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CHAPTER 7

Differential Argument Marking in Two-term Case Systems and its Implications for the General Theory of Case Marking[1]

1. INTRODUCTION

In this paper I present a view of case marking that explicitly rejects a commonly assumed position that its primary function is to merely distinguish arguments from one another (cf. Comrie 1978, 1989; Dixon 1979, 1994), while marking them according to their specific semantic or pragmatic functions is a secondary phenomenon. In order to show that such a view (which has already been challenged by many linguists, see section 2) is untenable, I will investigate data from argument-encoding variations in languages which possess only two cases, and will compare them with similar phenomena from languages with richer case systems. As it will be seen, 'nondiscriminative' coding strategies found in two-term case systems, though typologically unusual, can be easily accounted for under the assumption that case marking of a particular argument is subject to 'local' 'indexing' rules and constraints dealing rather with this particular argument, than with the overall 'global' relational structure of the clause. The 'discriminatory' function, though retaining its importance, is, in this view, no more than just one of the constraints relevant for argument marking, whose ranking with regards to other such constraints is not always and not necessarily high.

Also, I am going to argue that, contrary to some recent Optimality-theoretic proposals (see e.g., Woolford 2001), the case inventory found in a particular language cannot be always derived from a universal set of constraints (see Wunderlich and Lakämper 2001 for a similar proposal). As it will be shown, in order to account for case marking patterns in the languages with two-term case systems it is inevitable to regard the case inventory as a part of the input, and not as a feature of the candidates.

In section 2 I will briefly outline the 'discriminatory' theory of case marking and summarize some arguments against it which have already been discussed in the literature. In section 3 I will discuss data from argument encoding variations (in particular, the interrelationships between tense/aspect conditioned 'split ergativity'

and 'differential object marking') in the Indo-Iranian languages, and will show that their evidence is crucial with respect to my argument. In section 4 I will discuss subject marking in main vs. subordinate clauses in some Uto-Aztecan languages, which is also relevant for this topic. In section 5 I will present an Optimality-theoretic conception of case marking which, I believe, is able to account for these facts.

2. THE 'DISCRIMINATORY' THEORY OF CASE MARKING

The conception of case marking most commonly assumed among typologists is based on the assumption, clearly formulated by Comrie (1978:379-380; 1989:124-127), and pursued to different extents also, among others, by Dixon (1979, 1994), Givón (1984:184), Legendre *et al.* (1993), Woolford (2001), Aissen (2003), that one and perhaps the most prominent function of case marking is to distinguish between those arguments which may be confused when simultaneously present in the clause (I will later call it the Syntagmatic Discrimination Principle, SDP). Thus, in transitive sentences, when both the A(gent) and the P(atient) arguments are present, it is necessary to mark either of them so that one might not confuse them. Consider the formulation of the DISTINGUISHABILITY constraint by de Hoop and Narasimhan (2005), de Hoop and Lamers (2006):

(1) DISTINGUISHABILITY
     The two arguments of a transitive relation should be distinguishable.

On the contrary, it is not necessary to mark the S(ingle) argument of the intransitive predicate in any special way, because it cannot be confused with anything in its clause, and its marking would be redundant and uneconomical. So, we can state the following two constraints on the possible argument marking strategies: (i) SDP, which precludes A from being encoded identically to P, and (ii) *I(ndependent)-S, an economy-driven constraint, which prohibits special marking of the 'intransitive subject'. Recasting these well-known insights in an Optimality-theoretic fashion, we get the following predictions concerning the possible types of case marking strategies, see Table 1, where the input is a pair of clauses (a canonical transitive sentence, e.g., 'The man killed the bear', and an intransitive sentence, e.g., 'The man is walking'), and all possible alignment types serve as candidates.

Tableau 1. An OT-like account of case marking strategies

V_{tr}: A,P; V_{itr}: S	*I-S	SDP
☞ a. accusative: S + A vs. P		
☞ b. ergative: S + P vs. A		
c. neutral: S + A + P		*
d. tripartite: S vs. A vs. P	*	
e. 'quasi-neutral': S vs. A + P	*	*

Both functionally motivated constraints predict that the *accusative* and the *ergative* systems of case-marking, neither of which violates any of the constraints in question, will be the most wide-spread case-marking patterns attested in the languages of the world, which is actually the case[2] (see Nichols 1992:90 for the relevant statistics). A considerable difference in the frequency of occurrence between the *neutral* coding strategy (5 %), which marks all arguments similarly (or, to be more precise, usually does not mark them at all), and the *tripartite* coding strategy (< 1 %), which marks all three basic clausal arguments differently, suggests the following tentative ranking of our constraints: *I-S >> SDP. The *quasi-neutral*, as I call it (or 'double-oblique', see Payne 1979, 1980, 1989), coding strategy, which does not distinguish between A and P, but marks them separately from S and thus violates both constraints, is predicted to be the rarest one if not non-existent at all (cf. e.g., Kibrik 1979:63-66).

Under the 'discriminatory' theory of case marking it is also predicted that A and P must be marked differently only when the roles of the nominals are not inferable from their lexical semantics, otherwise they may be left undistinguished. Thus, in a transitive clause with an animate and an inanimate participant the former will be the A and the latter the P with much greater probability than vice versa. The important generalization by Silverstein (1976; see also Moravcsik 1978a) concerning the person/animacy split of case marking is explained in this vein by Comrie (1978) and Dixon (1979), who explicitly argue that since it is 'natural' for As to be animate and for Ps to be inanimate, the 'unnatural' animate Ps and inanimate As get marked, while animate As and inanimate Ps remain unmarked. Also, in some languages, e.g., Hua (Papuan), a special marker is used only when there is a possibility of confusion between A and P, so it is claimed that in this language SDP is the only factor determining case marking (see Comrie 1978:384-385). The same holds, as it were, for the widely attested 'differential object marking' (Bossong 1985, Aissen 2003), when definite and/or animate Ps are encoded differently from indefinite and/or inanimate, which usually pattern with unmarked As (cf. Comrie 1979).

A formulation of SDP pertaining to case marking only may be found in (2) (cf. Wunderlich and Lakämper's (2001) UNIQUENESS and de Swart's (2003) MINIMAL SEMANTIC DISTINCTNESS constraints):

(2) SYNTAGMATIC DISCRIMINATION PRINCIPLE (for case marking)
The two arguments of a transitive relation which are not distinguishable by their semantic/referential properties must be distinguished by case marking.

It should be noted that (2) is less general than (1), in that it pertains only to morphological distinguishability (i. e., by means of case marking) of semantically and pragmatically similar clausal participants (see de Hoop and Lamers 2006 for a

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[2] Here I disregard the fact that, according to Nichols, the most frequent pattern of nominal case-marking is actually the 'nondiscriminative' neutral one. This fact is not surprising, however, since most languages in her sample simply lack any case marking on nouns. Neutral is the dominant 'global' alignment type only in a small, but noticeable (5 %, according to Nichols) number of languages with morphological case marking. Also, there must be independent reasons for ergative alignment being, contrary to the prediction of Table 1, almost two times less frequent than accusative.

more comprehensible account of factors pertaining to distinguishability of As and Ps, such as agreement, word order etc.).

The conception of case marking outlined above, as is well known, correctly predicts and attempts to coherently explain some important cross-linguistic generalizations concerning the types and distribution of argument-marking strategies. However, this theory is subject to objections of both a theoretical and an empirical nature. First of all, it has been often shown that cases usually have more or less coherent and more or less abstract semantic functions, which dictate the patterns of their usage (see, *inter alia*, Wierzbicka 1980, 1981, 1983, 1988:Ch. 8; Mallinson, Blake 1981:Ch. 2; Du Bois 1987; Primus 1999; Wunderlich and Lakämper 2001, Song 2001:156-167; Testelec 2003:64-68) regardless of the apparent need to distinguish between arguments. This is in accordance with the grammaticalization theory which claims and convincingly shows that 'grammatical' cases arise diachronically from morphemes with more 'concrete' functions (see Lehmann 1995/1982:66-107); it is hardly conceivable how one could place the discriminatory function on any of the well documented grammaticalization paths of case morphemes. The discriminatory function may thus be a mere by-product of the process of grammaticalization, but not its primary driving force. Second, there are large pieces of evidence that languages perfectly tolerate almost any degree of Agent-Patient ambiguity (see, e.g., Moravcsik 1978b, Plank 1980; cf. also de Hoop and Lamers 2006) and that quite a number of languages (5 % in the Nichols' (1992) sample) lack any kind of grammaticalized discriminatory devices (Riau Indonesian, see Gil 1994, 1999, is a well-known example). Third, this theory incorrectly predicts that both 'optimal' case marking strategies, viz. accusative and ergative, must show comparable frequency of occurrence. Why such a prediction fails is not obvious; for a tentative explanation see Primus (1999).

Therefore, one has to admit, I believe, that however appealing the 'discriminatory' theory may seem, it cannot be adopted without serious amendments. Some steps towards a more balanced theory of case-marking have been made in current literature (e.g., Kibrik 1997), especially in the framework of Optimality Theory, see the already mentioned contributions by Aissen (1999, 2003), Primus (1999, 2003), Wunderlich and Lakämper (2001), de Hoop and Narasimhan (2005), Malchukov (2005, 2006), and some other (e.g., a non-OT-based paper Butt and King 2002a). In their approaches, different though they are, it is assumed that there are two main functions of case marking (see the discussion in de Hoop and Narasimhan 2005): the already discussed 'discriminatory' function, and the so called 'indexing' function, which pertains to the encoding of particular semantic features of arguments. These functions quite often compete with one another and their tension is resolved by the relative ranking of the relevant constraints.

OT approaches to case also assume (tacitly or explicitly) that not only case marking *patterns* in individual languages, but also language-particular case *inventories* may be predicted by universal constraints and their different rankings. Such an approach is advocated, e.g., by Woolford (2001), see also Aissen (1999:685-686). However, I believe that such a view is basically incorrect, and I will present some data which unequivocally contradict it.

In the following sections I attempt to show that the data usually disregarded by typologists may present important empirical evidence against the primary role of SDP in argument encoding. Conversely, I outline a conception of case marking which, in my view, is free of the disadvantages of the 'discriminatory' theory, though it incorporates its basic insights.

3. DIFFERENTIAL ARGUMENT MARKING IN INDO-IRANIAN

The modern Indo-Iranian languages possess a variety of argument marking patterns, which, however, have not been subject of detailed investigation of those linguists who advocate the 'discriminatory' theory of case marking. A closer look at those facts reveals that case marking in these languages is hard to explain in terms of SDP. In this section I present the relevant facts, paying special attention to the data from the languages with two-term case systems.

Let us look at the patterns of argument marking in Vafsi, an Iranian language with two cases: unmarked Dir(ect) and marked Obl(ique). Like quite a number of its neighbors it exhibits two types of differential argument marking: a tense/aspect split, which affects the marking of A, and a animacy/definiteness split, which is relevant for the marking of P. In the non-perfect tenses, S and A are encoded by Dir, which has zero exponence (Stilo 2004:231, 243):

(3) tæ   æten bæ- ssæ   in   kelj- i   palu
     you(DIR)   now PFV- go   this girl- OBL   to
     'Now you go to this girl.'

(4) tæ   in   xær- i   næ- ruš- i?
     you(DIR)   this donkey- OBL NEG- sell- 2SG
     'Won't you sell this donkey?'

P must be marked by Obl if it is both animate and specific (*individuated*, in Lazard's (1984, 1994) sense), as in (4), or left unmarked otherwise (Stilo 2004:243):

(5) bæ- ss- e   yey xær   ha- gir- e
     PFV- went-3SG one donkey(DIR)   PVB- take- 3SG
     'He went to buy a donkey.'

In the perfect tense, however, A is invariably encoded by Obl, and S by Dir (Stilo 2004:244, 226):

(6) in   luti-   an   yey xær=   esan   æ- ruttæ
     this wise.guy- OBL.PL one donkey(DIR)= 3PL   DUR-sell.PST
     'These wise guys were selling a donkey.'

(7) qondaq   bidara   næ- væ?
     swaddled(DIR)   wake.up   NEG- become
     'Didn't the infant wake up?'

However, the differentiation of animate vs. inanimate Ps remains intact in the perfect tense, resulting in the following 'nondistinctive' quasi-neutral structure (Stilo 2004:244):

(8) luas- i   kærg-   e=   s   bæ- værdæ
     fox- OBL chicken- OBL= 3SG PFV- take.PST
     'The fox took the chicken.'

Similar patterns can be found in other languages of this region, cf. the following examples from the Southern Tati dialect Chali (Yar-Shater 1969:75-76):

(9) bar   beškias
     door(DIR)   broke
     'The door broke.'
(10) varziar- ō   barr-   ōn[3]=   ešō   bāšind
     peasant- OBL.PL   spade-   OBL.PL= 3PL   threw.away
     'The peasants threw away their spades.'

and from Roshani, a Pamir language, where only demonstrative pronouns decline for case (Payne 1980:155):

(11) dāδ   xawrič- ēn=   an   tar   Xaraɣ   sat
     these.DIR   boy-   PL=   3PL to   Xorog   go.PST
     'These boys went to Xorog.'
(12) duf   xawrič- ēn   um   kitōb   xēyt
     these.OBL   boy-   PL   this.OBL   book   read.PST
     'These boys (have) read this book.'

In spite of the rarity (quasi-neutral patterns are, to my knowledge, attested only in the Iranian and perhaps also Dardic languages, (see Skalmowski 1974, Payne 1979, 1980, 1989, Bossong 1985) and apparent 'disfunctionality' of these structures, it is evident that they are clearly motivated (see, e.g., DeLancey 1981, Tsunoda 1981, Lazard 1994 for important insights into the nature of functional motivation of various types of 'split case marking'), notably *not* by the SDP. The alleged need to morpho-syntactically discriminate between the syntagmatically co-occurring arguments seems to be altogether irrelevant here. What counts is, on the contrary, the semantic/pragmatic properties of the arguments themselves: individuated (animate and/or definite) Ps are marked, while their less individuated counterparts are left unmarked. Similarly, those As which coincide with the 'aspectual point of view' (in DeLancey's 1981 sense), i.e. As of imperfective/non-past clauses, are unmarked, whereas those which do not, viz. As of clauses with perfective aspect or past tense, bear overt case markers.

Let us compare Vafsi data with that of Hindi/Urdu, which uses postposition-like case markers for the encoding of core grammatical functions (see Mohanan 1994,

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[3] The final -*n* of the Oblique Plural ending appears before a vowel.

Butt and King 2002a,b, Lee 2003, and de Hoop and Narasimhan 2005, this volume, for detailed accounts), its case system thus radically differing from two-term case systems common in the Iranian languages. Hindi is similar to Vafsi, however, in one crucial respect: it possesses the same two types of argument encoding alternations, viz. a tense/aspect ergativity split and differential object marking. The difference lies only in how these patterns are realized by the surface morphology.

As in Vafsi, in Hindi/Urdu both S and A are unmarked in the non-perfective tenses (Mohanan 1994:72, 59):

(13) Rām   gā   rahā hai
     Ram(NOM)   sing DUR COP.PRS.3SG
     'Ram is singing.'
(14) Ravī   kelā   khā   rahā thā
     Ravi(NOM) banana(NOM) eat   DUR COP.PST
     'Ravi was eating a banana.'

If P is individuated, it is marked by the postposition =*ko*, which is also used to mark the Recipient/Addressee in ditransitive constructions; I will gloss it Acc(usative) (Mohanan 1994:59):

(15) Nīnā   bacce=   ko   uṭhāyegī
     Nina(NOM) child.OBL[4]=ACC   pick.up.FUT
     'Nina will pick the child up.'

In the past tenses the A argument is marked by the postposition =*ne* glossed Erg(ative) (Mohanan 1994:59):

(16) bacce=   ne   kītāb paḍhī
     child.OBL= ERG   book read.PFV
     'The child read a book.'

It is necessary to mention here that not only transitive Agents are marked by =*ne* in Perfective tenses, but some intransitive Agents as well; here the Ergative encoding is clearly semantically motivated: the presence of =*ne* implies volitionality and control on the part of the subject, cf. the following pair (Mohanan 1994:72; see also de Hoop and Narasimhan, this volume):

(17) a. rām=   ne   cillāyā.   b. rām   cillāyā
        Ram= ERG scream.PFV   Ram(NOM) scream.PFV
        'Ram deliberately screamed.'   'Ram screamed (e.g., because of fright)'

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[4] Just as many Iranian languages, Hindi/Urdu has retained an older distinction between a Direct (unmarked) and an Oblique morphological case; however, it has developed a new 'layer' of grammaticalized case markers from former postpositions; see Masica (1991:230-248) for a comprehensive survey.

Like in Vafsi, 'differential object marking' in Hindi/Urdu is present in all tenses, regardless of whether there is any need to distinguish P from A; cf. the following example, where both Ergative and Accusative postpositions are present (Mohanan 1994:80):

(18) Īlā= ne   bacce=   ko   uṭhāyā
     Ila= ERG   child.OBL= ACC   lift.PFV
     'Ila lifted the child.'

It is clearly seen from the examples above, that the 'global' strategies of argument marking which exist in Vafsi and other Iranian languages and Hindi/Urdu are no more than the automatic consequence of (i) functionally motivated argument-marking rules, assigning special case markers to As in the past/perfective tenses and to individuated Ps, and most importantly (ii) the actual number of core case markers in these languages. In Vafsi there is only one non-zero case marker, which is thus used as the output of both rules; in Hindi/Urdu there are many different postpositions, thus no quasi-neutral pattern arises. The patterns of argument marking in these languages are summarized in Tables 2 and 3.

Table 2. Patterns of argument marking in Vafsi

S	A	P	strategy	conditioning factor
Dir	Dir	Dir	neutral	non-past; non-individuated P
Dir	Dir	Obl	accusative	non-past; individuated P
Dir	Obl	Dir	ergative	past; non-individuated P
Dir	Obl	Obl	quasi-neutral	past; individuated P

Table 3. Patterns of argument marking in Hindi/Urdu

S	A	P	strategy	conditioning factor
Nom	Nom	Nom	neutral	imperfective; non-individuated P
Nom	Nom	Acc	accusative	imperfective; individuated P
Nom ~ Erg	Erg	Nom	ergative	perfective; non-individuated P
Nom ~ Erg	Erg	Acc	tripartite	perfective; non-individuated P

It is thus evident that both the 'nondistinctive' quasi-neutral pattern of Vafsi, Chali and Roshani and the 'over-distinctive' tripartite pattern of Hindi/Urdu are conditioned by the very same functional-semantic factors and differ only in their surface realizations, which is merely a consequence of a more or less arbitrary factor such as the number of core case markers in a particular language.

4. MAIN VS. SUBORDINATE CLAUSE SPLIT IN THE UTO-AZTECAN

Some Uto-Aztecan languages have two-term case systems for nouns. The dominant pattern of case marking is accusative: S/A is encoded by Dir, and P by Obl. A typical example is Chemehuevi (Press 1979:73, 78):

(19) maŋ   nakwi- j
     he(DIR) run-   PRS
     'He is running.'

(20) maŋ   puŋkuc- i   kɨʔi- vɨ
     he(DIR) dog-   OBL bit- PST
     'He bit the dog.'

However, in many types of subordinate clauses (relative clauses, complement clauses, and adjunct clauses) the marking of the S/A argument switches to Obl (Press 1979:108, 11, 115):

(21) [puŋkuc- i   havitu- g]   aipac   ay   tɨka- vɨ
     dog-   OBL sing-   SIM boy(DIR)   that   eat- PST
     'While the dog sang, the boy ate.'

(22) waampakwic [nɨni paka- mpa- n]   aipac-   i   kwipa- vɨ
     scorpion(DIR) I.OBL kill- FUT- NML boy-   OBL sting- PST
     'The scorpion I am going to kill stung the boy.'

(23) John [Ann- i   karɨtɨa- j   kɨaw   taya- kai- n]
     John Ann-   OBL chair-   OBL yesterday kick- PFV- NML
     putucuga- j
     know-   PRS
     'John knows that Ann kicked the chair yesterday.'

Example (23) is of particular interest here. Both arguments of the subordinate clause are marked by the same Obl case, thus resulting in a 'non-distinctive' neutral structure.

The same holds for another language of this family, Yaqui, which, too, has only two fully grammaticalized cases on nouns (personal and demonstrative pronouns have, apart from that, also a separate possessive form). In main clauses, argument-encoding follows the accusative pattern: S/A is unmarked, and P gets Oblique case (Lindenfeld 1973:11, 54):

(24) itom   čuuʔu   bem   kari=   po   yeewe
     we.POSS   dog(DIR)   they.POSS house= in   play
     'Our dog is playing in their house.'

(25) inepo   em   misi- ta   biča- k
     I(DIR)   you.POSS   cat- OBL see- PFV
     'I saw your cat.'

The Obl case also fulfills the function of the genitive, marking possessors (Lindenfeld 1973:56):

(26) itom   pare-   ta   kari   si   weela
     we.POSS   priest- OBL house(DIR) very old
     'Our priest's house is very old.'

Like in Chemehuevi, Yaqui encodes its subjects with Obl in subordinate clauses, cf. the following examples from Lindenfeld (1979:65, 81, 103):

(27) hu   kari   [in   ačai-   ta   hinuk- aʔu]   weče-k
     this house.DIR I.POSS father- OBL buy-   NML   fall- PFV
     'The house my father bought fell down.'

(28) [hu- ka   oʔoo- ta   yepsa- k-o]   itepo   saha- k
     this- OBL man-   OBL   arrive- R-TEMP we.DIR   go-   PFV
     'When this man arrived we left.'

(29) na=   a biča ke [hu- ka   usi- ta   čuʔu- ta   kipwe- ʔu]
     I.DIR= it see that this- OBL child-OBL dog- OBL have-   NML
     'I see that this child has a dog.'

Similarly to Chemehuevi, the case marking of P is not affected by the case alternation on the subject, and thus a 'non-discriminative' pattern, like in (29), arises.

The explanation for this pattern of case marking in subordinate clauses in both languages is relatively straightforward: as is well attested cross-linguistically (see, e.g., Keenan 1985:160-161, Lehmann 1988:195-200), verbs in subordinate clauses are often nominalized, and the marking of their subjects patterns with that of possessor NPs. Consider similar structures in English:

(30) John visited Bill.
     [John's visiting Bill] was a disaster.

That this is the case in the Uto-Aztecan languages as well is proven by evidence from Yaqui, where the pronominal subject of the embedded clause is encoded similarly to the pronominal possessor, and not to the pronominal direct object, cf. the following example (Lindenfeld 1973:72):

(31) ini- ka   bači- ta   [em   hinu- k- aʔu] nee   maka
     this- OBL corn- OBL you.POSS   buy- R- NML   I.OBL   give
     'Give me the corn that you bought.'

Here only the possessive form of the pronoun (*em* 'your', as in (25)) is possible, and not the form used for direct/indirect objects (*enči* 'you.OBL').

From the evidence presented in this section it is possible to arrive at a conclusion similar to that of the previous one where I dealt with case-marking alternations in the Indo-Iranian languages: neutral argument marking pattern in embedded clauses in Yaqui and Chemehuevi is no more than an epiphenomenon of the interaction of two factors: (i) the typologically natural situation when subordinate clauses are headed by verbal nouns triggering possessor inflection on their subjects, and (ii) the fact that in these languages there are only two cases on nouns, and therefore nominal possessors and nominal Ps get similar marking. Such a situation does not arise in languages where a matrix/embedded split coincides with a richer case system which has different cases for Ps and adnominal dependents.

5. TOWARDS A UNIFIED APPROACH TO CASE MARKING

In order to account for the facts presented in the previous two sections, I would like to outline a conception of case marking which, on the one hand, would capture the major insights of the 'discriminatory' view, and, on the other hand, would be devoid of its disadvantages. The main idea behind my proposal is that the Syntagmatic Discrimination Principle (SDP) is only one of the factors which may determine the actual patterns of argument encoding in a particular language and across languages, and that it may be (and often is) overridden by other principles.

The most important rival of SDP that operates in all the languages I have surveyed is best regarded as a family of rules constraining the marking of particular arguments in particular contexts, which are itself determined by universal functional tendencies (cf. Lazard 1994 and Kibrik 1997 for comprehensive surveys of such motivations). For instance, in the Indo-Iranian languages there is a rule PERFA which requires the A argument to be marked differently according to the tense/aspect of the verb, and a rule INDIVP which is responsible for the dissimilar encoding of indefinite/inanimate (less individuated) vs. definite/animate (more individuated) Ps. A corresponding Uto-Aztecan rule is EMBEDSB, which assigns non-nominative case to the subjects of embedded clauses. It is important that the surface realization of these rules, viz. the actual case marking device which is used to mark the argument they apply to, is determined on the language-particular level and crucially depends on the inventory of formal means a language possesses.

What all these rules (which, of course, operate in a large number of different languages, not just in those surveyed here) have in common is the fact that their application creates context-sensitive alternations in the encoding of a single argument (A, P, S/A, etc.) regardless of the properties of other NPs present in the clause. I believe them to be possible instantiations of a more general principle, which I will call the Paradigmatic Discrimination Principle (PDP). The rigorous formulation of PDP is not so easy to arrive at, so I will only attempt to give an informal characterization:[5]

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[5] The distinction between SDP and PDP is akin to the difference between the Syntagmatic and Paradigmatic Argument Selection Principles of Ackerman and Moore (2001); it is probable that similar semantic factors operate in both domains.

PARADIGMATIC DISCRIMINATION PRINCIPLE (PDP)

The argument with a given semantic role may be encoded differently depending on contextual and/or inherent factors, such as its position on empathy and referentiality hierarchies, viewpoint distinctions (≈ tense/aspect of the clause), or the independent/embedded status of the clause (see DeLancey 1981, Tsunoda 1981).

What is most important about PDP, is that, unlike SDP, it is not a rule straightforwardly applying to any possible clause. As a general principle, it can be regarded only as a typological tendency; which PDP-driven rule or rules are operating in a particular language is a matter of its history,[6] just as the presence or absence of nominal case marking.

Each instantiation of PDP may be seen as a constraint contributing to the determination of the actual inventory and distribution of argument encoding types in a given language. SDP also plays an important role here, but the relative ranking of these constraints varies from language to language, and it is not always the case that SDP is higher in rank than any of the PDP-constraints.

Let us see how the data surveyed above may be accounted for in these terms, by casting these constraints in the functionally-based Optimality-theoretic framework (see Aissen 1999, 2003, Aissen and Bresnan 2002 and others). First let us formulate the relevant PDP-based constraints. In order to do this it is necessary to bear in mind not only that there are certain (gradual or binary) distinctions relevant for differential argument marking, such as semantic role, grammatical function, animacy, person, definiteness, volitionality, perfective/imperfective, independent/embedded, etc., but also the fact that there are more 'prototypical' or less 'marked' configurations of these properties and less 'prototypical' and correspondingly more 'marked' constellations of them (see especially DeLancey (1981) for an initial proposal and Aissen (1999, 2003) for an enlightening OT account). For instance, it is known that it is less typical for Ps to be animate and/or definite ('individuated') than inanimate and/or indefinite ('non-individuated'). Also, following DeLancey (1981), I assume that it is unmarked for As to be 'viewpoint foci', that is to occur in Imperfective clauses where the activity of the A is foregrounded, rather than in Perfective clauses which underscore the change of state undergone by the P. Observations of a similar kind follow also for subject of syntactically embedded (and thus pragmatically backgrounded) and independent (pragmatically foregrounded) clauses. These generalizations may be stated as in the following harmonic scales and corresponding constraint hierarchies (where '>' should be read as 'more harmonic than'), see Table 4.

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[6] This certainly does not contradict the view that the functional constraints motivating these rules are universal. Cross-linguistically valid functional constraints have language-particular instantiations and language-particular rankings, just as it does not follow from the universality of grammaticalization paths that all languages must grammaticalize all possible categories. I thank the editors for pointing out to me that it is necessary to clarify this point.

Table 4. PDP-based harmonic scales and constraint hierarchies

Harmonic scales	Constraint hierarchies
NonIndiv/P > Indiv/P	*INDIV/P >> *NONINDIV/P
Imperf/A > Perf/A	*PERF/A >> *IMPERF/A
Indep/Sb > Embed/Sb	*EMBED/SB >> *INDEP/SB

In the languages surveyed both marked and unmarked constellations of argument properties are permitted and differ only in their relative *formal* markedness. Therefore it is necessary to supplement the constraint hierarchies in Table 4 with additional constraints which would have as a result that individuated Ps are case-marked while non-individuated ones are not, and similarly with As in imperfective and perfective clauses. Here, I follow proposals by Aissen (1999, 2003) and Primus (2003) postulating the following markedness constraints, see table 5. *X/∅ should be understood as 'the feature constellation X should not receive default (Nominative/Direct) case marking'.[7]

*Table 5. Constraint hierarchies conjoined with *∅*

*INDIVP/∅>> *NONINDIVP/∅
*PERFA/∅ >> *IMPERFA/∅
*EMBEDSB/∅ >> *INDEPSB/∅

In order to account for those patterns of case marking where one or several arguments get unmarked (Nominative/Direct) case I assume, again following Aissen, the constraint *STRUC which penalizes assignment of marked cases; this constraint may be interpolated at various points of the relevant hierarchies thus predicting a sufficient range of cross-linguistic variation in differential argument marking.

At last, SDP as formulated in (2) is violated by all transitive structures which simultaneously satisfy the following two conditions: (i) both arguments are prominent on animacy/definiteness scale, e. g. both are animate, or one of them is animate, and another definite; (ii) these arguments bear the same case marking. Thus, SDP is violated even if there are other grammatical clues, such as verb agreement of word order, which help to distinguish the two arguments.

Another very important and already mentioned aspect of the account I propose here is the treatment of the language-particular case inventories. Contrary to current OT practice which attempts at accounting for the number and character of cases in individual languages on the basis of universal constraints and their language-particular rankings, I propose to treat case inventory of each language as a part of

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[7] Aissen (op. cit.) and de Hoop & Narasimhan (2005) assume that 'default' marking is identical to 'no case marking at all', which view I am somewhat reluctant to adhere to (e.g. because there are languages, such as Japanese or Aleut, in which Nominative case is not formally unmarked).

the input,[8] and not just as a feature specification of the candidates, generated by GEN. I believe that this approach is more consistent with the actually attested data, which proves to be more 'messy' than one could conclude without taking into account the whole range of attested possibilities. The case inventory of a particular language is the result of various and often conflicting tendencies, many of which are better looked upon as historical 'accidents' rather than instantiations of universal 'laws'. The data from two-term case systems, in my opinion, support such a view.

Let us now turn to how the actual case marking patterns found in the languages surveyed in sections 2 and 3 can be accounted for under these assumptions.

Let us begin with the Uto-Aztecan patterns, where only one PDP-driven rule is operating, namely EMBEDSB. Let the input be an embedded clause with both Agent and Patient; there are only two cases in these languages (Dir and Obl). The set of candidates I consider here consists of (i) the actual one, where both A and P are marked by Obl, and where SDP is violated (but only if both A and P are animate/definite); (ii) the one where SDP is satisfied by leaving A unmarked, thus violating *EMBEDSB/∅; and (iii) where both *EMBEDSB/∅ and SDP are satisfied by suspending case marking of the P, which violates either *INDIVP/∅ or *NONINDIVP/∅, which in these languages are both ranked over *STRUC thus securing that all Patients are marked,[9] see constraint ranking in (34) and Tableau 6.[10]

(34) *EMBEDSB/∅, *INDIVP/∅ >> *NONINDIVP/∅ >> *SDP >> *STRUC

Tableau 6. Case-marking of embedded clause subjects in Yaqui and Chemehuevi

A,P,Embed;{Dir,Obl}	*EMBEDSB/∅	*INDIVP/∅	*NONINDIVP/∅	*SDP	*STRUC
a. <A:Dir, P:Obl>	*!				*
☞ b. <A:Obl, P:Obl>				*	**
c. <A:Obl, P:Dir>		*!	*		*

---

[8] As the editors point out, it is actually not correct to regard the case inventory as a part of the input per se; rather, it is a more general language-particular specification (most probably pertaining to the lexicon, since it is, in my view, possible to treat language-particular case grammemes on a par with ordinary lexical items) constraining the possible candidates; i. e., for a language with a two-term case system, like Vafsi, GEN simply does not generate candidates marked with, say, Genitive or Accusative. The rigorous formulation of this point is a topic for further research.

Also, I do not take into account candidates where, e. g. A gets Accusative case or P gets Ergative; those I consider to be excluded by higher-ranked faithfulness constraints checking whether the semantic role of the argument is compatible with the specifications of the case grammeme, see e. g. Wunderlich and Lakämper (2001).

[9] It is not important which of the PDP-driven constraints, viz. subject-oriented *EmbedSb/∅ or object-oriented *IndivP/∅ is ranked higher; here it is possible to assume that they are not ranked with respect to each other. However, as the discussion of the Indo-Iranian data will show, sometimes the relative ranking of different PDP-driven constraints is crucial.

[10] I do not omit SDP from my tableaux even though it does not really play a role in the evaluation of the candidates, because what I want to show explicitly is precisely that in Yaqui, Vafsi and Hindi/Urdu it is irrelevant whether SDP is satisfied or violated.

Let us now turn to the more complicated Indo-Iranian case. In Vafsi and other Iranian languages, as has already been shown, the 'need' to differentially mark As according to aspect and Ps according to their degree of individuation is stronger than the 'need' to discriminate between As and Ps; thus we may state that higher-ranked PDP-driven constraints (*PERFA/Ø and *INDIVP/Ø) are again ranked above the SDP, but not with respect to each other; since only individuated Ps and As in the perfective are marked in these languages, *STRUC is ranked above the lower-ranked *IMPERFA/Ø and *NONINDIVP/Ø see (35):

(35) *PERFA/Ø, *INDIVP/Ø >> *STRUC >> SDP >>
        *IMPERFA/Ø, *NONINDIVP/Ø

Let us first see how these constraints account for the most 'unmarked' transitive clauses, where the aspect is imperfective and the Patientive argument is non-individuated; since there are only two cases in these languages, the possible set of candidates is straightforwardly derivable. See Tableau 7.

Tableau 7. 'Unmarked' transitive clause in Vafsi

A,P[non-indJ],Imperf, {Dir,Obl}	*PERFA/Ø	*INDIVP/Ø	*STRUC	SDP	*IMPERFA/Ø	*NONINDIVP/Ø
☞ a. <A:Dir, P:Dir>					*	*
b. <A:Dir, P:Obl>			*!		*	
c. <A:Obl, P:Dir>			*!			*
d. <A:Obl, P:Obl>			*!*			

Note that *PERFA/Ø and *INDIVP/Ø are of no relevance here, and neither is SDP, which is satisfied due to the non-individuated character of the P, which is thus distinguishable from the A on semantic/pragmatic grounds (let us assume for the time being that A in the inputs is invariably high in animacy). The candidates with one or both arguments marked are ruled out by *STRUC; the resulting pattern may be regarded as an instance of the 'emergence of the unmarked' structure (McCarthy and Prince 1994).

Let us now look at the most complex case, where both PDP-driven rules operate, viz. clauses with both perfective aspect and individuated Patient, see Tableau 8.

Tableau 8. Perfective transitive clause with individuated Ps in Vafsi

A,P[indJ],Perf, {Dir,Obl}	*PERFA/Ø	*INDIVP/Ø	*STRUC	SDP	*IMPERFA/Ø	*NONINDIVP/Ø
a. <A:Dir, P:Dir>	*!	*!		*		
b. <A:Dir, P:Obl>	*!		*			
c. <A:Obl, P:Dir>		*!	*			
☞ d. <A:Obl, P:Obl>			**	*		

From Tableau 8 it is clearly seen that the optimal candidate, viz. the 'double oblique' pattern of case marking is the sole candidate which does not violate any of the highest-ranked PDP-driven constraints; other candidates, most importantly those which satisfy SDP, are ruled out either by *PERFA/∅ or by *INDIVP/∅.

If we now turn to Hindi/Urdu, we find that the constraint ranking in (35) applies to this language as well; the only difference between Hindi and the Iranian languages lies in the realm of the input, where the case inventory is registered. See tableaux 9 and 10.

Tableau 9. 'Unmarked' transitive clause in Hindi/Urdu

A,P[non-ind],Imperf, {Nom,Acc,Erg}	*PERFA/∅	*INDIVP/∅	*STRUC	SDP	*IMPERFA/∅	*NONINDIVP/∅
☞ a.<A:Nom,P:Nom>					*	*
b.<A:Nom,P:Acc>			*!		*	
c.<A:Erg,P:Nom>			*!			*
d.<A:Erg,P:Acc>			*!*			

Tableau 10. Perfective transitive clause with individuated Ps in Hindi/Urdu

A,P[ind],Perf, {Nom,Acc,Erg}	*PERFA/∅	*INDIVP/∅	*STRUC	SDP	*IMPERFA/∅	*NONINDIVP/∅
a.<A:Nom,P:Nom>	*!	*!		*		
b.<A:Nom,P:Acc>	*!		*			
c.<A:Erg,P:Nom>		*!	*			
☞ d.<A:Erg,P:Acc>			**	✓		

Optimal output candidates for the most marked input in Vafsi and Hindi differ only with respect to SDP: double-oblique pattern in Vafsi violates the low-ranked SDP, while tripartite pattern in Hindi satisfies it (which is marked by ✓ in the tableau). Nevertheless, both these case marking patterns, although superficially different, are clearly motivated by identical functional constraints.

Evidently, PDP-driven constraints are not invariably ranked higher than SDP. First of all, instances when these principles may come into conflict are not so widespread, and are probably limited to languages with relatively poor case systems, such as modern Iranian. Second, while in Vafsi, Southern Tati and Roshani two PDP-driven rules straightforwardly apply in all suitable contexts, it is also possible for one of such rules to be suspended in favor of the SDP; that is, in many languages PDP-driven rules operate only in those cases where this does not lead to violations of SDP.

Let us look at some examples from another Iranian language with a two-term case system, viz. Zaza. Here also both the tense/aspect split ergativity and animacy-driven differential object marking are present, but the latter applies only to non-past tenses, thus not creating the notorious quasi-neutral patterns. Consider the following examples from Selcan (1998:277-279):

(36) televe   kitav   cên- o
     student(DIR) book(DIR)   take- PRS.3SG
     'The student is taking the book.'

(37) televe   malım- i   vinen- o
     student(DIR) teacher- OBL see-   PRS.3SG
     'The student sees the teacher.'

(38) televe- y   kitav   di
     student-OBL   book(DIR)   saw
     'The student saw the book.'

(39) televe- y   malım (*-i)   di
     student- OBL teacher (*OBL)   saw
     'The student saw the teacher.'

As can be seen from the examples, the INDIVP rule does not operate in the past tenses in Zaza, resulting in the 'pure ergative' construction. This pattern may be accounted for by reranking SDP higher than *INDIVP/∅, see the ranking in (40):[11]

(40) *PERFA/∅ >> SDP >> *INDIVP/∅ >> *STRUC >>
     *IMPERFA/∅, *NONINDIVP/∅

Let us see how this ranking predicts the mirror-like case-marking patterns of (37) and (39), where the Patient is animate (that is, individuated), and only tense switches from Present to Past. The relevant evaluations are shown in Tableaux 11 and 12.

Tableau 11. Present tense and individuated Patient in Zaza

A,P$_{[ind]}$,Present,{Dir,Obl}	*PERFA/∅	SDP	*INDIVP/∅	*STRUC	*IMPERFA/∅	*NONINDIVP/∅
a. <A:Dir, P:Dir>		*!	*		*	
☞ b. <A:Dir, P:Obl>				*	*	
c. <A:Obl, P:Dir>			*!	*		
d. <A:Obl, P:Obl>		*!		**		

Tableau 12. Past tense and individuated Patient in Zaza

A,P$_{[ind]}$,Past,{Dir,Obl}	*PERFA/∅	SDP	*INDIVP/∅	*STRUC	*IMPERFA/∅	*NONINDIVP/∅
a. <A:Dir, P:Dir>	*!	*	*			
b. <A:Dir, P:Obl>	*!			*		
☞ c. <A:Obl, P:Dir>			*	*		
d. <A:Obl, P:Obl>		*!		**		

[11] Another possible ranking, viz. *INDIVP/∅ >> SDP >> *PERFA/∅, is, to my knowledge, not attested, at least all putative examples from the Indo-Iranian languages are not very reliable; as far as I can judge, nothing should preclude languages with such ranking.

As is seen from Tableaux 11 and 12, in the present tense, when A is left unmarked, nothing prohibits the individuated P to get Obl case, thus satisfying both PDP-driven *IndivP/Ø and SDP. However, in the Past tense, when A is marked by Obl (otherwise it would have fatally violated the highest-ranked *PerfA/Ø, as do candidates (a) and (b)), P cannot get Obl case due to the fatal violation of SDP.

The Zaza example constitutes an important argument for my proposal that case inventories of individual languages are to be regarded as features of the input rather then as epiphenomena of the constraints and their ranking. Indeed, the independently motivated constraint ranking in (40) is perfectly compatible with a Hindi-like system with separate Accusative and Ergative. See Tableau 13 for an evaluation of 'Pseudo-Zaza' past tense clauses with an individuated P, where instead of Direct and Oblique the case system includes at least three cases: Nominative, Accusative, and Ergative.

Tableau 13. 'Pseudo-Zaza' with a three-case system

A,P[ind],Past, {Nom,Erg,Acc}	*PERFA/Ø	SDP	*INDIVP/Ø	*STRUC	*IMPERFA/Ø	*NONINDIVP/Ø
a.<A:Nom,P:Nom>	*!	*	*			
b.<A:Nom,P:Acc>	*!			*		
c.<A:Erg,P:Nom>			*!	*		
☞ d.<A:Erg,P:Acc>				**		

Tableau 13 clearly shows that since SDP is now irrelevant, it is the tripartite structure rather than the ergative structure that wins. Thus, if we were to derive the Zaza two-term case system merely from a constraint ranking like (40), in order to account for the fact that it is actually candidate (c), and not (d), that wins, we would need to stipulate some other economy-based constraint, which would be ranked low in Hindi and Vafsi, and high in Zaza. Such a solution is certainly always possible, but I am reluctant to overload the theory outlined here with further probably *ad hoc* constraints.

From the preceding discussion it is clear that SDP and PDP-driven rules may be ranked differently in the grammars of particular languages, resulting in various patterns of case marking. It is a matter of empirical investigation whether the universally preferred ranking is SDP >> PDP or PDP >> SDP. If the former is the case, than the 'discriminatory' theory of case marking is proven to be basically true. But this would not, I believe, undermine the claim that the 'discriminatory' function of case marking, though it plays its role, is not the sole and not always the principal determinant of existing argument encoding structures. In any case, the universal ranking of the two basic functions of case marking is an empirical, and not an *a priori*, issue.

6. CONCLUSION

In this article I have presented data from argument encoding variations in the languages with two-term case systems, which constitute strong evidence against the

widely assumed 'discriminatory' conception of case marking, which states that the main factor determining the 'global' strategies of argument marking in the languages of the world is the Syntagmatic Discrimination Principle (SDP): A and P in a transitive clause must be somehow distinguished from one another. As the data from Indo-Iranian and Uto-Aztecan languages show, however, this simplistic view is empirically disconfirmed, since these languages tolerate severe violations of the SDP. In order to account for these facts I proposed that another factor is at work here, namely the Paradigmatic Discrimination Principle (PDP): arguments with similar semantic or grammatical functions may be encoded differently if there are strong contextual factors favoring their differentiation. Since different such factors may be grammaticalized in different languages, there are various instantiations of PDP. Also, the comparison of languages with different case systems shows that language-particular surface realization of various PDP-driven rules depends on the inventory of formal devices the language possesses. SDP and PDP may have different ranking, which results in variable distribution of particular argument-encoding strategies. It is not *a priori* obvious which of the two principles, both of which seem to be functionally motivated, cross-linguistically tend to be ranked higher. An Optimality Theory based framework, which incorporates both kinds of factors as universal constraints, and regards language-particular case inventories as relevant characteristics of the input, seems to be useful for the uniform description of these facts.

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