

CHAPTER 19

CASE AND
ALTERNATIVE
STRATEGIES

WORD ORDER AND
AGREEMENT MARKING

ANNA SIEWIERSKA
DIK BAKKER

19.1 INTRODUCTION

It is often assumed and sometimes explicitly stated that both agreement marking and word order constitute viable alternatives to morphological case with respect to some subset of the functions that case marking may fulfil. This chapter will explore to what extent this is indeed so and how the three forms of marking interact with each other on a cross-linguistic basis.

The discussion will begin in section 19.2 with an overview of what are typically considered to be the primary functions of case marking, agreement, and word order, concentrating on the areas of overlap between case marking and the other two forms of morphosyntactic encoding. Then we will proceed to consider in more detail the ways in which case marking interacts with word order and agreement.

Section 19.3 will be devoted to a consideration of the relationship between case marking and basic clausal constituent order first noted by Greenberg (1963b), namely the predilection for case marking of core grammatical relations in languages with basic APV order and the scarcity of case marking in languages with basic AVP order. The existence of the above preferences will be explored from the perspective of the potential advantages for on-line processing stemming from the earliest correct recognition of structures, as elaborated most extensively in Hawkins (2004). In section 19.4 we will turn to a consideration of the degree of complementarity and overlap in the overt marking of case and agreement language-internally, concentrating again on core grammatical relations including those found in ditransitive clauses. The discussion will focus on the differences in the degree of overlap in case and agreement marking exhibited by the verbal arguments. In section 19.5 we will close the discussion with some remarks on the relationship between case and agreement marking and word order flexibility.

19.2 THE FUNCTIONS OF CASE MARKING, AGREEMENT, AND WORD ORDER

The primary function of case marking, be it via affix or adposition, is typically seen to be a relational one, namely of denoting the nature of the semantic dependency obtaining between the verb and its less predictable dependents, i.e. its adjuncts (see e.g. Moravcsik 1974; Lehmann 1988; Croft 1988). Case identifies the dependent leaving implicit the head and simultaneously indicates the nature of the semantic relation of the adjunct. The more unpredictable the semantic nature of the dependency relation, the more likely it is to be overtly marked by case. By the same token, arguments, in contrast to adjuncts, are much less likely to bear case since the nature of the dependency relation between a head and its dependent arguments is largely predictable from the lexical properties of the head and less often, from the properties of the arguments. In addition to this primary relational function associated with adjuncts, case marking may also perform two other functions, which concern essentially arguments only. The first of these is the discriminatory or differentiating function (Comrie 1978, 1989 and Dixon 1979, 1994), i.e. the use of case to distinguish the A from the P in transitive clauses and the R (recipient) from the T (theme) in ditransitive ones. This role of case marking rests essentially on the presence vs. absence of marking of an argument as opposed to the nature of the case marking. Since what is at stake is mere differentiation of one argument from another, only minimal case marking of core arguments is required. For example, in transitive clauses only the A or the P needs to be case-marked rather than

both. Furthermore, in terms of discrimination no preference is assigned to which argument should receive overt case marking. Thus the overt marking of just the P in accusative alignment, as in the Brazilian language Kwaza (1) or of just the A in ergative alignment, as in the Tibeto-Burman language Manange (2) are functionally equivalent.

- (1) Kwaza (van der Voort 2000: 57)
wa zjwau-'wa e'cyi-ki
 bee Joao-AN.P sting-DECL
 'A wasp stung Joao.'
- (2) Manange (Hildebrandt 2004: 68)
/1/mriŋ-tse naka /2/phuŋ /2/khol-tsi
 woman-ERG chicken egg boil-PRF
 'The woman boiled the egg.'

The second additional function that case marking may fulfil is that of indexing properties of the referents of arguments or of the clause itself (see e.g. Silverstein 1976; Hopper and Thompson 1980). The properties of the referents of arguments may concern their inherent characteristics (e.g. animacy) or contingent ones (e.g. definiteness, referentiality, focus). Unlike in its discriminatory function, in its indexing function case marking is not driven by economy, that is, in transitive clauses both the A and P may bear overt case marking under appropriate circumstances. Moreover, if only one of two arguments bears case, it is highly relevant which of the arguments does. One line of reasoning associates case marking with inherent saliency as reflected on the person or animacy hierarchies. Another sees case marking as favouring arguments (and clauses) which display some departures from prototypicality be it with respect to the properties of their referents (inherent or discourse properties) or their morphosyntactic realization. An example of indexical case marking is the so-called differential case marking of the P, i.e. the use of case marking only on Ps that are pronominal, human, or animate and/or definite and/or specific. For instance, in the Colombian language Desano (Miller 1999: 57) the relevant conditioning seems to be specificity, as suggested by the presence of the clitic case marker *-re* in (3a) as compared to (3b) and (3c).

- (3) Desano (Miller 1999: 78, 55, 67)
- a. *bari-re ai-ga-ke*
 food-SPC take-move-IMP
 'Take the food to another spot.'
- b. *era bere diʔta baʔba-ba*
 they fruit only eat-3PL
 'They eat mere fruit.'
- c. *suʔri koe-go ii-ku-bo pera-ge*
 clothes wash-F.SG do-assume-3F.SG port-LOC
 'She (probably) is washing clothes at the river landing.'

(For further examples of differential case marking see Malchukov and de Swart in this volume.)

Whereas case marking is primarily a relational encoding strategy denoting the relation holding between two entities, agreement is an indexing strategy denoting the properties of one of the entities in the agreement relationship (Croft 1988: 173; 2003: 199). Using the terminology introduced by Corbett (1983), we will refer to the entity whose properties are indexed as the controller and the entity on which the index is placed, the target of the agreement relation. Thus, for example, in the Desano example in (3b) the controller is the A argument *era* ‘they’, the target is the verb *baʔba* ‘eat’ and the agreement index on the target is *-ba* ‘3PL’. The notion of agreement is variously conceived of in the literature. Our use of the term here encompasses both so-called grammatical agreement, where the controller and target are both overt in the same clause (or phrase), as in (3b), and anaphoric agreement where there is no overt controller in the clause (or phrase) featuring the target, as in (3c).¹ Further, whereas some scholars restrict the notion of agreement to indexing via affixal marking, for us it also includes marking via clitics. In what follows we will confine our attention to agreement involving person, which more often than not simultaneously encodes number and/or gender but not necessarily so. Person agreement is thus considered to be primarily a means of keeping track of referents in the discourse via their index of features. Under our view person agreement is thus a form of pronominalization used in preference to free personal pronouns for highly salient discourse referents, which the speaker assumes to be easily accessible to the addressee (see e.g. Lehmann 1988; Ariel 2000; Siewierska 2004). Since cognitively salient referents tend to be encoded as arguments rather than as adjuncts, agreement, unlike case marking, is primarily associated with arguments. It thus enters into competition with case marking only in regard to the secondary functions of the latter, that is with respect to discriminating between two arguments and the indexing of their special properties. As a means of discriminating between arguments, agreement marking is comparable to case marking only if the arguments in question differ in terms of the person, number, or gender features indexed by agreement. By way of illustration, consider, for instance, the clauses in (4) from Gumawana, an Oceanic language spoken in the Milne Bay Province of Papua New Guinea.

- (4) Gumawana (Olson 1992: 327, 326)
- a. *Koloto vaniva-yao i-duduwe-di*
man woman-PL 3SG-call:TR-3PL
‘The man called the women.’
 - b. *Koloto-ya-di vavina si-duduwe-Ø*
man-REF-3PL woman 3PL-call.TR.3SG
‘The men called the woman.’

¹ The terms grammatical and anaphoric agreement were introduced by Bresnan and Mchombo (1986). An elaboration of their typology is discussed in Siewierska (2004: 12–127).

- c. *Topiyo Kelebi i-tala-i-Ø*
 Topiyo Kelebi 3SG-hit-TR-3SG
 ‘Topiyo hit Kelebi.’

As the above examples suggest, in Gumawana, agreement with the S or A is marked by prefixes and with the P by suffixes. Thus since in (4a) the prefix is 3SG and the suffix 3PL, *koloto* ‘man’ is identified as the A and *vanivayao* ‘women’ as the P, irrespective of any discriminatory role that the word order may play. And analogously in (4b). In (4c), by contrast, the agreement marking fulfils no differentiating function since both of the arguments are third person singular and if it were not for the word order, the clause would be ambiguous, that is, either Topiyo or Kelebi could be the A or the P. In view of the above, agreement marking is a less versatile and reliable means of differentiating between arguments than case marking. As for the indexing of additional semantic or pragmatic properties of arguments, agreement is just as good a means of such indexation as case marking. Moreover, it tends to be used to index the same range of properties as case marking and for the same type of arguments, i.e. for the P as opposed to the A. Thus, for example, in Gapapaiwa (McGuckin 2002: 300, 307, 309) – another Oceanic language of the Milne Bay Province of Papua New Guinea – agreement marking of the P occurs when the P is a specific higher animate (e.g. human, spirit, or pet) but not a lower animate or inanimate. Compare (5a) with the suffixal P agreement marking with (5b,c) which feature no such marker.

- (5) Gapapaiwa (McGuckin 2002: 310, 305)
- a. *Wivine-si a-vi-yava-i-si*
 woman-3PL 1SG-CAUS.PAST-COUNT-TR-3PL
 ‘I counted the women.’
 - b. *aririta i-peyari sasara a-vunuwa*
 aririta.bird 3:NPRS-many very 1SG-capture
 ‘I caught a lot of aririta birds.’
 - c. *wakima a-vi-yava-i*
 rock 1SG-CAUS.PAST-COUNT-TR
 ‘I counted rocks.’

A similar situation is found in Acehnese, Hua, Kairiru, Mundari, and Noon, while in languages such as Bulgarian, Greek, Persian, Rumanian, Spanish, and Tinrin the presence of P agreement depends on specificity or definiteness.

Turning to word order, its basic function is taken to be the sequencing of information in ways which best reflect the communicative intentions of the speaker and simultaneously enable these intentions to be successfully and speedily processed by the addressee. Whether this complex goal can be best achieved by linearizing the words in an utterance in terms of their informational load at a given point in the discourse as captured, for example, by Givón’s (1988) Task Urgency Principle or in terms of human parsing preferences, as reflected in Hawkins’ (1994, 2004) parsing

principles is not yet clear. While with respect to its primary function word order differs quite radically from case marking (especially under the parsing approach), there is some overlap between the two again in regard to argument differentiation and indexation. Consistent placement of arguments on opposite sides of the verb as in AVP or PVA order in particular, and to a lesser extent in a fixed sequence before the verb (e.g. APV, PAV) or after the verb (e.g. VAP, VPA) is a means of distinguishing arguments from each other. Recall, for example, the disambiguating function of the placement of the A before the P in the Gumawana example in (3c) in the absence of any contribution from the agreement markers on the verb. The placement of constituents in designated clausal locations may in turn be used as a means of indexing properties of their referents, in particular specificity (or lack thereof), referentiality, or focus. Thus, for example, immediate preverbal location is a common focus position in APV languages while immediate positioning after the verb in AVP ones may be suggestive of nonspecificity or incorporation. Significantly, unlike case marking or agreement marking, word order does not tend to be used to index the inherent properties of referents, i.e. animacy, humanness, or person. Nor does it tend to single out the P in preference to the A or S. In fact it is arguably the intransitive S that is most likely to exhibit variation in its clausal location.

We have seen that despite their different primary functions case marking, agreement, and word order may all be used to discriminate between arguments and index their properties. We have also seen that with respect to argument discrimination word order is a better alternative strategy than agreement, at least when it is relatively stable. With respect to referent indexing agreement is more comparable to case marking than word order both in terms of the nature of the features indexed and the arguments involved. This suggests that we may expect there to be a significant interaction between case marking and word order with respect to argument differentiation and also between case marking and agreement marking with respect to argument indexation. Let us now consider whether this is indeed so.

19.3 CASE MARKING AND BASIC ORDER OF THE VERBAL ARGUMENTS

Of the various relationships posited in the literature between case marking and basic clausal order (cf. Siewierska 1996), the best known is Greenberg's (1963b: 96) universal 41 which is: 'If in a language the verb follows both the nominal subject and nominal object as the dominant order, the language almost always has a case system.' Although there are in fact many APV languages which lack case marking

Table 19.1. Distribution of case over word order types

	V-final	V-medial	V-initial
Dryer N=502	72% (181/253)	14% (26/190)	47% (28/59)
S&B N=417	71% (143/202)	21% (32/150)	42% (27/65)

such as Gumawana exemplified in (4) cited earlier, cross-linguistic studies strongly confirm that APV languages are much more likely to exhibit case marking than languages manifesting other types of basic order.

This is quite evident in the data presented in Table 19.1, reflecting the distribution of case marking relative to basic clausal order expressed in terms of the three-way typology of verb-final, verb-medial, and verb-initial, with the APV and PAV languages grouped under verb-final, etc. The data relate to the 582 languages classified as manifesting a basic order in Dryer (2002) for which case information was available to the author and the 417 languages analysed as evidencing a basic order in our current sample. In both samples the variation in case marking relative to basic word order is highly statistically significant (at the 0.5% level). As the figures plainly show, this is due on the one hand to the predilection for case marking in verb-final languages, and on the other, to the dispreference for case marking in verb-medial languages.

The traditional explanation for the relationship between case marking and basic word order depicted in Table 19.1 runs as follows. The dispreference for case marking in verb-medial languages is attributed to the overlap in function of the two forms of morphosyntactic encoding. The placement of the A and P on opposite sides of the verb is seen to be just as good a means of discriminating between the transitive arguments as the overt case marking of either or both of them. Accordingly, once the A is separated from the P by the verb, the marking of either the A or the P via case, for purposes of discrimination, is considered to be superfluous. This line of argument is extended to account for the higher incidence of case marking in both verb-initial and verb-final languages as compared to verb-second ones. In both verb-initial and verb-final languages the placement of the A and P on the same side of the verb allows for the A and P to be differentiated from each other in terms of their linear order alone. However, linear order is a less robust form of argument discrimination than placement on opposite sides of the verb since it relies on the overt presence of the A and P and the absence of other clausal constituents which could interfere in distinguishing the A and the P from each other. Case marking thus ensures that the A and P are clearly identified. As for the considerably higher incidence of case marking in verb-final as opposed to verb-initial languages, this is to a large extent attributable to verb position. Given that the verb's arguments are largely predictable from the semantics of the verb, the placement of the verb in

initial position provides important clues about the nature of the A and P and thus facilitates the identification of the two. This reduces the need for case marking. In verb-final languages, by contrast, since the A and P occur before the verb, relying on the verb to differentiate the A and P from each other would delay the task of identification. Case marking avoids such a delay by allowing the A and P to be distinguished from each other before the verb is reached.

A somewhat more sophisticated version of the above account of the relationship between case marking and basic clausal order has been recently elaborated by Hawkins (2004) within the context of his processing model of grammatical structure. Taking as his point of departure the assumption that grammars have conventionalized structures in proportion to their degree of preference in performance, Hawkins posits several efficiency principles, which he sees as facilitating on-line processing. The one most relevant to the current discussion is Maximize On-line Processing (MaOP) which defines a preference for the earliest possible correct recognition of assignments of properties to forms. The MaOP predicts that correct recognition can be achieved earliest if morphosyntactic marking facilitating recognition and precluding misassignments and unassignments is skewed to the left of a clause. The positioning of morphosyntactic marking on the left-side of the clause translates into the presence of case marking on arguments when they occur before the verb, and the presence of agreement marking on the verb when they occur after the verb. Although both forms of morphosyntactic encoding, case marking, and agreement marking, are considered to be compatible with all word order types, verb-final languages are predicted as favouring case marking over agreement marking, verb-initial languages as favouring agreement marking over case marking.² Verb-medial languages in turn are seen to disfavour either form of morphosyntactic encoding by virtue of the disambiguating function of the verb position. Nonetheless, Hawkins (2004: 245) argues that the overall level of case marking should be lower than that of agreement marking since agreement of the verb with an argument which follows it is in line with the MaOP, while agreement with the preverbal A in so-called pro-drop languages satisfies another efficiency principle, namely form minimization.

The relationship between word order type and the other two forms of morphosyntactic encoding outlined above is actually formulated by Hawkins not in terms of case marking and agreement marking per se but rather with reference to what he calls rich case marking and rich agreement marking. The notion of rich case marking does not differ from what is typically understood by the term case marking as applied to lexical NPs in transitive clauses, that is, it covers the presence of affixal or adpositional marking on the A or P or both which enables the two to be distinguished from each other. Rich agreement marking is agreement by affix or

² That agreement in verb-initial languages carries processing advantages is widely accepted. See, for example, Nichols (1992: 108) or Siewierska and Bakker (1996).

Table 19.2. Distribution of rich case and agreement over word order types

	Rich Case		Rich Agreement	
	Dryer N=502	S&B N=417	Dryer N=582	S&B N=417
V-final	72% (181/253)	71% (143/202)	49% (140/283)	51% (104/202)
V-medial	14% (26/190)	21% (32/150)	44% (94/213)	54% (81/150)
V-initial	47% (28/59)	42% (27/65)	56% (48/86)	69% (45/65)

clitic with both the A and P rather than with just one or the other.³ Thus verb-final languages are predicted to favour rich case marking over rich agreement marking, and verb-initial languages as favouring rich agreement over rich case with verb-medial languages exhibiting a weaker preference for rich agreement over rich case. In support of the predictions of the MaOP Hawkins cites data from the previously mentioned sample in Dryer (2002). These data together with ours are presented in Table 19.2.⁴

We see that in both samples the relevant predictions made by the MaOP are borne out. In verb-final languages rich case marking is more common than rich agreement marking (72% vs. 49% in Dryer's sample and 71% vs. 51% in ours) and in verb-initial languages rich agreement marking is more common than rich case marking (56% vs. 47% in Dryer's sample and 69% vs. 42% in ours). Further, in verb-medial languages rich agreement clearly prevails over rich case marking (44% vs. 14% in Dryer's sample and 54% vs. 21% in ours). It is important to note though that the distribution of rich agreement relative to word order type is much more uniform than that of rich case marking. Particularly telling is the close similarity in the levels of rich agreement marking in verb-medial and verb-final languages in both samples. Since only agreement with arguments that follow the verb as opposed to those that precede it is in line with the MaOP, one would expect verb-medial languages to evince a higher level of rich agreement than verb-final ones. Yet as the

³ Strictly speaking the agreement in question should be grammatical rather than anaphoric in the sense of Bresnan and Mchombo (1986) since only the former co-occurs with lexical NPs. Hawkins does not, however, discuss the issue and the data he cites clearly embrace both types of agreement markers. Therefore our comparative data in Table 19.2 also refer to both types of agreement. In section 19.4, however, we will restrict ourselves to grammatical agreement only.

⁴ It is important to note that Hawkins frames his predictions in regard to the distribution of case and agreement in relative not absolute terms. Furthermore, it should be noted that, although Nichols (1992) classifies several languages as having both head and dependent marking of all three arguments, in her classification not all of these markers need be overt. When we look at the number of head and dependent marking points assigned to the languages in her Appendix Two, it turns out that if a language has agreement affixes for the A, R, and T, then at least one of the corresponding lexical NPs bears no overt marker of case, as in Basque for example. And if all the lexical NPs bear overt case marking, then there are restrictions on the number of non-zero agreement markers on the verb, as in Georgian.

data in Table 19.2 reveal, this is only marginally so in our sample while in Dryer's quite the opposite obtains.

The distribution of case and agreement marking relative to word order type depicted in Table 19.2 tells us little about how the two forms of morphosyntactic encoding interact with each other *within* languages as opposed to *across* languages. Hawkins' dichotomizing approach with respect to the parsing advantages of case or agreement marking depending on word order type suggests that there should be a considerable complementarity in the distribution of these two types of marking within languages. On the other hand, if the parsing advantages of agreement are not as great as those of case marking (recall that agreement can disambiguate the A from the P only when the two differ in person, number, or gender) one may expect some overlap between the two rather than mutual exclusion particularly in verb-initial and verb-medial languages. Let us therefore take a closer look at the patterns of distribution of case and agreement marking within languages.

19.4 THE LANGUAGE-INTERNAL DISTRIBUTION OF CASE MARKING AND AGREEMENT MARKING

As is well known, case marking of arguments is overall considerably less common cross-linguistically than agreement marking. Moreover, case marking is more often found in languages that also display agreement marking than in languages in which it is the only means of morphological argument encoding. In our sample, of the four logically possible combinations of the occurrence of case and agreement marking of the arguments in transitive clauses, the most common cross-linguistically is agreement alone (44%) followed by case and agreement (37%), then case alone (10%), and finally neither (8%). Thus, there is a considerable amount of complementarity in the distribution of case and agreement marking. The degree of overlap is substantial enough to warrant closer scrutiny. Let us therefore take a look at which arguments are actually overtly marked by case and which by agreement.

As discussed in section 19.2, in transitive clauses case may be overtly marked on the A or on the P or on both. The differentiation of the A from the P can be achieved by overt case marking of either of the two only. Indeed, the overt marking of both is less common than the overt marking of just the A or of just the P. Of the 213 languages with case marking in transitive clauses in our sample, only 41 (19%) exhibit overt case marking of both the A and P. In contrast to case marking, agreement with both the A and the P is cross-linguistically more common

than agreement with either the A or the P. Of the 316 languages in the sample which display grammatical agreement marking 182 (58%) manifest agreement with both the A and P. Furthermore, when only one argument displays agreement it is overwhelmingly the A (131; 41%) as opposed to the P (6; 2%) which does so. In the light of the above, any overlap in overt marking via case and agreement is more likely to involve the A than the P. And indeed, in our sample the degree of overlap in overt case and grammatical agreement marking of the A is 66% (81 out of 123 languages with case marking for the A) while of the P it is only 32% (42 out of 131).

In ditransitive clauses case marking favours the R over the T, with adpositional marking of the R being somewhat more common than affixal marking. The overt case marking of both the R and T occurs more frequently than of the two arguments of transitive clauses.⁵ Agreement marking also favours the R over the T. Further, unlike in transitive clauses, agreement with both the R and T is strongly disfavoured over agreement with either the R or the T (Gensler 2002; Siewierska 2003; Haspelmath 2005b). Given that the R more often than the T exhibits agreement, it is the R which is the more likely of the two to exhibit overlap in overt case and agreement marking. Among the languages in our sample, overt marking of the R via case and agreement obtains in 7% (30/419) of the languages. Thus, double marking of the R is even less common than double marking of the P. In sum, the likelihood of an argument exhibiting both overt agreement and case marking conforms to the hierarchy in (7), with overlap in marking declining as we proceed from left to right.

(6) $A > P > R$

Since agreement is a property of arguments, what the hierarchy in (7) essentially reflects is the increasing sensitivity or dependence of agreement on the presence of overt case marking. The further down the argument prominence hierarchy we go, the more likely agreement is to be optional rather than obligatory. By the same token, the greater the sensitivity of agreement marking to the presence of overt case marking the less the likelihood that the two forms of marking will overlap. Agreement marking with the A is typically obligatory. It is very rarely conditioned by the presence of case marking alone. Virtually all instances of agreement with the A tied to case marking that we are aware of turn out on closer inspection to be either lexically determined (i.e. occur with verbs requiring experiencers rather than agents) or to involve tense or aspectual distinctions. For example, in Hindi/Urdu and various other related languages (see Klaiman 1987) the A evinces agreement in the imperfective when it bears no overt case marking (7a), but in the perfective where it bears the ergative case (7b), the agreement is with the P. (*RooTii* 'bread' has feminine gender.)

⁵ The relevant figures for languages in which both the A and P markers are grammatical as opposed to anaphoric in our sample are Vf = 41%, Vm = 33%, and Vi = 46%.

- (7) Hindi (Comrie 1984: 858)
- a. *laRiyaa rooTtii khaa-tii hai*
 girls bread eat-IMPF.F.PL be.PRES.3PL
 'The girls eat bread.'
- b. *laRiyaa=ne rooTtii khaa-ii*
 girls=ERG bread eat-PRF.F.SG
 'The girls ate bread.'
- c. *laRiyaa=ne rooTtii=koo khaa-yaa*
 girls=ERG bread=ACC eat-PRF.M.SG
 'The girls ate bread.'

In contrast to agreement with the A, agreement with the P is frequently not obligatory and more often at least partially conditioned by case marking. Moreover, case-conditioned variation in agreement with the P is generally associated not with tense or aspect but with the referential properties of the P. This can be observed also in Hindi/Urdu. As a comparison of (7b) with (7c) shows, Hindi/Urdu displays P agreement in the perfective but only when the P is not marked by the case clitic *koo*. When *koo* occurs, as in (7c), there is no agreement with either the P or the A. The verb displays only default masculine singular marking. The marker *koo*, however, is not just a case marker but also a marker of specificity. Recall from section 19.2 that agreement marking like case marking may fulfil an indexing function, with indexing features such as definiteness, specificity, humanness, or animacy. It may therefore be argued that the failure of agreement marking to occur in the presence of *koo* is due to matters of economy. More specifically, if neither case nor agreement is obligatory and thus either may potentially be used to index the properties of referents, it is uneconomical to signal the same property of a referent twice, once by case and once by agreement. That agreement should give way to case, rather than vice versa, may in turn be attributed to the fact that referential features such as specificity, as compared to inherent ones, are essentially properties of lexical arguments and as such are better marked on the arguments themselves rather than on the verb. Turning to the R, agreement with the R is considerably more frequently conditioned by case marking than agreement with either the A or the P. The case marking in question, however, tends to be adpositional rather than affixal. The presence of agreement with the R is not tied to differences in tense/aspect or referential distinctions. Rather what is generally at issue here is the argument status of the R. Adpositionally marked Rs are lower on the argument prominence hierarchy than those lacking case marking. And it is only the latter which tend to display agreement marking, as illustrated in (8) from Southern Tiwa. Note that (8b) manifests agreement marking with both the T and R.

- (8) Southern Tiwa (Rosen 1990: 674)
- a. *bi-musa-wia-ban ùide áy*
 1SG.3PL-cat-give-PAST child to
 'I gave the cats to the child.'

- b. *Ūide tam-musa-wia-ban*
 child 1SG.3PL.3SG-cat-give-PAST
 ‘I gave the cats to the child.’

Adpositionally marked Rs only exceptionally exhibit agreement. When they do so it is mostly by means of a coreferential clitic rather than a verbal affix, as in Bulgarian or Spanish, for instance. An example of the even rarer phenomenon of agreement with an adpositionally marked recipient by means of affixal marking is presented in (9) from Burushaski.

- (9) Burushaski (Wilson 1996: 35)
jé-e dasin-mo r hán gitáap-an mu-chí-abayam
 I-ERG girl-OBL.F to one book-INDEF.ABS 3SG.F-give-1SG.PRES.PRF
 ‘I have given the girl a book.’

It must be pointed out though that in Burushaski agreement with the R (as opposed to the T) occurs only with four verbs.

Given that the degree of overt double marking of each of the verbal arguments is quite low, it comes as no surprise that overt case and agreement marking of both the A and P is quite exceptional. Only 19 (4%) languages in our sample display such double marking. Overt marking by case and agreement of each of the three arguments in a ditransitive clause does not seem to be attested.⁶

As for the distribution of overt case and agreement marking relative to word order type, recall from section 19.3 that the pattern of marking that is seen to be most advantageous for on-line processing is the case marking of preverbal arguments and the agreement marking of postverbal ones. Among the languages in our sample, the percentage of case-marking-only verb-final languages is higher than that of verb-initial and verb-medial ones (19% vs. 15% vs. 5%), and is statistically significant at the 0.5% level. And among the verb-initial languages, agreement-only ones are indeed more common than those manifesting both agreement and case marking or case marking alone (52% vs. 25% vs. 15%). But the frequency of agreement-only languages among the verb-initial ones is not much higher than among verb-medial ones (45%). Thus in all, while there are differences in the intra-language distribution of overt case and agreement marking relative to word order type, they are not as extensive as might be expected. This is to a large extent attributable to the high frequency of agreement marking in all word order types, which in turn is a reflection of its referent tracking function rather than its argument discriminating one.

⁶ Both the T and R may take affixal case marking or the T may be marked by a case affix, the R by an adposition.

19.5 FINAL REMARKS

In our discussion of the relationship between case marking and word order and case marking and agreement marking we have concentrated on the extent to which the three forms of encoding may complement each other and the extent to which they interact with each other. We have argued that at least for lexical NPs the discriminatory function of case marking is better rendered by word order than by agreement marking. This is reflected in the existence of a statistically significant correlation between case marking and basic word order type. Significantly, there is no comparable correlation between agreement marking and word order type. We have also shown that the likelihood of an argument displaying both overt case and agreement marking declines as we progress down the argument prominence hierarchy and attributed this distribution to the indexing properties of case marking which are more strongly in evidence in relation to Ps and Rs than As. Finally we have documented that, despite assumptions to the contrary, there are only very weak patterns with respect to the intra-language distribution of case and agreement marking relative to word order type.

An aspect of the interaction between case, agreement, and word order which we did not explore is the association between the presence of the two morphological forms of encoding and word order flexibility. The basic insight underlying this association is that if the A is morphologically distinguished from the P by case and/or agreement marking, word order is 'freed' from performing this function and can thus be used for other communicative ends. While the cross-linguistic studies of Steele (1978) and subsequently Siewierska (1998) have lent some support to the above, especially to the lack of word order flexibility arising from the absence of case and agreement marking, the lack of consensus on which word order variants should be taken into account in determining word order flexibility considerably reduces the efficacy of any concise discussion of the issue. A comparison of the effects on word order flexibility of the presence of case marking with that of the presence of agreement marking therefore deserves more space than can be given to it here.