SOME REMARKS ON MARKEDNESS HIERARCHIES: A REPLY TO AISSEN 1999 AND 2003[*].

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This short squib examines some problems with the Markedness Hierarchy approach of Aissen (1993, 2003) with respect to case and agreement marking systems. It argues that this approach, based on overt morphological exponance of marked forms both misses important Markedness relations that are not expressed morphologically, and fails to account for certain morphological patterns.

0. Introduction

In the typological and relational grammar literature, a great deal of attention is paid to hierarchies of semantic relations. For example, the phenomena of split ergativity (Aissen 1999, Dixon 1979, 1994, Silverstein 1976, DuBois 1981, Delancy 1986, among others) and differential object marking (DOM) (Aissen 2003) seem to be sensitive to the placement arguments on a hierarchy referring to person, specificity or animacy. An example of such a hierarchy, taken from Dixon (1994) is seen in (1):

(1) 1st > 2nd > 3rd > Proper nouns > Humans > Animates > Inanimates

Such markedness hierarchies predictive of what arguments are more likely to take on the role of subjects and which arguments will be objects. Arguments high on the scale make better subjects and those low on the scale are better objects. When unexpectedly hierarchy-high arguments are objects, and/or hierarchy-low arguments are subjects we get marked constructions like ergative/absolutive case or DOM.

These issues have recently come to the forefront in Optimality Theoretic approaches to syntax, in particular in the work of Aissen (1999 and 2003). Aissen's work seeks to derive splits and DOM from ranked

[*] Thanks to Andy Barss, Heidi Harley, Scott Jackson, Eloise Jelinek, Simin Karimi, and Dan Siddiqi for comments on this paper, as well as discussions from my seminar on ergativity in 2000. Thanks also to Judith Aissen, who hates this work, but was generous with her time and patience in trying to convince me that I'm wrong, I leave it to the reader to decide which of us is correct. All mistakes herein are the fault of my cat.

constraints built out of relational hierarchies. These accounts rely on the tight relationship between morphological expression and constructional markedness as defined by markedness hierarchies. One of the primary results of Aissen's research is that constructions that are syntactically unexpected will be morphologically marked. In this short reply to Aissen's work, I argue that this morphological correlation is incorrect. While it is true that many grammatical systems do overtly express syntactic markedness in terms of morphology, we find many constructions that are syntactically marked but exhibit no morphological exponence of that markedness. Instead, they exhibit their syntactic markedness in terms of word order. Further, I show that at least one of the test cases that Aissen (1999) presents is based on incomplete data. The more complete picture points away from Aissen's analysis.

1. Markedness Hierarchies

Most ergative/absolutive languages exhibit some kind of "split" case marking. Take for example the well-known data from Dyirbal (Payne 1997[1]). If first and second person pronouns are used as subjects in Dyirbal, a classic nominative/accusative (N/A) pattern emerges (2):

(2) a. ŋana-Ø banaga-n^{y}u.
1PL-NOM returned-NONFUT
"We returned."

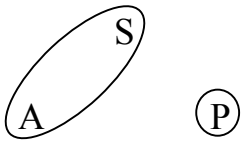
b. nyura-Ø banaga-n^{y}u.
2PL-NOM returned-NONFUT
"You (pl) returned."

c. nyura-Ø ŋana-na buɽa-n.
2PL-NOM 1PL-ACC see-NONFUT
"You saw us."

[1] Payne attributes this data to (Dixon 1972). However, in reading Dixon (1972) I could not find these exact examples. Similar forms, using a slightly different orthographic system, are found in Dixon (1979). I have corrected the orthography to that of Dixon 1979 -- which in turn is different than that of Dixon 1972) Dixon's <ŋ> corresponds to Payne's <ng>, Dixon's <ɽ> corresponds to Payne's <r>. It should be noted, as will become very important below, in his 1979 article, Dixon leaves off all NP-class markers for full NPs.

d. ŋana-Ø nyura-na buɽa-n.
1PL-NOM 2PL-ACC see-NONFUT
"We saw you."

In these sentences, we see that the subjects of intransitives ('S' in the typological literature) and the subjects of transitives ('A') are marked with the same case marking (a null or Ø marking), whereas the objects of transitives ('P') are marked with a different (*-na*) marking. This is the standard N/A pattern (3) (diagram taken from Payne 1997):

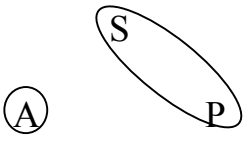
(3) 

If a third person pronoun[2] or full NP subject is used however, the ergative/absolutive (E/A) pattern emerges as seen in (4). The subjects of intransitives (S) and the objects of transitives (P) take the same case marking (again a Ø suffix[3]) (4a–b) but the subjects of transitives (A) (4c) take ergative case *(-ŋgu*) as summarized in diagram (5).

(4) a. ŋuma-Ø banaga-n^{y}u.
father-ABS returned-NONFUT
"Father returned."

b. yabu-Ø banaga-n^{y}u
mother-ABS returned-NONFUT
"Mother returned."

c. ŋuma-Ø yabu-ŋgu buɽa-n
father-ABS mother-ERG saw-NONFUT
"Mother saw father."

(5) 

[2] The existence of a third person pronoun in Dyirbal is a matter of some debate. See Dixon (1972: 51-52) for discussion.
[3] Again as noted above in footnote 1, these sentences are again taken from Payne (1997) and the orthographic representation corrected to be the same as Dixon (1979).

Cross-linguistically, splits such as this are found based on a number of semantic criteria, including status as a free morpheme, person, definiteness or specificity, animacy, topicality/focality, and aspect. The topic is discussed at length in the typological literature. In that tradition, splits are treated as the interaction of markedness hierarchies. These are essentially descriptive statements of the relative prominence of various types of arguments (or in some cases tenses) with particular grammatical relations. For example, the pattern seen above in Dyirbal can be characterized as the relationship between a hierarchy of person and NP type, and a system of grammatical relations.

6) *Person hierarchy*
1,2 (local persons) > 3, other NPs (non-local persons)

Very crudely put, elements high on the hierarchy take an S or an A grammatical relation and those low on the hierarchy take a P grammatical relation. When NPs do not correctly line up (such as when we have a 3rd person in an A role, we must mark the unusualness of the sentence with some special morphology (such as ergative case marking).

1.2 Hierarchies in OT

From the standpoint of a generative grammar, it isn't at all clear what the grammatical status of the hierarchies is. They aren't constraints, procedures or rules. How the restrictions are imposed on the grammar isn't at all clear. These hierarchies tend to be merely post-factum descriptive statements of grammatical tendencies. To be fair, it isn't the goal of the typological tradition to characterize language in generative terms. However, the lack of formalizability is a problem for linguists who would like to accommodate such robust descriptive generalizations in their generative grammar.

Most recently, the question of formalizing these hierarchies has been treated in depth in the Optimality Theoretic framework (Aissen 1999, 2003). Aissen (1999) is the first presentation of an OT account of relational hierarchies, focusing primarily on split ergativity and a few related phenomena (including inverse and a few other voices). In Aissen (2003), she addresses a wider empirical domain than just split ergativity: Differential Object Marking (DOM). DOM is the set of phenomena where NP objects of one semantic type on a relational hierarchy are morphologically marked differently from NP objects of other semantic types. This may be through

case marking (in dependent marking languages) or through agreement or voice morphology (in head-marking languages).

Aissen proposes that the effects of markedness hierarchies in syntax are encoded through harmonic alignment (Prince and Smolensky 1993). An example of harmonic alignment in phonology is the mapping of segments to syllable positions (peaks > margin) based on a sonority hierarchy (vowels > sonorants> obstruents). Harmonic alignment gives us ranked constraints such as *peak/obstruents >> *peak/vowel etc., thus deriving the universal sonority curve.

Aissen extends this to relational hierarchies. She does this for a number of hierarchies, including thematic relations, animacy, and person number. I list here only a single representative example, that of the alignment between a hierarchy-based on person and a hierarchy of grammatical relations.

(7) *Person/Grammatical relation alignment* (Aissen 1999)

Scale	Harmonic Alignment	Constraint Alignment
Local > 3 Su > Non-Su	Su/local ≻ Su/3 Non-Su/3 ≻ Non-Su/Local	*Su/3 >> *Su/Local *Non-Su/Local >> *Non-Su/3

The constraint alignments in the rightmost column are claimed to be universal. The advantages to this kind of approach, Aissen claims, are twofold. On a purely conceptual level, it takes an otherwise well-motivated mechanism (harmonic alignment) and applies it in a different domain. On an empirical level, it allows us to explain "markedness reversals": What is good for the goose is bad for the gander, and vice versa. Good subjects make bad objects, and good objects make bad subjects.

The harmonically aligned constraints proposed by Aissen, do not by themselves derive split ergativity or other kinds of DOM. Two additional constraints are necessary.

(8) *ø Avoid zero expression
*STRUC Avoid overt expression

*ø is required to ensure that a violation of a highly ranked constraint is expressed by morphologically marking the violation rather than simply deleting the offending argument. This is accomplished through local conjunction with the alignment constraints. *STRUC is the constraint that gives us cross-linguistic variation in DOM and split ergativity. It is based on

the observation that marked alignments are usually morphologically marked. Take the case of Turkish, specific noun objects are marked with *–i*, and non-specific ones are not. A version of the *STRUC constraint (*STRUC$_C$) penalizes a case marking ($_C$) when it appears on a noun that does not violate a grammatical relation alignment (*Obj/Specific), but not when it appears on an unexpected form. (Local conjunction of the alignment constraints with *Ø($_C$) penalize non-expression of case). This is reflected in the following constraint ranking, where *STRUC$_C$ is language-specifically ranked between the two universally ranked alignment constraints:

(9) *Obj/Specific & *Ø$_C$>> *STRUC$_C$ >> *Obj/Non-specific & *Ø$_C$

When applied to non-specific object, a candidate with no overt marking wins:

(10)

Obj/Spec	*Obj/Spec & *Ø$_C$	*STRUC$_C$	*Obj/Non-Spec &*Ø$_C$
NSO[4]-i		!*	
☞NSO-Ø			*

When applied to a specific object, the candidate with the *–i* marking wins.

(11)

Obj/Spec	*Obj/Spec & *Ø$_C$	*STRUC$_C$	*Obj/Non-Spec &*Ø$_C$
☞SO[5]-i		*	
SO-Ø	!*		

Let us now return to the Dyirbal split-ergativity example (seen above in (2) and (4)). Aissen (1999) asserts that two of the cases (Nominative and Absolutive) are morphologically unmarked, and the others are overtly marked. (According to Dixon (1972) the case suffixes for Dyirbal include: Ergative: *–ŋga* , *–ga, -bu, -du, –gu* or *-ɽu* and Accusative (pronouns only): *–na*). This is crucial for her analysis, since cross-linguistic differences are expressed by the relative ordering of locally conjoined alignment constraints and *Ø with the *STRUC constraint thus penalizing overt expression of

[4] NSO here stands for Non-Specific Object.
[5] SO here stands for Specific Object.

unmarked alignments. Aissen proposes the following constraint ranking for Dyirbal (where the constraints ranked above *STRUC and those below it are not crucially ranked with respect to one another, and 3 is taken to be representative of all non-local persons):

(12) {*Subj/3&*$Ø_C$, *Obj/local&*$Ø_C$} >> *$STRUC_C$ >> {*Subj/local&*$Ø_C$, *Obj/3&$Ø_C$)

In sentences where we have an "expected" alignment (i.e., local arguments in subject position and non-locals in object position), a N/A pattern emerges. (It should be noted that accusative suffixal morphology is limited to pronouns in Dyirbal. What appears instead is the absolutive[6] (Ø-suffix) form of full nouns.) This is seen in the tableau in (13) (Aissen's 10, pg 701).

(13)

V(ag/1, pat/3)	*Subj/3&*$Ø_C$	*Obj/loc&*$Ø_C$	*$Struc_C$	*Subj/loc&*$Ø_C$	*obj/3&*$Ø_C$
S/1-case, O/3			*!		*
S/1, O/3-case			*!	*	
☞S/1, O/3				*	*
S/1-case, O/3-case			*!*		

The maximally marked construction, by contrast, is one with a non-local subject and a local object. In such a situation, Aissen's system predicts the attested pattern where an ergative marking appears on the non-local subject and an accusative appears on the local person object.

[6] Since there is a clear categorial distinction between the items that take the *-na* suffix (2nd person pronouns) and those that don't (full NPs) and the fact that the split ergativity forces these two NP types to be in strict complementary distribution makes it very difficult to distinguish between Aissen's description of the case marking (here a Ø absolutive), and simply a morphologically conditioned allomorph of accusative marking, where pronouns take *-na* and nouns take a Ø. However for the purposes of this discussion, I adopt Aissen's surface-true characterization: that there are indeed two Ø morphemes but they represent distinct NOM and ABS cases; ACC case is always represented by *-na*.

(14)

V(ag/3, pat/1)	*Subj/3&*$Ø_C$	*Obj/loc&*$Ø_C$	*$Struc_C$	*Subj/loc&*$Ø_C$	*obj/3&*$Ø_C$
S/3-case, O/1		*!	*		
S/3, O/1loc-case	*!		*		
S/3, O/1	*!	*			
☞S/3-case, O/1-case			**		

2. Problems with the harmonic-morphological hypothesis.

As noted by Aissen herself, there are a number of technical problems with this analysis. For example, she notes that the constraint hierarchy fails to give the correct output for the subjects of intransitives in Dyirbal, which are uniformly marked with a Ø case (either Nom or Abs). This kind of problem is easily solvable provided enough creativity is applied to constructing the correct constraint set. However, the technical problems pale in comparison with the empirical and conceptual problems underlying this approach.

First, let us consider a conceptual argument[7], then we turn to an empirical problem. One of the advantages of such a system, it is claimed, is that it "derives" the harmonic constraint set from relational hierarchies. At first blush this seems very appealing, but on careful evaluation it means that the analysis is built on feet of clay. In particular, note that relational hierarchies themselves have no particular grammatical status. As mentioned above, they are merely descriptive statements. I'm not at all convinced that grammatical constructs "derived from" non-grammatical descriptions provide solid basis for grammatical theory. In the phonology literature prominence scales, such the sonority scale, are grounded in instrumental phonetics. The grounding of typologically significant, but nonetheless non-absolute, relational hierarchies is much more difficult. One could imagine that relational hierarchies were grounded in lexical semantic notions, but it is totally mysterious how we might measure or compute, for example, the relative "animacy" of a set of NPs (see Yamamoto 2000 for extensive discussion of how various factors seem to come into play in determining animacy in Japanese). The harmonic approach relies on relational hierarchies as primitives, but these primitives don't clearly have any status in

[7] Larger conceptual arguments concerning a stochastic implementation of Aissen's approach are raised in Newmeyer (2002a,b), and discussed in Bresnan & Aissen (2002). I won't attempt to repeat or evaluate all the arguments presented in that debate. Needless to say, I am more sympathetic to Newmeyer's arguments, but I leave it to the $reader_k$ to evaluate $their_j$ debate $themselves_k$.

a generative grammar unless properly grounded either in the real world or in theoretical constructs that themselves have some grammatical status.

Empirical arguments are always more appealing than conceptual ones, and so I now turn to two such examples. The first is based in the grammar of Dyirbal, the other in the ambiguity that inherently lies in the term "marked".

What is crucial to Aissen's account is the fact that unmarked argument alignments are morphologically unmarked. But this characterization of the facts, in the case of Dyirbal case marking at least, is simply false. While it is true that there is no case suffix on Dyirbal absolutive NPs, full NPs in the absolutive usually take a case-marked noun-class particle. Absolutive case *is* overtly marked in Dyirbal, just not as a suffix. Dixon notes that Dyirbal has a set of class markers, which are usually used to express the proximity or visibility of the entity being referred to. These particles are based (suppletively) on the forms *bala* 'visible and there', *yala* 'visible and here' and *ŋala* 'not visible'. These forms are inflected for case and the noun class of the element that follows them. I reproduce here the chart Dixon (1972) provides for the inflected forms of *bala*.

(15)

	Nom/Abs	Ergative	Dative	Genitive
Class 1	bayi	baŋgul	bagul	baŋul
Class 2	balan	baŋgun	bagun	baŋun
Class 3	balam	baŋgum	bagum	---
Class 4	bala	baŋgu	bagu	baŋu

These markers are regularly found on Dyirbal non-local NPs. See for example the sentences in (16) taken from Dixon (1972):

(16) a. ŋadya [bayi yaɽa-Ø] balgan
I-NOM class1-ABS man-ABS hit
"I am hitting the man."

b. [bayi yaɽa] baniɲu
class1-ABS man-ABS come
"The man is coming."

The full form of the sentences in (4) sentences with case-marked noun-class markers would be as follows (Dixon 1979):

(4') a. bayi ŋuma-Ø banaga-n^{y}u.
class1.ABS father-ABS returned-NONFUT
"Father returned."

b. balan yabu-Ø banaga-n^{y}u
class2.ABS mother-ABS returned-NONFUT
"Mother returned."

c. bayi ŋuma-Ø baŋgun yabu-ŋgu buɽa-n
class1.ABS father-ABS class2.ERG mother-ERG saw-NONFUT
"Mother saw father."

Since many languages mark case on determiners or class markers (such as German), it seems odd to claim that these Dyirbal forms are morphologically unmarked. Remarkably, Aissen (1999) does not cite a single example of any of the languages she discusses, so it is not at all clear if she is aware of this fact, but it seems to be a definite problem for her approach. Absolutive case *is* expressed morphologically in the language.

Still limiting our discussion to Dyirbal for a moment, it should also be noted that even within the pronominal system, it isn't clear that nominative marking is unmarked either. It is true that for many of the forms (1dual, 1plural, 2dual, 2plural) the accusative form is simply *-na* affixed to the nominative (Data from Dixon 1972):

(18)

	nominative	*accusative*
1dual	ŋalidyi	ŋalidyi-na
1 pl	ŋandyi	ŋandyi-na
2 dual	ɲubaladyi	ɲubaladyi-na
2 pl	ɲuradyi	ɲuradyi-na

This might suggest that nominative is morphologically unmarked in contrast to accusative. However, the data from 1st and 2nd person singular are not so transparent:

(19)

1sing	ŋadya	nayguna
2sing	ŋinda	ninuna

While the accusative forms do still have the *-na* ending, it should be noted that nominative is suppletively distinct from accusative in the root as well

(*ŋadya* vs. *naygu-* and *ŋinda* vs. *ninu-*). Nominative case is at least partly marked overtly, again non-suffixally, in these forms.

This points to the broader empirical problem with Aissen's approach. She claims that case marking systems in general (and split systems, in particular) rely on taking the notions "marked" and "unmarked" too literally. "Unmarked" situations are predicted to be morphologically unmarked. "Marked" ones take morphological marking. I've shown above, for the case of Dyirbal case marking, this tight link between the morphological and syntactic/typological senses of the terms 'marked' and 'unmarked' is questionable. I believe, however, that there is a much stronger empirical argument to be made: there are split systems that do not use any overt morphological marking at all, instead only linear order expresses the relations. This is in the phenomenon of object shift, which as Aissen (2003) speculates, is tied closely to DOM

Consider the following data from object shift in K'ichee' (data from England 1991):

(20) a.

V	O	S
kuq'ab'arsaj		winaq lee[8] tzaam
perf.3s/3s.gets.drunk.cause		person the liquor

"(The) Liquor gets people drunk

b.

V	S	O
xuq'aluj	lee achi	lee ala
3/3-hug	the man	the boy

"The man hugged the boy" (*The boy hugged the man)

In (27a) with an non-specific object we get VOS order, with a specific object we get VSO. Here we have an alternation in position, one that is *not* reflected in case or agreement morphology (the same morphology -- Ø '3s.abs' +*uu* '3s.erg' → *u* -- is used independent of whether a OS or an SO order is found). In Wasteko (Huastec) we find the same alternation driven by animacy instead of specificity (England 1991).

[8] The *lee* marker here is not actually a definite determiner, it is a proximate marker. I use it here to force a specific reading on the nouns, but the specific reading is possible without it (and under the right pragmatic context, a non-specific reading is possible with it.) I use proximate markers as merely a heuristic for the reader. It should also be noted that *lee* is often phonologically reduced when preceding nouns beginning with vowels. I have also abstracted away from that here.

In fact, in many languages, cases of DOM are not expressed morphologically but show up only in terms of position (as indicated by object shift). Take the classic case of German (data from Jelinek and Diesing 1995:128, 130).

(29) a. … weil ich nicht eine einzige Katze gestreichelt habe
since I not a single cat petted have
"Since I have not petted a single cat"

b. *? … weil ich nicht die Katze streichle
since I not the cat pet
"Since I do not pet the cat"

c. … weil ich die Katze nicht streichle
… since I the cat not pet
… Since I do not pet the cat

Indefinite object NPs in German are allowed to appear to the right of the negation marker *nicht*, which marks the left edge of VP. Definite objects, by contrast, must be scrambled to the left of negation. Here again, we have a case of distinguishing objects along the lines of a relational hierarchy, without any morphological exponence on the objects or on the verbal head.

Another example comes from English double object constructions. Only animate goals are advanced to object position as noted by Bresnan (1982) and Oehrle (1976). Compare:

(31) a. The lawyer sent a letter to Ellen.
b. The lawyer sent Ellen a letter.
c. The lawyer sent a letter to Dallas.
d *The lawyer sent Dallas a letter.

When the goal is an inanimate destination, dative movement is excluded. The explanation for this correlate to an animacy hierarchy remains mysterious under Aissen's morphological approach. This kind of fact appears to be evidence against a system that crucially links syntactic markedness to overt morphology.

3. Conclusions

In this short note, I have presented evidence that the tight link between morphological expression and syntactic markedness predicted by Aissen's approaches to split case systems and differential object marking is weaker than one might expect. In particular, I have shown that crucially, certain so-called "unmarked" cases in fact receive morphological exponence (such as Dyirbal absolutive class markers). Further, I have shown that other phenomena tightly linked to markedness hierarchies, such as object shift and dative movement find no obvious explanation in the harmonic-morphology approach of Aissen. There are at least two alternative formal approaches to markedness hierarchies, which rely on a strict correlation between phrase structure prominence and markedness hierarchy prominence. First is Isaak (2000); the other is found in the work of Jelinek (Jelinek 1983, Diesing and Jelinek 1995, Jelinek 2000, Jelinek and Carnie 2003). While these alternatives are not without their problems, they appear to make the correct predictions with respect to systems such those discussed above.

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