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Case Patterns*

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Standard Case licensing principles (see Chomsky 1981, 1986, 1995) are designed to handle situations where the Case licensing feature of the relevant local head alone determines what Case an argument will have. However, there are a range of problematic situations wherein relying solely on the features of the local head to determine Case is insufficient. These problematic situations, which are the focus of this paper, can be handled if violable markedness and faithfulness constraints are added to Case Theory.

These problematic phenomena can be classed into two types: dependency and valency effects. *S*ituations where the Case of one argument depends on the Case of another are *dependency effects*. For example, the Case of objects in Icelandic and Hindi depends on the Case of the subject (Yip, Maling and Jackendoff 1987, Mahajan 1990). Burzio's (1986) generalization describes another dependency effect. In *valency effects,* the Case of an argument depends on whether the verb is transitive. Many ergative languages limit ergative subjects to transitive clauses, and a similar valency restriction can occur with dative subjects.

Previous attempts to solve such problems within standard Case theory have involved placing restrictions on accusative Case licensing to explain why some objects cannot be accusative (e.g. Burzio 1986, Woolford 1993). An alternate approach proposed by Yip, Maling, and Jackendoff 1987 is to order the principles that associate Cases to arguments, so that nominative is assigned before accusative. Legendre, Raymond, and Smolensky (1993) and Nakamura (1977, 1999) take the latter strategy within Optimality Theory, varying the ranking among the principles that associate Cases to arguments to account for differences in Case patterns across languages. These initial OT results provide a simple account of certain dependency and valency effects, without complicating the Case licensing principles. Nevertheless, ranking the Case licensing principles is not the only means of accomplishing this goal. The approach proposed here maintains the principles of the Case theory of Chomsky 1981, 1986, 1995 as

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universal and inviolable, accounting for dependency and valency effects, and other cross-linguistic differences in Case patterns with a supplementary set of ranked violable markedness and faithfulness constraints. Whenever there is a choice of licensed Cases for a particular argument (a situation which occurs frequently), the violable constraints determine which Case will surface.

Under this approach, dependency effects follow from markedness. All of the contexts in which it previously appeared to be necessary to restrict accusative Case licensing (by Burzio's (1986) generalization or Woolford's (1993) Accusative Case Blocking) turn out to be contexts in which nominative Case is potentially licensed on the object as well as accusative, and nominative is selected as the less marked Case. Valency effects and other dependency effects involve the interaction of various markedness and faithfulness constraints, including faithfulness constraints that are contextually restricted.[2] These same constraints account for the surface inventory of Cases used in a language.[3]

This paper is organized as follows. Section 1 lays out the universal principles of Case Theory retained from Chomsky (1981, 1986, 1995). Because the entire burden of determining which Case will surface is no longer carried by these Case licensing principles, they can be formulated in a maximally simple and restrictive form. If they overgenerate, the overgeneration is curbed by the violable constraints. This section discusses the kinds of universal generalizations that these Case licensing principles capture, motivating the decision to keep them as inviolable principles.

Section 2 presents an overview of the violable constraints used in the paper. Markedness constraints requires avoidance of marked Cases (e.g. *ergative, *dative, *accusative, etc.). There are some universally fixed ranking relations among these constraints: inherent Cases are universally more marked than structural Cases, and accusative is universally more marked than nominative. An additional markedness constraint prohibits multiple occurrences of the same Case. Faithfulness constraints require lexically determined inherent Case licensing features of verbs to be checked. (There is no literal faithfulness to the Case of the input, because arguments have no Case in the input; Gen adds Case in the output candidates.)[4] The faithfulness constraints have variant contextually restricted forms, requiring faithfulness to be obeyed only in particular contexts, such as transitives or perfective aspect.

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[2] The idea that faithfulness can be restricted to certain contexts is proposed in McCarthy and Prince 1995 and developed in Beckman 1998.

[3] The idea that the inventory of sounds in a language can be accounted for, rather than merely stipulated, comes from Prince and Smolensky 1993.

[4] In the version of this paper presented at the Hopkins Optimality Workshop / Maryland Mayfest 1997, I assumed that the input to syntax was something more like the old D-structure (without the structure) where inherent Cases were already assigned to the relevant arguments.

Section 3 begins the analysis of various valency, dependency, and inventory problems, focusing on those involving the dative Case. These effects, as well as the behavior of unaccusatives that motivated Burzio's Generalization, are shown to follow from the interaction of the violable markedness and faithfulness constraints. Section 4 deals with the same range of problems with respect to ergative Case, showing that the same solution works for ergative constructions. This section also deals with ergative-dative patterns, arguing that these provide empirical evidence for the approach proposed here, and against any approach that ranks Case licensing rules. Section 5 is a brief look at how to deal with other sorts of dependency effects.

1. The Universal Case Licensing Principles

This approach retains much of the Case theory of Chomsky 1981, 1986, 1995, including the requirement that every argument have a licensed Case. Any candidate violating these principles will be eliminated from the candidate set before the violable constraints apply.

1.1 Licensing Structural Case

Structural Case is licensed on an argument in the proper structural relationship with the appropriate licensing head. Nominative is licensed by Tense and accusative is licensed by V. The proper structural relationship includes Spec-head relationships, plus any situation where the head c-commands the argument in a sufficiently local relationship to allow Case checking by feature raising (Chomsky 1995). (Covertly raising just the features of an argument for checking replaces LF movement of the entire argument in Chomsky 1986.) The feature raising option allows nominative Case to be licensed on objects, as well as on subjects, which is necessary for nominative objects in dative subject constructions (e.g. Icelandic).[5] The standard assumption that Tense can only license one nominative prevents the subject and object of a single clause from both being nominative.[6]

Accusative Case cannot be licensed on an external subject, but it can be licensed

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[5] The fact that nominative Case can be licensed on an argument inside the VP means that overt NP Movement is no longer driven by Case checking; instead, movement to the external subject position is driven by a different principle, a version of the EPP (Extended Projection Principle) formulated in Chomsky (1995) as a need to check a D feature.

[6] There are constructions that can optionally have what looks like a nominative Case morpheme on both subject and object in Korean, but Schütze 1996 argues that one of these actually marks the topic. Multiple nominatives mark multiple topics in Japanese as well (Tateishi 1991). See also Dubinsky (1992) on other special Japanese constructions with a double nominative. I know of no language that marks normal agentive transitive clauses with a nominative on both subject and object, although languages that have a morphologically unmarked accusative are sometimes glossed in this way in the literature.

on a VP-internal subject. Previously, it appeared to be necessary to restrict accusative Case licensing, in order to prevent accusative licensing of unaccusative subjects (e.g. Burzio 1986, Woolford 1993), but now no such restrictions are needed. The violable constraints will prevent accusative Case from surfacing on an unaccusative subject.

The universal Case licensing principles express certain apparently universal restrictions on nominative and accusative Case licensing, and that fact motivates retaining these principles as inviolable. In addition to the impossibility of structural accusative on external subjects (outside ECM constructions), we do not find (to my knowledge) that nominative Case occurs inside PPs in any language, even though nominative is the least marked Case in other situations. It is not possible to move a nominative Case feature out of a PP up to Tense for Case checking because of locality considerations which prevent feature raising out of a PP. These structural Case licensing principles also prevent nominative and accusative Case from occurring in NPs (unless there is a clausal origin), because NPs have no Tense and nouns are [-V].

There have also been claims in the literature for structurally licensed inherent Cases such as dative; this possibility is discussed in the next section on inherent Case licensing.

1.2 Licensing Inherent Case

Inherent Cases (also called lexical or quirky Cases) can only be licensed by heads that assign a theta role to the argument in question (Chomsky 1995). There is a fairly strong correlation between particular theta roles and particular inherent Cases, although this correlation is far from perfect:

(1) Inherent Cases and Thematic Roles

dative	loosely correlates with	goals and experiencers
ergative	loosely correlates with	agents
inherent acc	loosely correlates with	themes

For arguments that ergative Case belongs on the list of inherent Cases, see Woolford 1997. It has been suggested that dative Case is structurally licensed in certain situations (Czepluch 1988, Broekhuis and Cornips 1994, Webelhuth 1995).[7] We will thus consider the possibility of structurally licensed datives and ergatives in the candidate sets

[7] Some of the claims that dative is structural are based on passives where where dative changes to nominative. However, under the approach argued for here, lexically licensed Cases do not always get to surface, and thus the traditional 'Case change' diagnostic is not reliable.

discussed in this paper, although it is not clear exactly how such Cases would be licensed.)

Although inherent Cases are licensed in conjunction with theta role assignment, the mere ability to assign a thematic role to an argument does not necessarily give a verb the ability to license an inherent Case. For example, 'like' takes a dative subject in Icelandic, but 'love' does not, and 'eat' takes an ergative subject in Hindi, but 'bring' does not (Comrie 1984). Thus the ability to license inherent Case must be part of a verb's lexical entry (Mohanan 1982, Zaenen and Maling 1984, Zaenen, Maling, and Thráinsson 1985).[8] Nevertheless, it is assumed here that all languages are alike in having a class of verbs that can license dative and ergative Case, even though the membership of those classes may differ somewhat across languages. If those Cases do not surface in a particular language, it is due to the violable constraints.

2. Overview of the Violable Constraints

When the Case licensing principles do not uniquely determine what Case a particular argument will have, the violable constraints determine which licensed Case will surface. The idea that one argument can be potentially licensed for more than one Case has long been part of Case theory, but only with respect to potentially licensing both an inherent Case and a structural Case on a single argument. In Chomsky (1981, 1986), the overlap in inherent and structural Case licensing principles was handled by postulating a serial order in the Case assignment process, so that inherent Cases were assigned earlier (in D-structure), before the structural Case licensing principles had a chance to apply (at S-structure). Under the assumption that D-structure Case could never be changed, that approach guaranteed that a licensed inherent Case would always surface. That approach is less appealing now that D-structure has disappeared from the theory (Chomsky 1995). Moreover, there is evidence that lexically licensed Cases are not actually guaranteed to surface.

Under the approach advocated here, there are many situations in which more than one Case is potentially licensed on the same argument and the violable constraints determine which of these licensed Cases will surface. In a contest between an inherent and a structural Case, the relative ranking of faithfulness constraints (favoring inherent Cases) versus markedness constraints (favoring structural Cases) determines the outcome. In situations in which two different structural Cases are licensed on one argument, markedness constraints make the decision.

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[8] Nevertheless, we need to capture the correlations between thematic roles and particular inherent Cases. One idea is that some verbs carry truly quirky inherent Case features, but other verbs receive such inherent Case licensing features as a result of general lexical rules (Yip, Maling and Jackendoff 1987). Both types of verb will carry such a feature in the input to syntax, which is the output of the lexicon / word formation component.

2.1 Markedness Constraints

Paralleling markedness constraints in phonology, such as *voice, it is proposed here that there is a series of markedness constraints pertaining to Case, with the form of *accusative, *dative, *ergative, etc.[9] Among these constraints, there are certain universally fixed rankings. Nominative is generally agreed to be the least marked Case (e.g. Dixon 1979, Tsunoda 1981) and nominative does appear to surface in all languages.[10] Thus *nominative is always ranked below all other marked Case constraints.[11] Inherent Cases are much more likely to be morphologically marked than structural Cases, suggesting that inherent Cases are universally more marked than structural Cases. This view is consistent with Grimshaw's suggestion (this volume) that *dative is universally ranked above *accusative.[12] Among the inherent Cases, there do not appear to be any universal markedness rankings.

An OCP type markedness constraint prohibits two instances of the same Case in the same clause. Such constraints have existed in the literature for years as language-specific constraints (e.g. the double-o constraint of Japanese (Harada 1973, Kuroda 1992)); these can now be elevated to the status of universal, but violable constraints. (See Yip 1995 for a general survey of OCP constraints in syntax, morphology, and phonology).

(2) OCP_{-case}: prohibits two (adjacent?) instances of the same Case

2.2 Faithfulness Constraints

With no Cases present in the input, there is no possibility of literal faithfulness to the input Case of an argument. However, we need some kind of faithfulness constraint to allow the more marked inherent Cases to surface when the verb carries a lexical feature licensing them. That is, we need a faithfulness constraint to do the job that was

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[9] The idea that there are constraints such as *dative and *accusative is independently proposed by Grimshaw (1997, this volume).

[10] One might doubt that nominative is universally the least marked Case, given the fact that in English, accusative rather than nominative is selected on the answer to questions like 'Who is there?' However, there may be a reason why nominative cannot occur in this context. Cardinaletti and Starke (to appear) show that there are a number of special contexts in which only what they call 'strong' pronouns can occur. One of these contexts is coordinate constructions, where (in vernacular English at least) accusative occurs instead of nominative.

[11] The constraint *nominative is not needed for any situation discussed here, or any other situation that I know of. If the theory does not require the least marked element in such a series to have a corresponding markedness constraint, then *nominative should be eliminated.

[12] This does not exclude the possibility of a language with datives but no (surface) accusatives, because there are other constraints that favor datives (faithfulness) and discriminate against accusatives (see section 5.3).

done in Chomsky 1981 by claiming that the inherent Cases were assigned at D-structure, giving them priority over the structural Cases assigned at S-structure. Under this approach, there is a family of faithfulness constraints to do this job which require faithfulness to (checking of) any lexically specified inherent Case licensing features carried by verbs.

(3) Faith-lex A lexically specified inherent Case licensing feature must be checked.

In phonology, faithfulness constraints have variants that hold only in restricted contexts, such as roots, syllable onsets, or stressed syllables (see Beckman 1998). In syntax, inherent Cases often surface only in certain contexts, such as transitive constructions or perfective constructions. Such contextual restrictions will be accounted for here by means of contextually restricted versions of Faith-lex.[13]

(4) 'Contextually' restricted Faithfulness Constraints:

Faith-lex$_{trans}$ Faith-lex holds only in transitive clauses.

Faith-lex$_{perf}$ Faith-lex holds only in perfective clauses.

To simplify the calculation of the typological predictions of this paper, it will be assumed here that there is a universally fixed ranking such that the restricted versions of Faith-lex are always ranked above the general version. While the opposite ranking will make no empirical difference here, there is work in phonology showing that it can make an empirical difference under certain circumstances (Prince 1997), and that the opposite ranking of general and specific constraint variants may be needed in some languages (Keer 1999).

Let us now turn to the analysis of the valency, dependency, and inventory effects that require these violable constraints.

3. Two Types of Dative Subject Languages

Languages that allow dative subjects fall into two types: one type shows a valency effect, prohibiting dative subjects in intransitive clauses, while the other type does not, allowing dative subjects in intransitive clauses as well as in transitives

[13] The question of what contexts are associated with special faithfulness and why is an interesting one, in both syntax and phonology. There is a functionalist argument that there is a need for marked Cases in transitive clauses, to prevent ambiguity between subject and object (e.g. Silverstein 1976). That account does not extend to aspectual restrictions, but those have been argued to have a historical account (e.g. Anderson 1977).

(Woolford 1997). Japanese is an example of the first type (Shibatani 1977) while Icelandic is an example of the second.

(5) Japanese: prohibits dative subjects in intransitive clauses[14]

a. *Akatyan-ni moo arukeru.
baby-DAT already walk-can
The baby can walk already. (Shibatani 1977:807)

b. Akatyan-ga moo arukeru.
baby-NOM already walk-can
The baby can walk already. (Shibatani 1977:807)

(6) Japanese: allows dative subject in transitive clauses

a. Taroo-ni eigo-ga hanaseru.
Taro-DAT English-NOM(*ACC) speak-can
Taro can speak English. (Shibatani 1977:806)

b. Sensei-ni okane-ga ir-u.
teacher-DAT money-NOM need-PRES
The teacher needs money. (Shibatani 1977:799)

(7) Icelandic: allows dative subjects in intransitives and transitives

a. Bátnum hvolfdi.
boat-DAT capsized
The boat capsized. (Levin and Simpson 1981 (1b))

b. Barninu batnaði veikin.
child-DAT recovered-from disease-NOM (*ACC)
The child recovered from the disease.
(Yip, Maling, and Jackendoff 1987:223)

The Icelandic pattern, where all lexically licensed Cases are preserved on the surface, is the pattern that we expect under the Case theory of Chomsky 1981, but Japanese is problematic. To deal with that problem, Shibatani (1977:807) proposes a language-specific constraint for Japanese, requiring a nominative Case to be present in every matrix clause. Shibatani specifies that a dative Case on an intransitive subject is

[14] This valency restriction in Japanese holds in matrix clauses, but not in embedded clauses (Shibatani 1977: 807, Dubinsky 1992) and in statements, but not in questions (Kitagawa, personal communication). This suggests that there is also contextually restricted faithfulness in these contexts.

changed to a nominative. Shibatani's view can be translated into OT terms as a claim that faithfulness to lexically licensed Cases is violable.

Tsunoda 1981 reformulates Shibatani's constraint to capture the intuition that what is going on in Japanese is caused by markedness. In addition, Tsunoda elevates this constraint from a language-specific constraint for Japanese to a universal constraint (although he notes that there are exceptions to it). Tsunoda's reformulation, the Unmarked Case Constraint, requires that every sentence in every language have an NP in the unmarked Case (nominative or absolutive).

Tsunoda's contribution thus takes two important steps in the right direction that we want to preserve. First, he explains why nominative is selected over dative, because nominative is the least marked Case, and second he elevates this constraint to a universal (with exceptions). Translating these insights into OT terms, we want the Japanese valency restriction on intransitives to follow from universal, but violable, markedness constraints.

The markedness constraints we need for this data, and their universally fixed ranking, are given below:

(8) *dative >> *accusative >> * nominative

The distribution of lexically licensed dative Case in intransitive constructions in Japanese and Icelandic follow from the two possible relative rankings of *dative and Faith-lex, the faithfulness constraint that requires lexically licensed inherent Cases to surface:[15]

(9) a. Japanese: *dative >> Faith-lex

b. Icelandic: Faith-lex >> *dative

Before we look at the tableaux illustrating how the above rankings produce the desired results, let us briefly discuss the candidate set to which these constraints apply.

[15] Nakamura (1997, 1999) independently proposes an OT solution to this problem of the two types of dative subject languages, embedded in Role and Reference grammar. For him, the Icelandic pattern results when the constraint 'Non-macrorole core arguments take DATIVE case' is ranked above 'Core arguments take nominative Case'. The opposite ranking produces the Japanese pattern. However, we will see in section 4 that any approach that captures this valency effect by assigning nominative before dative encounters empirical problems.

3.1 The Candidate Set

Although Gen will generate candidates containing arguments with no Case, as well as candidates with unlicensed Cases, these candidates are removed from the candidate set before the violable constraints apply, because they violate the universal principle requiring all arguments to have a licensed Case. With respect to the intransitive constructions we are considering here, the sole argument can be licensed for nominative Case or for accusative Case (since the argument is not an agent) and for dative, if the input verb carries an inherent Case licensing feature for dative (or if there is a structurally licensed dative).

3.2 Datives in Intransitive Constructions

The tableau below shows the three possible output candidates with these licensed Cases. In Icelandic, all lexically licensed dative Cases surface because faithfulness takes precedence over markedness. The nominative and accusative candidates in (10b-c) are both eliminated by Faith-lex, because the lexical Case licensing feature of the verb is not checked. That leaves the dative candidate in (10a) as the only remaining candidate, and thus the winner of the competition. The fact that (10a) violates the lower ranked markedness constraint, *dative, is irrelevant, because the game is over before that lower ranked constraint has a chance to influence the outcome (as indicated by the shading).

(10) Icelandic intransitives (verb carries a feature licensing dative Case):

input: NP V-[+dative]	Faith-lex	*dative	*acc	*nom
a.☞NP-dat V-[+dative]		*		
b. NP-nom V-[+dative]	*!			*
c. NP-acc V-[+dative]	*!		*	

If the verb happens to be one that does not lexically license dative Case, the result is quite different. Then, the decision is made entirely by the markedness constraints and nominative wins because it survives after the more marked dative and accusative candidates are eliminated. (If there is an (a) candidate, it has a structurally licensed dative.) Faith-lex plays no role because there is no lexical licensing feature on the verb.

(11) Icelandic intransitives (verb has no inherent Case licensing feature):

input: NP V	Faith-lex	*dative	*acc	*nom
a. NP-dat V		*!		
b. ☞ NP-nom V				*
c. NP-acc V			*!	

Let us turn now to Japanese, where the ranking of Faith-lex and *dative is reversed. The higher ranked *dative eliminates the dative candidate in (12a) before the lower ranked Faith-lex has a chance to apply. Faith-lex has no effect on the outcome because both remaining candidates violate it, since they do not check the lexical Case feature of the verb. The accusative candidate in (12c) is eliminated by *accusative, leaving the nominative candidate in (12b) as the winner.

(12) Japanese intransitives:

input: NP V-[+dative]	*dative	Faith-lex	*acc	*nom
a. NP-dat V-[+dat]	*!			
b. ☞ NP-nom V-[+dat]		*		*
c. NP-acc V-[+dat]		*	*!	

The same result occurs with verbs that do not carry a dative licensing feature. The dative candidate (which could only have a structurally licensed dative) is eliminated first. Faith-lex has no effect, but this time it is because none of the candidates violate it. Finally, as above, *accusative makes the final decision, leaving the nominative candidate the winner.

Because this account makes the correct prediction for Japanese intransitives, even if there are verbs that lexically license datives, it is not necessary to assume that there is an accidental gap in the inventory of verb classes in Japanese such that Japanese simply happens to lack any intransitive verbs that have the ability to license dative Case.

3.3 Burzio's Generalization

We now have an account for (a portion of) Burzio's Generalization. That is, we now have an account for why, regardless of the ranking of constraints, unaccusative verbs never appear with a structural accusative argument. Although the argument of an unaccusative verb is potentially licensed for either nominative or accusative Case, nominative wins because of markedness.[16,17]

(13) unaccusatives:

input: V NP	*accusative	*nominative
a. V NP-acc	*!	
b. ☞ V NP-nom		*

We have now seen how the ranking of these simple faithfulness and markedness constraints produces the two types of intransitive patterns in dative subject languages; let us turn to transitive constructions.

3.4 Transitive Clauses with Dative Subjects

Despite their difference in intransitive constructions, Icelandic and Japanese share a common set of Case patterns in transitive clauses:

(14) a. Japanese Case Patterns:

intrans:	nominative
	*dative

b. Icelandic Case Patterns:

	nominative
	dative

[16] Note that there is no need to invoke partitive Case to explain how a subject that remains in the VP gets Case, contra Belletti 1988, because a VP internal argument can be licensed for nominative Case by feature raising (Chomsky 1995) and unaccusative subjects agree like any other nominative in Italian (Burzio 1986). The definiteness effect is argued by Diesing 1992 to be related to structural position of the object rather than to partitive Case. Chomsky (1995) rejects the partitive Case hypothesis as incompatible with the assumptions of the Minimalist Program.

[17] The idea that unaccusative objects inside the VP are potentially licensed for either nominative or accusative Case, but some principle selects nominative over accusative, has been proposed more or less independently in a wide-range of recent work on Burzio's Generalization, including Brandner (1993, 1995), Laka (1993), Haider (1995), Burzio (forthcoming), and Mahajan (forthcoming), although the deciding principle proposed in these works is not markedness. See Woolford (2000) for a summary of this literature.

transitive:	nominative-accusative	nominative-accusative
	nominative-dative	nominative-dative
	dative-nominative	dative-nominative
	*dative-accusative	*dative-accusative

We need to answer two questions about these patterns. First, why does Japanese allow datives in transitives, but not in intransitives? Second, what produces the dependency effect observed in both languages, wherein the Case of the object depends on the Case of the subject?

We will see below that the Icelandic pattern is just what we expect given the constraints discussed for intransitives. If a verb carries a lexically specified licensing feature for the dative, that dative will surface due to the highly ranked faithfulness constraint, Faith-lex. Markedness then takes over to pick the least marked Case for those arguments that do not get a lexically licensed Case: whenever there is a choice of nominative or accusative on an object, markedness always picks the nominative.

The interesting problem is how to get the identical transitive pattern in Japanese, where the markedness constraint *dative is ranked above the faithfulness constraint, Faith-lex. Why does dative ever get to surface in Japanese? Intuitively, there are two possible answers to this question. One is that nominative and dative fight over the single argument in an intransitive, but both can win in transitives because there are two arguments. That intuition is the basis of all previous approaches to this problem, including the one in the version of this paper presented at the Hopkins Optimality Workshop / Maryland Mayfest 1997. The second intuitive answer is that datives surface in Japanese transitives for the same reason that they surface in Icelandic transitives, faithfulness, despite the lack of faithfulness in intransitives. We will see that while both types of approaches can account for the Case patterns listed above, they make different predictions for what can happen cross-linguistically and the second intuition appears to be correct.

Let us now examine the details of the analysis of transitive constructions in Icelandic and Japanese.

3.4.1 Transitive Clauses in Icelandic

Let us begin with Icelandic transitive verbs that carry a lexical feature licensing a dative subject. In the lexical entry of such a verb, the experiencer role is marked to take dative Case:

(15) Barninu batnaði veikin.
child-DAT recovered-from disease-NOM
The child recovered from the disease. (Yip, Maling, and Jackendoff 1987:223)

(16) verb < Experiencer, Theme>
|
[+Dative]

The candidate set will include both dative and nominative subjects, and both nominative and accusative objects, since all these Cases can be licensed. (If we add candidates with a structurally licensed dative on the object, that would add candidates with a dative-dative pattern, as well as a nominative-dative pattern, but these would be eliminated by high ranking constraints, as shown below.)

(17) a. dative-nominative
b. dative-accusative
c. nominative-accusative

Now, let us submit these candidates to the two ranked constraints we used above for Icelandic intransitives. We know from the behavior of intransitive constructions that Faith-lex is ranked above *dative in Icelandic, because datives survive in intransitives. *Accusative is universally ranked below *dative, because structural Cases in general are less marked than inherent Cases.

In (18) Faith-lex rules out any candidate that does not check the dative licensing feature of the verb against a dative feature on the subject of this verb. That eliminates the nominative-accusative pattern in (c). The remaining candidates (a) and (b) tie on the next constraint, *dative, because they both have a dative subject. What makes the final decision in this situation is, *accusative, which eliminates (b), leaving the dative-nominative pattern in (a) as the winner. (The verb is omitted from the candidates to save space, but it is important to remember that the verb in each output candidate carries a lexical Case licensing feature that needs to be checked if Faith-lex is to be obeyed.)[18]

[18] A nominative-dative pattern with a structurally licensed dative would be eliminated by Faith-lex because the subject has no dative feature to check against the verb's dative licensing feature. A dative-dative pattern would be eliminated by *dative because of its extra violation.

(18) Icelandic (input verb licenses dative subject)

input: V[+dat sub] NP NP	Faith-lex	*dative	*acc	*nom
a. ☞ NP-dative NP-nom		*		*
b. NP-dative NP-acc		*	*!	
c. NP-nom NP-acc	*!		*	*

The intuitive explanation for why the dative-nominative pattern wins here is clear. In Icelandic, lexically licensed datives always surface. The decision between any remaining Case patterns is made by markedness. That is the source of the dependency effect. When the subject is dative, and both nominative and accusative are available to the object, the less marked nominative wins.[19]

If a verb lexically license dative Case on its object instead of its subject, the situation is essentially the same so no tableau will be shown here. For verbs that do not carry any lexically specified inherent Case licensing feature, candidate (c) with the nominative-accusative pattern, will not be eliminated by Faith-lex, in contrast to what happens in the above tableau. If candidates (a) and (b) are present, they would have to have structurally licensed datives, but those candidates would be eliminated by *dative, leaving the nominative-accusative pattern in (c) the winner.

Let us now turn to transitive clauses in Japanese.

3.4.2 Transitive Clauses in Japanese

In contrast to Icelandic, where the same two constraints we needed for intransitives automatically produce the right result for transitives, Japanese initially seems to present a serious problem. Above, we ranked *dative above Faith-lex in Japanese to prevent dative subjects from surfacing in intransitive clauses. But, if we try to analyze transitive clauses with just these two constraints, ranked in the same order,

[19] While nominative is always selected over accusative when the relative markedness of these two Cases is making the decision, in OT there is always the possibility that other constraints, when high ranked, will make a different decision. A family of constraints that selects a more marked object when that object has certain features such as human or specific will be discussed briefly at the end of this chapter. There may also be a constraint penalizing the non-locality of checking nominative Case on an argument inside VP, which may be responsible for the dative-accusative pattern in Faroese (see Barnes 1986), a language closely related to Icelandic. See Woolford (2000) for a discussion of how this constraint should be formulated.

we would incorrectly predict that *dative would also eliminate datives in transitive clauses, before the lower ranked Faith-lex has a chance to preserve them. In fact, that ranking of those two constraints produces the pattern we see in English, where datives never get a chance to surface, even if there are verbs that can lexically license them.

(19) English Transitives

input: NP NP V[+dat subj]	*dative	Faith-lex
a. NP-dat NP-nom	*!	
b. NP-dat NP-acc	*!	
c.☞ NP-nom NP-acc		*

To produce the Japanese transitive pattern, some higher constraint must eliminate the nominative-accusative pattern in (c) before *dative can eliminate the dative-nominative pattern that actually surfaces. In an earlier version of this paper, it was proposed that the higher constraint in Japanese is *accusative, which would eliminate the (b) and (c) candidates, leaving (a) as the winner. While that gets the right result here, it conflicts with Grimshaw's (this volume) suggestion that *dative is universally ranked above *accusative (and that, more generally, all inherent Cases are universally more marked than structural cases). Moreover, that approach encounters some empirical problems which it shares with previous OT approaches, which we will discuss below.

The alternative proposed here is that faithfulness preserves the dative in Japanese transitives, just as it does in Icelandic. Although inherent Cases are universally more marked than structural Cases, a pattern with an inherent Case (e.g. dative-nominative) can beat out a pattern with only structural Cases (e.g. a nominative-accusative pattern) if a higher ranked faithfulness constraint favors the inherent Case. The additional faithfulness constraint we need here is a contextually dependent version of the Faith-lex constraint. Faith-lex$_{trans}$ requires checking of the lexical Case licensing feature of transitive verbs (defined here as verbs with more than one argument). In Japanese, Faith-lex$_{trans}$ is ranked above *dative, so that Japanese transitive constructions act like Icelandic transitive constructions in preserving lexically licensed Cases.

(20) Japanese ranking: Faith-lex$_{trans}$ >> *dative >> Faith-lex

Let us see how this works in the tableau below. The nominative-accusative candidate in (c) is eliminated by Faith-lex$_{trans}$ because that candidate has an unchecked

lexical Case licensing feature on the transitive verb. The remaining candidates tie on *dative, so that constraint has no effect. The decision is made by *accusative, which eliminates the dative-accusative pattern, leaving the dative-nominative pattern as the winner.

(21) Japanese Transitives

input: NP NP V[+dat subj]	Faith-lex$_{trans}$	*dat	Faith -lex	*acc	*nom
a. ☞NP-dat NP-nom		*			*
b. NP-dat NP-acc		*		*!	
c. NP-nom NP-acc	*!		*	*	

When the input verb does not carry any lexical Case licensing feature that needs to be checked, Faith-lex will not eliminate any candidates. If the (a) and (b) candidates are present in the candidate set, with a structurally licensed dative, these would both be eliminated by *dative. That would leave candidate (c), the nominative-accusative candidate, as the winner.

3.4.3 Theory Comparison

The Icelandic and Japanese facts considered so far have been handled by three different OT approaches. Two of these, Nakamura (1977, 1999) and the approach in the earlier version of the present paper given at the Hopkins Optimality Workshop / Maryland Mayfest 1997, make the following prediction:

(22) Prediction of Previous Approaches:

If a language requires a nominative in intransitives,
that language will also require a nominative in transitives.

Nakamura's (1997) approach makes this prediction because it ranks the rule assigning nominative Case first, to assign nominative in all intransitives. But that means that nominative assignment must also be first in transitives as well, predicting that all transitives will have a nominative. This same prediction is made by the approach in an earlier version of this paper, because if faithfulness is ranked low in intransitives, so that markedness constraints select a nominative, then faithfulness must also be ranked low in transitives, and markedness constraints should again select a nominative for

some argument.

In contrast, the contextual faithfulness approach advocated here makes a different prediction. Regardless of what happens in intransitives, a highly ranked contextually restricted variant of the faithfulness constraint will preserve inherent Cases in transitives, whether or not a nominative is present.

(23) Prediction of This Approach

If a language allows inherent Cases in transitives,
their realization will not depend on the presence of a nominative.

One way to test the predictions of these approaches is to find a situation where the verb is transitive, but yet there is only one argument that takes Case. Such a situation occurs when a transitive verb takes a clausal object. Assuming that the clausal object does not get Case, the subject is predicted to be nominative under the previous approaches, because it is the only argument getting Case (just as in an intransitive). In contrast, the contextual faithfulness approach predicts that the subject will be dative (if the verb lexically licenses a dative), because the construction is transitive (there are two arguments). An example of such a construction in Japanese is given below (from Mariko Sugahara, personal communication), and we see that a dative subject can occur with a clausal object, as expected under the contextual faithfulness approach:

(24) Mariko-ni(wa) [watashi-ga nihongo-o hanas-anai-to] omo-eru.
Mariko-dat(topic) I-nom Japanese-acc speak-neg-comp think-able
Mariko thinks that I do not speak Japanese.
(or It seems to Mariko that I do not speak Japanese.)

Under the two previous approaches, one would have to claim that the clausal object must have nominative Case.

Stronger evidence that the contextual faithfulness approach makes the correct prediction cross-linguistically will be presented in section four. There we will see an ergative language that requires a nominative in all intransitive clauses, but nonetheless allows transitive clauses with an ergative subject and dative object (and no nominative).

3.5 Typology

Let us now calculate the different types of languages that are predicted, based on the possible rankings of these violable constraints. Although we have used five violable constraints thus far, several of these are ranked in universally fixed orders, severely restricting the possible rankings:

(25) Universal Rankings

*dative >> *accusative >> *nominative

Faith-lex$_{trans}$ >> Faith-lex

We will focus here on the possible rankings of *dative with respect to the two faithfulness constraints.[20] When both faithfulness constraints are above *dative, we get Icelandic, where all datives surface. When the faithfulness constraints are both below *dative, we get English, where no datives surface. (Note that under this approach, it is not necessary to stipulate that the dative Case is absent from the Case inventory of English, or that English verbs lack the ability to license dative subjects or objects. Any dative licensed by an English verb would never be allowed to surface, given this ranking.) Finally, when *dative is ranked between the two faithfulness constraints, we get Japanese, where datives only surface in transitives.

(26) Typology:

Faith-lex$_{trans}$	>> Faith-lex	>> *dative	Icelandic pattern
*dative	>> Faith-lex$_{trans}$	>> Faith-lex	English pattern
Faith-lex$_{trans}$	>> *dative	>> Faith-lex	Japanese pattern

Note that there is no way to rank these constraints that would produce a language that allows dative subjects only in intransitive clauses, but not in transitive ones. That is a desirable property because that logically possible type of language apparently never occurs.[21]

To conclude this section, let us take a brief look at ditransitives.

3.6 Ditransitives

Let us examine the predictions of the above rankings in Icelandic and Japanese for the Case patterns in ditransitive constructions, focusing on how to account for the very regular appearance of datives in ditransitives.

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[20] The relative ranking of the Faith-lex constraints with respect to markedness constraints barring structural Cases makes no empirical difference because Faith-lex constraints have no effect on structural Cases.

[21] To strengthen this result, we need to rule out the possibility of a faithfulness constraint that is contextually restricted to intransitives.

Ditransitive constructions are much more likely to contain a dative than transitives are, and the question is whether we need to add anything to this approach to account for this fact. One can think of several reasons for an increase in datives in ditransitives. First, ditransitives are more likely to contain a goal argument than transitives are, simply because there are more arguments present. With three arguments, there has to be something besides just an agent and a theme, and goal is a very likely choice for the third role. Since dative Case is associated with the goal role, that provides more opportunity for lexically licensed datives. A second, similar reason that ditransitives are more likely to contain a dative than transitives is because there is an additional argument that needs Case. In languages that prohibit two accusatives, there has to be a third Case in ditransitives besides nominative and accusative and dative is the usual choice. The question is what is the source of this dative? Is it always lexically licensed?

To put this discussion on a more concrete footing, let us examine the predictions of the above constraint rankings for Icelandic and Japanese with respect to ditransitives. For Icelandic, where Faith-lex is ranked above *dative, any lexically licensed dative will surface in ditransitives. The same is true for Japanese, where Faith-lex$_{trans}$ is ranked above *dative. Let us examine the tableau below to see this in Japanese. If the input verb carries a feature licensing dative on its goal argument, Faith-lex$_{trans}$ will eliminate any candidate without a dative goal.

(27) Japanese Ditransitive (where the verb lexically licenses a dative goal)

input: agent goal theme V[+dat goal]	Faith-lex$_{trans}$	*dat	*acc
a. ☞ agent-nom goal-dat theme-acc		*	*
b. agent-nom goal-acc theme-acc	*!		**

The interesting question is whether there are any Japanese or Icelandic ditransitive verbs that do not license dative Case on the goal. The standard view has been that ditransitive verbs in these languages all lexically license dative Case on goals, perhaps due to the operation of a regular lexical rule (Yip, Maling, and Jackendoff 1987). That may be true, but let us at least ask what would happen if there are some ditransitive verbs in these languages that do not lexically license datives.

With no other constraints operating (and assuming that all languages can license two accusatives), one might expect that a ditransitive verb that licenses no inherent Cases would end up with a Case pattern like English ditransitives, with a nominative-accusative-accusative pattern. That pattern is what emerges when markedness alone selects the Cases in a ditransitive, because dative is more marked than accusative.

(28) Ditransitive (With No Lexically Licensed Cases)

input: agent goal theme V	Faith-lex$_{trans}$	*dat	*acc
a. agent-nom goal-dat theme-acc		*!	*
b. ☞ agent-nom goal-acc theme-acc			**

However in Japanese, double accusative constructions are generally ruled out by an OCP-like constraint, known in the literature as the Double o Constraint (Shibatani 1973).[22]

(29) OCP$_{-acc}$ prohibits two (adjacent) accusatives

By ranking this OCP constraint above *dative in Japanese, the (b) candidate is eliminated before *dative can eliminate the (a) candidate.

(30) Japanese Ditransitive (Without a Lexically Licensed Dative Goal)

input: agent goal theme V	OCP$_{case}$	Faith-lex$_{trans}$	*dat	*acc
a. ☞ agent-nom goal-dat theme-acc			*	*
b. agent-nom goal-acc theme-acc	*!			**

While this is the right result for Japanese ditransitives, the question is how the dative in the winning candidate is licensed. Unless there is a lexical rule that gives all ditransitive verbs the ability to lexically license dative Case on their goals, a ditransitive verb that does not lexically license a dative must have a structurally licensed dative on its goal.

3.7 Conclusions

In this section, we have seen how valency effects, dependency effects, and inventory effects involving the dative Case can be handled if standard Case licensing principles are supplemented with a small set of markedness and faithfulness constraints.

[22] The double o constraint in Japanese has exceptions, "especially when the two constituents are non-adjacent" (Dubinsky 1994:54).

The dependency effect is the result of markedness. When the subject is dative, both nominative and accusative Case are potentially licensed on the object; but because nominative is less marked, a nominative object is always selected over an accusative one.

The valency effect involves both markedness and faithfulness. Nominative is favored over dative when *dative is ranked above Faith-lex. The situation in which datives are allowed in transitives but not intransitives, is due to the effect of a higher ranked, contextually restricted faithfulness constraint that holds in transitive contexts.

The inventory effect also involves both markedness and faithfulness. Above we saw that whether or not datives surface in a language may depend on the relative ranking of *dative and the faithfulness constraints that preserve lexically licensed datives, or on the relative ranking of the OCP constraint prohibiting double accusatives.

In the next section, we turn to ergative languages. We will see that this same OT approach correctly predicts the basic types of languages that occur with respect to the distribution of the ergative Case.

4. Types of Ergative Languages

The two basic types of ergative languages are the classic type (limiting ergative Case to transitives) and the active-stative type (where ergatives also occur in intransitives, on the more agentive subjects). An example of the classic type is Niuean, where intransitives can only have nominative subjects, as in (31), but transitives may have ergative subjects, at least when the subject is an agent as in (32) (Seiter 1980).[23]

(31) Ko e tohitohi a au (he) mogo-nei.
pres write NOM I on time-this
I am writing at the moment. (Seiter 1980:30)

(32) To lagomatai he ekekafo a ia.
Fut help ERG doctor NOM him
The doctor will help him. (Seiter 1980:29)

An example of the active type of ergative language is Basque (Levin 1989). An intransitive construction with an ergative subject is shown in (33).

[23] Verbs such as *like* with an experiencer subject take a nominative subject.

(33) Gizona-k kurritu du.
man-erg ran 3sg-aux
The man ran. (Levin 1989:57)

In Basque, only agentive subjects take ergative Case; unaccusative subjects take nominative Case (Levin 1989).

(34) Ni etorri naiz.
I-NOM arrive 1sg-aux
I arrived. (Levin 1989:43)

Let us summarize the Case patterns that we wish to focus on.

(35)	Classic ergative type:	Active-stative ergative type:
intrans:	nominative *ergative	nominative ergative
trans:	ergative-nominative *ergative-accusative	ergative-nominative *ergative-accusative

These patterns are very similar to what we saw above with datives. The classic ergative patterns look a lot like Japanese, with ergative substituted for dative, while the active-stative patterns look like the Icelandic patterns, again with ergative substituted for dative. As we saw with the dative languages above, the transitive patterns are the same in both types of ergative language, despite the difference in intransitives. These languages show the same dependency effect we saw with dative subjects: constructions with an inherently Cased subject have a nominative object.[24]

The above account of the two types of dative subject languages crucially rests on the fact that dative is an inherent Case. Under the view that ergative is also an inherent Case, we can capture the parallel dependency and valency effects in ergative constructions.

The constraints we need are Faith-lex and *ergative. If Faith-lex is ranked higher than *ergative, the ergative must surface, because Faith-lex requires that any inherent Case licensing feature on the input verb be checked. That ordering produces active-stative languages where the ergative is preserved even in intransitive clauses. The reverse ranking produces classic ergative languages (and languages where ergative never surfaces) where nominative is selected over ergative in intransitives.

[24] There are ergative languages that manifest a 3-way pattern, due to the effect of additional markedness constraints discussed in section 5.

(36) Constraint Ranking for the two types of ergative languages:

active-stative: Faith-lex$_{trans}$ >> Faith-lex >> *ergative

classic ergative: Faith-lex$_{trans}$ >> *ergative >> Faith-lex

non-ergative: *ergative >> Faith-lex$_{trans}$ >> Faith-lex

Let us now see how these rankings produce these Case patterns.

4.1 Intransitive Constructions

Active-stative languages preserve all lexically licensed ergatives because of the highly ranked faithfulness constraints.

(37) Active-Stative

input: NP V[+erg subj]	Faith-lex	*ergative
a. ☞ NP-ergative		*
b. NP-nom	*!	

In contrast, classic ergative languages rank Faith-lex lower, allowing markedness to make the decision in intransitives.

(38) Classic Ergative

input: NP V[+erg subj]	*ergative	Faith-lex
a. NP-ergative	*!	
b. ☞ NP-nom		*

4.2 Transitive Constructions

In the active-stative type of ergative language, where Faith-lex is ranked above *ergative, Faith-lex requires ergatives to surface in transitives as well as intransitives. Nominative is a better choice than accusative for the object, due to markedness (the dependency effect).

(39) Active-Stative

input: V[+erg subj] NP NP	Faith-lex	*erg	*acc	*nom
a. ☞ NP-erg NP-nom		*		*
b. NP-erg NP-acc		*	*!	
c. NP-nom NP-acc	*!		*	*

The classic type of ergative language works much like Japanese. Although Faith-lex is ranked below *ergative, the effect of *ergative is nullified in transitive constructions by the effect of the higher ranked Faith-lex$_{trans}$. Thus ergative subjects surface in transitive constructions, even though they cannot in intransitives.

(40) Classic Ergative

input: V[+erg subj] NP NP	Faith-lex$_{trans}$	*erg	*acc	*nom
a. ☞ NP-ergative NP-nom		*		*
b. NP-ergative NP-acc		*	*!	
c. NP-nom NP-acc	*!		*	*

What happens in ergative languages when the subject is not lexically licensed for ergative Case? The prediction is that candidate (c) above, with the nominative-accusative pattern, will be the winner because it will not be eliminated by the faithfulness constraint, and the (a) and (b) patterns will be eliminated by *ergative. That is exactly what happens in Hindi with verbs such as 'bring' that do not lexically license an ergative:

(41) LaRkiyãã sabzii laayĩĩ.
girls-NOM vegetable-ACC brought-FEM-PL
The girls brought vegetables. Comrie (1984:858)

In section five, we will discuss more complex ergative systems that manifest other Case patterns. However, before we do that, let us consider languages with both datives and

ergatives.

4.3 Datives in Ergative Languages

We have seen that languages can be classified into three types depending on the patterning of datives (no datives, datives only in transitives, datives in intransitives and transitives), and into three parallel types depending on the patterning of ergatives. What does this approach predict with respect to types of languages with both ergatives and datives? The answer to that question depends partially upon whether or not there is any universal markedness relation between ergative and dative: that is, are *ergative and *dative in any universally fixed ranking?

While one might assume that datives are less marked than ergatives, based on the fact that familiar languages such as German, Icelandic, and Japanese have datives but not ergatives, there are languages where *dative is ranked above *ergative. Basque is such a language. Basque has both ergative and dative Case; we saw ergative examples above, and a dative example is given below:

(42) Ni-ri zure oinetako-a-k-∅ gustatzen zaizkit.
I-DAT your shoes-det-NOM like aux
I like your shoes. (Austin and Lopez 1995:12)

However, the distribution of these Cases differs; ergatives can occur in intransitives, but datives are limited to transitives (Austin and Lopez 1995). That suggests that *ergative is ranked below Faith-lex (so ergatives surface even in intransitives), while *dative is ranked above Faith-lex but below Faith-lex$_{trans}$ (so that datives surface only in transitives):

(43) Basque ranking: Faith-lex$_{trans}$ >> *dative >> Faith-lex >> *ergative

It appears, therefore, that the ranking of *ergative and *dative is not universally fixed, and we thus expect the distribution of the dative Case to be independent of that of the ergative Case. Thus the 'type' of a language with respect to datives should be independent of the 'type' of that language with respect to ergatives.[25]

Languages with both ergatives and datives have a special theoretical interest, however, because they allow us to test the predictions of different kinds of OT approaches to the valency problem.

[25] The claim in Woolford 1997 that the behavior of ergative and dative is parallel refers only to the fact that both Cases participate dependency and valency effects, in a way that structural Cases do not.

4.4 The Ergative-Dative Problem

The type of language that will allow us to test these predictions prohibits both ergatives and datives in intransitive constructions, but allows both Cases in transitive clauses. Such a language is Uradhi (Crowley 1983).[26] In Uradhi, intransitive subjects are always nominative (Crowley 1983:334), but there are transitive constructions with an ergative-dative pattern.

(44) ɽapa-al ulu ipi-ɣu iɲʈu-ɲa.
blue dove-erg clitic water-dat look for-pres
The blue dove is looking for water. (Crowley 1983: 341)

The existence of ergative-dative transitive patterns in languages that require a nominative in intransitives is problematic for any approach that ranks rules that associate Cases to arguments. The reason is as follows. Such approaches account for the obligatory presence of nominative in intransitives by ranking the rule that assigns nominative highest, so that nominative will be assigned before the rule that assign ergative or dative has a chance to apply.

(45) Hypothetical Ranking of Case Association Rules for Uradhi

assign nominative >> assign dative, assign ergative >> assign accusative

That approach does a fine job for intransitives, which will always get nominative, and it also does a fine job for any transitive construction with one inherent Case plus a nominative, as in the dative-nominative example in (42) above. However, that approach makes an incorrect prediction for transitive examples like (44) with an ergative-dative pattern. In those constructions, the nominative assigning / association rule should also apply first, so that either the subject or the object should be nominative.

The existence of ergative-dative clauses in languages like Uradhi is equally problematic for the approach taken in the oral version of this paper. Under that approach, a language such as Uradhi would have a constraint ranking as follows:

(46) *accusative >> *dative, *ergative >> *nominative, Faith-lex

That grammar would select nominative Case for all intransitives, because the faithfulness constraint is ranked too low to allow datives or ergative to win. But with Faith-lex ranked so low, decisions in transitives would also be made by markedness and

[26] Another such language may be Tabassaran. There are no one-place verbs with either dative or ergative Case according to Kibrik 1985, and that work gives an example of a transitive sentence with an ergative subject and a dative object (Kibrik 1985: 281).

an ergative-dative pattern could never beat a pattern containing a nominative.

In contrast, the Uradhi pattern is not problematic, and is in fact expected, under the contextual faithfulness approach advocated here. The Uradhi pattern will result whenever both *dative and *ergative are ranked between the two faithfulness constraints, Faith-lex$_{trans}$ and Faith-lex.

(47) Uradhi ranking: Faith-lex$_{trans}$ >> *dative, *ergative >> Faith-lex

Ranking *dative and *ergative above Faith-lex prevents either of these inherent Cases from surfacing in intransitive constructions, but ranking *dative and *ergative below Faith-lex$_{trans}$ means that both inherent Cases will surface in transitives when the verb lexically licenses them.

Thus languages like Uradhi provide strong evidence for a contextual faithfulness approach to the valency problem, over any approach that tries to get valency effects merely from the ranking of Case association / assignment rules or markedness constraints.

4.5 Conclusions

In this section, we have seen that the types of dative subject languages discussed in section 3 are paralleled by the types of ergative constructions that occur and the same approach accounts for both. This initial success suggests that this OT approach is a promising way to deal with the problem of the typology of Case patterns. Nevertheless, the few simple constraints introduced so far cannot account for anything like the full range of Case patterns that occur in the languages of the world. Although a complete account of the typology of Case patterns is far beyond the scope of this paper, the last section of this paper will discuss possible ways of dealing with some other sorts of dependency effects involving Case.

5. Other Sorts of Dependency Effects

We have discussed dependency effects in which the Case of the object depends on the Case of the subject. Other dependency effects include Cases that depend on the aspect of the verb and Cases that depend on the semantic features of the argument (e.g person, animacy, specificity, etc.).

5.1 Aspect Split in Hindi: Contextually Restricted Faithfulness

Hindi is a well-known example of a language with an aspectually based 'split' in its Case patterns, such that ergative Case is restricted to the perfective aspect (e.g. Comrie, 1984, Kachru 1987, Mahajan 1990). In the examples below, the verb 'eat' occurs with a nominative-accusative pattern in the imperfective construction in (48a), but an ergative-nominative pattern in the perfective construction in (48b). In both constructions, agreement is with the nominative argument.

(48) a. Raam roTii khaataa thaa.
Ram(masc)-NOM bread(fem)-ACC eat(imp-masc) be(past-masc)
Ram (habitually) ate bread. (Mahajan 1990:72)

b. Raam-ne roTii khaayii thii.
Ram-ERG bread-NOM eat(perf-fem) be(past-fem)
Ram had eaten bread. (Mahajan 1990:73)

It is proposed here that this is another instance of a contextual restriction on the distribution of ergatives and we should treat it like we treated the contextual restriction of ergatives to transitives in the last section. Specifically, the proposal is that there is a variant of the Faith-lex constraint that preserves ergatives which operates only in the context of perfective aspect. When that contextually restricted Faith-lex constraint is ranked higher than *ergative, the result is that lexically licensed ergatives will surface in perfective clauses; but outside that context, markedness takes over, and the subject is nominative.

(49) Hindi ranking: Faith-lex$_{perf}$ >> *ergative >> Faith-lex, *accusative

This approach makes the correct prediction that not all agentive or transitive verbs will take an ergative subject in the perfective; instead, only the verbs that are lexically marked to license an ergative subject will do so. The Hindi verb for 'brought' is an example of an agentive, transitive verb that takes a nominative subject even in the perfective:

(50) LaRkiyãã sabzii laayĩi.
girls-NOM vegetable-ACC brought-FEM-PL
The girls brought vegetables. Comrie (1984:858)

Any approach that ignores the lexicon and simply assigns ergative Case to all agentive or transitive subjects in the perfective aspect will make the wrong prediction for such examples.

5.2 Subject Person Splits: the Morphological Realization of Case

A language is said to manifest a subject 'split' if it marks subjects differently (in terms of Case or agreement) depending on the features of that subject. The standard example of a subject split is from Dyirbal, where transitives subjects take an ergative Case morpheme only if they are third person; first and second person subjects are never marked with (overt) ergative Case (Dixon 1979:87). The proper treatment of such splits depends on whether they represent an alternation between different abstract Cases (nominative versus ergative) or whether they involve one abstract Case which may or many not be morphologically realized.

Comrie (1991) argues that all transitive subjects in Dyirbal have ergative Case which is simply not morphologically realized on first and second person pronouns. There are good arguments that this is the correct approach for Dyirbal and for other languages with this kind of subject person split. Dixon (1972) shows that first and second person transitive subjects behave like ergative subjects in a variety of syntactic constructions in Dyirbal. In languages with agreement, such as Marathi, the agreement pattern indicates that subject person splits do not involve a change in abstract Case (in contrast to aspect splits, which do). We see this contrast in the examples below, where the nominative subject in the imperfective construction in (51a) controls the agreement, whereas the unmarked first person subject in the perfective construction in (51b) does not, suggesting that it is still ergative.

(51) a. Sudha ambe khate.
Sudha(fem) mangoes(masc) eat(fem,3sg)
Sudha eats mangoes. (Comrie 1984: 861)

b. Mi kame keli.
I jobs did-(neuter,3pl)
I did the jobs. (Comrie 1984:861)

We can eliminate the possibility that the agreement system simply has a different pattern in the two aspects, because transitive verbs that do not license an ergative subject show the agreement of a nominative subject.

(52) Mi khup goSTi bollo.
I many things said(masc,1sg)
I said many things. (Comrie 1984:861)

The conclusion is that these subject person splits do not involve an alternation between different Cases, but only whether or not the ergative abstract Case is morphologically

realized.[27] The present paper is limited to dealing with situations involving choices among different abstract Cases and nothing will be said about the problem of morphological realization problems, however the reader is referred to Aissen (this volume) who treats the morphological realization problem with constraint conjunction.

5.3 Marked Objects and 3-Way Systems

It is well-known (e.g. Comrie 1981, Croft 1990, Dryer 1986) that in many languages, objects with certain features are Case marked differently than objects without those features (e.g. specific and non-specific objects in Turkish (Enç 1991) and Inuit (Bittner 1994), and pronominal versus non-pronominal objects in Dyirbal (Dixon 1972).

How should we treat such object Case 'splits'? Aissen (this volume) translates the functional approach of Silverstein (1976) into Optimality Theory using the technique from Prince and Smolensky 1993 of aligning prominence scales. Under Silverstein's approach, subjects prototypically have features that are high on the various animacy / topicality hierarchies (e.g. first person, human, specific, etc.), while objects prototypically have low features (third person, inanimate, non-specific, etc.). When a subject or object has unexpected features, it needs to be marked or flagged as atypical, so as to alert the listener not to make a mistake about its grammatical relation. This flag can be a morphologically overt Case, preposition, or agreement.

One problem with Silverstein's approach is that it treats subject splits and object splits alike, as two ends of the same continuum. But if that is so, we expect to find an equal diversity of types of subject and object splits in the world's languages; however, that prediction is not born out. Instead, there are very few kinds of subject splits, in contrast to an enormous diversity of object splits.[28] For example, Comrie (1981:123) notes that while definiteness is frequently the basis of object splits, there is an embarrassing absence of clear attestations of the predicted marked indefinite subject. Object splits often involve disjoint sets of features and combinations of features, as in Palauan where human objects and singular, specific objects are marked (Woolford 1995), but subject splits seem never to involve more than one feature. In addition, object

[27] Additional evidence that there is no abstract Case change from ergative to nominative in languages that overtly mark ergatives only in third person comes from Kabardian (Colarusso 1992). Kabardian has a marked nominative Case. The nominative, ergative and dative (the latter two look alike) all show the same pattern of overt morphological marking of the Case in the third person, but not in first and second person. But it is clear from the fact that nominative is morphologically marked in Kabardian that this alternation is between the presence and absence of a Case morpheme, rather than a change in abstract Case.

[28] This observation is also noted in Isaak (2000). Isaak proposes an interesting modification of Silverstein's approach wherein certain features associated with object splits are privative so that there could not be subject splits based on the negative value of features such as human.

splits can be 'marked' with a range of devices, including prepositions, several different Cases, and agreement, while subject splits only involve Case. Croft (1990) argues that agreement does not show the inverted pattern for subjects that Silverstein's approach would predict.

My conclusion is that (virtually) all subject splits (and some object splits) involve an alternation between realizing or not realizing one abstract Case, whereas the majority of object splitss involve an alternation between two distinct abstract Cases. My approach to the latter type of object split (Woolford 1995, 1996, 1999) is parallel in some sense to the treatment of coda constraints in phonology. The basic intuitive idea is that syntax 'wants' an empty VP (or at least one that is empty of structurally Cased arguments), just as phonology 'wants' an empty coda in syllables. Structurally Cased VP-internal arguments are worse if they have marked features, just as codas are worse if they have marked features. The strategies that languages use to avoid having a VP-internal structurally Cased argument are of two types: one can make the argument not VP-internal by moving it out of VP (which may consequently alter its Case), or one can simply alter the Case of the argument by adding a preposition or an inherent Case. The reason that subjects are so much less often affected by such constraints is that subjects are usually already outside of the VP for independent reasons, and thus cannot violate these constraints.

For reasons of space, it is not possible to describe this approach to object splits and contrast it with that of Aissen (this volume), so let us instead focus here on what these two approaches have in common and how they allow us to explain why nominative is not always the best choice for objects in ergative languages.

Simplifying somewhat, both my approach and Aissen's postulate a family of markedness constraints that prohibit 'bare' objects with marked / high features such as [+human], [+specific], [+topic], or [+pronominal]. Normally, ergative languages have nominative objects, as we have seen in the above sections, but nominative objects are 'bare' objects. If the relevant bare object constraint is ranked high enough, it will eliminate candidates with a VP-internal nominative object from the candidate set, leaving candidates with more marked object Case as the winner.

6.0 Conclusion

Case patterns that are problematic for Case theory (e.g. Chomsky 1981, 1986, 1995) include dependency effects, valency effects, and inventory effects. These can be dealt with if we add a set of violable constraints to Case theory, which come into play only when more than one Case is licensed on a particular argument. This will allow us to maintain the Case licensing principles of Chomsky 1995 as universal, inviolable principles, formulated in a quite restrictive way that mentions only which head licenses

which Case. All situations that previously seemed to require language-specific licensing principles, or language-specific features or parameter settings, or any other exceptions to or qualifications of the universal Case licensing principles can now be handled by the violable Case constraints. However, even the violable constraints are universal: what differs between languages is their relative ranking.

The violable Case constraints include faithfulness and markedness constraints. Faithfulness constraints require faithfulness to (checking of) any inherent Case licensing features carried by verbs. Markedness constraints select less marked structural Cases over more marked inherent Cases, and within the structural Cases, they select the less marked nominative over the more marked accusative. In addition, there are OCP-type constraints that prohibit two instances of the same Case or the same kind of Case in certain domains.

This approach subsumes the behavior of unaccusatives that motivated Burzio's generalization under markedness: unaccusatives can be licensed for nominative or accusative Case, but markedness prefers the less marked nominative. Similarly, in constructions with a dative or ergative subject, the object surfaces as nominative rather than accusative because of markedness.

With the removal of D-structure from the theory, we can no longer maintain the idea that inherent Cases are assigned at D-structure in order to explain why inherent Cases occur in positions normally licensed for structural Case. Instead, inherent Case surfaces when faithfulness constraints (favoring inherent Case) are ranked above markedness constraints favoring a structural Case. However, faithfulness is sometimes contextually restricted, producing valency effects as well as 'split' systems.

The reason that ergative and dative do not surface in all languages is that these are rather marked Cases. The same markedness and faithfulness constraints that account for the dependency and valency effects discussed above also account for the (apparent) Case inventory of each language. There is no need to claim that some languages lack the ability to license certain Cases.

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