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Paul McFetridge, Editor

Jumah Al-Bayaty

Dwight Gardiner

Donna B. Gerdts

Nancy A. Hedberg

Paul McFetridge

Zita McRobbie

Deborah Osborne

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Outline of a Relational Theory of Case

Donna B. Gerdts
SImon Fraser University

1. Foundations.[1]

Research on the morphosyntax of languages of the world has shown that most languages use some morphosyntactic means (e.g. case, agreement, or word order) to identify the grammatical relations (subject, object, etc.) of the nominals in a clause, and that languages vary widely as to which morphosyntactic means are used (see Gerdts 1990a). For example, nominal case marking occurs in some languages (e.g. Icelandic, Quechua, Russian) but not others (e.g. Halkomelem Salish, Ilokano, Mandarin); subject-verb agreement exists in some languages (Spanish, Swahili, Turkish) but not others (Korean, Japanese, Mandarin).

My ultimate goal is to develop a theory of morphosyntax that treats each of the devices employed by languages, and, furthermore, states principles for the distribution and interaction of these devices. This research program should not only lead to a better understanding of the role these devices play in the grammar of a language, but also provide a typology of the morphosyntactic systems found in natural languages.

This paper summarizes some preliminary research on one piece of the morphosyntactic puzzle. I present here a cross-linguistically motivated theory of morphologically-realized case. Moreover, I draw parallels between the elements of a case theory and agreement, thus providing independent support for the theoretical constructs elaborated here.

1.1. Case Theory.

Traditional grammarians have recognized the role that case (e.g. nominative, accusative, dative) plays in many language of the world. Analyses of languages like German, Greek, Latin, and Russian have shown the correlation of morphological case with the grammatical relation that the nominal bears in the clauses. Case has figured prominently in the development of current syntactic theory as well.

One major framework, Government/Binding, takes this concept a step further, as Lasnik and Uriagereka (1988, p. 9) explain:

> Suppose we take the traditional view that NPs are assigned Case. In a language like Latin
> or German, Case has a clear morphological realization. But suppose this is just a superficial
> property. Suppose all languages are abstractly like Latin or German, differing only in low-
> level realization properties.

Starting from this assumption (that all languages have abstract case), GB develops the Case Filter (a universal principle for licensing nominals in morphosyntactic structure) and universal rules for the assignment of abstract case (see Chomsky 1981).

This line of research is paradoxical in two respects. First, the languages which have been central in developing Case Theory are ones that have little or no morphological case, e.g. English (Chomsky 1981), Italian (Belletti 1988, Belletti and Rizzi 1988) and Chinese (Huang 1982, Li 1985). Second, since the languages taken as a basis for GB Case Theory have little in the way of morphological case, other morphosyntactic means for licensing nominals are used, including agreement and fixed word order (cf. Gerdts 1990). Abstract case can be

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taken as a secondary phenomenon in such languages; thus GB posits case assignment rules like the following: AGR (informally, agreement) assigns NOM(inative) and V(erb) assigns ACC(usative) to an adjacent NP. However, languages with more robust case phenomena tend to have freer word order, and some even lack agreement. So, ironically, it is frequently more difficult to justify the rules of case assignment in languages where case is morphologically realized than those where it is not. We see then that, while the GB approach to case may be an interesting theory of licensing nominals, it has little to say about morphologically-realized case.

My approach to the development of a case theory avoids these pitfalls. First, languages that have richly instantiated morphological case are given first priority. Second, I take into consideration the importance of other licensing devices (word order and agreement) and thus place case in a larger context. Especially important to this program are languages lacking person/number agreement and having extremely free word order, as the case system in such languages is presumably free from interference from other morphosyntactic devices.

A side effect of this approach, however, is that rules treating case as an indirect phenomenon (e.g. AGR assigns NOM; V assigns ACC) will be impossible to invoke. It is, therefore, necessary to find an alternative basis for case assignment.

1.2 A Relational Theory of Case.

Another recently proposed case theory, Case in Tiers (Yip et al. 1987), uses a simple mechanism of associating hierarchically organized cases to linearly ordered noun phrases in a left-to-right fashion, mirroring autosegmental treatments of phonological phenomena. The authors, however, are quick to point out that:

> Free word-order languages, whether ergative or not, pose an obvious problem for the simplest form of this approach. It seems likely that association must be defined on grammatical (or thematic) relations in such languages, and indeed perhaps universally; but we leave this issue for further research. (p. 220)

My research on case, in fact, adopts this approach. It takes as its foundation Relational Grammar, a theory that uses grammatical relations as its principal organizing construct. After all, since one of the goals of the research is to separate the function of case from the function of other devices such as agreement and word order, some more abstract construct, such as grammatical relation, must serve in the formulation of case rules (and also, for that matter, in the formulating of rules for agreement and word order). In sum, a relationally-based case theory is justified from a metatheoretical perspective.

RG is an especially appropriate vehicle for a theory of morphosyntax since it has a richly developed set of grammatical relations, a clear view of levels of structure, and some proposed universal laws constraining possible structures. Furthermore, RG has an established protocol for identifying grammatical relations. Thus, evidence for the grammatical relation of a nominal can be provided independently of its case marking, thereby avoiding the circularity of argumentation so often present in discussions of case marking.

My methodology for collecting relevant data has been twofold: I have drawn on some of the available information on case in individual languages to document core and problematic examples of case assignment, and, more importantly, I develop an analysis of the case system of a test language—Korean—to serve as an exemplar of how the elements of a case theory interact. Korean meets the criteria set above, since it is a language which has a notoriously rich case system, an extremely free word order, and no person/number agreement. In addition, there is a rich literature on grammatical relations in Korean, which serves to establish independently the constructions under study.

In what follows, I present and exemplify the elements of a relational theory of case. Section 2 covers "primary " case, that is, case licensed by the semantic or grammatical relation of the nominal. I discuss two types of case, their distribution, and their interaction. Section 3 deals with two types of "secondary" case, where a nominal gets case indirectly via its relationship to a nominal that licenses primary case. Section 4 draws some parallels between a theory of case and one of agreement, showing that the same relationally-based concepts serve to organize both.

2. Primary Case.

I use the term Primary case to refer to case marking that appears on a nominal due to the grammatical or semantic relation borne by the nominal. This section discusses two types of primary case, non-standard case, case resolution, and case stacking.

2.1 Types of Case.

The Relational Theory of Case, like other syntactic approaches to case, including GB Case Theory and Case in Tiers, divides case marking phenemona (including affixal case and adpositional flags) into two types, referred to here as S-Case and I-Case. S-Case is grammatical case licensed in terms of final structure, while I-Case is selected on the basis of the semantic role of the nominal and licensed in initial structure.

Let's take Korean as an illustration of these two types of case. A partial list of case forms in Korean is given in (1).[2]

(1)		
	NOM	-i/-ka
	ACC	-ul/-lul
	DAT	-eykey (animates)
		-ey (inanimates)
	INSTR	-ulo/-lo
	COM	-kwa/-wa

I claim that in Korean NOM and ACC are S-Cases, respectively licensed by the final 1 and final 2 of a clause, while other cases are I-Case, as given in the partial rule for Korean case in (2).[3]

(2) Korean Case (partial):
   a. S-Case
       NOM is licensed by a final 1
       ACC is licensed by a final 2
   b. I-Case
       DAT is licensed by a Goal, Exp, Loc, Ben, Temp, Agent, etc.
       INSTR is licensed by an Instr, Path, etc.
       COM is licensed by a Com(itative).

We see the effect of rule (2) in a monostratal construction such as (3a), represented in the stratal chart in (3b).

(3) a. Yengswu-ka   Swuni-eykey sopho-lul   hangkongphyen-ulo   ponay-ss-ta.
        Y. -NOM   S. -DAT   parcel-ACC   air.mail   -INSTR   send-pst-ind
        "Youngsoo sent the parcel to Sooni by airmail."

     b. Yengswu   sopho   Swuni   hangkongphyen

            1   2   3   Instr

The first two nominals are assigned S-cases based on their final grammatical relations, while the last two nominals are assigned I-cases on the basis of their semantic roles (goal and instrumental respectively).

Several arguments can be made for distinguishing S-Case and I-Case in Korean. I-Case, for example, can co-occur with the topic marker, un/-nun, as (4) illustrates, but S-Case cannot (cf. 5).

(4) Swuni-eykey-un   nay-ka   i   chayk-ul   cwu-ess-ta.
     S.   -DAT -TOP   I -NOM   this   book-ACC   give-pst-ind
     "To Sooni, I gave this book."

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2. When pairs are given, the first appears after consonants and the second after vowels. Genitive -uy is not discussed here; see Gerdts and Youn (in prep).

3. Gerdts and Youn (in prep) discuss two other types of flagging—complex postpositions (e.g. ey uy-hay "by" and ey kwanhay "about") and topic/focus markers (e.g. -un/-nun).

(5) a. I   chayk-ul   (*-un)   nay-ka   Swuni-eykey   cwu-ess-ta.
        this   book -ACC -TOP   I -NOM   S.   -DAT   give-pst-ind

     b. I   chayk-un   nay-ka   Swuni-eykey   cwu-ess-ta.
        this   book -TOP I -NOM   S.   -DAT   give-pst-ind

     "This book, I gave to Sooni."

Assuming that S-Case and Topic marking have similar functions, that is, to link the nominal to surface structure, it is not surprising that they do not co-occur. I-Case, on the other hand, presents semantic information about a nominal which is not incompatible with Topic marking, so co-occurence is possible.

Also, S-Case appears outside of delimiters such as kkaci, mace, and cocha, while I-Case appears inside such delimiters, as (6) and (7) illustrate.

(6) a. Inswu $\left\{\begin{array}{l} -kkachi \\ -mace \\ -cocha \end{array}\right\}$ -ka   keki-ey   ka-ss-ta.

        I.   even   -NOM   there-DAT   go-pst-ind

     b. *Inswu -ka $\left\{\begin{array}{l} -kkachi \\ -mace \\ -cocha \end{array}\right\}$ keki-ey   ka-ss-ta.

        I.   -NOM   even   there-DAT   go-pst-ind

     "Even Insoo went there."

(7) a. *Chelswu -ka   cenche $\left\{\begin{array}{l} -kkachi \\ -mace \\ -cocha \end{array}\right\}$ -eykey senmwul-ul   cwu-ess-ta.

        C.   -NOM   ex-wife   even   -DAT   present -ACC   give-pst-ind

     b. Chelswu -ka   cenche -eykey $\left\{\begin{array}{l} -kkachi \\ -mace \\ -cocha \end{array}\right\}$ senmwul -ul   cwu-ess-ta.

        C.   -NOM   ex-wife -DAT   even   present -ACC   give-pst-ind

     "Chulsoo gave a present even to his ex-wife."

S-Case (and also Topic Marking) follows the entire NP, but I-Case sometimes appears before other semantic modifiers of the nominal. [4]

For the most part these differences follow from the difference in the relevant level of structure. In Korean, as in all languages, we see that the primary difference between S-Case and I-Case is semantic. Nominals appearing in a certain I-Case share some semantic gestalt. For example, DAT in Korean (like "to"/"at" in English) marks location/movement in time, space, or emotional/mental space. On the other hand, nominals with S-Case may sometimes have very different semantic roles, given that many languages have rules "creating" new subjects and objects. For example, in an active/passive pair in Korean, a nominal with the same semantic role (theme/patient) licenses ACC in (8a) but NOM in (8b):

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4. There are other differences between I-Case and S-Case. When another morphosyntactic device (e.g. word order) is used to identify the grammatical relation, S-Case is unnecessary. Floated quantifers can be marked with S-Case but not I-Case. When case stacks (see section 2.5), I-Case occurs before S-Case. Only S-case spreads (see section 3.1).

(8)   a. Ai-ka   chayk-ul   ilk-ess-ta.
            child-NOM   book -ACC   read-pst-ind
        "The child read the book."

        b. Chayk-i   ai-ey uyhayse   ilk-hi-ess-ta.
            book-NOM   child-by   read-PAS-pst-ind
        "The book was read by the child."

The Korean case rule in (2) accommodates this fact since <u>chayk</u> is a final 2 in (8a) but a final 1 in (8b).

2.2 Non-standard Case.

Given a set of case rules distinguishing S-Case and I-Case along the lines of (2), case marking in monoclausal sentences in Korean (and in fact in most languages) will be straightforward: subjects will be NOM, objects ACC, indirect objects DAT, etc. Case in multistratal clauses, however, may be more complicated. In some languages, e.g. Icelandic (Zaenen et al. 1985), Kashmiri (Altaha 1985), and Korean (Gerdts and Youn 1988), it is possible to have a nominal that is a subject but is nevertheless marked with non-standard case, that is, a case (e.g. ACC or DAT) usually associated with a non-subject relation. I claim that , in each instance of this phenomenon, the non-standard case is determined by the semantic relation that the nominal bears in the initial level of structure; non-nominative subjects (in languages where subjects are otherwise marked nominative) always involve advancement to subject of a nominal otherwise eligible to license I-Case.

Take for example Korean non-nominative subject constructions like (9)-(11):[5]

(9)   I   kongcang-ey   pwul-i   na-ss-ta.
        this   factory   -DAT   fire-NOM   break.out-pst-ind
        "Fire broke out in this factory."

(10)   I   theyleybi -ey   menci-ka   kki-et-ta.
        this   T.V.   -DAT   dust-NOM   collect-pst-ind
        "Dust collected on this T.V."

(11)   Chelswu -eykey   Swuni -ka   mopsi   kuli-wess-ta.
        C.   -DAT   S.   -NOM   badly   miss-pst-ind
        "Chulsoo missed Sooni badly."

Gerdts and Youn (1988, 1990) and Youn (1989) give several arguments that the DAT nominal is the final subject in (8) and (9) and that the NOM nominal is not. We propose that such clauses are initially unaccusative; the DAT nominal is an initial oblique and the NOM nominal is an initial 2. The DAT nominal advances oblique-to-2-to-1, placing the NOM nominal en chômage, as represented in the stratal chart for (9) in (12):

(12)   OBL   2
             2   CHO
             1   CHO
      kongcang   pwul

This analysis accounts for the final 1-hood of the DAT nominal and various properties of the NOM nominal, discussed further in section 3.1 below. Given the case rule in (2), DAT is properly licensed in (9) -(11); the final subject bears the semantic role of locative or experiencer and thus licenses the I-Case DAT.

This situation, where a final 1 advancee appears in a non-nominative case, is not unique to Korean. For example, Zaenen et al. (1985) discuss "Quirky Case" in Icelandic; when an initial 2 is assigned an idiosyncratic case like DAT in an active clause like (13a), this case also appears on the advancee in a passive like (13b).[6]

(13)   a. Ég   hjápaði   honum.
         I   helped   him (D)

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5.   See Kang (1986) for a GB discussion of these data.

b. Honum   var   hjápaði.
   him(D)   was   helped.

Furthermore, many languages have I-Case experiencers in Psych constructions, for example, Icelandic (14) (Zaenen, et al. 1985), and Italian (15) (Belletti and Rizzi 1988).

(14)   Henni   hefur   alltaf   þótt   Ólafur   leiðinlegur.
         her(D)   has   always   thought   Olaf(N)   boring(N)

         "She has always thought Olaf boring."

(15)   Gli   piacciono   molte   sinfonie   di   Mozart.
         to-him · like   many   symphonies   of   M.

         "He likes many of Mozart's symphonies."

Under an Advancement analysis, these nominals are final 1 advancees. Their case is assigned, however, on the basis of their semantic role.

2.3 A Typology of Languages.

The elements of a relational theory of case discussed below hinge on the S-Case/I-Case dichotomy. Differentiating cases into these two types will be an essential part of the grammar of a language. The behavior of case in advancement constructions will be an important diagnostic for S-Case vs. I-Case. For example, in Korean we find that DAT subjects but not ACC subjects are possible (cf. (9) vs. (8)). Thus, passives involving patient subjects and unaccusatives in Korean will have NOM subjects. Icelandic shows the same effect; DAT subjects, as in (13) and (14) are possible, but an ACC patient/theme in an active clause (16a) corresponds to a NOM marked one in a passive (16b).

(16)   a. Lögreglan   tók   Siggu   fasta.
        the-police   took   Sigga(A)   fast(A)

        "The police arrested Sigga."

    b. Sigga   var   tekin   föst   af   lögreglunni.
       Sigga(N)   was   taken   fast(N)   by   the-police(D)

       "Sigga was arrested by the police."

Thus, NOM and ACC are S-Cases in these languages, licensed in final structure, while DAT, etc. are I-Cases.

Kashmiri, as discussed by Altaha (1985), shows a slightly differently pattern. ACC (aka DAT) case in Kashmiri marks all indirect objects but also direct objects in the present tense. Furthermore, ACC is an I-Case in Kashmiri. Thus, not only do the psych constructions in (17) have ACC subjects, but passives (18) and unaccusative clauses (19) in the present tense do as well.

(17)   badšh-əs   če   badšahbay-e   xuškaram
        king-ACC   aux(3.f.sg)   queen-ACC   liking

        "The king likes the queen."

(18)   lərk-əs   ču   yiwan   parnawne   maštərni   sidi   zeryi
        boy-ACC   aux(3.m.sg)   coming   teach-PAS   teacher-OBL   of   by

        "The boy is being taught by the teacher."

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6.   Such case is called "quirky" because it is apparently lexicalized. This greatly complicates the rules of I-Case assignment. For example, the list for DAT in Icelandic would include patient/themes of "help". In a transitive clause, this final 2 nominal would also qualify for the S-Case ACC. However, see section 2.4. Note that Korean and Kashmiri differ from Icelandic in that non-standard case is a regular and not idiosyncratic feature in these languages.

(19)   dɔktɔr-əs   ču   šamis   pond trawaın
        doctor-ACC   aux(3.ms.sg evening   sneezing
        "The doctor sneezes in the evening."

Taking NOM, ACC, DAT, etc. to be hierarchically defined cases, we can derive the typology in (20).[7]

(20)   NOM   ACC   DAT   other

        A   S   S   S   S   Ø

        B   S   S   S   I   Georgian, (English)

        C   S   S   I   I   Icelandic, Korean, (Italian)

        D   S   —— I ——   I   Kashmiri

        E   S   I   I   I   ??

        F   I   I   I   I   Ø

Icelandic, Korean, and Italian (at least for pronominal case) are type C languages: NOM/ACC are S-Cases, while DAT and other obliques are I-Cases. Kashmiri (at least in the present tense) is type D; a case normally used to represent objects (in the present tense) tests to be an I-Case. English (insofar as it has case), may be a type B language. As pointed out below, passives with recipient subjects omit "to", but passives with locative subjects require "in" to be restructured into the predicate. Georgian may also represent a type B language.

As discussed in Harris (1981), a variety of nominals bearing diverse initial relations (including agents, causees, and benefactives) can be final 3s in Georgian. She argues, for example, that the benefactive in (21b) is advanced to 3.

(21) · a. gelam   šeķera   axal   šeuķera   merabistvis
          Gela -ERGhe-sewed-it-II-1   new   trousers   Merab   -for

      b. gelam   šeuķera   merabs   axali   šarvali
         Gela-ERGhe-sewed-him-it-II-1   Merab-DAT   new   trousers
         "Gela made new trousers for Merab."

That Merab is DAT would follow from the claim that DAT case is licensed by final 3s. Such evidence suggests that Georgian is a type B language.

I have found no languages of type A or F to date. Such languages, which would make no use whatsoever of the S-Case/I-Case distinction, perhaps do not exist.

2.4 Case Resolution Rules.

The previous sections have shown non-standard case phenomena in several languages. However, Icelandic, Italian, and Kashmiri differ from Korean in a crucial respect; NOM is not possible on the subject nominal in (13b), (14), (15), (17), (18) or (19), even though a final subject would otherwise license NOM in these languages. To account for this fact, I invoke "case resolution" rules. Given case rules like those in (2), a nominal that heads more than one arc (e.g. an initial arc that is distinct from a final arc) may have the ability to license more than one case. In some languages, however, only one case is allowed to be phonologically realized; language specific resolution rules like (22a) and (22b) stipulate which case appears in these instances.[8]

7. For the sake of brevity, I do not discuss ergative and absolutive case here. A preliminary hypothesis is that ergative is an I-Case in some languages and an S-Case in others, while absolutive is an S-Case.

8. Zaenen et al. (1985) suggest that case assigned by a language specific rule (such as "quirky" DAT) takes priority over case assigned by universal rules (e.g. NOM). It is not clear how this principle could be extended to the Korean facts.

(22)   Case Resolution:
        a. I-Case takes priority over S-Case.
        b. S-Case takes priority over I-Case.

In Icelandic, Italian, and Kashmiri we see that (22a) is relevant and thus the advancee is marked DAT, not NOM. In other languages, however, (22b) may be relevant. For example, in English Dative constructions like (23a), the I-Case marker "to" flags the indirect object; in the passive (23b), the indirect object that is advanced to final subject must be NOM, as (23c) and (23d) show.

(23)   a. John gave the book to me.
        b. I was given the book.
        c. *To me was given the book.
        d. *I/me was given the book to.

However, Korean (cf. (24)-(25)) and Japanese (cf. (26)) show another pattern.

(24)   I   kongcang -ey/-i   pwul-i   na-ss-ta.
        this   factory   -DAT/-NOM   fire-NOM   break.out-pst-ind
        "Fire broke out in this factory."

(25)   Chelswu-eykey/-ka   Swuni -ka   mopsi   kuli-wess-ta.
        C.   -DAT /-NOM   S.   -NOM   badly   miss-pst-ind
        "Chulsoo missed Sooni badly."

(26)   John   ni / ga   nihongo   ga   wakaranai.
        J.   DAT /NOM   Japanese   NOM   understand-not
                   ni
                   DAT
        "John does not understand Japanese."

The locative/experiencer licenses either NOM or DAT in these examples. Gerdts and Youn (1988, 1990) point out that there is no apparent difference in the syntax of these clauses no matter which case appears. Thus, all are assigned the structure in (12). Actually, a case rule like (2) accounts for this alternation; both NOM and DAT are properly licensed—NOM at final level and DAT at initial level. What is different about Korean and Japanese from Icelandic, Italian, Kashmiri, and English is that the former languages lack a resolution rule; thus neither I-Case or S-Case will take priority in advancement clauses like (24)-(26).

2.4 Case Stacking.

Under most views of case only <u>one</u> case can be assigned to a nominal.[9] The Korean data, however, show that such a restriction is too strong. I claim instead that Korean needs the following restriction:

(27)   A nominal can license at most one S-Case.

The restriction in (27) prohibits the co-occurrence of the S-Cases NOM and ACC, hence the impossibility of the combination of cases in (28) and (29).

(28)   *haksayng-lul-i/ -i-lul
        student-ACC-NOM/-NOM-ACC

(29)   Chelswu -(*lul)-ka   cha-ey   chi-i-et-ta.
        C.   -ACC-NOM   car-DAT   hit-ps-pst-ind
        "Chulsoo was hit by a car."

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9.   Lefebvre and Muysken (1982) and Belletti (1988) are two notable exceptions to this.

Of course, given that NOM and ACC case are both licensed at final level, and that a nominal cannot be simultaneously a final 1 and a final 2 of the same clause, no situation arises where the stacking of NOM and ACC would be expected.

However, (27) allows two types of co-occurrence of cases—referred to here as Case Stacking (see also Kim 1970 and Sung 1982) First, more than one I-Case may appear on a nominal, as (30) and (31) show.

(30)   Chelswu -ka   Yengswu -eykey-lo   kong-ul   tenci-et-ta.
             C.   -NOM   Y.   -DAT-INSTR   ball-ACC   throw-pst-ind

            "Chulsoo threw the ball to(ward) Youngsoo."

(31)   Chelswu -ka   Yengswu-eykey-lo-wa   na-eykey-lo   kong-ul   tenci-et-ta.
             C.   -NOM Y.   -DAT-INSTR-COM I-DAT-INSTR ball-ACC throw-pst-ind

            "Chulsoo threw the ball to(ward) Youngsoo and me."

We see that a nominal can have multiple semantic roles like goal, path, and comitative and can be multiply case marked accordingly.

Second, some speakers of Korean allow both I-Case and S-Case on a nominal. For example, DAT co-occurs with ACC in 3-2 and OBL-2 advancement constructions, as in (32) and (33) respectively.

(32)   a. Chelswu -ka   Swuni -eykey-lul   chayk-ul   cwu-et-ta.
            C.   -NOM S.   -DAT-ACC   book-ACC   give-pst-ind

           "Chulsoo gave Sooni the book."

    b.   1   2   3

          1   CHO   2

       Chelswu   chayk   Swuni

(33)   a. Kim-sensayngnim-i   Seul-ey-lul   ka-si-et-ta.
          K. -teacher.HON-NOM   Seoul-DAT-ACC   go-SH-pst-ind
          "Prof. Kim went to Seoul."

    b.   1   OBL
          1   2
      Kim-sensayngnim   Seoul

For these speakers of Korean, DAT and NOM can also co-occur in OBL-2-1 advancement constructions as in (34) and (35); case stacking occurs on the locative subject and the experiencer subject respectively.

(34)   I   kongcang -ey-ka   pwul-i   na-ss-ta.
          this   factory   -DAT-NOM   fire-NOM   break.out-pst-ind
          "Fire broke out in this factory."

(35)   Chelswu -eykey-ka   Swuni -ka   mopsi   kuli-wess-ta.
          C.   -DAT -NOM   S.   -NOM   badly   miss-pst-ind
          "Chulsoo missed Sooni badly."

The case rule in (2), the lack of a case resolution rule, and the restriction in (27) account for case in (30)-(35). The I-Case DAT is properly licensed since each of the nominals is an initial OBL with an appropriate semantic role. The S-Case ACC or NOM is also licensed since the nominal is a final 2 or 1. The nominals in (30)-(35)) have only one S-Case and thus satisfy (27).

Furthermore, a principle of linearization of grammatical elements, the <u>Satellite Principle</u> (revised from Gerdts (1988b)), given informally in (36), assures that the Cases in (30)-(35)) appear in that order.[10,11]

(36)   If an element A is licensed in an earlier stratum than element B, then A appears inside B.

Since I-Case is determined in the initial stratum while S-Case is determined in the final stratum, (36) requires I-Case to precede S-Case. This predication is correct, as seen by comparing (35) to *(37).

(37)   *Haksayng-tul-i-eykey   ton-i   philyoha-ta.
          student-pl-NOM-DAT   money-NOM   need-ind
          "Students need money."

The table in (38) from (M-S Kim 1970) summarizes the allowable combinations of case in Korean.

(38)   a. Double Compound Case:

	Sub. ka	Gen. uy	Acc. lul	Instr. lo	Dat. key	Loc. ey	Abl. se	Com. wa	Voc. ya	Pred. Ø
ka										
uy										
lul										
lo	loka	louy	lolul				lose	lowa		loØ
key	keyka	keyuy	keylul	keylo			keyse	keywa		keyØ
ey	eyka	eyuy	eylul	eylo	eykey		eyse	eywa		eyØ
se	seka	seuy	selul	selo				sewa		seØ
wa	waka	wauy	walul	walo						
ya										
Ø										

     b. Triple Compound Case.

       eykeyka, eyseka, eykeyul, eyseuy, eykeylul, eyselul, eykeylo, eyselo, eykeywa, eysewa, ey-
       loka, eylouy, eylolul, eylowa, etc.

     c. Quadruple Compound Case.

       eykeyloka, eykeylouy, eykeylolul, eykeylowa, etc.

Although I have no explanation for the relative order of I-Cases, other features of the table in (38) are accounted for in the above discussion. The lack of co-occurence of S-Cases follows from the restriction in (27) , and the appearance of S-Case after I-Case but not vice versa follows from the Satellite Principle (36).

2.5.1 Further Types of Case Stacking.

The Korean data in the previous section illustrate two types of case stacking in monoclausal structures. First, I-Case can be stacked. This arises when a nominal bears more than one semantic relation (e.g. goal and path). Many languages, including Japanese, Russian, and English (e.g. "into", "toward") have compound forms in such contexts. The second type of case stacking, involving an I-Case and an S-Case, appears to be much rarer. In Korean, it arises when an advancee is marked for an earlier and a later relation. No other examples of monoclausal case stacking of this latter type have been brought to my attention.

However, Lefebvre and Muysken (1982) (see also Cole and Hermon 1981) have discussed an instance of case stacking in Quechua in a multiclausal context. In raising to object constructions like (39b), the ascendee is marked for its complement relation (subjects of some embedded clauses are GEN), as well as its matrix relation (ACC).

(39)   a. mariyacha   muna-n   [xwancha-q   platanu   ranti-na-n-ta]
         Maria   want 3   Juan   GEN   banana   buy SUB 3 AC
         "Maria wants Juan to buy bananas."

---

10. Originally formulated to account for ordering of verbal morphology, the Satellite Principle as stated here also covers nominal morphology. Although the Satellite Principle my be systematically violated in some languages, it is necessary for Korean, as Gerdts and Youn (in prep) show.

    Formal definitions of the terms "grammatical element", "earlier" and "inside" are necessary to make this principle precise.

11. The Mirror Principle (Baker 1985) is the GB equivalent. However, Baker does not discuss nominal morphology.

b. mariyacha   xwancha-q-ta$_i$ muna-n [e$_i$ platanu   ranti-na-n-ta]
Maria   Juan GEN AC   want 3   banana   buy SUB 3 AC
"Maria wants Juan to buy bananas."

Although nominals marked with a variety of cases can "raise", case stacking can only be observed in examples like (39b). As the chart in (40) shows, only the GEN and ACC stack. NOM is otherwise Ø, ACC does not double, and OBL cases rather than ACC appear on raised obliques, so the domain of case stacking in Quechua is quite limited.

(40)
	embedded	raised	
nominative	Ø	-ta	nominative + objective
genitive	-q(pa)	-q(pa)-ta	genitive + objective
objective	-ta/Ø	-ta	objective
oblique	obl.	obl.	oblique

A third type of case stacking involves case agreement (see section 3.2). The Dyirbal data from Dixon (1969) in (41) illustrate this:

(41)   njalŋga   guda-ŋgu   [yaɽa-ŋn-ndjin-du]   badja-n
        child NO   dog-ERG   man-REL-ERG-ERG   bit-PAST
        "The man's dog bit the child."

The nominal yaɽa is marked for case twice. The first ERG suffix arises because it is a possessor; the second ERG suffix arises through agreement with the head guda, which licenses ERG since it is the subject of a transitive clause.

We see, then, that although case stacking is perhaps a marginal phenomenon cross-linguistically, it arises monoclausally and multiclausally in several situations: where a nominal has more than one semantic role, where an advancee/ascendee is marked for cases at different levels of structure, and where a nominal licenses a case of its own but also has a second case via agreement.

2.5.2 Case Stacking Effects.

It is probably not surprising that so few instances of case stacking have been attested. Four factors must co-occur before case stacking is possible in a language: (i) the language must have morphologically realized I-Case/S-Case, (ii) a semantic/syntactic situation (as discussed in the previous section) must arise so that more than one case could be licensed, (iii) the language must ordinarily lack a case resolution rule, and (iv) the morphological expression of compound case must be possible. Albeit rare, case stacking should nonetheless not be assumed to be impossibe as it is, for example, by Chomsky (1981). Support for this claim comes from a variety of phenomena that can be accounted for under the assumption that some languages show case stacking "effects" even if morphological compounding of case is blocked.

First, one view of restructured prepositions and applicative markers is that they should be associated with the I-Case marking of an advancee. Locative passives like (42a) show that although I-case cannot appear on the advancee (42b), its semantic content must be recoverable (42c).

(42)   a. This bed was slept in by George Washington.
        b. *In this bed was slept by George Washington.
        c. *This bed was slept by George Washington.

Restructuring the preposition onto the predicate accommodates the I-Case without expressing it on the final subject nominal. Some applicative suffixes, for example the locative applicatives in Ilokano (Gerdts in prep.a) as in (43b) and in Kinyarwanda (Kimenyi 1978) as in (44b)), may be the results of a similar strategy.

(43)   a. P-in-akbo   ni Juan ti   danum   yan-ti   ubing.
           -pst-pour   det J.   det water   on -det   child

        b. P-in-akbu-an   ni Juan   ti ubing   i -ti   danum.
           -pst-pour-on   det J.   det child   obl-det   water
        "John poured water on the child."

(44)   a. Úmwáana   y-a-taa-ye   igitabo   <u>mú</u>   máazi.
           child   he-put-throw-asp   book   in   water

        b. Úmwáana   y-a-taa-ye-mo   máazi   igitabo.
           child   he-put-throw-asp-in   water   book

        "The child has thrown the book into the water."

A relational analysis of (43b) and (44b) involves OBL-to-object advancement. The final object nominal in both Ilokano and Kinyarwanda must be caseless. Presenting the I-Case on the predicate allows for its recoverability without violating the object's caselessness.

The above examples show covert I-Case marking. Covert S-Case marking is sometimes evidenced as well. For example, sometimes we see that a nominal determines S-Case agreement (see section 3.2), even when it is not overtly marked for that case itself. Arabic predicate nominals [cf. (45)] show case agreement, as discussed by Mohammad (1988); <u>alwalad</u> is a final 1 and thus licenses NOM case on itself and the agreeing predicate nominal.

45)   al-walad-u   mariid-un
        the-boy NOM   sick-NOM
        "The boy is sick."

Example (46) seems paradoxical, however, since the subject of the embedded clause and the predicate nominal referring to it appear in different S-Cases (ACC and NOM) respectively.

(46)   a. qultu   ?inna-ka   mariid-un
           said 1s   that-you(Acc)   sick-NOM

        "I said that you are sick."

        b. [qultu   [{?inna (-ka } -Ø   mariid -un)]
                                you(ACC)-NOM   -NOM

Covert case stacking provides an explanation for this disparity. The complement subject licenses two S-Cases: ACC in the domain of the complementizer (like <u>for</u> in English) and NOM in the domain of the embedded clause. Only the former is morphologically realized. The relevant domain for the predicate nominal is the embedded clause (not the complementizer phrase), as represented in (46b). The subject nevertheless licenses NOM case on the agreeing predicate nominal. In contrast, when the (small clause) predicate nominal is linked to a "real" object, as in (47), it appears with ACC case agreement.

(47)   hasibtu   l-walad-a   mariid-an
        thought 1s   the-boy-ACC   sick-ACC
        "I thought the boy is sick."

Thus, the embedded clause subject in (46) shows the indirect effect of having licensing NOM case, even though it appears in ACC.

Finally, copy pronouns may in part arise as a circumvention of case stacking. For example, in biclausal structures involving raising or relativization where a nominal bears two final relations (one in each clause), one Case might appear on the nominal, while a second Case might appear on the copy pronoun. We see this in Arabic (Salish 1985):

(48)   tabayyanat-i l-bint-u   [?anna   l-walad-a   zarra-ha:]
        seem-V   the-girl-NOM   that   the-boy-ACC   visited-her(ACC)
        "The girl seems to have been visited by the boy."

        (literally: "The girl seems that the boy visited her.")

Salih (1985) argues for object-to-subject raising for sentences like (48). The ascendee licenses NOM in the matrix clause; its pronoun copy licenses ACC in the embedded clause.

In summary, although overt case stacking may be quite rare, many "effects" of case stacking are nevertheless discernible in various languages. Thus, a theory of case must allow for the possibility of case stacking. The

Korean data discussed above, insofar as they are the only data known to me that involve overt case stacking in a monoclausal domain, are crucial in establishing this position.

3. Secondary Case.

The previous section discusses primary case, which is licensed by the semantic (I-Case) or syntactic (S-Case) properties of the nominal. Other nominals (and non-nominals, for that matter) may receive secondary case—indirectly licensed case—through association with a nominal that licenses primary case. I briefly exemplify two types of secondary case: case spread and case agreement.

3.1 Case Spread.

As discussed above, many languages of the world have non-nominative subjects in Psych and Locative Subject constructions. An account of non-nominative subjects was given above. Such constructions pose a second, more interesting, problem for case theory: How does the theme nominal, which tests to be a non-subject, get NOM case? Here there is little agreement between theories. Various approaches have been suggested: NOM is assigned as a default case, or NOM is assigned to the theme when the experiencer/locative is already case marked by inherent case.[12] Neither of these methods is particularly insightful for Japanese (see (26)) or Korean (see (25)), where the psych construction can have two NOM nominals.

Gerdts and Youn (1988) provide a relationally-based explanation for the nominative case of the theme. Following a suggestion by Bickford (1987), we propose that one nominal can spread its ability to license case to another nominal under the condition of overrun. We give this as the Case Spread Law in (49).

(49)   Case Spread Law:

   If $\underline{a}$ spreads its ability to license an S-Case to $\underline{b}$, where $\underline{a}$ and $\underline{b}$ head nominal arcs, then there are arcs $\underline{A}$ and $\underline{B}$ where $\underline{a}$ heads $\underline{A}$ and $\underline{b}$ heads $\underline{B}$, and $\underline{A}$ overruns $\underline{B}$.

Overrun, which is defined in terms of arcs as in (50), includes, for example, a situation where one nominal has placed another en chômage.
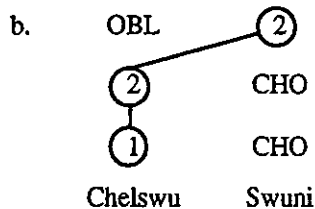
(50)   Definition: (Aissen 1987)

   A $\underline{overruns}$ B if and only if:

   (i) A and B have the same term R-sign (i.e., 1, 2, or 3);

   (ii) and A's first coordinate index is +1 of B's last coordinate index.

For example, in our analysis of psych constructions in (51a), represented in the stratal chart in (51b), the experiencer advances OBL-to-2-to-1, placing the theme en chômage in the second stratum.

(51)   a. Chelswu -eykey/-ka   Swuni -ka   mopsi   kuli-wess-ta.
           C.   -DAT/-NOM   S.   -NOM   badly   miss-pst-ind
           "Chulsoo missed Sooni badly."

---

12. Belletti (1988) suggest that an inherently marked subject can pass its structural case to another nominal. Her account would not extend to Korean, however, where double NOM is possible in the same context. Also, it apparently would not extend to double ACC constructions.

b.

$$
\begin{array}{ccc}
\text{OBL} & & \text{②} \\
& \text{②} & \text{CHO} \\
& \text{①} & \text{CHO} \\
\text{Chelswu} & \text{Swuni}
\end{array}
$$

The arc headed by the experiencer in the second stratum has overrun the arc headed by the theme in the initial stratum. This sets up what I call an "overrun chain", represented by the circles in (51b), consisting of the overrun arc, the overrunning arc, and all subsequent arcs headed by the same nominal.

(52)   Overrun chain:

arcs A and B, where A has overrun B, and all arcs with the same head as A with coordinate indices greater than the coordinate index of A.

Case and agreement features pass along this chain. Thus, the experiencer, since it is a final 1, can spread its ability to license NOM case onto the theme. Also, as proposed by Aissen (1987, 1990), agreement features in some languages can pass from one nominal to another under the condition of overrun, as exemplified in section 4.4 below.

3.1.1 Case Spread and 2-chômeurs.

Notice that 2-chômeurs fall between the cracks as fas as Primary Case is concerned. The Korean rule in (2) does not refer to either 2-chômeurs or theme. Assuming some version of the case filter (e.g., a visibility condition as in Gerdts (1990a)) for Korean, case spread saves the clause by providing a mechanism for assigning case to the 2-chômeur.

This approach to case spread provides a solution to the problem of the case marking of 2-chômeurs in various constructions. Sometimes 2-chômeurs are marked NOM, but other times they are marked ACC. For example, in the Korean possessor ascension construction (Chun 1986, Gerdts 1990b, Youn 1989), when the object of a transitive is the host, the head nominal is marked ACC, as in (53a), but when the host is an unaccusative, it is marked NOM, as in (54a).

(53)   a. Yangswu -ka   Swuni -lul   elkwul -ul   kuli-ess-ta.
           Y.   -NOM   S.   -ACC   face   -ACC   draw-pst-ind
        "Yangsoo drew Sooni's face."

   b.   1   ② (POS/HEAD)
             1   ②(POS)   CHO (HEAD)
          Yangswu   Swuni   elkwul
                       ACC   ACC
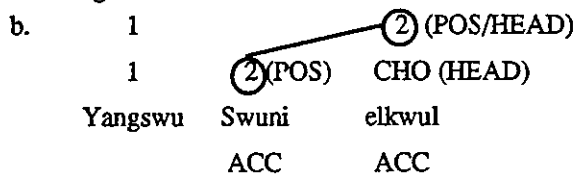
(54)   a. Swuni -ka   elkwul-i/*-ul   yeppu-ta.
           S.   -NOM   face-NOM/*-ACC   pretty-ind
        "Sooni's face is pretty."

   b.   ② (POS/HEAD)
             ②(POS)   CHO (HEAD)
             ①   CHO
          Swuni   elkwul
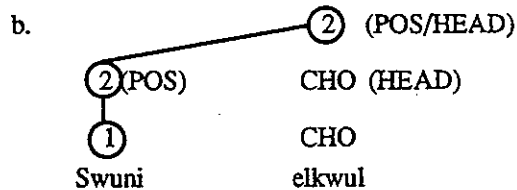
These cases are predicted by case spread, given the representations for these clauses in (53b) and (54b). As (53b) shows, the head of the overrun chain is a final 2, which spreads ACC case to the chômeur, but in (54b) the head is a final 1, and thus NOM case is spread to the chômeur.

Japanese is another language in which 2-chômeurs are assigned case via case spread in possessor ascension constructions. Example (55) (Poser 1990), where the host is an object of a transitive, shows an ACC 2-chômeur, and (56) (Shûichi Yatabe, Yasunari Harada, Michio Isoda, p.c.), where the host is an unaccusative, shows a NOM 2-chômeur.

(55)   Taroo ga   Hanako o   kesa   hara o   sasita.
        T.   NOM   H.   ACC   this morning belly ACC   stabbed

        "Taroo stabbed Hanako in the belly this morning."

(56)   Tanaka sensei   ga   iro   ga   o-kuroi
        T.   teacher NOM   color NOM   HON-black

        "Prof. Tanaka is dark-skinned"

Data involving 3-2 advancement in Korean also demonstrate case spread to 2-chômeurs. (57a) involves 3-2 advancement, as represented in (57b) (Gerdts 1987, 1990a); (58a) involves 3-2 advancement and passive, represented tentatively as in (58b) (Gerdts and Youn 1988, Kang 1986, Gerdts 1991):

(57)   a. Chelswu-ka   Swuni -lul   chayk-ul   cwu-ess-ta.
           C.   -NOM S.   -ACC   book-ACC   give-pst-ind

        "Chulsoo gave Sooni a book."

        b.   1   3 ———(2)
                1   (2)   CHO
             Chelswu Swuni chayk
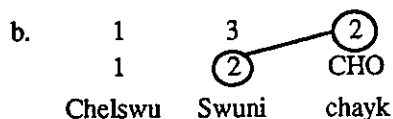
(58)   a. Swuni -ka   haksayng-tul-ey uyhay chayk-i   cwu-eci-ess-ta.
           C.   -NOM   student-pl-by   book-NOM   give-PAS-pst-ind

        "Sooni was given a book by the students."

        b.   1   3 —(2)
                1   (2)   CHO
               CHO   (1)   CHO
          haksayng-tul Swuni chayk
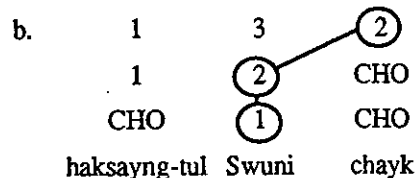
 The head of the overrun chain is a final 2 in (57b) and thus ACC is spread to the 2-chômeur, but it is a final 1 in (58b), thus NOM is spread to the 2-chômeur.

An additional case of a NOM theme in a dative passive can be seen in the Icelandic example in (59) (from Zaenen et al. 1985).

(59)   Konunginum   voru   gefnar   ambáttir.
        the-king(D) were   given(f.pl.)   maidservants(Nf.pl.)

        "The king was given female slaves."

Assuming a structure parallel to (58b) for (59), we see that the overrun nominal appears in NOM (and determines verb agreement).

In sum, we find that 2-chômeurs in many languages get their case from the nominal heading the arc that has overrun them. Either NOM or ACC gets spread to the chômeur, depending upon the final relation of the nominal heading the overrunning arc.

3.1.2 The Case Spread Parameter.

Not all languages, however, use this means for case marking themes. In Kashmiri (Althaha 1985), for example, initial objects in the present tense and all initial indirect objects are assigned the I-Case accusative (a.k.a. dative), as exemplified in (17)-(19) above. Assuming the structure in (60b) for a psych construction like (17) = (60a), the theme maŝtərbay- is an initial 2/final chômeur.

(60)   a. lərk-əs   če   maŝtərbay-e   xušhara:n
            boy-ACC   aux.3fsg   teacher.f-ACC   liking
            "The boy likes the teacher (f.)"

        b.   3   2

                  2   CHO

                  1   CHO

            lərk-əs   maŝtərbay-e

The theme is not NOM, however, as would be expected under Case Spread. Rather, it is licenses the I-Case ACC since it is the initial object in a present tense clause. We see, then, that languages are parameterized as to whether or not they assign case via case spread.

3.2 Case Agreement.

A second type of Secondary Case, case agreement, has been discussed extensively in the literature in various frameworks. (See especially Andrews 1971, 1982, 1990). I do not attempt to give an elaborated treatment here. I briefly illustrate two types of case agreement and suggest appropriate relational concepts for handling them. In addition, because of the ongoing confusion between case spread and case agreement, I briefly contrast these two secondary case phenomena in section 3.3.

3.2.1 Modifier-Head Agreement.

In many languages, the Case assigned to a noun phrase appears on both the head and (some of) its modifiers. For example, in Arabic the modifier agrees with the head in case, number, and gender, as in (61).

Arabic: (Lehmann 1983)

(61)   al-qamaru   'l.kabïrul
        DEF.moon.NOM.SG.M   DEF.big.NOM.SG.M
        "the big moon"

Case Agreement like that in Arabic, where the modifier and the head nominal form a surface constituent , is usually thought to involve percolation of the case features onto the modifier. Case, assigned to the entire nominal, is morphologically represented on the head. Thus, the modifier gets case via its adjacency to the head in surface structure.

Such a view of modifer-head agreement is complicated to implement in a free word order language like Warlpiri, however. As Andrews (1985, 73-74) points out, the head nominal and its case agreeing modifier do not need to appear as a surface constituent. Thus, all of the word orders in (62) are possible:

(62)   a. Kurdu-ngku   ka   maliki   wita-ngku   wajilipi-nyi.
            child-ERG   PRES   dog(ABS)   small-ERG   chase-NONPAST

        b. Wajilipi-nyi   ka   wita-ngku   maliki   kurdu-ngku   .
            chase-NONPAST   PRES   small-ERG   dog(ABS)   child-ERG

        c. Maliki   ka   kurdu-ngku   wajilipi-nyi   wita-ngku.
            dog(ABS)   PRES   child-ERG   chase-NONPAST   small-ERG
            "The small child is chasing the dog."

Presumably an account positing an underlying fixed order, case agreement, then scrambling could accommodate the data in (62). However, as Andrews notes, when the modifier and head appear together in surface structure then case on the modifier is unnecessary (cf. (63):

(63) Wita   kurdu-ngku   ka   maliki   wajilipi-nyi
      small   child-ERG   PRES   dog (ABS)   chase-NONPAST
      "The child is chasing the small dog."

It is thus paradoxical under a constituent-based account that case agreement is unnecessary in its only domain of application.

Andrews (1985, pp. 74-75) offers an alternative account of case agreement where the relevant level of structure is more abstract. NPs should be considered "functional" units even if they are discontinuous in surface structure. In fact, a relational theory of case accommodates such a strategy. Relational structures represent modifier and head relations without making any claims concerning surface constituency. RG assumes that rules building constituency and linearizing elements will be stipulated as needed in the grammars of individual languages. Some languages may have more stipulations of this type than others. We can therefore assume that percolation effects can be handled by taking a nominal to be a "relational constituent" definied on semantic/functional grounds in terms of the modifier/head relations. Warlpiri illustrates two different means of signallying this relationship—word order and case agreement.

3.2.2 P-Case Agreement.

A second type of case agreement, P-Case agreement, involves a nominal and a predicative element (e.g. predicate nominal, adjective, adverb, participle) referring to it. Korean (cf. (64)) shows a predicate nominal agreeing with a subject nominal.

(64) Chelswu-ka   uysa   -ka   toy-ess-ta.
      C.   -NOM   doctor -NOM   became-pst-ind
      "Chulsoo became a doctor."

The relevant concept is that the nominal is the sole argument of the predicate containing the case marked element. Case agreement mirrors subject/verb agreement: case features are passed from the nominal to the predicate. Again case agreement is in the domain of a relational constituent, i.e the clause (or, in the terminology of Davies and Rosen (1988), "P-Sector") consisting of the nominal and the predicate, even though these elements may not comprise a surface constituent.

As Andrews (1985) points out, P-Case agreement, like modifier-head agreement, serves as a cross-referencing device. He gives the following Ancient Greek examples to illustrate the role case agreement can play to disambiguate the understood subject of a participle.

(65) Klearchos   ape:inte:sed   Philippa:i   apio:n
      Klearchus(NOM)   met   Philip(DAT)   leaving(NOM)
      "Klearchus met Philip while Klearchus was leaving."

(66) Klearchos   ape:nte:se   Philippo:i   apiontie
      Klearchus(NOM)   met   Philip(DAT)   leaving(DAT)
      "Klearchos met Philip while Philip was leaving."

3.3 Case Spread vs. Case Agreement.

There is some overlap in the domain of case spread and case agreement. For example, double NOM possessive constructions in Korean derive from both case spread and case agreement (see Youn (1989), Kim (1990)). For the most part, however, these two types of secondary case have very different properties. The domain of case agreement is a relational constituent, while case spread involves two clausemate nominals that do not necessarily form a unique constitutent (for example, object and indirect object). Case spread, unlike case agreement, requires the target to be a former term (since only terms can be placed en chômage). Case spread, as defined above, is an S-Case phenomenon: only the ability to license S-Case is spread, and the mo-

tivation for spreading case is to link the target nominal to surface structure. Case agreement is a tracking device and can involve I-Cases as well as S-Cases.

Case agreement and case spread have two things in common. First, both are secondary phenomena: they allow case to appear on an element that does not itself license case. Second, neither is a simple copying rule. Both case spread (see (25)) and case agreement (see (46)) can indirectly license a case not otherwise overtly occurring in the clause.

4. Parallels with Agreement Phenomena.

In the above discussion of case, several concepts were proposed: Primary case vs. Secondary case, S-Case vs. I-Case, non-standard case, case resolution, case stacking, case spread, and case agreement. This section briefly discusses verb agreement (taken loosely to mean any type of morphology appearing in the predicate complex, including morphological agreement, incorporated pronouns, and clitic pronouns). It is shown that equivalent concepts organize a theory of agreement.

4.1 Types of Agreement.

Primary agreement, determined by the semantic or syntactic relation of the nominal, is well represented in typological discussions of agreement (see especially Moravcsik 1978 and Lehmann 1983), and has been well-studied in formal theories. We find that, like case, agreement works on a GR hierarchy along the lines of (67), as proposed by Moravscik (1978):[13]

(67)   subject > object > indirect object > oblique

This implicational hierarchy represents the claim that there will be no language in which just indirect objects agree, or in which indirect object of ditransitive clauses but not direct objects in monotransitive clauses agree. For most languages, the essential question is which grammatical relations are referenced by agreement and which are not, in other words, where does agreement break on the hierarchy in (67). In this respect, agreement or lack therof parallels the S-Case/I-Case split typology given in (20). Languages with 1-way agreement, i.e. agreeing only with subjects (NOM-ACC pattern) or absolutives (ergative pattern), with 2-way agreement , i.e. agreeing with subject/absolutive and direct/indirect object (depending on valence and ergativity), and with 3-way agreement, i.e. where subject, object, and indirect object/benefactive all agree, are well-attested. A brief informal sample of agreement types based on the information presented in Gerdts (1990a) is given in (68):

(68)   Ø-agreement: Malagasy, Malay, Mandarin, Norwegian, Thai, Tongan, Yoruba

1- way agreement: Arabic, Avar, Chechen, Finnish, Greek, Hebrew, Mende, Turkish

2 -way agreement: Arosi, Fijian, Halkomelem, Hindi, Ilokano, Nubian, Quechua, Sierra Populuca, Swahili, Tuscarora, Tzotzil

3-way agreement: Abkhaz, Basque, Kiowa, Papago, Seri

more than 3-way agreement: Fula

The last type of language, in which a non-term agrees, is rather rare, so much so that various proposals (including the Controller Agreement Law (Aissen 1987)) have limited agreement controllers to terms (i.e., 1s, 2, and 3s). Data from Fula, Kinyarwanda (discussed below), and Choctaw contradict this claim. For example, Ulrich (1986) shows that Choctaw has different agreement prefixes for various obliques (including benefactives, locatives, superessives, comitatives, and ablatives).

As with case, two levels of linguistic structure are important to agreement. Some agreement, "S-Agreement", references final grammatical relations, as can be seen in English by comparing the active in (69a) with the passive in (69b).

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13. Ergative/absolutive agreement is not taken into consideration for the purposes of the present discussion.

(69)   a. The police <u>are</u> arresting John.

    b. John <u>is</u> being arrested by the police.

This use of agreement probably constitutes the bulk of agreement phenomena found in languages of the world. However, in some languages, agreement may be referencing the semantic role of the nominal rather than its grammatical relation; that is, some languages have I-agreement. Like I-Case, I-Agreement would most commonly reference GRs on the low side of the hierarchy in (67).

For example, the verb in Kinyarwanda can agree with as many as five nominals, according to Kimenyi (1978, p. 183):

(70)   Ba-ra-zí-tú-gú-há-hé-er-a.
    they-pres-them-us-you-there-give-ben-asp
    "They are giving them to us for you there."

There is some evidence, however, that locative agreement differs from subject, object, indirect object, and benefactive agreement. The latter agree with the class (i.e. gender and number) of the nominal, but the locative form is the invariant <u>ha</u>. Furthermore, the latter appear in a fixed order: subject, (tense), benefactive, indirect object, object, (verb stem). Locative agreement, however, "floats": it can appear anywhere between the tense and verb stem with no apparent semantic difference, as (71) shows:

(71)   a. Ba-ra-há-zí-tú-gú-hé-er-a.
    b. Ba-ra-zí-há-tú-gú-hé-er-a.
    c. Ba-ra-zí-tú-há-gú-hé-er-a.

Positing an S-Agreement/I-Agreement distinction for Kinyarwanda would provide a basis for accounting for these facts. I-Agreement, like oblique nominals in English, which also show great freedom in word order, provides semantic information. In contrast, S-agreement, since it serves to establish the grammatical relation of the nominal and does not do so by its form in Kinyarwanda, appears in a fixed order, parallelling conditions on subjects and objects in English.

4.2 Non-standard Agreement.

Further evidence that locative agreement in Kinyarwanda is I-Agreement comes from its behavior in passives. Kimenyi (1978, pp. 129-130), gives examples like (72b) where the locative is the subject in a passive.[14]

(72)   a. Umugabo   y-ooherj-e   íbárúwa   kw'íípósita.
        man   he-send-asp   letter   to post office
    "The man sent a letter to the post office."

    b. Kw'íípósita   h-ooherj-w-e   íbárúwa   n'ûmugabo.
        to post office   it-send-pass-asp letter   by man
    "The post office was sent a letter by a man."

When the locative is passivized, it keeps its I-Case marking although it appears in subject position (pre-verbally). It controls the locative agreement -<u>ha</u> rather than an agreement prefix appropriate for the class of the head noun (<u>y</u>). The locative agreement nonetheless appears in subject agreement position (before tense), a position unavailable to locative agreement controlled by non-subjects. We see from this example that Kinyarwanda not only has non-standard case (see section 2.2) but also non-standard agreement. That is, the subject controls agreement usually associated with a non-subject relation.

Halkomelem (Salish) passives also have non-standard agreement. As Gerdts (1988b, 1989) shows, a first or second person subject of a passive (cf. (74)) controls object agreement (cf. (73)) rather than appearing as a subject clitic.

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14. Advancement of locatives in initially unaccusative clauses is also possible; such clauses are assigned a structure as in (12). See Bresnan and Kanerva (1989) for an LFG discussion of the same phenomenon in Chichewa.

(73)   ni   cən   ləm-əθamə
        aux   1-sub   look-tr+2obj
        "I looked at you."

(74)   ni   ləm-əθamə   ʔə   ɬə   steniʔ
        aux   look-tr+2obj+intr   obl det woman
        "You were looked at by the woman."

With respect to passives (though not unaccusatives, as Gerdts (1988b, 1989) shows), non-standard agreement in Halkomelem mirrors the phenomenon of non-standard case in Kashmiri discussed above.

The Muskogean languages Choctaw and Chickasaw (as discussed in Davies 1986 and Munro and Gordon 1982) also have non-standard agreement. One type of agreement—ACC agreement—is not only used for objects of transitives, but also for final subjects in some intransitive clauses (those that Davies (1986) argues are unaccusatives), as the Choctaw example in (75) shows.

(75)   Sa-hohchafo-h.
        1ACC-hungry-PRED
        "I am hungry."

If we assume that ACC-agreement is I-agreement, determined at the initial level on the basis of the nominal's semantic properties, then Choctaw unaccusatives mirror the non-standard case facts in Kashmiri unaccusatives (cf. (19)).

4.3 Agreement Resolution.

In the discussion of non-standard case above, it was pointed out that in many languages I-Case takes priority over S-Case (e.g. Icelandic, Italian, and Kashmiri) and thus I-Case appears on an advancee. In other languages (e.g. Korean and Japanese) either I-Case or S-Case can appear on an advancee. The non-standard agreement phenomena discussed for Kinyarwanda and Halkomelem in the previous section parallels the first class of languages; neither the locative subject in (72b) nor the patient subject in (74) can alternatively control subject agreement.

The Muskogean case, as Munro and Gordon (1982) discuss, is much more complicated. There are instances, however, of pairs of clauses with apparently identical meaning where the final subject can control either NOM or ACC agreement; see the following Choctaw examples from (Davies 1986):

(76)   a. Chi -nokshoːpa   -li   -h.
           2DAT-fear   -1NOM-PRED
           "I am afraid of you."

        b. Chi -sa   -noksho:pa-h.
           2DAT-1ACC-fear   -PRED
           "I am afraid of you."

One view of these clauses is that they are dyadic unaccusatives in initial structure; the experiencer is an initial 2 and the causal (indirect cause of the psychological state) is an oblique.[15] Since the experiencer, whether it controls NOM or ACC agreement tests to be the final subject, an analysis involving unaccusative advancement as in (77) could be posited for these clauses.

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[15] Davies claims that (76a) involves 2-3 retreat while (76b) involves antipassive and 2-3 retreat. In Gerdts (in prep.), I show that the evidence given by Davies is in fact also consistent with the structure in (77). This structure has been attested in other languages of the world, including Halkomelem (see Gerdts 1988b) and Ilokano (see Gerdts in preparation).

(77)   2   OBL

            1   OBL

            exp   causal

Given this analysis, the assumption discussed above that ACC agreement is I-Agreement in Choctaw, and the further assumption that NOM agreement is S-agreement, licensed by the final subjecthood of a nominal, we can account for the data in (76) by positing the lack of an agreement resolution rule in Choctaw (in dydadic unaccusatives at least). This analysis, like the treatment of Korean and Japanese oblique advancements constructions given above, allows for two different morphological forms to be assigned via the same syntactic structure.[16]

4.4 Agreement Doubling

Given the mechanisms of an agreement theory—levels of agreement, and non-standard agreement—a situation could exist where a nominal potentially controls more than one agreement form. The question arises: it is possible for a nominal to control double agreement? In other words, are there agreement phenomena that parallel the case stacking phenomenon discussed above?

Davies (1986) addresses this issue, pointing out that Choctaw but not Chamorro prohibits agreement doubling. In Chamorro, as seen in the passive in (78) from Gibson (1980), the advancee controls agreement twice: u is controlled by the final subject of an irrealis clause, fan by a plural final subject in an intransitive clause.

(78)   Para u   fan- sinaolak   i   famagu?un gi as   tata   n-ñiha.
            Irr   3PL Pl   PASS=spank   the children   OBL   father   their
            "The children are going to be spanked by their father."

This leads Davies to the generalization, stated in (79), that agreement doubling is possible, but only where the agreement markers are not taken from the same set (that is, where they reference the same semantic features (person, number, etc.)):[17]

(79)   Agreement Principle (Davies)
            Given a set of agreement rules making a predicate agree with the same set of properties a, b,....
            n of nominals, the rules apply disjunctively to any given nominal.

Data from Halkomelem (Gerdts 1989) also support (79); in passives like (80), the subject can license object agreement but not a subject clitic.

(80)   ni   (*cən) ləm   -əθeləm
            aux   1sub   look   -tr+1obj+intr
            "I was looked at."

The Halkomelem subject clitics and the object suffixes reference the same semantic features and so (79) requires them to be mutually exclusive.

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16. Switch reference in Choctaw also shows this. Davies (1986) gives examples of switch reference involving an unaccusative clause as one of the conjuncts. In this case, either SS or DS morphology is possible:
    (i) Sa-   hohchafo— cha/-na tobi   hoponi—li   —tok.
        1ACC—   hungry   —SS/-DS   bean   cook   —1NOM—PST
        "I was hungry, so I cooked some beans."
    Whaley (1990) gives a parallel case involving assignment of case to genitive absolutes in Koine Greek.

17. Baker (1985) discusses the signifance of such examples for the Mirror Principle.

However, when the Passive is embedded as a nominalization, for example after the negative form in (81), the subject may be doubly represented by possessive (as appropriate for a subject of a nominalization) and object marking.

(81)   sk'ʷey   k'ʷə   nə -s -c'ew -əθe lt
         impossible   det   1pos-nom-help -tr+1obj+st
         "It is impossible for me to get helped."

Data like (81) can be reconciled with (79) under an analysis that gives a nominalization like (81) a complex structure. We can claim that the domain of the object suffix is the passive predicate "be helped", while that of the possesive prefix is the entire nominalized clause.[18] Thus, one nominal can control two forms of agreement, but not in the same domain.

4.5 Surrogate Agreement.

The above sections have discussed primary agreement, that is agreement licensed by the semantic or grammatical relations of a nominal. Secondary agreement is also possible. Aissen (1987, 1990) gives an extensive discussion of "surrogate agreement", that is cases where agreement is controlled by a nominal that is not a regular agreement controller in the language. For example, in English <u>there</u> constructions, the post-verb nominal, rather than the subject <u>there,</u> controls agreement.
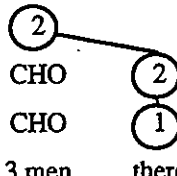
(82)   There are/*is three men at the door.

Expanding on treatments of this phenomenon in terms of <u>brother-in-law</u> agreement (see for example, Perlmutter (1983)), Aissen (1987, p. 205) proposes the following restriction on surrogate agreement:[19]

(83)   Lateral Feature Passing Law:
        If $\underline{a}$ passes its features to $\underline{b}$, where $\underline{a}$ and $\underline{b}$ head nominal arcs, then there are arcs $\underline{A}$ and $\underline{B}$
        where $\underline{a}$ heads $\underline{A}$ and $\underline{b}$ heads $\underline{B}$, and $\underline{B}$ overruns $\underline{A}$.

Overrun, defined in (50) above, includes the situation where one nominal has placed another nominal en chômage. For example, the RG analysis of (82) posits that the dummy enters as a 2, overrunning the initial 2, as represented as in (84):

(84)

      CHO   (2)
      CHO   (1)
    3 men   there

This sets up an overrun chain (cf. (52)) along which features can pass. The 2-chômeur passes its agreement features to the final 1, which is a regular agreement controller in English.

In some languages, surrogate agreement and case spread can be seen to co-occur. In Icelandic clauses involving 3-2-1 advancement (e.g. (59) repeated as (85a)), features pass along the overrun chain (cf. (85b)).[20]

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18. Such examples obey the Satellite Principle, as Gerdts (1989) points out.

19. Two cases that Aissen treats as surrogate agreement in a context not involving brother-in-law agreement have since been given other analyses. See Durie (1988b) for a discussion of Acehnese passives and Rosen (1990) for a discussion of Southern Tiwa dative constructions. Another potential case in Kapampangan is given an alternative treatment in Rowsell (1983) and Durie (1988a). However, Aissen gives examples from several other languages, including an extensive discusion of Tzotzil , to justify this step.

20. The classic RG analysis of psych constructions involves 1-3 retreat and the insertion of a dummy as a 2 that then advances to final 1 (see Perlmutter 1983). Under this analysis, NOM is assigned to the theme via brother-in-law case. Extension of case spread to the context of overrun in general allows the alternative treatment of psych constuctions given here.

(85)   a. Konunginum   voru   gefnar   ambáttir.
            the-king(D)   were   given(f.pl.)   maidservants(Nf.pl.)

"The king was given female slaves."

b.

$$
\begin{array}{ccc}
1 & 3 & \;2\; \\
1 & \;2\; & CHO \\
CHO & \;1\; & CHO \\
& konunginum & ambáttir
\end{array}
$$

Agreement features pass from "maidservants" to "king", while the ability to license NOM case passes from "king" to "maidservants". The Italian psych construction in (15), repeated here as (86a), also shows passing of both case and agreement features along the overrun chain (cf. (86b)).

(86)   a. Gli   piacciono   molte   sinfonie   di Mozart.
            to-him   like   many   symphonies   of M.

"He likes many of Mozart's symphonies."

b.

$$
\begin{array}{cc}
3 & \;2\; \\
\;2\; & CHO \\
\;1\; & CHO \\
gli & molte\ sinfonie\ do\ Mozart
\end{array}
$$

In other languages, however, passing of case and agreement features are independent. For example, in the Kashmiri example (87a) (= (60)), there is surrogate agreement but no case spread (cf. section 3.1.2).

(87)   a. lərk-əs   če   maštərbay-e   xušharam
            boy-ACC   aux.3fsg   teacher.f-ACC   liking

"The boy likes the teacher (f.)"

b.

$$
\begin{array}{cc}
3 & \;2\; \\
\;2\; & CHO \\
\;1\; & CHO \\
lərk\text{-}əs & maštərbay\text{-}e
\end{array}
$$

Initial 2s license I-Case ACC in Kashmiri, thus making case spread unnecessary.

Korean, on the other hand, has case spread but no surrogate agreement. As the psych constructions in (88)-(89) show, the final 1 (not the 2-chômeur) controls subject honorification:

(88)   Kim   sensayngnim -eykey/-i   ai-tul-i   kuli-wusi-ess-ta.
            S.   teacher   -DAT/-NOM   child-pl-NOM   miss-SH-pst-ind

"Prof. Kim missed his children."

(89)   Swunhi -eykey/-ka   yengesensayngnim-i   philyoha-(*si)-ess-ta.
            S.   -DAT/-NOM   English.teacher.HON-NOM   need-SH-pst-ind

"Soonhee needed an English teacher."

In summary, one concept—"overrun chain"—provides a unified account of the passing of agreement and case features. However, languages are independently parameterized for surrogate agreeement and case spread.

4.6 Summary.

Although the discussion of agreement phenomena given above is very preliminary, several parallels between a relational theory of case and an agreement theory were proposed. This is expected under an integrated theory of morphosyntax. The concepts proposed for a relational theory of case thus gain support from an examination of agreement phenomena in languages of the world.

5. Conclusion.

This paper outlines a relationally based approach to case. The Relational Theory of Case differs from GB CaseTheory in two important ways. First, it is a theory of morphologically realized case, not abstract case. This gains a methodological advantage over GB since, in many instances, nominals that are alleged to have abstract case of a certain type (e.g. NOM) show no phonological effect of having licensed this case. Without independent evidence from outside of the case theory, there is no principled means for justifying case assignment in such instances. GB is thus quite unconstrained in its claims regarding case.

Nonetheless, GB Case Theory has been put to effective use as a general theory of licensing of nominals. Case Theory has been used to account for a variety of phenomena, including, for example, word order conditions in languages with no morphological case (see Huang 1982 and Li 1985). Gerdts (1990a) points out that much of the benefit of such an approach can be accommodated within a relational viewpoint by means of a principle of relational "visibility":

(90)   Every nominal must be relationally identified by some morphosyntactic means.

That is, every nominal must be distinguishable from other nominals in terms of grammatical relations. Morphosyntactic means include agreement, case, and word order. This principle does much of the work of GB Case Theory without prejudicing the grammar toward a certain morphosyntactic device and thus toward a certain type of language. The residue of case facts in languages, those actually involving phonologically realized case, are treated by a case theory as presented here.

A second difference between GB Case Theory and the Relational Theory of Case is in the structure of case rules. GB is a very "verb"-based approach: categories like V, agr, and P are case assigners. NPs receive case only via their relationship to these categories. The Relational Theory of Case is very "noun"-based. Case is directly licensed on a nominal because of its semantic role or syntactic relation. These are, of course, indirectly related to verbs in that a theory of argument structure and semantic roles is organized around verbal semantics. We see, however, that many aspects of case assignment are independent of verbal influence. For example, in some languages it is the semantic properties of the nominal itself (proper vs. common, masculine vs. feminine) that determine the form of the case marker. Some evidence may ultimately decide which conceptualization is more appropriate for the world's languages, and, in fact, perhaps both should be available for constructing case theories.

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