ergativity in several constructions; the ability to undergo relativization is possible for the absolutive but not the ergative, as is both the ability to undergo deletion and the ability antecede such deletion in what Dixon (1972) calls TOPIC CHAINING. Here we illustrate with topic chaining. In 8a, we see the absolutive intransitive subject of *banagay* ‘return’ anteceding deletion of the absolutive transitive object of *buɾal* ‘see’. This is not possible for ergative subjects; instead, the transitive verb must be antipassivized, rendering its agent the absolutive subject of an intransitive verb. This absolutive subject may then participate in topic chaining, anteceding or undergoing deletion. This is illustrated in 8b: the embedded verb *buɾal* ‘see’ is antipassivized, rendering the agent an absolutive intransitive subject; the absolutive intransitive subject of *banagay* ‘return’ antecedes deletion of the absolutive intransitive subject of *buɾal-ŋa* ‘see (antipassivized)’.

- (8) a. *ŋuma banaga-ŋu yabu-ŋgu buɾa-n*  
father.ABS return-NFut mother-ERG see-NFut  
‘Father returned and mother saw (him)’ (Dixon, 1994:12)
- b. *ŋuma banaga-ŋu buɾal-ŋa-ŋu yabu-gu*  
father.ABS return-NFut see-APass-NFut mother-DAT  
‘Father returned and (he) saw mother’ (Dixon, 1994:13)

We apply this test to nominal types that lack overt ergative morphology. Our interest is whether such nominals pattern as ergative for syntactic ergativity, despite the lack of ergative morphology. In 9, we see that the first person singular pronoun does pattern as ergative when in transitive subject position, despite its nominative-accusative case marking. In 9a, it is ungrammatical for the intransitive subject of *banij* ‘come’ to antecede the deletion of the transitive subject of

<sup>15</sup> We retain Mel’čuk’s translation of his examples; Dixon (1972:408) translates this adjective as ‘no good’.

<sup>16</sup> Dixon translates this construction he refers to as a RELATIVE CLAUSE sometimes with a relative clause in English, but sometimes with another type of construction. It’s not clear to us whether the translation differences represent a real difference; if not, these examples could have been alternatively translated as ‘I, [who was] going up hill,...’. See also Hale (1976) on the noun phrase modifying NP-RELATIVE INTERPRETATION versus the temporal modifying T-RELATIVE INTERPRETATION of the ADJOINED RELATIVE CLAUSE in Warlpiri.

<sup>17</sup> The writing system in Dyirbal examples has been regularized to that used by Dixon (1972). Morpheme boundaries have been added in examples from Mel’čuk (1979) and Dixon (1972).

*balgal* ‘hit’, even though the form of the first person pronoun is the same: *ɲaɖa*. Instead, ‘hit’ must be antipassivized, yielding the grammatical 9b, in which the intransitive subject of *baniy* ‘come’ antecedes the deletion of the intransitive subject of *balgal-ɲa* ‘hit (antipassivized)’. Note that this antipassivization has no effect on the morphological form of the subject pronoun – the first person singular pronominal subject of both *balgal* ‘hit’ and *balgal-ɲa* ‘hit (antipassivized)’ is *ɲaɖa*.

- (9) a. \**ɲaɖa bani-ɲu balan ɖugumbil balga-n*  
 I.NOM come-NFut NCII.there.ABS woman-ABS hit-NFut  
 ‘I came here and hit woman’ (Dixon, 1972:132)
- b. *ɲaɖa bani-ɲu bagun ɖugumbil-gu balgal-ɲa-ɲu*  
 I.NOM come-NFut NCII.there.DAT woman-DAT hit-APass-NFut  
 ‘I came here and hit woman’ (Dixon, 1972:132)

Thus, for syntactic ergativity, the “nominative” pronoun patterns as ergative when the subject of a transitive verb but non-ergative (nominative) when the subject of an intransitive verb. This is expected if the subject of the transitive verb is uniformly ergative in the syntax, with the failure of ergative on a subset of nominal types determined only in the morphology. This is not expected if transitive subjects without ergative case marking have a different syntax from transitive subjects with ergative marking, specifically the syntax of nominatives/absolutives.

In summary, then, both case agreement and syntactic ergativity tests diagnose pronouns with ergative versus nominative case in Dyirbal, despite the lack of a morphological distinction between the form of the ergative pronoun and the form of the nominative pronoun.

For a perhaps less-familiar example, consider Uradhi (Paman: Cape York Peninsula, Australia) (Crowley, 1983), in which nominals inflect for ergative but pronouns do not. Uradhi does not exhibit the freedom of word order found in languages like Dyirbal; it is essentially an S(O)V language (Crowley, 1983:368), with a fixed word order within the DP (Crowley, 1983:354). Importantly for our purposes, when the head of the DP is a noun, a third person pronoun may appear in the initial position within the DP “acting as a number marker” (Crowley, 1983:371); this is clearly related to the crosslinguistically common pattern of pronominals used as determiners. Since case marking is obligatory on the pronoun and the head noun, this construction provides one opportunity to test case agreement.

There is also another opportunity to test case agreement in the language. The elements of a DP cannot be freely separated in Uradhi (whereas they can in Dyirbal); however, Crowley (1983:370) points out a construction in which a pronoun in the argument position of the clause is further specified by a final DP that is a “‘dislocated’ afterthought”, “separated from the first part of the sentence by an intonation break”.

In both of these test constructions, we find that when the pronoun is a transitive subject, or is an initial number marker within a transitive subject, it is marked nominative, identically to intransitive subjects. The nominal it cooccurs with, however, is marked ergative as a transitive subject and absolutive as an intransitive subject. 10a illustrates that a nominative pronoun in transitive subject position triggers ergative case agreement on an associated dislocated nominal. In contrast, 10b illustrates that a nominative pronoun in intransitive subject position triggers absolutive case agreement on an associated dislocated nominal. Note that the alternation between *ulu* versus *uluβa* is not nominative versus ergative, but two variants of the third person singular pronoun; 10c illustrates *ulu* as a transitive subject, and 10d illustrates *uluβa* as an intransitive subject. (All the pronouns in Atampaya dialect of Uradhi have an optional extension (-*βa*/*-la*/*-ɲa*) in the nominative and accusative; see Crowley, 1983:352 for details, where it is noted that “slower, more deliberate speech almost invariably produces the longer forms.” All cited examples are from this dialect.)

- (10) a. *uluβa aɲiβa waɖa-n, utayɔ-mpu*  
 3sg.NOM 1sg.ACC bite-PAST dog-ERG  
 ‘The dog bit me’ (Crowley, 1983:370)
- b. *ulu ipuka-wa, ama*  
 3sg.NOM drown-FUT man.ABS  
 ‘The man will drown’ (Crowley, 1983:370)
- c. *apuða ulu ipant-ɲ anpaɲu-ɲu uɲumu-ɲu*  
 bone.ABS 3sgNOM bury-PAST husband-DAT 3sg.GEN-DAT  
 ‘She buried the bones for her husband’ (Crowley, 1983:342)
- d. *uluβa uɲumu-ɲu pana-ɲu intya*  
 3sgNOM 3sgGEN-OBL friend-OBL stay.PRES  
 ‘He is staying with his friend’ (Crowley, 1983:370)

The case agreement on dislocated nominals in these examples indicates that the nominative pronoun bears ergative case when in transitive subject position, but nominative when in intransitive subject position.

The other test case outlined above involves pronouns in an initial, determiner-like function within the DP. 11a gives an example of a transitive subject in which the pronoun is DP initial, the pronoun marked nominative while the head noun is marked ergative; 11b gives the corresponding intransitive example, the pronoun is still marked nominative while the head noun is now marked absolutive.

- (11) a. uluβa ama:lu aŋiβa aru-ŋaŋka  
 3sg.NOM man-ERG 1sg.ACC hit-FUT  
 'The man will hit me' (Crowley, 1983:364)
- b. ulaβa mupa uŋaβa:ni-n  
 3nonsg.NOM child.ABS hide-REFL-PAST  
 'The children were hiding.' (Crowley, 1983:376)

These examples further indicate that the nominative, rather than ergative, case on pronouns in Uradhi cannot be due to pronouns appearing in distinct syntactic structures from ergative nominals, since the pronouns are contained within the ergative DP. (See Crowley, 1983:371–372 for further discussion of the Uradhi DP.)

In sum, we have seen evidence from case agreement and syntactic ergativity that split ergativity based on nominal type in the Australian languages Dyirbal and Uradhi is due to morphological syncretism rather than distinct syntax.

In the following sections, we demonstrate that the three tests also diagnose a morphological source for the split-ergative patterns in several language families outside of Australia.

## 2.2. Northeast Caucasian

In this section, we consider two Northeast Caucasian languages, Udi (Lezgi: Azerbaijan) (Schulze, 2001, 2014)<sup>18</sup> and Ingush (Nakh: Ingush Republic) (Nichols, 2011). In both languages, case agreement patterns demonstrate that the split ergativity based on nominal-type is due to morphology, rather than syntax.

In Udi, nominals are marked for ergative case, whereas 1st and 2nd person, singular and plural, pronouns are not. Instead, these show a single form in both ergative and absolutive function:

(2)

	singular	plural
1	zu	yan
2	(h)un	va <sup>c</sup> n

Case agreement demonstrates that the 1st and 2nd person pronouns are ergative in transitive subject position, despite the lack of ergative morphology. Schulze (2001) presents the following contrasts. The first pair of examples illustrate the use of the nominative/absolutive *zu* for first person singular subjects of both transitive and intransitive clauses. The second pair of examples adds the appositive *kala* 'big', in its nominalized form. In the transitive clause, the appositive registers ergative case agreement: it is suffixed with the oblique stem augment followed by the ergative case suffix. In the intransitive clause, in contrast, the appositive registers nominative case agreement: it is suffixed with the nominative/absolutive marker for nominalized elements, *-o*.<sup>19</sup>

- (13) a. zu šum-ax aq'-sa-zu  
 1ABS bread-DAT2 eat-Pres-1sgA  
 "I eat the bread"
- b. zu damdam šähär-ä tağ-al-zu  
 1ABS tomorrow town-DAT1 go.Fut-Fut-1sgS  
 "I will go to town tomorrow"

<sup>18</sup> Thank you to Wolfgang Schulze for discussion of Udi.

<sup>19</sup> In the glosses, SA = stem augment, LV = light verb, CV = converb, POST = posterior action.



- c. zu k'ala-t'-in šum-ax aq'-sa-zu  
1ABS big-sa.OBL-ERG bread-DAT2 eat-Pres-1sgA  
“I - being the oldest one - eat the bread”
- d. zu kala-o damdam šähär-ä tağ-al-zu  
1ABS big-sa.ABS tomorrow town-DAT1 go.Fut-Fut-1sgS  
“I -being the oldest one - will go to town tomorrow” (Schulze, 2001)

Thus, we see that although the pronouns themselves can't bear ergative, nominalized adjectives in apposition to the pronouns disambiguate between morphological nominatives/absolutives with ergative case and those with nominative case.

A second set of relevant examples comes from coordination. As seen in the following examples, both conjuncts in a coordinate structure may exhibit case morphology.<sup>20</sup> (14a) illustrates with ergative on both conjuncts, (14b) with dative, and (14c) with genitive.

- (14) a. ğar-en-q'a xüyär-en-al sunsun-ax čal-x-al-t'un buq'-o  
boy-ERG-and girl-ERG-FOC each.other-DAT2 know-LV-PastPart-3pl want-Fut.Mod  
“The boy and the girl will probably want to know each other.”
- b. nik'olaj-a q'a serg-in-a gölö ma'ğ-urux-q'o aba  
Nikolaj-DAT and Sergej-sa-DAT much song-PI-3pl.IO knowing  
“Nikolaj and Sergej know many songs”
- c. baxt'avarru bak-al-le sodom-un q'an gomor-un baxt'in duvan-un  
pleasant be-Fut.Fac-3sg Sodom-GEN and Gomorrha-GEN for judgement-GEN  
ğena t'e šähär-ğ-oxo-gin  
day.sa.DAT Prox city-PI-ABL-Comp  
“It will be more pleasant for Sodom and Gomorrha in the days of judgement than for these cities.”  
(Schulze, 2014)

(15) is the crucial example. In this, the ergative-marked “father” in the first conjunct appears with the nominative/absolutive first person singular *zu* in the second conjunct. Hence, the lack of ergative on *zu* cannot be due to it appearing in a different syntactic structure from ergative-marked DPs, since it is coordinated with an ergative-marked DP.

- (15) miple, vi baba-n va zu-al kala dörd-en furu-yan-exa vax  
behold you.sg.Poss father-ERG and I.ABS-FOC great pain-INSTR search-1pl-LV.Pres you.sg.DAT2  
“Behold, your father and I search you with great pain.” (Schulze, 2014)

The second Northeast Caucasian language discussed here is Ingush (Nakh: Ingush Republic) (Nichols, 2011). Reflexive pronouns for third person singular and plural, and second person plural (identical to third person plural) do not distinguish between ergative and nominative/absolutive forms.<sup>21</sup> In addition, the first person inclusive plural pronoun *vai* is used for the nominative, ergative, and genitive; the first person inclusive plural reflexive is also *vai* in the nominative/absolutive, and varies between *vai* and *voazh* in the ergative. See Nichols (2011:173–175). Furthermore, a subset of plural nouns do not show distinct ergative versus nominative/absolutive forms.<sup>22</sup> These nouns and the reflexive pronouns can be tested for their behaviour in case agreement contexts.

First, reflexive pronouns can combine with a non-reflexive pronoun in a construction Nichols characterizes as appositive. The combination displays case agreement: for example, in 16a, we see case agreement between the first singular ergative pronoun and the first singular ergative reflexive. We may thus test the behaviour of reflexive pronouns that do not bear ergative morphology in this case-agreement context. In 16b, we see the third person singular nominative/absolutive reflexive *shie* is used as the form for matching in case with the third person singular ergative pronoun, thus patterning as ergative. 16c illustrates that *shie* can also pattern as nominative for case agreement,

<sup>20</sup> Further research is required to determine the extent to which the initial conjunct may instead exhibit the default absolutive.

<sup>21</sup> These can be used long-distance, hence the availability of subject reflexive forms.

<sup>22</sup> In that declension class membership is arbitrary, it provides further evidence for a morphological, rather than syntactic analysis. There are a number of declension classes, with some complexity in the morphological analysis between extensions, number marking, and case; see Nichols (2011:127–140). Interestingly, the classes that do clearly show distinct ergative versus nominative forms in the plural are mostly animates, contrary to the hierarchy.

matching a nominative intransitive subject. Thus, *shie* patterns as a form syncretic over ergative and nominative forms.<sup>23</sup>

- (16) a. Aaz eisa cwannie derriga kinashjka diishar  
1sgERG 1sgREFL.ERG one.NZ.ERG D.all book D.read.WP  
'I read the whole book by myself' (Nichols, 2011:455)
- b. Cue shie hwoaxa-vycar  
3sgERG 3sgREFL mention-V.CS\*.NEG.IMPF  
'He himself (a teacher) didn't mention him (a proscribed historical figure)' (Nichols, 2011:455)
- c. Muusaa c'agha shie cwea vy  
Musa home 3sgREFL alone B.be.PRES  
'Musa is home alone' (Nichols, 2011:199)

Next, we consider case agreement between a quantificational adjective and a head noun. Quantificational adjectives show a reduced paradigm, making only an oblique versus nominative/absolutive distinction, where oblique agrees with the ergative (among other cases). In 17a, we see the basic case agreement pattern: the oblique form of the quantificational adjective *massa* 'all' is used to agree with an ergative transitive subject, whereas the nominative/absolutive form is used to agree with a nominative intransitive subject. 17c is the crucial example; although the noun 'children' is not marked with ergative case, it triggers case agreement like an ergative, combining with *massa* 'all' in its oblique form rather than in its nominative/absolutive form. (For reference, 17d illustrates the identical form of the noun 'children' used in a non-ergative context: the transitive object position.)

- (17) a. massa-jolcha jur-tuo hwa-bycha  
every-J.OBL town-ERG DX-B.do.CVTEMP  
'if every town does this' (Nichols, 2011:187)
- b. Massa-dola ber c'agha dy.  
all-D.PPL child home.ADV D.be.PRES  
'Every single child is home' (Nichols, 2011:187)
- c. Massa-dolcha bierazh hama di'arii?  
all-D.PPL.OBL child.PL thing D.eat.WP=Q  
'Have all the children eaten?' (Nichols, 2011:187)
- d. Shei zhwaliena bierazh bwarjga+deira  
3plREFL.GEN dog.DAT child.PL eye+D.see.WP  
'Their own dog saw the children' (Nichols, 2011:643)

In sum, case agreement and coordination data in Udi, and case agreement in Ingush illustrate that split ergativity based on nominal-type in these Northeast Caucasian languages is due to the morphology. All DP types are syntactically assigned ergative in transitive subject position, however the morphological realization of the ergative is not distinct from the nominative/absolutive for a subset of nominal types.

### 2.3. Tibeto-Burman

In this section we turn to Tibeto-Burman languages, focusing on Kham (East Himalayan: Nepal) (Watters, 1973, 2002) and Limbu (Kiranti: Nepal) (van Driem, 1989).

Kham follows the pattern whereby first and second person pronouns inflect on a nominative-accusative pattern, whereas third person pronouns (related to the distal demonstrative) and nominals bear ergative morphology. The following illustrates the ergative *-e* versus nominative/absolutive *-ø* on the third person plural pronoun, and the lack of an ergative on the first person singular pronoun.

<sup>23</sup> Ingush examples use the following abbreviations following Nichols (2011): B = gender class with marker /b/; CVTEMP = temporal converb; CS\* = causative morphology with nonliteral meaning; D = gender class with marker /d/; DX = deictic prefix; J = gender class with marker /j/; NZ = nominalizer; PPL = participle; Q = interrogative clitic particle; V = gender class with marker /v/; WP = witnessed past tense; + = compound boundary.

- (18) a. no-ra-e zihm jə-ke-rə  
 he-PI-ERG house.ABS make-PFV-3pl  
 ‘‘They made a house’’
- b. no-rə zihm-da ba-ke-rə  
 he-PI.NOM house-ALL go-PFV-3pl  
 ‘‘They went to the house’’
- c. ŋa: zihm ŋa-jəi-ke  
 I.NOM house.ABS 1sg-make-PFV  
 ‘‘I made a house’’
- d. ŋa: zihm-da ŋa-ba-ke  
 I.NOM house-ALL 1sg-go-PFV  
 ‘‘I went to the house’’ (Watters, 2002:79)

Kham shows case marking on nominalized headless relative clauses that fill an argument position, or that are used non-restrictively in apposition to an argument. (When used restrictively, headless relatives, like other modifiers, are unmarked for case.) The following examples illustrate a headless relative as a transitive subject marked with ergative case, and a headless relative marked with the objective case.<sup>24</sup>

- (19) a. ma-khim-o-ye ma-dəi-wo  
 NEG-search-NML-ERG NEG-find-3sg.IMPFV  
 ‘One who doesn’t search doesn’t find.’ (Watters, 2002:201)
- b. ma-yo:-wo-ra-lai  
 NEG-suffice-NML-pl-OBJ  
 ‘(to) insufficient poor ones’ (Watters, 2002:205)

When these are used nonrestrictively with a first or second person pronoun, they yield a construction we may test for case agreement. The result is the expected pattern on a morphological analysis of split ergativity. In 20a, we see the pronoun *ge*: ‘we’ as the transitive subject of ‘receive’; the pronoun itself is not marked ergative, but the associated nonrestrictive relative ‘who didn’t go’ is suffixed with the ergative case marker *-e*; notice that it is the pronoun, rather than the relative, that occupies the argument position, since the pronoun controls the verbal agreement. 20b is an additional example with the first person singular pronoun not marked for ergative, while the associated headless relative is.

- (20) a. ge: ma-ba-o-ra-e ge-ma-dəi-ye  
 we NEG-go-NML-PL-ERG 1pl-NEG-receive-IMPFV  
 ‘‘Those of us who didn’t go didn’t get any’’ (Watters, 2002:201)
- b. ŋa:, ao tha pəŋi:-zya-o-ye ...  
 I this news send-IMPFV-NML-ERG  
 ‘I, the sender of this news,...’ (Watters, 2002:205)

This case agreement test thus identifies first and second person pronouns as ergative, despite the lack of ergative case morphology.

In Limbu (Kiranti: Nepal) (van Driem, 1989), all personal pronouns<sup>25</sup> are unmarked for ergative case, and indeed appear in a single form for transitive subject, intransitive subject, and object positions. Demonstratives and nominals, in contrast, bear ergative morphology. Van Driem points out, however, (1989:26) that while the pronouns fail to bear ergative suffixes, quantificational modifiers of the pronouns do bear ergative; he provides the following example:

- (21) khunchi nɛpmaŋ-le  
 they both-ERG  
 ‘they both (ERG)’ (van Driem, 1989:26)

<sup>24</sup> The objective is likely the dative; it is found in typical dative contexts (e.g. the recipient of ditransitive verbs) as well as on first and second person objects, in a typical differential object marking pattern.

<sup>25</sup> With the exception of two demonstratives used as additional third person pronouns, which do show ergative versus absolutive forms. Note that the third person pronouns discussed in the text are limited to human referents, while the demonstratives can refer to inanimates.

Although we would like additional examples, this again supports the presence of ergative case on the pronouns, although this case is not morphologically realized on the pronoun.

In section 3 below, we discuss another Tibeto-Burman language, Mukli Thulung Rai (Kiranti: Nepal), for which language change is indicative of a morphological analysis.

#### 2.4. Indo-Aryan

In this section, we test the split ergative patterns based on nominal-type found in the Indo-Aryan language Marathi (Southern Zone: Maharashtra) (Pandharipande, 1997; Dhongde and Wali, 2009). In Marathi, the first and second person pronouns are used in both nominative and ergative contexts; third person pronouns and DPs show distinct nominative versus ergative case marking. In addition, Marathi shows an aspect-based ergative split<sup>26</sup> (found in many Indo-Aryan languages), whereby transitive subjects are ergative in the perfective aspect but not the non-perfective.<sup>27</sup>

For our first test, consider coordination. In their discussion of coordination, Dhongde and Wali (2009:233) explicitly state that nouns with distinct case marking cannot be coordinated: “Noun coordination requires coordinate nouns to bear the same case. In short, nouns obey what we call a ‘case constraint’. It prevents a nominative noun from coordinating with an ergative or dative cased noun.” This constraint is easily explicable if different case marking requires a different syntax. They provide the example in 22; notice also that the ergative case marker is repeated on each conjunct.<sup>28</sup>

- (22) lili-ni mēdhu-ni aṇi mini-ni jaḷa-la paḷṇ-y-at ṭhew-l-ə  
 Lili-ERG Madhu-ERG and Mini-ERG Raja-DAT crib-OBL-P put-PERF-Nsg  
 ‘Lili, Madhu and Mini put Raja in the crib.’ (Dhongde and Wali, 2009:233)

In 23 we demonstrate that an ergative marked noun may be coordinated with a nominative pronoun that fails to show the ergative-nominative distinction. Placement of the ergative marked *liki-ne* ‘Liki’ in the initial conjunct and the nominative pronoun *mi* ‘I’ in the final conjunct ensures that a final ergative morpheme is not simply having scope over the entire coordinated phrase.

- (23) liki-ne aṇi mi keḷi kha-ll-i  
 Liki-ERG and I.NOM banana.Npl.NOM eat-PERF-Npl  
 ‘Liki and I ate bananas’

On this test, then, the pronoun is behaving as though it is ergative, despite its nominative morphological patterning.

For our second test, consider case agreement. Pronouns may be post-modified by adjectives in Marathi, where the adjective bears a case morpheme, and the pronoun appears in the nominative form for nominatives, versus the oblique form for non-nominatives (including the ergative). The following examples illustrate with third person pronouns. The first shows a nominative pronoun with a zero-marked nominative adjective (a transitive subject of a non-perfective verb); the second shows an oblique pronoun with an ergative-marked adjective (a transitive subject of a perfective verb).

- (24) a. to gərib kay kar-ṇar?  
 he.NOM poor.NOM what do-Prospective  
 ‘What can he - a poor man - do?’ (Dhongde and Wali, 2009:50)  
 b. tya vedya-ne kay ke-la?  
 he.OBL foolish-ERG what do-PERF.3sg  
 ‘What did he - a foolish man - do?’

<sup>26</sup> For recent analyses of aspect-based splits, see for example Laka (2006a,b), Salanova (2007), Coon (2010a,b).

<sup>27</sup> In addition, transitive and intransitive subjects are marked with ergative in a verb form Pandharipande (1997) refers to as optative and Dhongde and Wali (2009) refer to as desiderative. Dhongde and Wali (2009:193 fn 1) seem to indicate that the ergative appears only on unergative intransitive subjects, and their example below supports this interpretation.

(i) aj paus pəḍ-aw-a  
 today rain.Msg.NOM fall-DESI-3Msg  
 ‘It should rain today’ (Dhongde and Wali, 2009:100)

<sup>28</sup> I have kept the transliteration system of Dhongde & Wali in data from their book. The transliteration system in data from my consultants is slightly different.

When we turn to first and second person singular, we find that although the pronoun is nominative in both the non-perfective and the perfective, the adjective registers nominative in the non-perfective but ergative in the perfective.<sup>29,30</sup>

- (25) a. mi bicharii-ne sagla kaam ke-la  
I.NOM poor-ERG all work do-PERF.3sg  
'Poor little me did all the work.'
- b. tu bicharii-ne sagla kaam kelas  
you.NOM poor-ERG all work do-PERF.2sg  
'Poor little you did all the work.'
- c. mi bicharii sagla kaam karte  
I poor.NOM all work do.PRES.1Fsg  
'Poor little me does all the work.'
- d. tu bicharii sagla kaam kartes  
you poor.NOM all work do.PRES.2Fsg  
'Poor little you does all the work'

In 25a and 25b, we see the first person singular and second person singular pronouns in transitive subject position of a perfective verb, a position normally associated with ergative case. Although the pronoun itself is nominative, the associated adjective bears ergative morphology. In 25c and 25d, in contrast, the pronoun is in the transitive subject position of a non-perfective verb, a position associated with nominative case. Correspondingly, both the pronoun and the adjective are in the nominative. This pattern provides additional evidence that the first and second person pronouns do have a distinction between ergative and nominative in Marathi, despite the identical morphological realization of these cases.

## 2.5. Eskimo-Aleut

Finally, we test the behaviour of split ergativity in the Eskimo-Aleut language, Siberian Yup'ik Eskimo (Yup'ik: Alaska, Russia) (de Reuse, 1988).

In Siberian Yup'ik Eskimo, first person pronouns, second person pronouns, and third person reflexive pronouns have a single form for ergative and absolutive case, whereas third person non-reflexive pronouns exhibit a distinct ergative (de Reuse, 1988:41). In order to test the source of this split ergativity, we use the test based on coordination. de Reuse (1988:377–390) discusses a coordination structure that uses the enclitic =llu, which normally appears on every conjunct. When =llu coordinates DPs, it appears outside the case marker; the following illustrates with the absolutive plural.

<sup>29</sup> This type of data also indicates that aspect-based split ergativity requires a different analysis from person/animate-based split ergativity (contra e.g. Keine, 2010): case agreement in aspect-based split ergativity indicates that the nominative DP does not bear ergative case, whereas case agreement in person-based split ergativity indicates that the nominative DP does bear ergative case. See Legate (2005) for further discussion.

<sup>30</sup> Deo and Sharma (2006) make the same point with a different construction, which is somewhat marginal. To the extent that it is possible, it again shows first and second person pronouns triggering ergative versus nominative case agreement. Their data make use of the fact that a subset of adjectives in Marathi show agreement with the head noun for gender, number, and case, where case agreement is limited to oblique (typically -ya) versus nominative -ø.

- (i) moṭh-i mulgi versus moṭh-ya muli-la  
big-Fsg.NOM girl.Fsg.NOM big-OBL girl.Fsg.OBL-DAT  
'a big girl' versus 'to a big girl' (Dhongde and Wali, 2009:56)

Their data are as follows.

- (ii) vedyaa ashaa mii ek aambaa khaa-llaa  
foolish.OBL like.OBL I.NOM one mango.NOM eat-PERF.3sg  
'Foolish me ate a mango.' (Deo and Sharma, 2006:[16])
- (iii) vedii ashii mii ek aambaa khaa-te  
foolish.NOM like.NOM I.NOM one mango.NOM eat-PRES.1sg  
'Foolish me eats a mango.' (Deo and Sharma, 2006:[16])

- (26) Sighinegh-mii-t=llu,                    Imtug-mii-t=llu,                    Avate-mii-t=llu,  
 Sirenik-people.of.N-ABSpl=also    Imtuk-people.of.N-ABSpl=also    Avan-people.of.N-ABSpl=also  
 Ungazigh-mii-t=llu,                    Napaqutagh-mii-t=llu                    ataasigh-ø    ulu-ø.  
 Chaplino-people.of.N-ABSpl=also    Napakutak-people.of.N-ABSpl=also    one-ABSsg    tongue-ABSsg  
 'The people of Sirenik, Imtuk, Avan, Chaplino, and Napakutak (have) one language.' (de Reuse, 1988:379)

27a illustrates that an ergative marked nominal may be coordinated with a pronoun that shows no morphological distinction between the ergative and nominative/absolutive. I have retained de Reuse's morpheme segmentation and glossing; note that he segments and glosses both the overt ergative case on the proper name 'lirgu', i.e. *-m*, and the missing ergative morpheme on the first singular pronoun *whanga*, hence *-ø*. Note that the form of the pronoun is identical to 27b, where it is an intransitive subject, hence nominative/absolutive.

- (27) a.    lirgu-m=llu                    whanga-ø=llu                    taglagh-(u)te-apeut                    qamugh-ke-luki  
           lirgu-ERGsg=also    1sg-ERGsg=also    go.up-V.with-IND(1pl/3pl)    load-have.as.N-APO (1pl/3pl)  
           'lirgu and I brought it from the shore as a load of meat.' (de Reuse, 1988:388)  
 b.    Merga-ø=llu                    whanga-ø=llu                    pi-aqe-ngamta                    ...  
           Merga-ABSsg=also    1sg-ABSsg=also    go-PROG-CQO(1pl)  
           'When Merga and I went' (de Reuse, 1988:388)

27a thus illustrates the pattern expected of coordination on a morphological analysis of the split ergative pattern, rather than a syntactic analysis. The pronoun and noun may be coordinated grammatically and when coordinated, they retain their standard case morphology. We may conclude that the two DP types are not required to appear in distinct syntactic structures; moreover, their differing case patterns cannot be due to distinct syntax, since the case patterns are retained when they are coordinated and hence share a single syntactic structure.

To conclude this section, we have seen evidence from case agreement, syntactic ergativity, and coordination in five language families: Australian, Northeast Caucasian, Tibeto-Burman, Indo-Aryan, and Eskimo-Aleut. In all instances, the evidence diagnoses split ergativity based on nominal-type as a morphological phenomenon, whereby a distinction between nominals with ergative case features and those with nominative case features is neutralized morphologically. It is important to notice that the results obtain both for languages that display the (commonly analysed) split ergative pattern whereby first and second person pronouns lack ergative (Dyirbal, Udi, Kham, Marathi), and for languages with different patterns of split ergativity based on nominal type (Uradhi, Ingush, Limbu, Siberian Yup'ik Eskimo). The data thus mandate a morphological analysis for a full range of split ergative patterns.

### 3. Morphology and attested patterns

In this section, we demonstrate on the basis of attested patterns, that a single cut-off point (e.g. first and second person versus all else) is inadequate (contra Carnie, 2005a; Alexiadou and Anagnostopoulou, 2006; Coon and Preminger, 2012, inter alia),<sup>31</sup> and that Silverstein's (1976) hierarchy is a tendency rather than a universal.<sup>32</sup> These properties are expected on a morphological analysis of these splits. Silverstein (1976) is quite explicit that his hierarchy is arranged in terms of featural markedness, and the paper also includes discussion of featural markedness in number, gender, and the inclusive/exclusive distinction:

- (28) a.    dual > plural > singular  
       b.    inclusive > exclusive  
       c.    feminine > masculine (> neuter)

Featural markedness plays a crucial role in patterns of splits, yielding patterns in accordance with the hierarchy. However, languages may also exhibit synchronic morphological idiosyncracies ultimately due to other factors (including language change, and perhaps functional considerations as well), potentially yielding patterns contrary to the hierarchy. This combination of a general pattern based on markedness coexisting with language-specific idiosyncracies is commonplace

<sup>31</sup> This may also be ascertained from the patterns of splits discussed in section 2.

<sup>32</sup> Indeed, Bickel and Witzlack-Makarevich (2008) perform statistical analyses over the case splits found in 353 languages, and conclude that while there are effects of a nominal hierarchy within several language families, the effects are statistical not absolute and the needed hierarchy differs between the language families. Thank you to an anonymous reviewer for bringing this work to my attention.

in morphological phenomena. It is long observed that marked features often result in syncretism (Greenberg, 1966; Zwicky, 1978; Croft, 1990, 2003; among many others). For example, considering the interaction of gender and person, and of gender and number, it is well-established that languages tend to show fewer morphological distinctions in gender in the marked persons – first and second, and in the marked numbers – dual and plural (see for example Corbett, 1991, 2000; Siewierska, 2004). However, there is no single cut-off point and these are only strong tendencies, not universals – e.g. Corbett, 1991:128 reports that it is “relatively common” for gender distinctions to be neutralized in the first and second person, but this is not categorical. To provide just two examples, Corbett points out that in Shilha (Berber: Morocco) (Applegate, 1958), only the first person singular pronoun lacks gender distinctions (Corbett, 1991:129), and that in Angas (West Chadic: Nigeria) (Burquest, 1986) only second person pronouns exhibit gender distinctions (Corbett, 1991:131).

In the following subsections, we discuss a number of patterns of split ergativity based on nominal type, organized according to the contributing factors. The final subsection focuses specifically on patterns contrary to Silverstein’s (1976) hierarchy.

### 3.1. Person and pronouns

As noted in the introduction, the most frequently analysed pattern consists of the most marked persons – first and second person – appearing without ergative morphology, while all other pronouns and nominals are marked ergative. This type of pattern is attested for example in Punjabi (Indo-Aryan: Punjab) (Bhatia, 1993), in which ergative DPs are marked with *ne*, described as a postposition. *ne* may occur on nominals and third person pronouns, but not first and second person pronouns (Bhatia, 1993:168–170). The following use the third singular feminine versus first singular feminine as illustrative examples.

- (29) a. Ó \*(ne) kamm kiitaa.  
she ERG work.Msg do.PAST.Msg  
‘She did the work’ (Bhatia, 1993:169)
- b. māi \*(ne) kamm kiitaa  
I.Fsg ERG work.Msg do.PAST.Msg  
‘I (feminine) did the work’ (Bhatia, 1993:170)

This pattern also appears in Nez Perce (Sahaptin: North Idaho) (Deal, 2010), Cashinawa (Panoan: Peru) (Dixon, 1994), among others.

The frequency of this pattern is also aided by its appearance in several languages in which true third person pronouns are lacking, the attested forms being based on demonstratives, for example Tsakhur (East Caucasian, Lezgi: Azerbaijan) (Schulze, 1997), Kham (Tibeto-Burman: Nepal) (Watters, 1973, 2002), and Dyirbal (Dyirbalic: Northeast Queensland, Australia) (Dixon, 1972), see above. Based on known patterns of syncretism in other features, though, (including case features that do not involve the ergative), we expect that syncretism could be sensitive to the noun versus pronoun distinction. Indeed, also attested is a division between all pronouns, including true third person pronouns, and other nominals. Here we illustrate with Ritharngu (Yuulngu: Arnhem Land, Australia) (Heath, 1980). The first set of examples illustrates ergative-nominative-accusative marking of the noun *rdaramu* ‘man’, and the second set illustrates nominative-accusative marking of the third person plural pronoun *dhali*.

- (30) a. bu-marya ngara-nha ngay rdaramu-dhu  
hit-Past 1sg-ACC 3sgNOM man-ERG  
‘The man hit me’ (Heath, 1980:35)
- b. barta-wani-na ngay rdaramu gardayka?  
Com-go-Past 3sgNOM man.ABS harpoon.ABS  
‘The man went with a harpoon’ (Heath, 1980:82)
- c. gurupa-larya nya ra dharypa rdaramu-nha  
give-Past 3sgACC 1sgNOM stick.ABS man-ACC  
‘I gave the man a stick’ (Heath, 1980:37)
- (31) a. ma:a-ma dhali milkir-gu ya milipa?  
get-Pres 3pl.NOM eye-DAT Part tree.sp.ABS  
‘They get milipa? tree for [afflictions of] the eye.’ (Heath, 1980:116)
- b. ngatha-ngarya dhali nhi:na-ø  
food-LOC 3pl.NOM sit-Pres  
‘They are (sitting) in the food area.’ (Heath, 1980:38)

- c. bu-marya dhali-nya ngay rdaramu-dhu  
kill-Past 3pl-ACC 3sgNOM man-ERG  
“The man killed them” (Heath, 1980:45)

This pattern is also found in, for example, Djapu (Yuulngu: Northern Territory, Australia) (Morphy, 1983), Maragny (Maric: Queensland, Australia) (Breen, 1976, 1981) (see section 1), Uradhi (Paman: Cape York Peninsula, Australia) (Crowley, 1983), and Limbu (Tibeto-Burman: Nepal) (van Driem, 1989) (see section 2.3 above for further discussion of Uradhi and Limbu).

### 3.2. Number

Patterns of split ergativity based on nominal type can also reflect the effect of markedness in number, often in combination with other properties – for example, in some languages the effects of number markedness are only found in the marked persons. This state of affairs arises in Diyari (Karnic: Southern Australia) (Austin, 2013): first and second person dual and plural lack ergative forms (patterning as nominative), whereas first and second person singulars exhibit ergative marking with the remaining pronouns and nominals. The first set of examples below show the nominative-accusative inflection of the first plural exclusive pronoun, and the second set of examples show the ergative-nominative-accusative inflection of the first person singular pronoun.

- (32) a. minha-nhi ngayani ngarnkuti thika-lka-ipa-rnanthu nhangkarni  
what-LOC 1plExcl.NOM goat.ABS return-Tr-Ben-Impl<sub>DS</sub> 3sgF.DAT  
“Why must we bring the goats back for her?” (Austin, 2013:88)
- b. pira-nthu ngayani wapa-yi  
moon-PROP.ABS 1plExcl.NOM go-Pres  
“We go in the moonlight” (Austin, 2013:151)
- c. ngayani-nha  
1plExcl-ACC  
“us (exclusive)” (Austin, 2013:68)
- (33) a. nga-thu kupa-kupa nhayi-nhayi-ipa-rna wanhthi-yi walpala-ya  
1sg-ERG child-child.ABS see-see-Ben-Part AUX-Pres white.man-DAT  
“I looked after the children for the white man” (Austin, 2013:85)
- b. nga-nhi wapa-rna kurra-yi  
1sg-NOM go-Part go.away-Pres  
“I go away” (Austin, 2013:86)
- c. mankarra-li nga-nha nhayi-rna wara-yi parlpa-li  
girl-ERG 1sg-ACC see-Part AUX-Pres some-ERG  
“Some girls saw me” (Austin, 2013:100)

This pattern is also found in Wargamay (Dyirbalic: Queensland, Australia) (Dixon, 1981) (and related Nyawaygi (Dyirbalic: Northeast Queensland, Australia) (Dixon, 1983)). The pronominal system of Gujarati (Indo-Aryan:India) (Cardona, 1965; Suthar, 2005), also lacks a morphologically distinct ergative for the combination of marked number and marked persons; to wit, first plural (inclusive and exclusive) and second plural lack ergative forms.

More limited splits also appear to show the effects of markedness in both number and person. In Tsova-Tush/Batsbi (East Caucasian: Kakheti, Georgia) (Holisky and Gagua, 1994) only the most marked person-number combination lacks ergative case – the first person plural inclusive pronoun (see Holisky and Gagua, 1994:[42],[43]). Similarly, in Waalubal Bandjalang (Bandjalangic: Northeast New South Wales, Australia) (Crowley, 1978), only the first person plural lacks an ergative form (see 1978:78).<sup>33</sup>

The role of markedness in number extends throughout the hierarchy in Iñupiaq (Eskimo-Aleut: northwest Alaska) (Lanz, 2010), and the role of markedness in person is also strongly apparent – only singular third person pronouns and (non-possessed) singular nouns show ergative case-marking. (All possessed nouns exhibit ergative marking in a

<sup>33</sup> Although see Sharpe (2005) (under the spelling Wahluwal Bandjalang), where it is stated of all Yugambah-Bandjalang dialects “Some researchers did not find evidence of case inflection for all cases for some plural pronouns; it could well be because their examples did not need ergative or accusative marking to disambiguate the utterance” (2005:47). However, Sharpe does not provide the missing plural forms, and it could well be that the researchers were in fact correct.



portemanteau suffix agreeing in person and number with the possessee.) The following examples illustrate; 34a versus 34b shows ergative case on third singular nouns in transitive subject position but not third plural; 34c shows an unmarked third singular intransitive subject for comparison.

- (34) a. anguti-m aṽnaq-ø tusa:-ya:  
man-ERG woman-ABS see-3sg/3sg.Indic  
“The man sees the woman.” (Lanz, 2010:55)
- b. anguti-t aṽnaq-ø tusa:-ya:t  
man-Pl woman-ABS see-3pl/3sg.Indic  
“The men(pl) see the woman.” (Lanz, 2010:55)
- c. aṽnaq-ø iṽlaq-tuq  
woman-ABS laugh-3sg.Indic  
“The woman is laughing” (Lanz, 2010:59)

Related languages show a slightly different pattern. West Greenlandic (Fortescue, 1984) differs from Iñupiaq in that all third person pronouns (which are based on demonstratives) exhibit ergative inflection in both the singular and plural (262–263), whereas the interrogative pronoun *kina* ‘who’ and *suna* ‘what’ pattern with other nouns in only taking ergative in the singular (264). Central Yup’ik Eskimo (Woodbury, 1981) as well differs from Iñupiaq in that third person singular, dual, and plural pronouns all have distinct ergative forms. This means that in these two languages, nonsingular nouns unexpectedly pattern above nonsingular third person pronouns in the hierarchy. (See section 3.5 below for additional patterns contrary to the hierarchy.)

In the following section, we turn to the role of gender markedness in ergative splits.

### 3.3. Gender

It has been noted that Silverstein’s hierarchy appears to predict the existence of case systems whereby only inanimates bear ergative marking and yet there are no known instances of such systems (see e.g. Blake, 1987:21, Fauconnier, 2010). However, on an interpretation based on morphological markedness, the prediction is for systems whereby only the most unmarked gender class bears ergative marking. This is indeed attested; here we illustrate with Hittite.<sup>34</sup>

In Hittite (Anatolian, Indo-European) (Garrett, 1990; Hoffner and Melchert, 2008; Melchert, 2011, inter alia), nouns belong to one of two morphological classes: the common (or animate) class (collapsed from distinct masculine and feminine), and the neuter (or inanimate) class. These classes reflect grammatical rather than natural gender; for example Melchert (2011:164) notes that “the number of nouns with inanimate referents that show animate grammatical gender is unusually high”. While the common class inflects on a nominative-accusative pattern, the neuter class inflects on an ergative-absolutive pattern; the ergative suffix is *-anza* in the singular and *-anteš* in the plural. The following illustrates use of the neuter noun “words” as an intransitive subject in the absolutive, and as a transitive subject suffixed with the ergative *āntes*.

- (35) [ammel] uddār [mass]-a-aaī n=at=za ammel uddan-āntes tar[hu]-ēr  
1sgGEN word.ABS.pl resist-3sgNPast CONN=3ABS=PTC 1sgGEN word-ERG.pl conquer-3plPast  
“[My] words [endu]re, my words have conquered them” (Goedegebuure, 2012:291)

In contrast the following illustrates uses of common nouns in the nominative as both intransitive and transitive subjects.<sup>35</sup>

- (36) a. <sup>d</sup>Telipinuš lēlaniyanza uet  
Telipinu.ANIM.NOM.sg furious.ANIM.NOM.sg come.Pret.3sg  
“Telipinu came in a fury” (Melchert, 2011:165)
- b. nu=za <sup>L</sup>patiliš wātar ī.DUG.GA dāi  
Conj=Refl priest.ANIM.NOM.sg water.NEUT.ABS.sg fine.oil.NEUT.ABS.sg take.Pres.3sg  
“The *patili*-priest takes water (and) fine oil for himself” (Melchert, 2011:165)

Mangarrayi (Gunwingguan: Arnhem Land, Australia) (Merlan, 1982) shows a similar pattern. Nominals are divided into three morphological classes: masculine, feminine, and neuter; the neuter includes inanimates as well as lower animates. The class markers show three distinct case patterns: marked nominative and zero accusative for masculine, marked

<sup>34</sup> In Hittite examples, following Anatolian conventions, words in capital letters are Akkadian or Sumerian logograms, superscripts are logograms used as determinatives with proper names, material in square brackets are reconstructions of lost material.

<sup>35</sup> Glosses for roots were added to these examples, as the cited source only provided glosses for inflectional features.

nominative and marked accusative for feminine, and marked ergative and zero absolutive for neuter. Thus, again, the distribution of ergative marking is based on morphological class, whereby only the least marked morphological class exhibits ergative case marking.

Note the sensitivity to (partially arbitrary) morphological classes in the two languages – in Hittite the least marked morphological class includes a subset of inanimate nouns, whereas in Mangarrayi the least marked morphological class is a superset of the inanimate nouns. This provides further evidence for a morphological analysis of the phenomenon.

### 3.4. Diachrony

An interesting case is Mukli Thulung Rai (Tibeto-Burman: Nepal) (Lahaussais, 2002, 2003a,b), which shows both the effects of markedness, as well as idiosyncrasies caused by language change. The general pattern in the language is for the marked persons to lack ergative: all first person pronouns, as well as second person singular and dual pronouns use the unmarked nominative. What is unexpected from the point of view of markedness is that the second person plural patterns with the third person pronouns and with all nominals in bearing the ergative marker *-ka*. This is illustrated in the following examples with the nominative *go* 'I' versus the ergative *ganimim-ka* 'you (plural)'.

- (37) a. *go mag dɔu-to*  
1sgNOM mug drop-1sg/3sg.PST  
'I dropped the mug' (Lahaussais, 2003a:[1])
- b. *go mi-gɔk-thi-nga* ...  
1sgNOM NEG-be.born.NEXP-EMPH  
'before I was born...' (Lahaussais, 2003b:[46])
- c. *ganimim-ka go-lai jal-ŋ ini*  
2pl-ERG 1sg-DAT hit-2pl/1sg  
'You hit me' (Lahaussais, 2003a:[4])
- d. *ganimim mukli-ra lɔni*  
2pl Mukli-LOC go-2pl.Past  
'You went to Mukli' (Aimée Lahaussais, pc)

This instance is particularly revealing in that the historical source of the behaviour of the second person plural is known. A prior stage of the language, documented in Allen (1975), exhibited a simple split between first and second person pronouns and third person pronouns and nominals. Subsequently, the second person plural and third person plural were reanalysed as polite singular pronouns, and new second and third person plural pronouns were innovated, using the plural suffix *-mim* (Lahaussais, 2002, 2003a,b).

- (38) a. Older system (Allen, 1975)
- |   |             |                      |             |
|---|-------------|----------------------|-------------|
|   | singular    | dual                 | plural      |
| 1 | <i>go</i>   | EXCL: <i>gutsuku</i> | <i>guku</i> |
|   |             | INCL: <i>gutsi</i>   | <i>gui</i>  |
| 2 | <i>gana</i> | <i>gatsi</i>         | <i>gani</i> |
| 3 | <i>gu</i>   | <i>gutsi</i>         | <i>gumi</i> |
- b. Modern system (Lahaussais, 2002, 2003a,b)
- |   |             |             |                      |                 |
|---|-------------|-------------|----------------------|-----------------|
|   | singular    | sg polite   | dual                 | plural          |
| 1 | <i>go</i>   |             | EXCL: <i>gutsuku</i> | <i>guku</i>     |
|   |             |             | INCL: <i>gutsi</i>   | <i>gui</i>      |
| 2 | <i>gana</i> | <i>gani</i> | <i>gatsi</i>         | <i>gani-mim</i> |
| 3 | <i>gu</i>   | <i>gumi</i> | <i>gutsi</i>         | <i>gumi-mim</i> |

This plural suffix is otherwise found on nominals; examples follow.

- (39) *u-je-mim*                                 *iki-beppap-mim*                                 *ku-ku paip-mim*  
3Poss-field-PI                                 1Poss-ancestor-PI                                 water-GEN E.pipe-PI  
'his fields' (Lahaussais, 2002:78)   'my ancestors' (Lahaussais, 2002:114)   'water pipes' (Lahaussais, 2002:177)
- tsutsu-mim*                                 *bostu-mim*  
child.child-PI                                 cattle-PI  
'children' (Lahaussais, 2002:192)   'cattle' (Lahaussais, 2002:291)

An important moral for our purposes is that this illustrates the crucial role of morphology, rather than syntax, in generating the pattern. It demonstrates that the lack of ergative marking on first and second person pronouns is not a matter of these nominals necessitating a different syntax due to their features as participants in the discourse, whether it be a higher syntactic positioning (e.g. Jelinek, 1993; Jelinek and Carnie, 2003; Carnie, 2005a; Merchant, 2006) or special licensing by a designated projection (Merchant, 2006; Coon and Preminger, 2012). The nominal plural suffix, *-mim* is morphologically compatible with the ergative throughout the relevant time period. Once this suffix appears on the second person pronoun, the ergative suffix automatically appears on this pronoun as well.<sup>36</sup> Thus, the issue is not that the pronoun as a whole is second person, but rather the pronoun itself cannot bear ergative morphology whereas *-mim* can; what *-mim* is suffixed to is of no significance.

### 3.5. Patterns contrary to the hierarchy

In this section we present patterns of split ergativity based on nominal type that (partially) disobey Silverstein's hierarchy. We begin with Ngarla (South-West: Western Australia) (Dench, 1994), a language that follows the hierarchy, apart from one form. Within the pronouns, the marked numbers – dual and plural – lack ergative morphology, but so does third person singular. Thus, third singular patterns as ranking above first and second person singular in the hierarchy. The following table is reproduced from Dench, 1994:168, where designated nominative forms are marked with S, ergative forms are marked with A, and forms used for both nominative and ergative are unmarked.

(40)

	Singular	Dual	Plural
1inc		ngali	nganyjarra
1exc	ngaya (S) ngaja (A)	ngaliya	nganarna
2	nyinpa (S) nyinta (A)	nyumpalu	nyurra
3	palura	piyalu	panalu

In Aranda (Arandic: Northern Territory, Australia) (Strehlow, 1942a,b; Wilkins, 1989), a single pronoun patterns with the nominals in exhibiting ergative morphology, but it is not the least marked pronoun as expected from the hierarchy, but rather first person singular. In Jiwari (South-West: Western Australia) (Austin, 1995), in contrast, the first person singular pronoun *ngatha* is the only pronoun lacking ergative case morphology; all other pronouns and nominals show distinct ergative and nominative morphology. This pattern also runs contrary to the hierarchy in that first person singular patterns as ranking above the first person nonsingular pronouns.

Gumbaynggir (Gumbaynggiric: New South Wales, Australia) (Eades, 1979) could also be interpreted as a language that follows the hierarchy save a single form. The most marked person, first (inclusive and exclusive), in the most marked number, dual, lacks an ergative form; however so does the second person singular. 41 versus 42 illustrates the contrasting behaviour of first versus second person singular pronouns.

- (41)
- a. nga:dya biyambang da:m- $\emptyset$   
I.ERG eat.PAST yam-ABS  
“I ate yam(s).” (Eades, 1979:293)
  - b. ngaya ngurra:la dyala:ra ngayinggiw  
I.NOM camp.LOC inside.LOC stay.FUT  
“I will stay in the camp” (Eades, 1979:275)
  - c. da:m-bu da:ndurambang nga:nya  
yam-ERG sick.VBLSR.PAST I.ACC  
“The yam(s) made me sick” (Eades, 1979:293)

- (42)
- a. muni:mba nga:nya ngi:nda  
stone-VF-IMP 1sg.ACC 2sg.NOM  
“You turn me into a stone” (Eades, 1979:340)

<sup>36</sup> Recall that all third person pronouns exhibit ergative marking in both systems, thus the affixation of the plural suffix to the third person pronoun did not change its case pattern.

- b. dyu:da      ngi:nda      ngayinggi?  
 where.LOC 2sg.NOM live-PRES  
 “Where do you live?” (Eades, 1979:300)
- c. nga:dya      ngi:na      bu:mgu      garadamba  
 1sg.ERG you.ACC kill-FUT quickly  
 “We will kill you quickly” (Eades, 1979:333)

In Thargari<sup>37</sup> (Karnic: Western Australia) (Klokeid, 1969), split ergativity shows effects of both person and number, whereby ergative is lacking in the most marked persons, but the least marked number – thus, first and second person singular pronouns lack ergative morphology (in direct contrast with Diyari, Wargamay, and Nyawaygi, above). (Note that Jiwari discussed above is closely related, but while Jiwari distinguishes second person singular ergative *nhurralu* from absolutive *nhurra*, Thargari uses *nhurra* in both functions.) In 43, we see nominative-accusative patterning for the first person singular pronoun *ngaða*; in contrast, 44 shows distinct ergative and nominative forms for the first person exclusive dual pronoun *ngadiyi*.

- (43) a. yina      ngaða      muḍuru-ṅi-n<sup>y</sup>a      waya  
 that.ABS I.NOM straight-Cause-Past wire.ABS  
 “I straightened this wire” (Klokeid, 1969:37)
- b. ... ngaða      paḍiri-a      ngura-ḍa-ru  
 1sg.NOM return-Pres camp-ALL-now  
 “I’m going back to camp” (Klokeid, 1969:54)
- c. waṭa-ra:ḍu      ngaða-na      yu-du      kaḍuja-du  
 give-HabPast 1sg-ACC that-ERG poor.old.fellow-ERG  
 “This poor old fellow used to give me [things]” (Klokeid, 1969:26)
- (44) a. ngadi-yi-Ru      ngawa-ina      kuḍara-du      nuḍuj      paṭi-iRangu-ṅi  
 1dual-Excl-ERG cover-Pres two-ERG smelly stink-Admon-Dir  
 “We’re covering up this smelly thing so it won’t stink” (Klokeid, 1969:48)
- b. majir-ira      ngadi-yi      kupa-ina  
 matches-Priv 1Dual-Excl.NOM be/sit-Pres  
 “We’ve got no matches” (Klokeid, 1969:20)

This pattern is also found in Tsez (East Caucasian: Southern Daghestan) (Comrie and Polinsky, 2003), where first singular and second singular pronouns lack distinct ergative morphology, while first plural, second plural, and all third person pronouns and nominals exhibit an ergative.

While Hittite and Mangarrayi discussed in section 3.3 above pattern according to the hierarchy with respect to gender markedness, patterns contrary to the hierarchy appear to also be attested.<sup>38</sup> Grunow-Hårsta (2008) reports that in Tanahu and Syangja Magar (Tibeto-Burman: Nepal), humans and higher animates are marked for ergative case, while lower animates and inanimates are not. Thus, in the following, we see ergative marking on *lenja-arnam* ‘young.male-young.female’ and *wak* ‘cow’, but not *mahar* ‘ant’ or *argan* ‘wasp’.

- (45) a. lenja-arnam-ko-e      cho-met      jya-a  
 young.male-young.female-PL-ERG rice-tarkari eat-PAST  
 ‘We ate rice and tarkari’ (Grunow-Hårsta, 2008:115)
- b. wak-e      ṅhet-iṅ      jya-cyo-kura      la-a  
 pig-ERG cow-ABL eat-ATT-stuff take-PAST  
 ‘The pig took food from the cow’ (Grunow-Hårsta, 2008:115)

<sup>37</sup> See also Austin (1995) where the language name is spelled Tharrkari.

<sup>38</sup> The Yugambah-Bundjalung dialect chain (Sharpe, 2005) has sometimes been cited as showing this type of exception to the hierarchy, based on Sharpe’s (2005:36) description of the ergative as marking “the person or large animal transitive subject”. However, Sharpe does not explicitly indicate that other nominal types cannot take ergative, and indeed that work contains such examples:

- (i) Mali-yu      gawari-ṅun-du      baganuma-ni      malah-ni.  
 that-ERG run-SYNC-ERG knock-CP      that-ACC  
 ‘The car knocked him over’ (Sharpe, 2005:74, citing Crowley, 1978:126)

- c. mahar myertuŋ-aŋ mim kas-a  
ant tree-LOC nest make-PAST  
'The ants made a nest in the tree' (Grunow-Hårsta, 2008:115)
- d. argan cahī argan-ko cahī cyu-ke lΛ gar-di-s-mΛ nΛ le-a lΛ gar-di-a  
wasp well wasp-PL well dog-DAT chase-LN-ITR-NOM EMPH COP-PAST chase-LN-PAST  
'The wasps, now, the wasps, well, they were chasing after the dog. They chased after (him).'

Note that the pattern is partially complicated by ergative/instrumental syncretism. Grunow-Hårsta analyses apparent examples of ergative morphology on inanimates like 3.5 as instrumental uses of the suffix, pointing out the causative morphology on the verb.

- (i) myertuŋ-e ŋa-o im-aŋ thok-ak-a  
tree-ERG 1-GEN house-DAT fell-CAUSE-PAST  
'A tree hit my house!' (Grunow-Hårsta, 2008:115)

We leave the discussion here, as we make no attempts at an exhaustive list of split ergative patterns running contrary to the hierarchy. It is important to recognize, however, that such patterns do exist.

### 3.6. Discussion

There are a few important points to highlight from the survey of attested splits based on nominal-type in this section. We have seen the important role that markedness plays in the attested patterns, including markedness in person, number and gender, while also noting that language change (and potentially other factors) can result in morphological idiosyncrasies. We have found that the oft-cited Silverstein hierarchy is a tendency rather than a universal: many languages show patterns contrary to the hierarchy, and languages may show patterns in direct contradiction to one another (for example Thargari on the one hand, versus Diyari, Wargamay, and Nyawaygi on the other). Furthermore, some languages show patterns that resist characterization through a single generalization, rather than a list of affected forms (for example, Gumbaynggir, in which 1dual and 2sg pattern as a natural class). Finally, we conclude that analyses that posit a universal dichotomy, for example between first and second person pronouns on the one hand, and all other nominal types on the other, cannot handle the complexity of attested patterns.

## 4. Analyses

In this section, we propose a morphological analysis of split ergativity based on nominal type, and discuss existing analyses, morphological and syntactic.

### 4.1. Proposed analysis

In the preceding sections, we have established that split ergativity based on nominal type in a wide range of languages is due to morphology rather than syntax. More precisely, for a subset of nominal types, morphological realization of the ergative is syncretic with the morphological realization of the nominative. The precise morphological mechanism to account for syncretism varies across morphological frameworks, see for example Carstairs (1987, chapter 4), Comrie (1991), Zwicky (1991), Aronoff (1994:83–84), Williams (1994), Noyer (1997), Stump (2001, chapter 7), Bobaljik (2003), Harley (2006), and Calabrese (2008). We expect the patterns of syncretism discussed here to be expressible in any framework.

For concreteness, we provide an analysis largely following the morphological framework of Distributed Morphology. In this framework, ergative-nominative/absolute syncretism can be derived in two primary ways. The first is based on the Elsewhere Condition (Anderson, 1969; Kiparsky, 1973; Halle and Marantz, 1993; Halle, 1997), whereby the most specific lexical item compatible with the features of the head is inserted; if no compatible specific lexical item exists, a default is inserted instead. In this instance, if a compatible realization of the ergative case is unavailable for a nominal type, the default nominative/absolute is inserted instead. For example, consider Hittite, discussed in section 2, where it was noted that the ergative only appears on neuter gender nouns. Specifying the ergative suffixes with a context of insertion limiting them to neuter gender nouns, combined with an underspecification of the nominative suffixes as the default realization of case, yields the result that nouns from the common gender (i.e. non-neuter nouns) will use the nominative in ergative contexts.<sup>39,40</sup>

<sup>39</sup> The treatment of the plural in these forms is of no current relevance.

<sup>40</sup> The three dots of ellipsis are for the morphological realization of other cases.

- (46) a. CASE: ergative ↔ -anteš / plural, neuter gender  
 b. CASE: ergative ↔ -anza / neuter gender  
 c. ...  
 d. CASE ↔ -eš / plural  
 e. CASE ↔ -š (elsewhere)

This type of analysis is also proposed by Legate (2008), where pronouns lacking an ergative form are realized through a (nominative/absolutive) default instead. She provides as an example Kugu Nganhcara (Middle Paman: Cape York Peninsula, Australia) (Smith and Johnson, 2000), in which pronouns follow a nominative-accusative pattern, while all other nominal types are ergative-absolutive. Thus, given the following possible realizations of the third person singular pronoun (Legate, 2008:80, based on the description in Smith and Johnson, 2000:397), a third singular ergative will be realized through the default nominative.

- (47) '3sg pronoun'  
 [Accusative] ↔ nhunha  
 [Dative] ↔ nhingu  
 [Ablative] ↔ nhingurumu  
 [Comitative] ↔ nhilara  
 [Privative] ↔ nhilayi  
 [Locative] ↔ nhilang(a), nhilan  
 (elsewhere) ↔ nhila

Note, however, that a simple Elsewhere Condition approach is only viable when the ergative can be positively specified as limited to a specific context of insertion, or when the relevant pronouns of the language are suppletive.<sup>41</sup> When the ergative is generally fully productive, appearing on a wide range of elements, it may not be possible to posit an appropriate positive context of insertion. When the pronouns are clearly segmentable into a pronominal stem plus a case morpheme, the lack of an ergative form of the pronoun is not so easily stated; indeed, the ergative morphology that appears on nominals may be expected to attach to the pronoun.

As illustration of the difficulties that can arise in a simple Elsewhere Condition approach, consider Warlpiri. In Warlpiri, ergative is marked as *-rlu* (*-ngku* on stems of two moras), whereas nominative and accusative are unmarked. Warlpiri also (optionally) shows split ergativity based on nominal type, whereby first singular and second singular pronouns lack ergative morphology. Assume the following featural decomposition of person (see e.g. Halle, 1997):

- (48) a. 1st = [+Author, +Participant]  
 b. 2nd = [-Author, +Participant]  
 c. 3rd = [-Author, -Participant]

and the following featural decomposition of number (see e.g. Noyer, 1997; Harbour, 2003; Nevins, 2006):

- (49) a. singular = [+singular, -augmented]  
 b. dual = [-singular, -augmented]  
 c. plural = [-singular, +augmented]

The difficulty that arises is the contexts in which the ergative suffix appears do not form a natural class – third person singular, and dual and plural in all persons, that is, EITHER [-participant] OR [-singular]. In such cases, the Elsewhere Condition is inadequate and an additional mechanism is required.

This brings us to our second main way in which syncretism is achieved in a Distributed Morphology framework: Impoverishment (first proposed in Bonet, 1991), which may be applied here as deletion of the ergative feature in the morphological component in the context of certain nominal types. Impoverishment has also been argued to be a more appropriate account of syncretisms that apply across morphological paradigms, metasyncretisms (see Williams, 1994, and see e.g. Bobaljik, 2003; Harley, 2006; Calabrese, 2008, for impoverishment analyses). Note that the timing of this operation is crucial – it must apply after case agreement, in order for case agreement to correctly yield ergative rather than default agreement (see section 2), but before vocabulary insertion, in order for the nominal itself to lack ergative morphology. This ordering is explained if case agreement applies in the syntax (see e.g. Richards, 2013) while

<sup>41</sup> We leave aside whether the pronouns in Kugu Nganhcara should be considered suppletive or not.

impoverishment and vocabulary insertion apply in the post-syntactic morphology. If, on the other hand, case agreement applies in the morphology as well, extrinsic ordering may be required.

As an initial example of how an impoverishment analysis would apply, let us return to our Warlpiri example. Whereas the contexts for the appearance of the ergative case do not form a natural class, the contexts for its disappearance – first person singular and second person singular, do form a natural class: [+participant, +singular]. Hence, we posit the impoverishment rule in 43,<sup>42</sup> which deletes the ergative<sup>43</sup> in the context of these features.

(50) ERG → ∅/ [+participant, +singular]

For a more complex example, consider Diyari, discussed in section 3, which exhibits nominative/ergative syncretism for 1 dual, 1 plural, 2 dual and 2 plural. The pronominal system for core arguments is provided below (from Austin, 2013:68); the oblique cases are more regular, dative is provided for reference – the locative/allative suffix is *ngu*, the ablative is *ngundru* (both also show the *-ka* stem extension in the singular).

(51)		ERG	NOM	ACC	DAT
	1sg	ngathu	nganhi	nganha	ngakarni
	2sg	yundru	yini	yinanha	yingkarni
	3sgF	nhandru	nhani	nhanha	nhangkarni
	3sgNF	nhulu	nhawu	nhinha	nhungkarni
	1duallIncl	ngaldra		ngaldranha	ngaldrami
	1dualExcl	ngali		ngalinha	ngalirmi
	2dual	yula		yulanha	yularni
	3dual	pulali	pula	pulanha	pularni
	1plIncl	ngayana		ngayananha	ngayanarni
	1plexcl	ngayani		ngayaninha	ngayanirmi
	2pl	yura		yuranha	yurarni
	3pl	thanali	thana	thananha	thanarni

(We leave aside here the stem allomorphy in the pronouns, which at least partially (morpho)phonological in nature, see Austin, 2013.)

On nouns, ergative is realized as *ndru* on female names, and otherwise as *-li*.<sup>44</sup> Nominative is marked as *-ni* on female names, otherwise it is unmarked (although see footnote 45). Accusative is marked as *-nha* on personal names and non-singular common nouns; singular common nouns are unmarked.<sup>45</sup>

<sup>42</sup> This rule must be optional, since the pronouns optionally appear with the ergative suffix. When these pronouns do exhibit ergative, they occur with the stem augment *-lu*:

(i) ngaju-lu-rlu vs ngaju; nyuntu-lu-rlu vs nyuntu  
 1-AUG-ERG 1 2-AUG-ERG 2

<sup>43</sup> Analysis of morphological syncretisms in this framework typically enlist featural decomposition. Since there is no generally-agreed upon featural decomposition of cases (see e.g. Halle and Vaux, 1998; Calabrese, 2008), we simplify away from this decomposition here, while noting that it could be added. For example, in the featural decomposition of Calabrese (2008):

(i)		ERG	NOM	ACC	GEN	DAT	LOC	ABL	INST
	Peripheral	-	-	-	+	+	+	+	+
	Source	+	-	-	+	-	-	+	-
	Location	-	-	-	-	-	+	+	+
	Motion	+	-	+	+	+	-	+	+

the impoverishment rule for Warlpiri would be instead:

(ii) [+source, +motion] → ∅/ [+participant, +singular]

This decomposition could be important for any system in which the syncretic nominative/ergative form is non-identical to the morphological default. Thus, a rule deleting [+source, +motion] (or changing them to [-source, -motion], see Calabrese, 2008) could result in insertion of the morphological form otherwise used for nominative.

<sup>44</sup> Before *-li*, final /u/ of dual becomes /a/, final /u/ or /i/ of singular common nouns becomes /a/, and *-ya-* is inserted for singular common nouns of two, four or five syllables whose final vowel is /u/ or /i/. See Austin (2013:57).

<sup>45</sup> Remarkably, *-nha* is also used for male names in the nominative, yielding an absolutive pattern for *-nha*. We leave aside whether this is a result of homophony, or whether nominative male names are morphologically altered to accusative.

Considering the system overall, we note the zero default running throughout the system.

(52) CASE  $\leftrightarrow \emptyset$

Ergative is eliminated by an impoverishment rule in the marked persons and numbers, resulting in the zero default appearing instead.

(53) ERG  $\rightarrow \emptyset$  / [+participant, -singular]

The following allomorphs realize ergative case.<sup>46</sup>

- (54) a. CASE: ergative  $\leftrightarrow$  -dru / [+participant, -author]  
 b. CASE: ergative  $\leftrightarrow$  -thu / [+participant]  
 c. CASE: ergative  $\leftrightarrow$  -ndru / [+female]  
 d. CASE: ergative  $\leftrightarrow$  -li (elsewhere)

Nominative has a realization in [+female], i.e. female names and the 3sgF pronoun:

(55) CASE: nominative  $\leftrightarrow$  -ni / [+female]

All other nominative forms are realized using the zero default, due to the lack of more specific forms. This seems natural, given the unmarked status of the nominative crosslinguistically.

An impoverishment rule deletes the accusative on singular common nouns, resulting in the zero default being inserted.

(56) ACC  $\rightarrow \emptyset$  / singular common nouns

Otherwise, accusative is realized as *-nha*:

(57) CASE: accusative  $\leftrightarrow$  -nha

This analysis captures the core case patterns for the Diyari system. Other instances of split ergativity based on nominal type will receive a similar analysis, based on a combination of impoverishment of the ergative case feature in certain contexts, followed by insertion of the available morphological realizations of case features in the language in question.

In sum, we have argued for a morphological analysis of split ergativity based on nominal type. The exact form of that analysis will depend on the morphological theory assumed. Within the framework assumed here, this is accomplished through the Elsewhere Condition and impoverishment.

#### 4.2. Alternatives

In this section, we briefly compare with alternative analyses of split ergativity based on nominal type. Throughout, we have contrasted a morphological analysis abstractly with syntactic analyses. Here we provide additional details, and then turn to alternative morphological analyses. We do not repeat the problems caused by over-simplification of the attested splits discussed in section 3; instead we focus on the account under alternative analyses for the lack of ergative morphology on a subset of nominal types.

According to [Carnie \(2005a\)](#) (see also [Jelinek, 1993](#); [Jelinek and Carnie, 2003](#)), first and second person pronouns as transitive subjects (in Diyirbal, for example) appear in a higher position in the clause (specifier of TP) than third person pronouns as transitive subjects (specifier of vP). For [Carnie \(2005a\)](#) this is due to a failure of *v* to assign ergative to first and second person agents, thus the difference in height is due to a difference in case, whereas for [Jelinek \(1993\)](#) it is due to first and second person pronouns being more PRESUPPOSITIONAL than others, thus the difference in case is due to a difference in height. Either way, the analysis is empirically problematic for the languages considered here, since it claims that first and second person pronouns never have ergative case, contrary to fact (see section 2). Note in addition that no evidence is provided for differences in structural height between those DPs that show ergative case morphology and those that do not. This is a pervasive problem in syntactic analyses of split ergativity based on nominal type.

<sup>46</sup> I follow [Austin \(2013:69\)](#) in analysing the *-lu* in the 3sgNF as due to the preceding */u/*.



Alexiadou and Anagnostopoulou, 2006 shares with Carnie, 2005a the claim that the *v* that hosts first and second person pronouns in its specifier position simply fails to assign ergative case to the external argument. This analysis is thus equally empirically falsified by the data in section 2.

Coon and Preminger (2012) proposes that first and second person pronouns require special licensing, and that this is accomplished by the insertion of a PARTICIPANTP between *v*P and VP. By hypothesis, this projection splits the clause into two case assignment domains, hence the transitive subject is case-marked as an intransitive subject, that is with nominative rather than ergative case. There are theoretically questionable elements to this proposal: how would a projection below *v*P license a first/second person pronoun in the specifier of *v*P; why would a participant projection split the clause into two case assignment domains (in contrast with other projections which cannot, e.g. an applicative projection); why wouldn't a first/second person object trigger a ParticipantP, resulting in nominative on the subject; etc. More importantly, however, this approach again fails empirically in that it claims that first and second person pronouns transitive subjects are case marked like intransitive subjects, and so never bear ergative case.

A more interesting proposal is that of Merchant (2006). Merchant proposes that DPs may be assigned multiple cases, resulting in either case stacking, or the last-assigned case determining the case morphology of the DP. He imports a hierarchy into the syntactic structure in terms of hierarchically ordered projections.

- (58) 1/2P > 3P > PROPERNOUNP > DEFINITE/SPECIFICP >  
INDEFINITE/SPECIFICP > INDEFINITE/NONSPECIFICP > *v*P

All transitive subjects (in ergative languages) are assigned ergative in their case position in *v*P. Subsequently, they must raise to the appropriate licensing projection based on their nominal type. By hypothesis, the projection assigning nominative case (i.e. TP) may be placed within this hierarchy in different places in different languages; for example, placement of TP below 1/2P but above 3P will result in first and second person pronouns bearing nominative case on top of ergative case, whereas placement of TP immediately below 3P will result in all pronouns bearing nominative case on top of ergative case. To account for case agreement data, Merchant proposes that while for example the first/second person pronoun raises to 1/2P, resulting in nominative case, the associated appositive remains in *v*P and thus only receives ergative case. While an improvement over other syntactic analyses, in that it engages with the case agreement data, this analysis is also empirically inadequate. No evidence is provided for appositives occupying a lower syntactic position than the associated nominals (and notice in the examples in section 2 the appositives are often linearly adjacent to the associated nominal). In addition, case agreement is not limited to appositives, but also obtains DP-internally; see for example section 2 for data on quantificational modifiers in Ingush, adjectives in Marathi, and pronouns inside the Uradhi DP. Furthermore, in requiring DPs of different types to occupy different positions in the clause, Merchant's analysis cannot explain the grammaticality of coordination of an ergative-marked DP with a nominative-marked DP, see section 2 for discussion and for examples from Udi, Marathi and Siberian Yup'ik Eskimo.

Let us now consider alternative morphological analyses. There are several accounts of split ergativity based on nominal type within the Optimality Theory framework, see Aissen (1999), Malchukov (2008), and Woolford (2008). Aissen (1999) applies harmonic alignment to the grammatical hierarchies: Local > 3rd (where Local is first or second person), Agent > Patient, and Subject > Nonsubject; the result is then conjoined with a constraint punishing the lack of morphology \* $\emptyset$ , and ranked with respect to a constraint punishing the existence of morphology \*STRUC. Thus the pattern whereby first and second person pronouns lack ergative morphology, but third person pronouns do bear ergative morphology results from the following ranking<sup>47</sup>:

- (59) \* $\emptyset$  & \*Subj/3 > \*Struc > \*Subj/Local

As pointed out in Carnie (2005b) and Legate (2008), this system is empirically problematic in that only allows for ergative case morphology versus no case morphology, whereas the nominative/absolute forms used in place of ergative are not identical to the stem in all languages.<sup>48</sup> See also Woolford, 2008 for OT-internal criticisms.

Malchukov (2008) presents an alternative OT account, based on two (families of) constraints that favour overt case marking in certain functionally-motivated environments, combined with an economy constraint that disfavors it (Malchukov, 2008:209).<sup>49</sup>

- (60) a. DIFF: The arguments (A and P) must be distinguishable.  
b. INDEX: Encode semantic roles (A and P)  
c. ECON: Do not overtly mark of (core) arguments

<sup>47</sup> Aissen (1999) does not analyse the fact that ergative case appears on transitive subjects but not intransitive.

<sup>48</sup> Footnote 43 is also relevant here.

<sup>49</sup> Here A = transitive subject; P = transitive object.

DIFF and INDEX differ in that DIFF applies to syntactic arguments, whereas INDEX applies to semantic roles.<sup>50</sup> The constraint rankings are presented in terms of A, that is an agent high on the Silverstein hierarchy, versus a, that is an agent low on the Silverstein hierarchy; assumedly this could be further specified. The pattern where only nominal types high in the hierarchy fail to show ergative marking is achieved by the following ranking.

(61) DIFF-a > ECON > DIFF-A, INDEX-A, INDEX-a

Thus, it is more important to distinguish subjects low on the hierarchy from objects than it is to economically avoid overt marking, but that is the only functional consideration that is more important than avoiding overt marking.<sup>51</sup>

The above-mentioned problem with Aissen (1999) that it predicts only overt ergative marking or no case marking, rather than ergative case marking or nominative/absolute case marking, equally holds for Malchukov (2008). In addition, Malchukov (2008) encodes functional motivations into the constraints – the need for subjects to be distinguished from objects, or the need for semantic roles to be signaled. However, functional motivations break down when we consider the diversity of attested patterns (see section 3). Why would it be important to distinguish first and second person singular pronouns from objects in Diyari, but not first and second person dual and plural? And why would the converse be true in Thargari? Although constraint rankings could be written to achieve these patterns, the emphasized functional motivations of these constraints is nullified. Finally, the case agreement data discussed in section 2 is not explained; accounting for such data would require positing differing levels of importance of distinguishing modifiers of a subject and the head of the subject, even when these are within the same DP. Such requirements again defy functional explanation.

Perhaps the most successful OT analysis is that of Woolford (2008). Woolford proposes a constraint \*ERGATIVE that penalizes the morphological realization of ergative case in combination with a person hierarchy, number hierarchy, and animacy hierarchy; this constraint interacts with a faithfulness constraint MAX(ERGATIVE) that penalizes the failure of morphological realization of ergative case. Thus the Dyrbal-type pattern is achieved through the constraints:

(62) \*ergative/local > Max(ergative) > \*ergative/human, etc

Woolford's discussion of split ergativity is relatively brief, and so many details are not included. Like the previous two OT accounts, the system apparently predicts no case morphology rather than (potentially overt) nominative case morphology when ergative case morphology is ruled out. However, this is not explicitly discussed; we leave as an open question whether the system can be modified to account for non-zero nominative marking. Although it is also not discussed, the system has the potential to correctly account for the case agreement data. Unlike the other OT approaches, Woolford explicitly distinguishes the assignment of ergative case from its morphological realization, where the constraint rankings are concerned with the latter not the former.<sup>52</sup> Thus, given prior assignment of ergative case and agreement in case features, as long as the constraints operate on lexical items rather than DPs as a whole, the case agreement data will be correctly predicted. We leave the necessary further elaborations of this account to others.

Finally, in the next section, we consider the source of the hierarchy on the proposed analysis.

#### 4.3. Whither hierarchy

An objection to the type of analysis advocated here is that it does not provide a central role for Silverstein's hierarchy itself. McGregor (2010:1614) complains (of Goddard's (1982) proposal) "this approach obscures the predictability of the distribution of the marking-systems across languages, which tends to be according to Silverstein's animacy hierarchy, and thus is grammatically conditioned by the NP type". In a number of the alternative analyses considered in the previous section, in contrast, Silverstein's hierarchy is directly encoded in the syntactic structure or constraints.

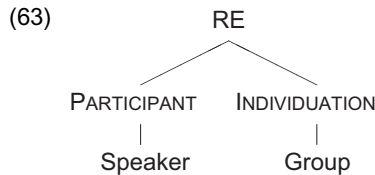
On the one hand, the discussion of attested patterns in section 3 suggests that directly encoding the hierarchy into the grammar is a weakness rather than a strength. The hierarchy is a tendency, not a universal, masking significant

<sup>50</sup> Note that he dismisses the possibility for accusative rather than ergative case to satisfy DIFF in a language like Dyrbal, which allows ergative-accusative case patterns, on the basis that discourse ellipsis may eliminate the accusative. He does not consider that discourse ellipsis may equally eliminate the ergative.

<sup>51</sup> Ranking of INDEX-A above ECON is used for Hindi, where in intransitive clauses, agentive subjects are marked ergative while nonagentive subjects are not. This, however, is a distinct phenomenon, whereby nonagentive subjects are never assigned an ergative case feature, rather than an ergative case feature being unrealized morphologically.

<sup>52</sup> Note that Woolford assumes a morphological analysis of split ergativity based on nominal type, rather than providing arguments of the type in section 2.

crosslinguistic variation, whereby patterns in one language directly contradict the patterns in another. The hierarchy itself cannot be hard-wired into the grammar. On the other hand, the extent to which the hierarchy captures a real trend can be explained through markedness, as discussed in section 2, without direct reference to the hierarchy. Again, nominal types high in the hierarchy involve highly marked features from a morphological point of view, this may be encoded through PLUS-values of features, such as Halle's (1997) [+participant] [+author] for first person; or context-sensitive markedness, such as Nevins' (2006) [-singular][-augmented] for dual,<sup>53</sup> where [-singular] is the marked value and [-augmented] is the marked value in the context of minus singular; or feature geometries, such as Harley and Ritter's (2002) representation of first person plural in 63 versus third person singular in 64.<sup>54</sup>



On the unremarkable assumption that ergative is also a marked feature value for case, the absence of ergative on nominal types high in the hierarchy is just another instance of reduction of highly marked feature bundles (see Woolford, 2008 for related discussion).

It is also possible, although more speculative, that functional considerations play a role in the development of the patterns. Suppose that in systems with optional ergative marking, the use of ergative case is roughly determined by Silverstein's hierarchy due to functional considerations. (See e.g. Tsunoda, 1981; McGregor, 1989, 1990, 1992; Kumakhov et al., 1996; Verstraete, 2010 for examples of optionality sensitive to the hierarchy in ergative languages; and e.g. Fry, 2001 and Lee, 2006 for examples of optional case marking sensitive to the hierarchy in non-ergative languages.) In such a situation, the child learner of the language will have less evidence for ergative morphology on nominals high in the hierarchy than those low in the hierarchy. Over time, this could result in loss of ergative morphology on nominals high in the hierarchy, if the child simply does not hear enough exemplars to learn the morphology. See Yang (2002) for a learning model that would make this prediction.

Finally, diachronic considerations independent of the hierarchy play a role in yielding the attested patterns. See, for example, the discussion in section 3.4 (based on Lahaussais, 2002, 2003a,b) for the role played by the innovation of a second person plural based on the nominal plural marker in Mukli Thulung Rai, and Dixon (2002) for the role played by the innovation of a two-syllable word constraint (resulting in a subset of pronouns with marked nominative rather than ergative marking) in many Australian languages.

In sum, the attested split ergative patterns based on the nominal hierarchy do not have a unique source. Instead, they result from a combination of synchronic morphological markedness repair and various diachronic processes.

## 5. Conclusion

In this paper, we have demonstrated that split ergativity based on nominal type is a morphological, rather than syntactic, phenomenon. We provided evidence from the complexity of attested splits, case agreement, syntactic ergativity, and coordination. We proposed an analysis couched in the Distributed Morphology framework, and showed that the analysis contrasts favourably with existing analyses. Finally, we provided some suggestions as to the source of the apparent sensitivity to a nominal hierarchy.

<sup>53</sup> Nevins builds on Noyer (1997) and Harbour (2003).

<sup>54</sup> RE = referring expression (the root node for pronouns).

## Acknowledgements

Thank you to Wolfgang Schulze for assistance with the Udi data, Ashwini Deo, Aravind Joshi, and Ashwini Vaidya for assistance with the Marathi data, and Aimée Lahaussais for assistance with the Thulung Rai data. Thank you also to four anonymous reviewers for suggestions that led to improvements throughout.

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