

# Modern Approaches to Case: an Overview

Miriam Butt  
Universität Konstanz  
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## 1 Introduction

As the range of topics collected in this volume demonstrate, case is a complex phenomenon: in many languages case marking takes on functions that go beyond the purely *structural* role of helping to identify the grammatical relations (subject, object, indirect object, etc.) of a sentence. For example, case marking is used to signal differences in agency, animacy, definiteness/specificity, existence/persistence of an object and is implicated within the domain of tense/aspect in terms of signaling telicity or boundedness. Case furthermore interacts with discourse functions such as topicality or focus (Japanese is a well known example, cf. Chapter 54) and can express modalities such as obligation vs. desire. Despite the fact that these diverse functions of case have been observed crosslinguistically for quite some time, very few modern approaches to case are currently able to present a coherent analysis of the wide and varied spectrum of functions associated with case.

As the vast range of the contributions in this handbook show, any theory that sought to provide a complete account of case crosslinguistically would not only need to be in control of a huge amount of data, but also possess a deep understanding of a very varied collection of theoretical approaches. In my opinion, the various perspectives on case offered up by each of the approaches all contain valid insights — only a combination of these valid insights can ultimately result in a complete theory of case.

This chapter cannot hope to do justice to all of the existing modern approaches to case, therefore cannot offer up any such a unified theory of case and so instead will concentrate on identifying some important general lines of inquiry that have emerged. Section 2 first looks at some central statements about the classification of languages according to case distribution. Sections 3 and 4 chart some of the leading ideas that have influenced many modern approaches to case. Section 5 offers a concluding discussion.

## 2 Language Classification

The 20th century has been able to establish quite a few useful and interesting generalizations on the distribution of case crosslinguistically.<sup>1</sup> For example, there is the realization that free word order languages tend to make use of case marking (but the converse does not hold: not all heavily case marked languages necessarily have free word order). Another example of a generalization that has become standard knowledge within general linguistics is Silverstein's (1976) proposal of an implicational preference hierarchy for the appearance of ergative case on subjects, known as the *NP-hierarchy* (cf. Chapters 1, 37). But perhaps the most influential idea has been the proposed classification of languages into types based on the case marking of their core arguments (cf. Chapter 45).

### 2.1 Fillmore's Case Relations

A systematic proposal for the crosslinguistic classification of languages on the basis of case was first articulated by Fillmore (1968), who suggested that *case roles* or *case frames* should be acknowledged as one of the common universal bases of language. Under his view, the basic part of a sentence contains a proposition P which contains a tenseless set of relationships involving verbs and nouns. These are *case relationships* (C), as in (1).

$$(1) P + V + C_1 + \dots + C_n$$

Fillmore argued that the case relationships needed for crosslinguistic analysis include at the very least: *Agentive*, *Instrumental*, *Dative*, *Factitive*, *Locative*, *Objective*. A first cut at a definition is shown in (2) (Fillmore 1968:24–25).

(2) **Agentive (A)** The case of the typically animate perceived instigator of the action identified by the verb.

**Instrumental (I)** The case of the inanimate force or object causally involved in the action or state identified by the verb.

**Dative (D)** The case of the animate being affected by the state or action identified by the verb.

**Factitive (F)** The case of the object or being resulting from the action or state identified by the verb, or understood as part of the meaning of the verb.

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<sup>1</sup>For a collection of sample generalizations as well as possible counterexamples, see e.g., the *Universals Archive* at <http://ling.uni-konstanz.de/pages/proj/sprachbau.htm>

**Locative (L)** The case which identifies the location or spatial orientation of the state or action identified by the verb.

**Objective (O)** The semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself; conceivably the concept should be limited to things which are affected by the action or state identified by the verb. The term is not to be confused with the notion of direct object, nor with the name of the surface case synonymous with accusative.

Given the basic formula in (1), languages are predicted to contain sets of formulas as in (3), which correspond to the basic kinds of sentences. An intransitive clause, for example, might consist of a verb and an agentive or objective case relation, depending on how ‘active’ the subject was. Note that this distinction is very similar to the one that was later put forward under the *Unaccusative Hypothesis* (see section 3).

- (3) V + A                    (intransitive, active subject)  
    V + O                    (intransitive, inactive subject)  
    V + O + A                (transitive)  
    V + O + D + A          (ditransitive)

Note that the underlying order of case relations as specified by (3) does not match the surface order for English (or, indeed, most languages of the world). Fillmore’s idea was that case relations represented a *deep structure* that would then be made to correspond to the surface string (or structure) via a series of transformations of the type available in Transformational Grammar (TG, Chomsky 1957) at the time. Similarly, the case relations abstracted away from the precise realization of case marking — the case roles could be realized by nothing or a preposition (as in English), inflectional case marking, or by some other device.

Fillmore’s original ideas were the subject of some controversy. A large part of the discussion revolved around the definitions of the case roles, which turned out to be too vague to be really useful. Fillmore (1977) presents a revision and further explication of his original ideas, but the notion of *thematic, semantic* or *argument roles* that is now part of general linguistic theory (see section 3) owes more to the formulations of Gruber (1965) and Jackendoff (1972), which were developing in parallel.

However, Fillmore’s original ideas influenced quite a lot of subsequent syntactic theorizing.<sup>2</sup> As already mentioned, just one of those ideas involved using his abstract case relations to help classify languages by the case marking patterns they display.

## 2.2 Current Standard Formulation

Fillmore took just two basic case roles to be relevant for the classification of languages: A (agentive) and O (objective). In looking at how languages mark these two case roles in the basic clause types associated with them (V+A, V+O, V+O+A), Fillmore came up with a classification of language types that led him to recognize five different types of case systems. However, of the entire classification, only a two-way opposition between what are now called *ergative* and *accusative* languages became standardly recognized.<sup>3</sup> In particular, the classification shown in (4) came to be the standard way of illustrating the distinction (Dixon 1994).

(4)

$$\begin{array}{rcl} & & \left\{ \begin{array}{l} \text{A} \quad \text{ergative} \\ \text{S} \end{array} \right. \\ \text{nominative} & & \\ & & \left. \begin{array}{l} \text{O} \end{array} \right\} \text{absolutive/nominative} \\ \text{accusative} & & \end{array}$$

A = transitive subject (Agent), S = intransitive subject,  
O = transitive object

As shown in (5), *ergative* languages are classified as those which tend to mark the agent with an ergative and the objective/object (O) with a nominative or absolutive. This nominative or absolutive tends to be exactly the same marker that is used for subjects of intransitives. In contrast, languages are classified as *accusative* when they distinguish the object via an accusative case and generally group subjects together by marking subjects of both transitive and intransitive clauses consistently with the nominative (English and German would be examples).

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<sup>2</sup>Fillmore saw himself as proposing a variant of TG; however, his *Case Grammar* turned out to be less of a variant of TG and more of an independent theoretical persuasion which shares some fundamental ideas with Tesnière’s (1959) *Dependency Grammar*. Today’s *Localist Case Grammar*(Chapter 8) owes much to Fillmore.

<sup>3</sup>In addition to this distinction, Fillmore also allowed for languages like Yana, which treat pronominal As and Os in all sentence types alike; Dakota which distinguishes all As from all Os; and Takelma, which has separate forms for almost everything.

## 2.3 Evaluation

The attentive reader will have noted that the standard method of classifying languages involves a “new” notion: S. The addition of the notion S to Fillmore’s original case roles allows a clear distinction between intransitive subjects and objects. This in turn allows for a cleaner statement of the generalizations differentiating between accusative-type and ergative-type language: accusative languages distinguish O, ergative languages distinguish A. However, it also obscures the difference between different types of intransitive clauses that was built into Fillmore’s system and that indeed mirrors a crosslinguistic division of intransitive verbs into at least unaccusative vs. unergative verbs (see section 3.4).

This distinction has been built back into the current system by acknowledging an “active” type of language which distinguishes unergative verbs from unaccusative ones via case marking (some examples are Georgian and Urdu). Other distinctions have also been introduced into the system, as it is clear that a complete crosslinguistic typology needs to take into account more than the now standard two-way distinction between ergative and accusative languages and, indeed, recognize more than Fillmore’s original five distinct systems. For more information on typologies of case systems and the current state of the art, see Chapter 45.

One issue that so far has not been the subject of much discussion, however, is Fillmore’s original assumption that the pertinent patterns for the classification of languages are: 1) the case of the agentive subject vs. the intransitive subject; 2) the canonical transitive frames (V+O+A) and the intransitive ones. This very fundamental assumption has far reaching effects, and should be discussed explicitly.

Fillmore’s original assumption excludes a consideration of indirect objects. But what justifies this assumption? Some languages use case to identify indirect objects (generally with the dative case), some do not — why should this not provide a useful basis for classification into language types? Furthermore, why should one not be forced to take into account case marking patterns in clauses that are not canonically transitive (cf. Hopper and Thompson 1980, also Chapter 23)?

The focus on canonically transitive clauses (V+O+A in Fillmore’s terms) has meant an exclusive focus on nominative/absolutive, accusative and ergative case marking. Other case markers such as dative, instrumental or genitive are automatically excluded. However, many languages use datives or genitives to mark subjects of so-called *experiencer* or *psych* verbs as in (5); other languages do not. Why should this not also be a relevant factor?

- (5) a MÉR batnaði kvefið.  
 I.Dat recovered the.cold.Nom  
 ‘I recovered from the cold.’ (Svenonius 2002:205) Icelandic
- b nadya=ko dar aya  
 Nadya=Dat fear come.Perf.M.Sg  
 ‘Nadya got scared.’ (lit. fear came to Nadya) Urdu

Furthermore, many languages show case alternations, either on subjects or on objects.<sup>4</sup> The examples from Georgian in (6) and from Urdu in (7) illustrate an ergative-dative subject alternation.

- (6) a **nino-m** Ceril-i daCera.  
 Nino-Erg letter-Nom wrote-3.Subj;3.Obj  
 ‘Nino wrote a letter.’ Georgian
- b. (turme) **nino-s** Ceril-i dauCeria.  
 apparently Nino-DAT letter-NOM wrote-3SGS;3O  
 ‘Apparently Nino wrote a letter.’ Georgian
- (7) a **nadya=ne** zu ja-na hε  
 Nadya.F.Sg=Erg zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg  
 ‘Nadya wants to go to the zoo.’ Urdu
- b **nadya=ko** zu ja-na hε  
 Nadya.F.Sg=Dat zoo.M.Sg.Obl go-Inf.M.Sg be.Pres.3.Sg  
 ‘Nadya has to/wants to go to the zoo.’ Urdu

The alternations are regular and have generalizable semantic import. In Georgian, the use of the dative instead of the ergative case goes hand in hand with a meaning of ‘apparently’. In Urdu, the dative is the unmarked case and can express a modality of either desire or obligation, depending on the context, whereas the ergative unambiguously signals desire.

The existence of such alternations is unexpected given a purely structural typology of languages in which only A, S, O and nominative/absolute vs. ergative vs. accusative case are taken to play a role. Furthermore, not all ergative languages display such a dative-ergative alternation. It would therefore seem to be typologically useful to establish which languages allow for such an alternation (and why, of course). However, despite the fact that

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<sup>4</sup>*Differential Case Marking*, as it has come to be known has been a recent focus of Optimality-Theoretic Approaches, see Chapter 6.

reports on the existence of the above alternations are not new (e.g., Harris 1981, Butt and King 1991), to my knowledge they have not triggered a typological investigation that takes such alternations into account.

Finally, note that although some of the fundamental assumptions behind the current practice of language classification can and should be questioned, the idea of a systematic classification of languages via case frames was very innovative in that it differs markedly from previous approaches, which tended to concentrate on trying to find a unifying semantics for individual case morphemes, as in the work of Jakobson (1936) or the localist tradition (e.g., Hjelmslev 1935), cf. Chapter 1.

### 3 Leading Ideas: (Morpho)syntax and Semantics

A comparative look at the underlying ideas contained in syntactic theories from antiquity to modern times (cf. Butt 2006) identifies several major lines of enquiry that have been postulated to help understand the distribution of case. Some of these include the notion of semantic roles (section 3.1), lexical decomposition (section 3.2), proto roles (section 3.3), grammatical relations (section 3.4) and linking (section 3.5).

Since the idea of semantic roles has already been introduced with respect to Fillmore in section 2, we begin with this topic.

#### 3.1 Semantic Roles

Pāṇini's *Kāraṅka Theory* (see Chapter 1) was the first to propose a systematic relationship between semantic roles such as agent, object of desire/goal, instrument, etc. and overt case marking. A quick look at South Asian languages, for example, shows that agents are generally marked with an ergative or instrumental, goals/experiencers with a dative, patients with an accusative, etc. Indeed, crosslinguistic data confirms that there is a clear semantic basis at the heart of a great deal of the distribution of cases (e.g., see Chapter 11 and Butt 2006 for examples and more discussion).

Most theories of case today assume that predicates (verbs, nouns, prepositions and also adjectives) come with some kind of underlying specification as to their *argument structure*, that is, a specification as to the number and semantic type of participant roles involved (see Chapter 17 for details)<sup>5</sup> and that this information is relevant for capturing case marking patterns across

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<sup>5</sup>A current exception is work by Marantz 1997 and Borer 2005, who attempt to eschew an argument structure altogether.

languages. Where theories tend to differ is on questions of representation and the precise interaction with other modules of the grammar (see Levin and Rappaport Hovav 2005 for a comprehensive discussion).

Generally, at least the following thematic roles are acknowledged: *agent*, *goal/experiencer*, *theme/patient*, *instrument*, *location*. However, across theories there is a huge amount of dissatisfaction with these role labels — this dissatisfaction arose when Fillmore (1968) first proposed his ideas and came to a head in the summary of the state-of-the-art provided by Dowty (1991). The problem is that while the labels are utterly intuitive and therefore quite useful at some level of description, it is very difficult to put them to practical use because the definitions provided to date are simply too vague.

### 3.2 Semantic Primitives

The solutions that have been pursued come in various flavors. One popular solution, going back to the efforts of Generative Semantics in the 1970s has been to identify *semantic primitives* which are relevant for understanding the lexical semantics of predication and the number and type of participants involved. A prominent researcher representing this direction of enquiry is Jackendoff (e.g., Jackendoff 1972, 1976, 1987, 1990).

Jackendoff works mainly on English, so he does not tend to figure centrally in discussions of theories of case; however, his framework is in principle eminently suitable for describing case relations. Consider, for example, the lexical entry for ‘give’ in (8) (for a slightly more detailed discussion see Butt 2006, for an application of this system towards case marking in Urdu, see Butt 1995).

$$(8) \text{ CAUSE}([\alpha], \text{GO}_{Poss}([\beta], \text{TO}[\ ])) \\ \text{AFF}([\ ]^\alpha, [\ ]^\beta)$$

In this lexical entry (the Lexical Conceptual Structure or LCS in Jackendoff’s terms) the event denoted by the English verb *give* is lexically decomposed into several primitives, namely CAUSE, GO and TO. The representation expresses that there is an event in which a participant (first argument of CAUSE) caused something (first argument of GO) to go to another participant (argument of TO). The verb *give* thus has exactly three arguments which need to be linked into the syntax.

Most readers will be aware of the English *dative alternation* whereby the arguments of ‘give’ can be realized via a double object construction: *The monkey gave the dog a bone*. This possibility is dealt with quite elegantly



in Jackendoff (1990) via the introduction of an *Action Tier*, which codes an AFF(ectedness) relation.

In (8), the two participants on the Action Tier are the causer of the event (coindexed with an  $\alpha$ ) and the theme/patient (coindexed with a  $\beta$ ). The Action Tier privileges two event participants, the actor and the patient/beneficiary of the action. These two arguments are therefore realized as the subject and the object of the clause, respectively. Note that the postulation of an Action Tier nicely models the much cited insight that the typical verbal event is transitive and involves two participants, an actor and a thing or person acted upon (cf. Hopper and Thompson’s 1980 notion of transitivity, Chapter 23), but does this without a parallel restriction in focus on just canonical arguments.

Given the AFF relation, the double object realization of the arguments of ‘give’ is accounted for by a version of (8) in which the argument of TO and the second argument of AFF are coindexed ((9)). This signals that the first argument of GO, the beneficiary, should be interpreted as the affected participant in (9) and therefore become the direct object in syntax.

$$(9) \text{ CAUSE}([\alpha], \text{GO}_{\text{Poss}}([\ ]), \text{TO}[\beta]) \\ \text{AFF}([\ ]^{\alpha}, [\ ]^{\beta})$$

Within Jackendoff’s system, there is thus no direct reference to thematic roles. Rather, they could be seen as emerging from the structural positions in the lexical semantic representation. And these structural positions in turn can easily be associated with case marking patterns crosslinguistically (i.e., arguments of CAUSE are generally nominative or ergative, arguments of TO are dative or marked with a preposition, etc.).

### 3.3 Proto Roles

A different solution to the problem of unsatisfyingly vague definitions of thematic roles involves the postulation of *macro roles* (Van Valin 1977) or *proto roles* (Dowty 1991) (cf. Chapter 17). Rather than worrying about whether a participant can indeed be identified as an *agent* when that participant is not volitional, for example, the postulation of proto roles revolves around the idea that a typical agent or *actor* role is actually a collection of various semantic properties, not all of which need to hold all the time. Two main proto roles are usually assumed: *Proto-Agent* and *Proto-Patient*. Again, this reflects the insight that the typical verbal event is transitive and involves two participants: an actor and a thing or person acted upon.

Many theories have adopted some version of the proto role approach. Role and Reference Grammar (RRG; Chapter 7) in the form of Van Valin was the first to pioneer such an approach and macro roles play a central role in determining case marking. At the same time, RRG is also a theory that makes a systematic use of semantic primitives at the level of lexical semantics. The information coming from these semantic primitives is bundled and flows into the determination of macro role properties.

In principle, the RRG approach is the most consistent as it first works with fine-grained lexical semantic properties, bundles those properties together in terms of macro roles and then includes a consideration of syntactic factors in the final determination of the case marking of arguments. However, not all theories have adopted this approach.

Some versions of Linking Theory (section 3.5) within Lexical-Functional Grammar (LFG; Chapter 4) have adopted proto roles, but there is no standard/consistent method of representing the lexical semantic factors that contribute towards the determination of proto roles (e.g., causation, animacy, volitionality, affectedness), though there is an acknowledgement that these things must of course be represented somewhere.

In contrast, Government-Binding (GB)/Minimalism (Chapter 3) has not incorporated proto roles at all, but instead has concentrated on finding direct correlations between lexical semantic decomposition and syntactic reflexes. That is, syntactic structure is assumed to mirror underlying lexical semantic relationships very directly. Earlier versions of the theory made a direct reference to thematic role labels like *agent*, *patient*, *experiencer*, etc. In recent years, there has been an effort to have these labels emerge out of fine-grained syntactic structures that mirror/represent lexical semantic decomposition. A central paper here is Hale and Keyser (1993), a recent effort, which also includes discussions of the distribution of case marking is Ramchand (2007).

Optimality-Theoretic Approaches (Chapter 6) have no standard approach: constraints are formulated with respect to thematic role labels, semantic primitives, as well as proto roles.

Finally, Cognitive Grammar (Chapter 9) and Localist Case Grammar (Chapter 8) use thematic role labels directly as an important part of the theory, while *Case in Tiers* (Chapter 5) eschews the use of thematic roles completely, instead concentrating on a hierarchy of case in conjunction with a hierarchy of grammatical relations.

### 3.4 Grammatical Relations, Unaccusativity

Notions like the *subject*, *object*, or *indirect object* of a clause are used pretheoretically by most linguists and most linguists carry around with them expectations that subjects should tend to be nominative, objects accusative and indirect objects dative (note that crosslinguistic data does not actually fulfill these expectations). Only a few theories, however, grant the notion of *grammatical relations* an official status. One of the first theories to do so was Relational Grammar (RG). This section first looks at the role of grammatical relations in RG, then introduces the *Unaccusativity Hypothesis*, which is due to RG and then surveys the use of grammatical relations in modern approaches.

In searching for a generalization that would be universally relevant for the formulation of a *passivization* rule, Perlmutter and Postal (1983) concluded that the only satisfactory generalization was one that was stated with respect to grammatical relations: in passives the object of the active clause becomes the subject of the passive and the subject of the active is demoted to an oblique or adjunct.

RG itself did not use labels like *subject* or *object*, but instead introduced a notion of *terms*, which were labeled 1, 2, and 3. Though not stated explicitly, there was some expectation that 1s would be nominative, 2s accusative and 3s dative. There was also some expectation that 1s generally correspond to subjects, 2s to objects and 3s to indirect objects. Furthermore, 1s were often placed in correspondence with agents, 2s with patients/themes and 3s with goals. However, as the broad range of crosslinguistic research done within RG showed, none of these correlations hold exactly.

For example, the Georgian ergative-dative alternation presented above in (6) was analyzed as an instance of 3-to-1 advancement. That is, the dative argument begins life underlyingly as a 3 (explaining the dative marking), but ends up on the surface as a 1 (modeling its status as a subject).

RGs postulation of terms thus allowed for a very integrated account of the interaction between lexical semantics, case marking and grammatical relations. This type of account is not mirrored as such in any of the other modern approaches to case, though many have adopted insights formulated within RG, a prominent example being the Unaccusativity Hypothesis.

Perlmutter (1978) observed that at least two classes of intransitive verbs exist: *unaccusatives* (e.g., *fall*, *melt*, generally non-agentive, verbs of motion or change-of-state) and *unergatives* (e.g., *dance*, *sneeze*, generally agentive, verbs of bodily process, etc.).

In languages like Urdu, this distinction goes along with a difference in

case marking. Unergative verbs have an ergative, unaccusatives are unmarked (nominative).<sup>6</sup> In some languages, the subject of unaccusatives even surfaces as an accusative.

- (10) a nadya            gır-i  
       Nadya.F.Nom fall-Perf.F.Sg  
       ‘Nadya fell.’
- b nadya=ne        k<sup>h</sup>ās-a  
       Nadya.F=Erg cough-Perf.M.Sg  
       ‘Nadya coughed.’

The analysis proposed by RG assumes an underlying 2 for unaccusatives and an underlying 1 for unergatives. This roughly models underlying agentivity for unergatives and underlying patienthood for unaccusatives. As all sentences are assumed to require subjects (a final 1 in RG), the underlying 2 of unaccusatives also ends up as a 1.

Essentially this analysis has been adopted into theories like LFG, GB/Minimalism and RRG, whereby each theory differs in its assumption as to how semantic information interacts with the syntax. LFG took seriously the idea that an abstract level of representation — grammatical relations/RG’s terms — that is not equivalent to thematic roles or case should be assumed. So LFG posits terms as well, but labels these with the more traditional labels SUBJ, OBJ, etc. Within LFG, unaccusatives are thus coded as having a patient argument at argument-structure that is then mapped to a SUBJ as part of a *Linking Theory*, which places thematic roles, case marking and grammatical relations in correspondence with one another (see section 3.5).

RRG assumes a clear semantic basis for the unaccusative/unergative split (Van Valin 1990) and models the difference in terms of sophisticated lexical semantic representations which result in a difference in macro roles (Actor vs. Undergoer). Whichever the macro role, the single argument of both unaccusative and unergative verbs ends up being the *syntactic pivot* of the clause. That is, RRG has not adopted a notion of grammatical relations, but rather focuses on the idea that in each clause there is one syntactic pivot with respect to which important generalizations, including ones about case marking, can be stated.

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<sup>6</sup>The statement that ergative case appears on unergative verbs tends to be confusing, but that is because of an unfortunate history of nomenclature with respect to *unaccusative* and *unergative* verbs (see Pullum 1988) — these terms were coined without taking ergative patterns as in (10) into account.

The GB/Minimalism analysis is in many ways quite parallel to the original RG one: an unaccusative is analyzed as having a V with an underlying complement (patient) that then moves to Spec, IP (or some similar position) where it receives nominative case (i.e., an underlying 2 moves to become a surface 1). However, very much unlike RG, GB/Minimalism in its current form does not include a notion of grammatical relations — the labels *subject*, *object*, etc. are used, but in a pretheoretical fashion. The theory also does not include a notion of syntactic pivot. Rather, the particular position an argument is situated at within a syntactic tree is considered to be significant and is interpreted in various ways.

Other theories in which grammatical relations do not play a significant role are Cognitive Grammar and Localist Case Grammar. In contrast, the Case in Tiers approach relies heavily on a grammatical relations in that it arranges them in a hierarchy and then formulates correspondences between this hierarchy and a *case hierarchy* (Chapter 5).

To sum up: the unaccusative/unergative distinction proposed within RG is now considered to be part of standard linguistic knowledge. However, the idea that grammatical relations or terms play a significant role in helping encode generalizations about case marking (and other morphosyntactic phenomena) has not been adopted across the board.

The next section turns to *Linking*, i.e., a formulation of the relationship between thematic roles, case, and grammatical relations (if your theory has them).

### 3.5 Linking

Although RG's generalization for passivization was stated at the level of *terms*, intense work on lexical semantics has since then shifted the analysis to the level of lexical semantics. A sample LFG analysis is sketched in (11).

(11)	<i>pinch</i>	<	agent	patient	>	
	active		SUBJ	OBJ		
	passive			SUBJ		(suppression of agent argument)

That is, in the active version of *pinch*, both participant arguments of the verb are linked into the syntax. Specifically in LFG, they are linked to grammatical relations. Passive morphology (or auxiliaries) are assumed to have the effect of suppressing the agent so that it is not available for linking to the subject anymore. Instead, the patient is linked to the subject.

The essential problem to be solved, under this world view, then, is how to relate the semantic participants of a predicate to their syntactic expressions. Most *Linking Theories* or *Mapping Theories* assume a many-to-many mapping and attempt to find constraints on and generalizations over these mappings.

Some generalizations are simple: crosslinguistically agents are mostly realized as *subjects*, patients as *objects* and goals/recipients as *indirect objects*. Agents also generally are associated with nominative or ergative case, patients with accusative case and goals with the dative. But this is just part of a larger pattern.

One of the most sophisticated theories of linking has been articulated by Kiparsky (1987, 1988, 1997, 2001), who provides an elegant and complex picture of the interaction between case, agreement, position, argument structure and grammatical relations. Kiparsky integrates a sophisticated semantic perspective on case as well as drawing on Pāṇini's *Kāraṅka Theory* (Chapter 1). Furthermore, Kiparsky identifies case, agreement and structural position as three *linkers* which all play a role in identifying the grammatical relations (Abstract Case in his terms) of a clause. Languages may make more or less use of each of these encoding strategies, but at least one of the three is bound to be utilized by a language.

Most theories seem to contain some version of Kiparsky's idea of linkers, though none formulate it as explicitly as Kiparsky. The majority syntax view, which is Government-Binding (GB)/Minimalism, acknowledges both structural position and agreement as playing a major role. Case markers themselves, however, are derivative as they are seen as mere *spell-outs*, that is, as pieces of morphophonology that emerge as part of the pronunciation of a particular structure, but do not play a role in determining the structure. A further difference is that GB/Minimalism adheres to the idea of a strict one-to-one mapping between semantic roles and structural position.<sup>7</sup> This idea is generally known as the UTAH (Uniformity of Theta Assignment Hypothesis, Baker 1988:46). A patient, for example, is assumed to always be accusative, structurally positioned as the complement of the verb (which roughly corresponds to being the object) and to not agree with the verb. Despite numerous difficulties in the face of empirical crosslinguistic patterns, the majority of GB/Minimalism practitioners continue to follow the very strong encoding of the one-to-one mapping assumption, as this is considered to be more theoretically elegant and predictive.

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<sup>7</sup>As mentioned, grammatical relations per se do not play a role in the theory, but are assumed to be directly related to structural position.

GB/Minimalism is thus the only modern approach which avoids a linking approach. The other theories all assume a many-to-many mapping, though differ on the details and the type of involvement of information across modules of grammar.

LFG, for example, factors in positional information as well as information from case markers. That is, position and case are seen as linkers in Kiparsky’s terms (cf. Nordlinger 1998 and Chapter 4 for an analysis whereby case markers constructively contribute to the syntactic analysis of a clause). Agreement, on the other hand, is seen as more of a requirement on structural well-formedness than a truly useful indicator of grammatical relation status. This is because the crosslinguistic pattern of agreement is quite varied and no useful generalizations really seem to be emerging.<sup>8</sup>

Like Kiparsky’s approach, RRG views structural position, agreement and case all as being implicated in the process of linking to syntax. In particular, RRG contains the notion of a *syntactic pivot* which is identified by agreement and often also nominative case. RRG explicitly implicates case as an inherent part of the process of linking, but like GB/Minimalism and unlike LFG, “assigns” case markers as part of the syntactic analysis, rather than having them carry information of their own.

The other theories surveyed in this book are not linking theories, Approaches within OT could in principle incorporate an explicit theory of linking, but this has not been done in practice. A collection of constraints on relations between thematic roles, semantic properties of the clause or parts of the clause, grammatical relations and case is formulated, but this collection remains loose and varies from paper to paper.

## 4 Cognition, Quirky Case and Formal Semantics

Most theories agree that case marking, among other things, expresses a relationship between a predicate and its dependents in that the predicate *governs* the form, type and sometimes also the position of the dependent.

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<sup>8</sup>One core assumption that continues to be held quite strongly in some theories (particularly strongly in GB/Minimalism) is that the verb will always agree with the nominative. However, this core assumption is falsified with respect to a number of languages, among them Nepali.

- |    |                        |                     |              |                |
|----|------------------------|---------------------|--------------|----------------|
| i. | mai=le                 | mero                | lugga        | dho-en         |
|    | I=Erg                  | PossPron.1.M.Sg.Gen | clothes.M.PI | wash-Perf.1.Sg |
|    | ‘I washed my clothes.’ |                     |              |                |

Nepali has an ergative marker for agentive subjects. In (i) the first singular subject is ergative, the object is unmarked (usually glossed as nominative in the literature). Verb agreement here is very clearly with the non-nominative subject.

Theories differ on the exact type of government involved and how it should be realized, but most theories show similarities in that they consider some types of predication to be more basic or “core”. Recall that only the patterns V+O+A, V+O and V+A played a role for Fillmore in terms of language classification. Recall also that proto roles are couched so that they identify core “transitive” predications. Other types, like occurrences of the dative on indirect objects or ergative-dative alternations as illustrated in (6) for Urdu and Georgian tend to be considered deviations from the norm.<sup>9</sup>

As already mentioned, in addition to the assumption that only some patterns are “core”, there was also a strong underlying assumption that subjects are nominative (or ergative), objects accusative and indirect objects dative. This assumption is pretheoretic (particularly for those theories that do not rely on grammatical relations as part of the theoretical apparatus), but quite strong. The assumption is also quite wrong, as was shown by Zaenen, Maling and Thráinsson (1985).

In a landmark paper, Zaenen, Maling and Thráinsson (ZMT) very carefully and thoroughly established that, over and above allowing various types of non-canonical case marking on objects, Icelandic also allowed dative, accusative and genitive subjects. An example for a dative subject is (12).

- (12) Mér batnaði kvefið.  
 I.Dat recovered the.cold.Nom  
 ‘I recovered from the cold.’ (Svenonius 2002:205) Icelandic

Although ZMT’s paper shows that a generalizable regularity holds between types of thematic roles and case markers (goals are generally datives, etc.), they themselves first offered an account for the non-canonical case marking in terms of lexical stipulation. That is, the lexical entries of verbs were analyzed as providing information about the types of thematic roles involved and then furthermore stipulating the type of non-canonical case markers involved.

Within GB/Minimalism, their analysis was interpreted to motivate a difference between *structural* (nominative and accusative) and *inherent* or *quirky* (all other kinds of) case. The former is taken to be regular and assigned as part of the syntactic structure of a language. The latter is

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<sup>9</sup>Theories differ on how far they see dative indirect objects as deviations from the norm. In GB/Minimalism extra machinery in terms of an extra governor (usually a null verbal head) must be introduced. RRG assigns datives to those roles which are neither Actor nor Undergoer macro roles. RG, in contrast, considers dative indirect objects as part of the basic inventory (term 3), as do the linking theories assumed within LFG, Kiparsky’s theory, as well as Wunderlich’s Lexical Decomposition Grammar (see Chapter 17).



considered to be associated with the verb’s lexical entry and is therefore assumed to be irregular, inexplicable and not worthy of interest.

However, crosslinguistic data shows that the patterns identified for Icelandic are not wholly unique, but that so-called non-canonical case marking occurs again and again with respect to generalizable semantic factors.<sup>10</sup> In particular, much seems to be due to spatial metaphors, as can be seen quite readily with respect to so-called *experiencer* or *psych verbs*.

The observation is that the subjects of verbs like *fear*, *feel*, *like/love*, *be hungry*, *be cold* or *recover* as in (12) crosslinguistically tend to deviate from the default subject marking. Very often this “non-canonical” case is a dative. Less often, it might be an accusative or a genitive. More precisely, examples such as (13) and (14) suggest that there is some connection to spatial semantics. In both examples, the main verb is a spatial verb. In Bengali, the liking of tea is metaphorically attached to the subject; in Urdu, fear can be seen to have metaphorically come to one. Experiencer subjects can thus be analyzed as abstractions over originally spatial configurations (cf. Verma and Mohanan 1990).

- (13) amar tʃa            b<sup>h</sup>alo lage  
 I.Gen tea.Nom good be.attached.Pres  
 ‘I like tea.’ (Klaiman 1980:276) Bengali

- (14) muj<sup>h</sup>e dar aya  
 I.Dat fear come.Perf.M.Sg  
 ‘I got scared.’ (lit. fear came to me) Urdu

Further instances of underlying spatial metaphors can be similarly readily identified with respect to other case patterns. *Localistic Case Grammar* (Chapter 8) therefore builds heavily spatial/localistic concepts. Indeed, spatial metaphors and other semantic extensions are so wide spread that *Cognitive Grammar* (Chapter 9) sees this as the primary factor underlying the distribution of case marking.

While this theoretical stance is clearly right in a very fundamental way, examples as in (15) and (16) present a challenge. Here, a difference in case marking goes hand-in-hand with a difference in modality. How can spatial metaphors (or other semantic extensions) be used to explain modal semantics in a straightforward manner?

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<sup>10</sup>With respect to Icelandic in particular, some recent work in this direction is, e.g., Svenonius 2002, Eythórsson 2002.

- (15) a. **ami** tomake cai  
 I.Nom you.Acc wants  
 ‘I want you.’ (Klaiman 1980:279) Bengali
- b. **amar** tomake cai  
 I.Gen you.Acc wants  
 ‘I need you.’ (Klaiman 1980:279) Bengali
- (16) a. **amma** kuṭṭiye aḍik’k’-aṇam  
 mother.Nom child.Acc beat-want  
 ‘Mother must beat the child.’ Malayalam  
 (Butt, King and Varghese 2004)
- b. **ammak’k’ə** kuṭṭiye aḍik’k’-aṇam  
 mother.Dat child.Acc beat-want  
 ‘Mother wants to beat the child.’ Malayalam  
 (Butt, King and Varghese 2004)

There is thus clearly much more work to be done with respect to explaining the connection between case marking and semantic expression.

## 5 A Complex Picture

This short overview chapter cannot begin to do justice to all of the modern approaches to case. In particular, there are several other theories that deal with case, but which are not discussed in the handbook. Among these are theories of syntax such as Head-Driven Phrase Structure Grammar (HPSG), Tree Adjoining Grammar (TAG) and Combinatory Categorical Grammar (CCG). With respect to the core ideas sketched in this chapter, these theories can be seen as following the intuitions articulated within GB/Minimalism quite closely, though they are realized quite differently in terms of technology and representations.

In addition to sketching some core ideas and assumptions of modern approaches in this chapter, I have also tried to show that any analysis of case must be prepared to encounter a complex pictures of interactions and, in particular, must be prepared for a semantic base underlying many of the patterns.

However, not all of the patterns are semantic in nature. One aspect that has not been dealt with much is the idea of the *Case Tier* (Chapter 5). This approach follows the general assumptions of GB/Minimalism, but additionally proposes an alignment between case markers and a *hierarchy* of

grammatical relations. This proposal is based on evidence that languages do organize at least part of their case marking system in terms of purely structural alignment constraints between case and grammatical relations. This idea is contained in very few other approaches, but seems to have pin-pointed yet another piece of the complex case picture, which involves an intricate interaction between morphosyntactic, semantic and discoursal factors.

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