the title ('general language-typology'), this book is concerned almost exclusively with quantitative typology. A more detailed account of agglutination versus fusion in Finnish and Estonian may be found in Comrie (forthcoming, d).

There are several works that give an overview of the typological structure of one or more languages – indeed, one can argue that this material should be readily retrievable from any good grammar. Meillet & Cohen (1952) provide overviews of most language families discussed (a third, substantially revised, edition is in preparation). Sketches of several languages (Easter Island, Japanese, and Mandarin Chinese) are included in Lehmann (1978b). Briefer, more introductory sketches of a larger number of languages are included in Shopen (1979a, b). See also the references to work by Sandra A. Thompson and John A. Hawkins in the notes and references for chapter 3.

Detailed typological overviews of a range of syntactic topics are included in Shopen (forthcoming): these volumes could well serve as a set of further readings in conjunction with the present book.

3

THEORETICAL PREREQUISITES

This chapter is not so much a study of language universals and typology as such, but rather an outline presentation of some of the notions that will be relevant in the discussion of particular aspects of universals and typology in subsequent chapters. However, section 3.5 does present a synthesis of the material in the rest of the chapter that is relevant directly to language typology, in the form of some contrasts between basic clause structure in English and Russian.

Much of the detailed discussion of the body of the book is concerned, in one way or another, with the valency of predicates, i.e. with the number and kind of noun phrase arguments that a particular predicate (usually, a verb) can take. An obvious example, from traditional grammar, would be the statement that the verb *give* takes three arguments: subject, direct object, and indirect object. Another way of describing the valency of the verb *give* would be to say that it takes an agent (the giver), a patient (the gift), and a recipient. There are thus several terminologies within which we can describe the valency of a verb, and in the present chapter we shall be looking at three such terminologies in particular: semantic roles, pragmatic roles, and grammatical (syntactic) relations. In addition, there will also be a brief discussion (section 3.4) of morphological cases, especially in relation to grammatical relations. The aim of this chapter is clearly not to provide an exhaustive account of the various kinds of relation a predicate can contract with its arguments, but rather to clarify certain more specific issues that will be of relevance for the subsequent discussion.

3.1 SEMANTIC ROLES

Recent interest in semantic roles within descriptive linguistics stems largely from the work, originally using English material, within the framework of

case grammar. This model made explicit an important point that had received virtually no treatment within previous models of transformational-generative grammar, namely that the various grammatical relations of English bear only a very loose correlation with semantic roles, and that therefore some other vocabulary, in addition to grammatical relations, is required to give a complete account of the syntax and semantics of valency in English. Thus, if one takes the sentences *John opened the door with the key*, *the key opened the door*, *the door opened*, then simply to say that the subjects of these sentences are, respectively, *John*, *the key*, and *the door* fails to recognize that the semantic role of the subject is different in each example, a difference that can be described by assigning the semantic roles, respectively, of agent, instrument, and patient. Conversely, simply to describe the grammatical relations of these sentences fails to note that although *the door* is sometimes direct object and sometimes subject, yet still its semantic role remains constant (as patient); although *the key* is sometimes a non-direct object and sometimes a subject, again it always fulfils the same semantic role, of instrument.

In relation to straightforward examples like the English examples just discussed, the problem seems to have a ready solution, but this is not so when one turns to a wider range of data. In particular, one major problem that arises is the justification of the set of semantic roles, and the justification of particular assignments of semantic roles. The former problem can be seen in the tendency for the list of semantic roles to grow with each new contribution to the literature. Thus if one distinguishes between agent, defined say as the conscious initiator of an action, and instrument as the means used by the agent to carry out the action, then one needs a third semantic role for *the wind* in *the wind opened the door*, say natural force, since the wind is neither a conscious initiator nor a tool used by some conscious initiator. The second problem can be illustrated by considering a sentence like *John rolled down the hill*: here, it would be misleading to consider John simply as a patient, as he would be in the sentence *Mary rolled John down the hill*, since at least one possible interpretation of the former sentence is that John consciously initiated his roll down the hill; on the other hand, it is equally misleading to classify John simply as an agent, since he is also undergoing the rolling action.

Given our interests in the present book, we shall not attempt to provide a general solution to the problem of enumerating and assigning semantic roles, but rather limit ourselves to the following two more restricted objectives – elsewhere, in the course of the exposition, we will often make informal use of terms from case grammar. First, our discussion will be limited to a relatively narrow area within the totality of semantic roles, namely the area concerned with such roles as agent, force, instrument, experiencer, and patient, the

last-named being treated essentially as unmarked, i.e. the others are described primarily in terms of their deviation from patient. Secondly, we will assume that in order for a distinction of semantic role to figure in a universal inventory of semantic roles, it must be the case that at least one possible language has some grammatical correlate of this semantic distinction. In practice, this means that justification of a semantic role requires such evidence from an actual language. This avoids the problem of multiplying the number of semantic roles to encompass all possible conceptual distinctions.

The most important point that we want to make concerning the relations among agent, force, instrument, and patient is that this is not so much a set of discrete semantic relations, but rather a continuum, the labels representing different points along this continuum. The continuum as a whole can be regarded as a continuum of control, and we shall use this term rather than the set of discrete labels, except informally. Our task is therefore to ascertain whether distinctions in terms of control find formal linguistic reflection in one or more languages, correlating with the conceptual distinction that can be drawn among conscious initiator (*John* of *John opened the door*), mindless initiator (*the wind* of *the wind opened the door*), mindless tool (*the key* of *John opened the door with the key*), and entity affected by the action (*the door* in each of these examples).

If we take an English sentence like *we fell to the ground*, then there is no grammatical indication of the degree of control that we exercised: it may have been the case that we deliberately fell down (full control), it may have been the case that we fell owing to our carelessness (potential control not exercised), or it may have been the case that we inadvertently succumbed to a hostile universe or were pushed (no control). In some languages, however, it is possible to express this kind of distinction in certain constructions. For instance, in Bats there are two ways of translating this English sentence, of which (1) has the intransitive subject in the absolutive case, and (2) – the less usual construction – has the intransitive subject in the ergative, usually reserved for transitive subjects:

Txo (ABSOLUTIVE) *naizdrax kxitra.* (1)

Atxo (ERGATIVE) *naizdrax kxitra.* (2)

The difference is entirely one of control: version (2) implies that we had more control over the event described, perhaps in that we deliberately fell, or more likely in that we should have exercised control but failed to do so; (2) cannot, however, be used to describe a situation where we fell through no fault of our own. Essentially the same distinction is found in Chickasaw, except that here

the distinction is shown by different sets of person-and-number affixes on the verb:

Sa-ttola. (3)

Ittola-li. (4)

Both can be translated into English as 'I fell down', but (4), the more marked form, indicates that I fell down on purpose. Although such distinctions, correlating with different degrees of control, are found sporadically across the languages of the world, we are not aware of any language where the case marking or verb agreement system is completely general in this respect, i.e. where this part of the morphology would be determined purely in terms of semantic roles. In Bats, this opposition is restricted to a small (and apparently dwindling) set of intransitive verbs, and also occurs only with first and second person pronouns. In Chickasaw, there are numerous verbs which seem simply to require one or other set of affixes, irrespective of degree of control, e.g. *ĩla-li* 'I am different', with no indication that I am deliberately being different.

Another area where differences in degree of control show up quite frequently across languages is in causative constructions, as discussed in more detail in chapter 8. For the present, we will restrict ourselves to giving some examples where the degree of control retained by the causee is different depending on the case used to encode this semantic role. In Japanese, for instance, there are two ways of translating 'Taroo made Ziroo go', in the first of which *Ziroo* is in the accusative (postposition *o*), in the second with the postposition *ni* (which is used for a variety of semantic roles, e.g. recipient, location, instrument):

Taroo ga Ziroo o ikaseta. (5)

Taroo ga Ziroo ni ikaseta. (6)

The difference is that (5) assigns minimal control to Ziroo, while (6) allows that Ziroo may have retained greater control: for instance, (5) often corresponds to 'Taroo forced Ziroo to go', while (6) corresponds to 'Taroo got Ziroo to go, persuaded him to go, got him to go by asking nicely'. A similar distinction with the causative of a transitive verb is found in the following Kannada examples:

Avanu nanage (DATIVE) *bisketannu tinnisidanu.* (7)
'He caused me to eat (fed me) a biscuit.'

Avanu nanninda (INSTRUMENTAL) *bisketannu tinnisidanu.* (8)
'He got me to eat a biscuit.'

Sentence (7) implies little or no control retained by the causee, and might be appropriate, for instance, for someone feeding a baby or force-feeding someone on hunger strike, while (8) suggests rather that the causer worked indirectly on the causee to get him to eat the biscuit, for instance by persuading him without the use of force.

On the parameter of control, it might seem that there is no distinction between experiencer and patient, since in general one does not have control over one's own sensory experiences: one can choose whether or not to look at something, but one cannot choose (except metaphorically) whether or not to see something. However, there is a crucial difference, in that for an entity to be an experiencer presupposes that it must be sentient, capable of receiving sensory experiences, and this is crucial in distinguishing experiencer from patient, and also in distinguishing experiencer from non-patient on the continuum of control: an experiencer has no (necessary) control over the reception of sensory impressions. Although many languages treat experiencers just like initiators of actions, as in English *I hit the man* and *I saw the man*, there are also many languages that distinguish them. In Lak, for instance, the dative case is used for the subject of a verb of perception, whereas the ergative is the usual case for the subject of a transitive verb:

Buttan (DATIVE) *ussu xxal ẋunni.* (9)
'Father saw brother.'

Buttal (ERGATIVE) *bavxxunnu ur ču.* (10)
'Father sold the horse.'

Causative constructions again sometimes evince a distinction between experiencer and non-experiencer causee. In French, for instance, the causee in the causative of a transitive verb can usually be expressed either by a noun phrase in the dative (preposition *à*) or by the use of the preposition *par* 'by':

J'ai fait manger les gâteaux à/par Paul. (11)
'I made Paul eat the cakes.'

Where the verb expressing the result is one of perception, however, the experiencer-causee can only stand in the dative:

*J'ai fait voir les gâteaux à/*par Paul.* (12)
'I made Paul see the cakes.'

From the preceding discussion, it might seem that the continuum of control and the distinction of experiencer from patient are concerned with

animacy, but in fact it is crucial to keep these two parameters apart. Notions like control and experiencer refer to a relation between the predicate and one of its arguments. The scale of animacy, however, to which we return in more detail in chapter 9, is concerned with an inherent property of noun phrases, irrespective of their role within a particular construction. Thus the noun phrase *the man* is always high in animacy, although it may vary in degree of control, having high control in *the man deliberately hit me*, minimal control in *I hit the man*, and either high or low control in *the man rolled down the hill*, depending on the particular interpretation assigned. The distinction between the relations and inherent properties is particularly clear in an opposition like that between Bats sentences (1) and (2): the noun phrase 'we' is very high in animacy in both examples, but the degree of control is different. More generally: a high degree of animacy is necessary for a noun phrase to be interpreted as having a high degree of control or as an experiencer, but is not a sufficient condition.

3.2 PRAGMATIC ROLES

By pragmatic or discourse roles, we refer to the different ways in which essentially the same information, or the same semantic content, can be structured differently to reflect the flow of given and new information. A simple way of illustrating differences of pragmatic role of noun phrases is by taking question and answer sequences:

—Who saw Bill?—John saw Bill/him. (13)

—Who did Bill see? —Bill/he saw John. (14)

In such interchanges, as indeed in any natural discourse, it is normally the case that the speaker and hearer share certain information in common, but that there is also some information that they do not share. Thus in (13), the questioner assumes that both he and his interlocutor know that someone saw Bill, and the questioner wants a piece of new information; this new information is given by the answerer as the noun phrase *John*. Likewise, in (14), the questioner assumes as common knowledge that Bill saw someone, and requests a piece of new information, provided by the answerer as *John*. In talking about pragmatic roles, as opposed to semantic roles, we are not restricted solely to noun phrases, since the new information may be the verb phrase, as in (15), or even the whole sentence, as in (16), but for the present purposes we will in fact restrict ourselves to the pragmatic functions of noun phrases:

—What did Bill do? —Bill/he went straight home. (15)

—What happened? —Bill went straight home. (16)

The terminology for describing pragmatic functions is even less standard than that for describing semantic roles, the differences being conceptual as well as purely terminological, but for present purposes we will need to make only two distinctions; we will therefore introduce the terminology used here for these distinctions, and stick to this terminology throughout the rest of the book. The essential piece of new information that is carried by a sentence will be referred to as its focus. Thus the focus of (13) is *John*, that of (14) is *John*, that of (15) is *went straight home*, and that of (16) is *Bill went straight home*. The use of question and answer sequences is particularly useful in illustrating focus distinctions, since the nature of the question forces the answerer (assuming he is being cooperative) to select a particular part of his reply as focus. However, the distinction between focus and non-focus can be applied to any sentence.

In English, in general, there is no grammaticalized indication of focus, although focus is usually shown intonationally in the spoken language by being assigned sentence stress (intonation nucleus). In some languages, however, there is such grammaticalization. In Hungarian, for instance, the focus must immediately precede the finite verb (as must the question word in a special question). Thus the question 'who saw Zoli?' could be phrased as either (17) or (18) in Hungarian, and likewise the reply 'Vili saw Zoli' could be either (19) or (20), but no other word orders are possible, because they would involve separating the focus from before the verb:

Ki látta Zoli-t? (17)

Zoli-t ki látta? (18)

Vili látta Zoli-t. (19)

Zoli-t Vili látta. (20)

(In these examples, *-t* is the accusative (direct object) suffix.) In Hungarian, incidentally, this rule operates independently of grammatical relations, so that if the focus is direct object then it also must immediately precede the verb:

Ki-t látta Zoli? or *Zoli ki-t látta?*
'Who(m) did Zoli see?' (21)

Zoli Vili-t látta or *Vili-t látta Zoli.*
'Zoli saw Vili.' (22)

Even in English, there is one instance where focus is the determining factor in word order, namely with special questions, where the *wh-* word

expressing the focus must be sentence-initial (or part of the sentence-initial noun or prepositional phrase), so that although direct objects normally follow the main verb in English, we still have *who(m) did Bill see?* It is by no means necessary for a language to exhibit this relevance of focus, since in Mandarin Chinese, for instance, one has the word order *Zhāngsān kàn shéi?*, literally 'Zhangsan see who?' for English 'who does Zhangsan see?'

The second distinction that we need to introduce is that between topic and comment. Again, the easiest way to appreciate this distinction is to look at mini-dialogues where the choice of topic is forced. In English, for instance, if one person asks a question like *and what about Bill?*, then his interlocutor is forced, assuming he is being cooperative, to select *Bill* as topic of his reply. Thus if a dialogue starts out by A saying *Bill sold the car*, and B then asks *and what about John?*, then A must continue by saying something about John, for instance *John sold the bike, John didn't sell his car*. Conversely, if B had said *and what about the bike?*, then A would have had to give a reply with *the bike* as topic, e.g. *Bill didn't sell the bike*, or *John sold the bike*. From the fact that *John sold the bike* is felicitous as an answer to either question, we observe that in general English does not have any grammaticalization of topic versus non-topic (comment) status. Some languages, however, do, for instance Japanese, with a special topic marker *wa* to indicate the topic of the sentence.

Although in general English does not have grammaticalization of topic or focus, there are some more restricted kinds of topic and focus that can be grammaticalized. These are contrastive topic and focus, i.e. where one wishes to select one topic or focus from a delimited set of topics or focuses. With topics, this is indicated in English, especially spoken English, by preposing the topic noun phrase, as in *John, I know*; the implication is that, of the various entities that constitute the potential range of topics, where is one, namely John, that I do know, whereas I am not indicating whether or not I know the others. With focus, the construction is with sentence-initial *it's X that*, where *X* represents the focused noun phrase. Thus if someone offers me a range of books and asks which particular book I want to take, I can reply by saying *it's that one over there that I want*. In English, however, these are not general topic or focus constructions, so that it would be inappropriate, for instance, to introduce a chapter by saying *in this chapter it's relative clauses that we're going to talk about*, even though *relative clauses* is the intended focus.

With pragmatic roles, as with semantic roles, we must emphasize that we are concerned with relations between noun phrase arguments and their predicate, and not with inherent properties of noun phrases. This is essential in order to distinguish adequately between, on the one hand, topic and focus, and, on the other, definiteness and indefiniteness. In answer to the question *what did you see?*, the focus may be either definite or indefinite, i.e. *I saw the dog* or *I saw a dog*. The former will be used if the answerer assumes that his interlocutor can identify the dog being referred to in the context or situation, for instance if this dog had already been mentioned in the earlier discourse; the latter, with the indefinite article, will be used if the answerer assumes that this identification cannot be made. In the first instance, *the dog* is in a sense old information, in that it is already available to speaker and hearer as referring to some known entity, but what is important is not the pragmatic nature of this noun phrase on its own, but rather its pragmatic relation to the rest of the sentence: although the presence of the dog in the store of speaker–hearer shared knowledge is presupposed, what is new is the precise relation of this entity to the action of my seeing. In the reply *a dog*, the dog in question is both presented per se for the first time, and related to my seeing for the first time. The terms given versus new information are potentially confusing because of this distinction between inherent and relational pragmatic properties of noun phrases, and to avoid this potential confusion we use definite/indefinite as inherent terms and topic and focus as relational terms.

3.3 GRAMMATICAL RELATIONS

Most descriptions of English syntax, and of the syntax of many other languages, have assumed that, perhaps in addition to semantic and pragmatic roles of the kind discussed in the earlier part of this chapter, there are also purely syntactic relations contracted between a noun phrase and its predicate, which, however closely they may correlate with semantic or pragmatic relations, cannot be identified with them. These might be called syntactic relations, though recent tradition has in fact determined that the usual name is grammatical relations, and this is the term that will be used in the present book: it should, however, be borne in mind that the term grammatical here does have the narrow sense of syntactic. Grammatical relations that are commonly proposed in traditional and recent literature are subject, direct object, and indirect object.

While the function of semantic roles and pragmatic roles can readily be understood in terms of the need for language to express semantic relations and package them in some way in terms of information flow, it is much less obvious why human language should require grammatical relations, or more generally why human language should require syntax (in the linguists' sense of syntax) at all. Although attempts have been made to do away with syntax by trying to argue that everything can be accounted for in terms of either semantics or pragmatics, no such attempt strikes us as

even nearly approaching success, and it therefore seems to remain a truth about human languages that they do have syntaxes, and that many of them do have grammatical relations that cannot be reduced to semantic or pragmatic primitives. In this book, we accept that such grammatical relations do exist, but unlike much recent work on grammatical relations (in particular, relational grammar), we argue that much of syntax can be understood only in relation to semantics and pragmatics, or more specifically that grammatical relations cannot be understood in their entirety unless they are related to semantic and pragmatic roles. This point will be illustrated in somewhat more detail in chapter 5, when we look more specifically at one grammatical relation, subject. For the moment, suffice it to say that at least many aspects of the nature of grammatical relations can be understood in terms of the interaction of semantic and pragmatic roles: for instance, many facets of subjecthood can be understood by regarding the prototype of subject as the intersection of agent and topic.

In much work on grammatical relations, it is taken for granted that certain grammatical relations exist as given by the general theory – in particular: subject, direct object, indirect object, versus other (oblique) noun phrases that bear some other relation to the predicate – and that the linguist looking at an individual language has to work out which noun phrases in this particular language evince these particular relations. In the present work, a different approach is assumed, namely that in order to say that a given grammatical relation exists in a given language this claim must be justified both language-internally and cross-linguistically. Language-internally, this means that a number of logically independent criteria must be established that serve to identify the grammatical relation in question as being syntactically significant in the language in question. Cross-linguistically, the problem is more difficult, and the following is more in the nature of a suggestion: in assigning the same name to grammatical relations established independently in different languages, it must be the case that the relations in the two languages have a reasonable degree of overlap, for instance in terms of occurrence in translation equivalents. Although there remain many unclear instances, this clearly excludes any analysis of a language where the only claimed occurrences of subjects were in translations of English prepositional phrases with the preposition *notwithstanding*.

One way of illustrating this is to take an example which is often treated as a grammatical relation, and show how under this approach it would probably, on available evidence, not be a grammatical relation, namely indirect object in English. In much traditional grammar this term is used very loosely, as when, for instance, we are told that the indirect object may either precede the direct object without a preposition (as in *I gave John the book*), or follow the direct object with the preposition *to* (as in *I gave the book to John*). Since these are, rather, different syntactic encodings of the same semantic role, this use of the term indirect object seems to be referring to a semantic role (in more current terminology, recipient) rather than to a grammatical relation; the noun/prepositional phrases *John* and *to John* seem to have little, other than semantic similarity, in common, as can be seen by contrasting their different abilities to become subject of the passive: *John was given the book*, but not **John was given the book to*.

Orthodox relational grammar deliberately avoids this pitfall, and would claim that in the version *I gave John the book* the noun phrase *John*, despite its semantic role, is a direct object, while restricting the term indirect object to the equivalent argument in the version *I gave the book to John*. The question which is not addressed by this assignment, however, is what evidence there is internal to English for the establishment of a separate grammatical relation of indirect object. There might seem to be a good test, in that indirect objects do permit the alternation between the two construction types shown above with *give*, i.e. corresponding to a construction with an indirect object there will be an alternative construction where that noun phrase appears as a direct object. However, this criterion – apart from being just a single criterion, and therefore not really satisfying the need for a set of logically independent criteria – fails on two major counts. First, the alternation in question is in large measure lexically conditioned, so that in many constructions where one might expect intuitively to find an indirect object the alternative without the preposition *to* is impossible, as in *I attribute our failure to his malevolence*, versus **I attribute his malevolence our failure*; presumably this objection could be answered (though at the risk of circularity) by saying that the *to* argument of *attribute* is not an indirect object. Secondly, this alternation applies not only to putative indirect objects, but also to benefactives, as in the alternation between *I bought this book for John* and *I bought John this book*. While one might again, circularly, avoid the problem by saying that in English benefactives are a subclass of indirect objects, this runs into further problems, since for many speakers the behaviour of such alternative benefactive constructions under passive is different from that of recipient constructions, since many speakers allow *John was given the book* but not **John was bought the book*. In English, then, there seems to be no evidence for, and circumstantial evidence against, the existence of a distinct grammatical relation of indirect object. Similar caveats can be applied to putative indirect objects in many other languages, and this particular grammatical relation seems to be the one that requires most re-thinking cross-linguistically.

After this negative demonstration, we shall outline a positive demonstration, using Huichol as the illustrative language. In Huichol, there are

several logically independent tests that enable us to set up two grammatical relations of subject and (direct) object (we parenthetize *direct*, since there is no grammatical relation of indirect object with which it contrasts). Subjects are characterized

(a) by having distinct suffixes for a limited number of noun phrase types, whereas all non-subjects have a distinct set of suffixes for such noun phrase types; in (23), the subject suffix is *-ti*:

Tïïri yïnauka-ti me -wa
children four 3PLURAL 3PLURAL
-zeiya uukaraawicizï yïhuuta-me. (23)
see women two
'Four children see two women.'

(b) by triggering a separate set of verb agreement prefixes; in (24), the prefix *pe-* is unequivocally a subject prefix:

Eekï pe -nua. (24)
you 2SINGULAR arrive
'You arrived.'

(c) in that only subjects can trigger the possessive reflexive prefix *yu-*, so that in (25) the stick is unequivocally in the possession of the one doing the beating and not of the person being beaten or some third party:

Mïïkï yu-kïye -kï me
they stick INSTRUMENTAL 3PLURAL
-pe-i -kuuwaazï (25)
3SINGULAR beat
'They beat him with their/*his stick.'

(d) in that, where the subject of certain time clauses is coreferential with the subject of the main clause, a special suffix must be added to the verb of the time clause, e.g. *-ka* in (26); in all other instances (i.e. unlike subjects, even if other noun phrases are coreferential), a different set of suffixes is used, e.g. *-ku* in (27):

Nee ne -nua -ka, paapaa ne
I 1SINGULAR come tortilla 1SINGULAR (26)
-p-ii -Pïti.
3SINGULAR give
'When I arrived, I gave him a tortilla.'

Uuka nua -ku, nee ne -petïa. (27)
girl arrive I 1SINGULAR leave
'When the girl arrived, I left.'

These four tests are clearly logically independent of one another, yet all serve to identify a single set of noun phrases, thus establishing a grammatical relation language-internally. Moreover, the degree of overlap between these noun phrases and subjects in translation equivalents in other languages is so close that we have no hesitation in referring to this grammatical relation as subject.

For direct objects in Huichol there are two criteria:

(a) verb agreement, since in addition to the prefixes for subject agreement, Huichol has a distinct set of prefixes for direct object agreement:

Taame eekï te -meci -zeiya. (28)
we you 1PLURAL 2SINGULAR see
'We see you.'

(b) possibility of appearing as subject of a passive, since in Huichol only direct objects have this property:

Tïïri me -puutiweiya. (29)
children 3PLURAL beat-PASSIVE
'The children were beaten.'

The conjunction of these two logically independent properties serves to identify the grammatical relation of direct object language-internally. In comparison with other languages, the noun phrases thus identified correlate highly with direct objects, with justifies the use of this term to refer to this grammatical relation (though a more neutral term like prime object might be preferable, since Huichol has no separate grammatical relation of indirect object). The overlap is not, however, complete here, since in a Huichol sentence with both a patient and a recipient it is the recipient, rather than, as in many languages, the patient that is direct object:

Nee waakanaari ne -meci -tïkiiti eekï. (30)
I chickens 1SINGULAR 2SINGULAR give you
'I gave the chickens to you.'

Eeki tumiini pe -puuzeiyastiari (31)
you money 2SINGULAR show-PASSIVE
'You were shown the money.'

But notwithstanding the discrepancy in certain instances, the degree of overlap elsewhere is large enough to justify the identification. Thus our use of the same terms subject and direct object as in discussing other languages is justified by the overlap cross-linguistically in their use: while the assignment of individual noun phrases to these grammatical relations in Huichol is determined by language-specific criteria associated with each grammatical relation.

In the particular example chosen, that of Huichol, all of the criteria for each grammatical relation converge on a single noun phrase in each construction (at least, in the present state of our knowledge of Huichol syntax). It is, however, conceivable that different sets of criteria might make for different groupings of arguments into different grammatical relations. Examples of this, and their implications for universals and typology of grammatical relations, will be discussed further in chapter 5, with particular regard to subjects. For the present, we may note that one particularly widespread instance of this kind of split is found between intransitive and transitive constructions in many languages, so that in translations of (32) and (33) it is sometimes the case that some criteria group *John* and *Bill* together as a single grammatical relation, while others group *John* and *Harry* together:

John arrived. (32)
Bill hit Harry. (33)

Since we shall need to refer, relatively informally, to some such examples before they are introduced more thoroughly in chapter 5, we will introduce the following terminology to refer to the various arguments: the intransitive subject (e.g. *John* of (32)) will by symbolized S; that argument of the transitive construction that correlates most closely with agent will be symbolized A (e.g. *Bill* of (33)), and that one that correlates most highly with patient will be symbolized P (e.g. *Harry* of (33)). Grouping of S and A together will be referred to as the nominative–accusative system; grouping of S and P together as the ergative–absolutive system.

3.4 MORPHOLOGICAL CASES

In terms of a traditional grammatical discussion of clause structure, it might seem strange that so far we have not spoken of morphological cases, such as

nominative, accusative, ergative, absolutive, since in the traditional grammars, especially of highly inflected languages like Latin, the discussion of grammatical relations, also semantic roles, is closely linked to that of case, with equation or near-equation being drawn between subject and nominative, or direct object and accusative, for instance. In the present section, largely as a counter-influence to this traditional view, we will emphasize the extent to which there can be discrepancy between grammatical relations and morphological cases, in particular noting some examples where the distribution of morphological cases is completely irrelevant to the operation of syntactic processes. Towards the end of this section, we will also note some examples where, despite a discrepancy between grammatical relations and morphological case, the latter does still play some role in the conditioning of certain syntactic processes.

We shall start with a relatively straightforward example of such discrepancy, concerning the cases used to express the direct object in Russian. In positive sentences, the direct object normally stands in the accusative; in negated sentences, the direct object may stand in either the accusative or the genitive, but our present interest is naturally focused on instances where the direct object under negation is in the genitive:

Maša kupila šapku. (34)
'Masha bought a cap.'

Maša ne kupila šapki. (35)
'Masha didn't buy a cap.'

One syntactic process of Russian that is sensitive to grammatical relations is passive, since only the direct object of an active verb can appear as the subject of the corresponding passive. Both (34) and (35), despite the different case markings of the noun *šapk-*, have corresponding passives where this noun phrase appears as subject, in the nominative form *šapka*:

Šapka byla kuplena Mašej. (36)
'The cap was bought by Masha.'

Šapka ne byla kuplena Mašej. (37)
'The cap wasn't bought by Masha.'

This is, then, a clear instance of discrepancy between grammatical relations and morphology, moreover one where the grammatical relations clearly win out.

To avoid misunderstanding, it should be emphasized that what we are

claiming is that there is here a discrepancy between syntax and morphology, i.e. that the morphology is arbitrary relative to the syntax (or, equivalently except for emphasis, the syntax is arbitrary relative to the morphology). We are not claiming that the morphology is arbitrary in any absolute sense – although there probably are many instances where morphology is simply arbitrary. For instance, the use of the genitive for a negated direct object can be given a natural interpretation as a special case of the use of the genitive in quantified expressions in Russian, compare the genitive singular in *ni šapki* 'not a (single) cap' and the genitive plural in *mnogo šapok* 'many caps'.

A particularly far-reaching discrepancy between morphology and syntax is to be found in Kalaw Lagaw Ya (the Western Torres Strait language), the discussion here being restricted to the Saibai dialect. Different classes of noun phrase have completely different morphological systems when they appear as S, A, or P of a clause. Thus, singular pronouns have different forms for each of these three (e.g. S *ngay*, A *ngath*, P *ngoena* 'I'); singular proper names have a nominative–accusative case marking system (e.g. S/A *Kala*, P *Kala-n*); non-plural common nouns have an ergative–absolutive case marking system (e.g. S/P *burum* 'pig', A *burum-an*); non-singular personal pronouns and plural common nouns have only one form for all three functions (e.g. S/A/P *ngoey* 'we', *burum-al* 'pigs'). However, there seems to be no other process in the language that is sensitive to these distinctions. For instance, verb agreement operates consistently on an ergative–absolutive basis: verbs agree in number with their S if intransitive, and with their P if transitive, totally independent of the case marking:

Ngay/ngi/garkaz/burum/Kala/Gibuma pathiz (SINGULAR). (38)
'I/you/the man/the pig/Kala/Gibuma left.'

Ngoey/ngitha/garkoez-il/burum-al pathemin (PLURAL). (39)
'We/you/the men/the pigs left.'

Ngath/garkoez-in/Kala/ngoey/garkoez-il ngin/burum/Gibuma-n mathaman (SINGULAR). (40)
'I/the man/Kala/we/the men hit you/the pig/Gibuma.'

Ngath/garkoez-in/Kala/ngoey/garkoez-il ngitha/burum-al mathamoeyn (PLURAL). (41)
'I/the man/Kala/we/the men hit you/the pigs.'

Although much recent work on syntax, especially syntactic typology, has emphasized the frequent irrelevance, for syntactic purposes, of morphological distinctions of this kind, some recent work has shown that at least in

some restricted instances some morphological differences are important for the operation of syntactic processes. The example used here is of coordination in Yidiny. First, we should note that, in English, when transitive and intransitive sentences are coordinated as in (42) below, it is possible to omit the subject of the intransitive clause only if it is coreferential with the subject (A) of the preceding transitive clause:

The man/I hit the woman/you and ran away. (42)

Thus the interpretation of (42) is that the man/I ran away, not that the woman/you ran away: in English this is rigidly determined syntactically, and only this interpretation is possible even in situations where the alternative interpretation would be as plausible or more so. In Yidiny, however, the interpretation, or at least the preferred interpretation, is determined by the case of the noun phrases in the transitive clause. In Yidiny, pronouns have a nominative–accusative case marking system, while other noun phrases have an ergative–absolutive case marking system, as in the first clause of each of the following examples:

Biṃbi: *gudᵑugudᵑu*
father-ERGATIVE rainbow-ABSOLUTIVE
wawa:l, biṛi gundᵑi:nʸ. (43)
saw PARTICLE returned
'Father saw the rainbow, and it returned.'

ŋayu nʸunin ʸ bandᵑa:ɽ, wanda:nʸ. (44)
I-NOMINATIVE you-ACCUSATIVE followed fell-down
'I followed you, and I fell down.'

ŋayu bama bandᵑa:ɽ, wanda:nʸ. (45)
I-NOMINATIVE person-ABSOLUTIVE followed fell-down
'I followed the person and I/he fell down.'

The rule determining the interpretation in Yidiny is the following: the controller of the interpretation (i.e. the noun phrase in the first clause interpreted as coreferential with the omitted noun phrase of the second clause) must be in either the absolutive or the nominative case: thus, in (43) the controller is the absolutive noun phrase, in (44) the nominative pronoun, and in (45) it can be either the absolutive noun phrase or the nominative pronoun.

This morphologically conditioned pattern, however, exists only for the interpretation of coordinate constructions. Elsewhere, these morphological differences are irrelevant to syntactic processes, which work for the most

part on an ergative–absolutive basis (cf. the discussion of Dyirbal syntax in section 5.3). It thus remains true that in general morphology can deviate quite widely from the syntactically relevant parameters, though there are also instances where morphology overrides the otherwise valid syntactic parameters.

3.5 ILLUSTRATION: ENGLISH AND RUSSIAN CLAUSE STRUCTURE

In this section, we will illustrate the interaction of the various parameters discussed in the preceding sections – semantic roles, pragmatic roles, grammatical relations, and morphological cases – by contrasting some of the properties of clause structure in two languages, English and Russian. Although these two languages are genetically related within the Indo-European family, they differ considerably from one another in terms of this interaction, and therefore the contrast between them does serve to illustrate two radically different solutions to the problem of integrating all of these parameters, i.e. we are contrasting two radically different types along this parameter.

In English, there is a very high correlation between grammatical relations and word order, indeed word order is the basic carrier of grammatical relations, especially of subject and direct object, as can be seen by comparing the following two sentences:

John hit Mary. (46)

Mary hit John. (47)

The position immediately before the verb is reserved for the subject, while the position immediately after the verb is reserved for the direct object. Even in the corresponding questions, with subject–auxiliary inversion, it is still the case that the subject precedes the main verb, as in *did John hit Mary?*, *did Mary hit John?* Changing the word order, as in changing (46) to (47), therefore changes the grammatical relations, and ultimately the meaning of the sentence.

From the pair of examples just given, one might imagine that an alternative statement could be given, namely that the word order is determined by semantic roles, with the agent preceding the verb and the patient following. However, further data serve to show that this alternative is incorrect, and that in English it is precisely grammatical relations and word order that correlate. This can be seen in examples where the subject is an experiencer or an instrument rather than an agent:

John saw Mary. (48)

The stone hit John. (49)

Perhaps most clearly, it can be seen in passive sentences, where the subject is usually a patient, and the agent follows the verb:

John was hit by Mary. (50)

Mary was hit by John. (51)

The correlation between word order and grammatical relations in English is so strong that native speakers have no difficulty in interpreting pairs of sentences like (46) and (47), where the interpretations of John hitting Mary and Mary hitting John are equally plausible in terms of real-world likelihood; and sentences like (52) below are interpreted as nonsense (at least, in terms of real-world interpretations), rather than a plausible interpretation being assigned that violates this syntactic determination of word order:

The stone saw Mary. (52)

We have already illustrated in passing another property of English clause structure, namely that a given grammatical relation can be associated with a wide range of semantic roles: the subjects in the above sentences included agents, patients, instruments, and experiencers. English has a number of syntactic processes which serve to put the same semantic role in different grammatical relations, and to have the same grammatical relation serving a number of semantic roles. Thus the passive construction places a patient in subject position, even though the agent is the more basic semantic role correlating with subjecthood for two-place predicates. The rule of subject-to-object raising, which relates sentences like (53) and (54), means that a role that is expressed as subject of a subordinate clause can also be expressed as direct object of a main clause:

I believe that Mary hit John. (53)

I believe Mary to have hit John. (54)

The embedded subject may itself encode a variety of semantic roles, as can be seen in the following examples:

I believe that the stone hit Mary. (55)

I believe the stone to have hit Mary. (56)

I believe that John saw Mary. (57)

I believe John to have seen Mary. (58)

I believe that John was hit by Mary. (59)

I believe John to have been hit by Mary. (60)

As a last illustration, we may take the rule of object-to-subject raising, which relates sentences like (61) and (62), enabling the object of an embedded construction to appear also as subject of the main clause:

It is easy to solve this problem. (61)

This problem is easy to solve. (62)

Many such constructions are frequently used in natural discourse, so that even though some constructions, like many instances of subject-to-object raising and passives with an expressed agent, are very rare in the spoken language, this variety of the language does still provide sufficient illustration of the operation of syntactic processes that destroy any close correlation between semantic roles and grammatical relations.

A similar situation can be observed in English with lexical, as opposed to syntactic, relations among the valencies of verbs. Thus English has many verbs that can be used either transitively or intransitively. When used transitively, the subject will be an agent; when used intransitively, the verb will have a patient as subject:

John opened the door. (63)

The door opened. (64)

In English, morphological marking of noun phrases plays a marginal role. To be sure, most pronouns have a nominative versus accusative distinction, as in:

I saw him. (65)

He saw me. (66)

However, the existence of this case distinction does not provide for any greater freedom of word order: **him saw I* and **me saw he* are simply ungrammatical in the modern language. Moreover, except in very straightforward examples like the above, the correlation between case and grammatical relation is rather weak: for instance, many speakers of English have the pattern illustrated below:

John and I saw Mary. (67)

Me and John saw Mary. (68)

Here, the difference between *I* and *me* is conditioned by word order, in turn conditioned by register ((68) is more colloquial than (67)), although there is no difference in grammatical relations. Finally, probably few native speakers of English consistently differentiate, in production and comprehension, between such putative minimal pairs in prescriptive grammar as *John knows more people than I* (sc. *than I do*) and *John knows more people than me* (i.e. he doesn't just know me).

In English, pragmatic roles play a very small role in the syntactic structure of sentences. Thus a sentence like *John hit Mary*, with that word order, could be used to answer any of the questions *who hit Mary?*, *who did John hit?*, *what did John do to Mary?*, *what did John do?*, *what happened to Mary?*, *what happened?* Differences among at least some of these will, of course, be carried by differences in intonation: the nucleus of the intonation pattern (the sentence stress) will fall on the focus. But in general, in English it is not possible to carry differences of pragmatic structure by simply varying the word order: *John hit Mary* and *Mary hit John* represent different distributions of semantic role, and cannot be used to encode differences of pragmatic structure. There is, however, a weaker correlation involving pragmatic structure, because in English the choice between alternative syntactic means of encoding the same semantic structure is often determined by pragmatic considerations, one of the principles being a preference to make the topic subject wherever possible, thus leading to a correlation between subject and topic. For instance, in answer to the question *what do you think of these problems?*, it is more natural to reply *these problems/they are easy to solve* than *it's easy to solve these problems/them*, i.e. there is preference for making *these problems/they* subject of the reply.

Russian clause structure is determined by a very different weighting of these principles, as can be seen by starting with variations on Russian sentence (69):

Tanja ubila Mašu.
'Tanya killed Masha.' (69)

In Russian the basic marker of grammatical relations is not the word order, but rather the morphology. In the example given above, the form of the noun ending in *-a* is nominative (the case used for subjects) and that in *-u* is accusative (the case used for direct objects); the citation forms of the two names, as indicated in the English translation, are *Tanja* and *Maša*. Changing the word order does not affect the distribution of grammatical relations or of semantic roles. In fact, any of the six logically possible permutations of the three words *Tanja*, *ubila*, *Mašu* is a grammatical Russian sentence meaning 'Tanya killed Masha'.

Although all six permutations have the same semantic roles and the same grammatical relations, they are by no means equivalent, in particular they differ in terms of the pragmatic roles expressed. The basic principle in Russian (especially in non-affective use) is that the topic comes at the beginning of the sentence, and the focus at the end. Thus the following question-and-answer pairs reflect the normal word order to be used in answer to that particular question:

—Kto ubil Mašu? —Mašu ubila Tanja. (70)
'—Who killed Masha? —Tanya killed Masha.'

—Kogo Tanja ubila? —Tanja ubila Mašu. (71)
'—Who did Tanya kill? —Tanya killed Masha.'

—Valja ubila Natašu. —A Tanja? —Tanja ubila Mašu. (72)
'—Valya killed Natasha. —What about Tanya?
—Tanya killed Masha.'

—Valja ubila Natašu. —A Mašu? —Mašu ubila Tanja. (73)
'—Valya killed Natasha. —What about Masha?
—Tanya killed Masha.'

Note that in examples (72) and (73), the distinction between the nominative (*Tanja*) and the accusative (*Mašu*) is crucial to understanding whether the question is about the killer or the victim: this is not brought out in the English translations, which would, to carry the same amount of information, have to be more explicit, e.g. (72) *and who did Tanya kill?*, (73) *and who killed Masha?* Our initial observation is thus that English and Russian differ in that in English word order is determined by grammatical relations and independent of pragmatic roles; in Russian, morphology is determined by and carries grammatical relations, while word order is determined by pragmatic roles.

In addition, there is a difference between English and Russian in terms of the interaction of semantic roles with grammatical relations. In the discussion of English above, we noted that a given grammatical relation, in particular subject, can carry a variety of semantic roles. Although to some extent this is also true of Russian, the range of the syntactic–semantic discrepancy is much smaller, in that in many instances where English would use a non-agentive subject Russian either requires or prefers a non-subject. A particularly clear instance of this can be seen in the description of actions where there is no agent or where the agent is not mentioned. Here English can quite freely use non-agentive subjects, as in:

The lightning killed Tanya. (74)

The bullet killed Tanya. (75)

Although literal translations are possible in Russian, the preference is rather for an impersonal construction: the verb remains in the active, but has no subject, standing instead in the third person singular neuter; the natural force or instrument stands in the instrumental, thus giving as translations of the English sentences above:

Tanju ubilo molniej. (76)

Tanju ubilo pulej. (77)

The noun phrase *Tanju* is in the accusative; the noun phrases *molniej* and *pulej* are the instrumentals of *molnija* 'lightning' and *pulja* 'bullet', respectively.

In somewhat similar manner, many experiencers which are expressed by subjects in English are expressed by noun phrases in the dative case in Russian, so that, for instance, the translation of 'Tanya is (feels) cold' must be *Tane* (DATIVE) *xolodno*: here, *xolodno* is an impersonal, subjectless, form of the adjective *xolodnyj* 'cold'. The closest nominative-subject equivalent, *Tanja xolodna(ja)*, the adjective being in the feminine form agreeing with *Tanja*, would have a quite different meaning, for instance that Tanya is dead and her body is cold, or that she is frigid, but certainly not with Tanya as experiencer.

The closer relation that obtains in Russian between grammatical relations and semantic roles can also be seen in the fact that some syntactic processes are subject to semantic role constraints, in addition to syntactic constraints, where their closest analogues in English are subject only to syntactic constraints. Thus the constructions referred to in English transformational-generative syntax as equi-NP-deletion require that the subject of the subordinate clause be coreferential with the appropriate noun phrase of the main clause, irrespective of semantic role:

I persuaded the doctor to examine Tanya. (78)

I persuaded Tanya to be examined by the doctor. (79)

In (78), the omitted noun phrase is subject and agent of the subordinate clause; in (79), the omitted noun phrase is subject and patient of the subordinate clause. In Russian, there is a literal translation of (78), but not of (79), the

version offered below being at best decidedly weird to native speakers of Russian, even though it does not violate any syntactic constraint:

Ja ugovoril vrača osmotret' Tanju. (80)

**Ja ugovoril Tanju byt' osmotrennoj vračom* (81)

Although further work is needed to establish the precise nature of the constraint, it seems at the very least that in a clause that contains both an agent (expressed or implied) and a patient, equi-NP-deletion cannot delete the patient. Note that in the interpretation of the English example (79), it is necessary to assign some degree of control over the situation of being examined to Tanya, and in order to translate this example into natural Russian this degree of control must be expressed, as in:

Ja ugovoril Tanju podvergnut' sebja osmotru. (82)
'I persuaded Tanya to submit herself to an examination.'

In looking at lexical relations, it emerges that Russian does have a similar range of possibilities to English for expressing similar or identical semantic roles by different syntactic constructions, but in nearly all such instances Russian, unlike English, must provide overt marking on the verb of the different semantic role of the grammatical relations. Thus, corresponding to a transitive construction with an agentive subject like (83), the intransitive construction with a patient subject requires the suffix *-s'* on the verb:

Tanja zakryla dubovuju dver'. (83)
'Tanya closed the oak door.'

Dubovaja dver' zakryla-s'. (84)
'The oak door closed.'

(The noun *dver'* 'door' happens to have the same form for nominative and accusative, but the fact that the noun phrase containing *dver'* is direct object in (83) but subject in (84) is shown by the distinction between the nominative adjective *dubovaja* and accusative *dubovuju*.) A further example of this difference between English and Russian is illustrated by the following pair, where Russian must distinguish between *po-sejal* and *za-sejal*, while English uses *sowed* in both:

Kolxoznik po-sejal pšenicu v pole. (85)
'The collective-farmer sowed wheat in the field.'

Kolxoznik za-sejal pole pšenicej. (86)
'The collective-farmer sowed the field with wheat.'

Turning to syntactically different means of encoding the same set of semantic roles, we find that Russian lacks many of the constructions that are found in English. For instance, Russian has no syntactic equivalent of object-to-subject raising, so that in an example like (87) there is no way of making *problemu* 'problem' (accusative case) into subject (as *problema*) in the nominative:

Legko razrešit' ètu problemu. (87)
'It easy to solve this problem.'

Given the free word order of Russian, it is, however, possible simply to move the noun phrase *ètu problemu* to the beginning of the sentence, to give (88):

Ètu problemu legko razrešit'. (88)

Since sentence-initial position correlates strongly with topic in Russian, and rather weakly with topic in English, sentence (88) is in a sense a functional equivalent of English *this problem is easy to solve*, so that the same pragmatic function is served, but by very different syntactic means. Russian does have a passive construction, but its use is much less frequent than is the English passive (even than the English passive in the spoken language). The usual functional equivalent of English *Masha was killed by Tanya* in Russian would be the active with the word order direct object-verb-subject, rather than the passive construction of (90):

Mašu ubila Tanja. (89)

Maša byla ubita Tanej. (90)
'Masha was killed by Tanya.'

The usual equivalent of the English agentless passive is a subjectless construction, with the verb in the third person plural, i.e. as if one were to say in English *they've killed Masha* in the meaning *Masha has been killed*:

Mašu ubili. (91)

Since Russian has free word order, it is actually possible to carry out pragmatic role variations on the passive sentence (90) in much the same way as with an active sentence, and even possible to give a passive sentence with the same word order and pragmatic role distribution as the active:

Tanej byla ubita Maša. (92)

Indeed, the basic function of the Russian passive seems to be not so much pragmatic as stylistic: it is characteristic of certain written styles, in particular scientific writing.

One particularly enlightening way of generalizing the above differences between Russian and English would be to say that in English the grammatical relations play a much greater role than in Russian. First, the grammatical relations in English are more independent than in Russian, with a low correlation in English between grammatical relations and either semantic roles or pragmatic roles (or morphology, which is virtually nonexistent). Secondly, there is a wider range of syntactic processes in English than in Russian where grammatical relations and changes in grammatical relations are relevant. In Russian, semantic and pragmatic roles (and even morphology) play a greater role than in English.

However, it is important to realize, in conjunction with the discussion of chapter 2, that what we have here is a difference of degree between English and Russian: it is not the case that English syntax operates solely in terms of grammatical relations while Russian syntax avoids grammatical relations. Relevance of pragmatic roles in English can be seen, for instance, in the formation of special questions and relative clauses, where the constituent questioned or relativized must appear in clause-initial position, irrespective of its grammatical relation:

Who saw you? (93)

Who(m) did you see? (94)

The man who saw me ran away. (95)

The man who(m) I saw ran away. (96)

Even in varieties of English that lack the *who/whom* distinction, the interpretation of pairs like (93) and (94), or (95) and (96), is kept apart by the general word order principle that the position before the main verb is reserved for the subject. In spoken English, especially, further constructions of this kind are possible, for instance the movement of contrastive topics to sentence-initial position, irrespective of grammatical relation:

That book over there, I wouldn't read in a million years. (97)

Conversely, in Russian there are some instances where grammatical relations are crucial. For instance, there is a rule of verb agreement whereby verbs agree with their subject, and, as the following examples show, there is no way in which this can be reformulated as agreement with agent or topic:

Tanja ubila (FEMININE) *Kolju.* (98)
'Tanya killed Kolya.'

Kolja byl ubit (MASCULINE) *Tanej.* (99)
'Kolya was killed by Tanya.'

Kolju ubila (FEMININE) *Tanja.* (100)
'Kolya, Tanya killed.'

(Tanya is a girl's name, Kolya a boy's.) The relevance of the grammatical relation of direct object in Russian is shown by the fact that only direct objects can become subject of the passive construction. There are also a few instances where Russian allows the same verbal form to be used even with rearrangement of the syntactic encoding of semantic roles, although such examples are few indeed, for instance:

Tanja povernula mašinu nalevo. (101)
'Tanya turned the car to the left.'

Mašina povernula nalevo. (102)
'The car turned to the left.'

Rabočie gruzili drova na baržu. (103)
'The workmen were loading wood onto the barge.'

Rabočie gruzili baržu drovami. (104)
'The workmen were loading the barge with wood.'

(In the perfective aspect, however, the verb forms in (103) and (104) would have to be distinguished as *na-gruzili* and *za-gruzili*, respectively.) And finally, as we noted above, there are many instances in Russian of discrepancy between semantic role and grammatical relation, for example experiencer subjects as in (105), quite apart from discrepancies occasioned by the, admittedly marginal, existence of the passive:

Tanja videla Kolju. (105)
'Tanya saw Kolya.'

Even the role of morphology is not an absolute distinction between English and Russian. In English, some pronouns do have a nominative–accusative distinction, although as we indicated above its functional load is minimal. Conversely, in Russian some noun phrases do not make the nominative–accusative distinction, and in the few instances where the morphology is ambivalent and both interpretations make sense, preference is given

to a subject-verb-direct object interpretation, i.e. (106) below, with *mat'* 'mother' and *doč'* 'daughter', is preferred with the interpretation 'the mother loves the daughter' rather than 'the daughter loves the mother', although for many speakers this does seem to be a preference rather than an absolute:

Mat' ljubit doč'. (106)

Although the interaction of semantic, pragmatic, syntactic, and morphological relations does not provide a holistic typology of either English or Russian (for instance, it has nothing to say about the phonology of either), it does characterize a large part of the syntactic differences between the two languages; indeed, we would argue that it provides a much wider-ranging characterization than does word order typology, especially since in terms of basic word order the two languages are remarkably similar. The discussion of this section can therefore be taken as illustration of a significant typological parameter.

NOTES AND REFERENCES

The bases of case grammar may be found in Fillmore (1968). The Bats examples are from Dešeriev (1953, 226). The Chickasaw examples are from Munro & Gordon (forthcoming); Munro & Gordon argue conclusively against the claim that verb agreement in Chickasaw is determined purely by semantic roles. The Japanese, Kannada, and French examples are discussed further in chapter 8. The Lak examples are from Žirkov (1955, 41, 138).

The classic studies of pragmatic roles (informational structure, topic–comment structure, functional sentence perspective) are by such Prague School linguists as Vilém Mathesius and Jan Firbas, but an excellent introduction is provided by Chafe (1976). Most of the contributions in Li (1976) relate more or less directly to the general discussion of section 3.2. For discussion of focus in Hungarian, see Kiefer (1967). Of the vast amount of literature on Japanese *wa*, a good starting point, given the general and English–Japanese contrastive viewpoints, is Kuno (1972).

At the time of writing, the only authoritative published account of (orthodox) relational grammar is the formal description in Johnson & Postal 1980, though a series of more data-oriented essays (Perlmutter, forthcoming) is promised. Reference may also be made to the overview by Johnson (1977b); the other essays in Cole & Sadock (1977) provide a variety of approaches, all linked by acceptance of the importance of grammatical

relations, though not all uncritical of relational grammar. A much fuller discussion of the Huichol material is given in Comrie (forthcoming, c).

In section 3.4, the Kalaw Lagaw Ya examples are from Comrie (forthcoming, b). The Yidiny examples and discussion are based on Dixon (1977, 388–92); as noted in my review of the work (Comrie, 1978e, 285), Dixon's discussion of examples where the first clause has an ergative noun phrase and an accusative pronoun is inconclusive, and the data no longer retrievable. Further arguments in favour of relevance of some morphology in syntax can be found in Shibatani (1977) (Japanese data), and Babby (1980) (Russian data).

The presentation of section 3.5 owes much to discussions with John A. Hawkins (University of Southern California, Los Angeles), who is currently working on similar problems in English–German contrastive syntax. For further discussion of the typology of English, see Thompson (1978). For further discussion of Russian, see Comrie (1979d).