

SUBJECTS AND
UNIVERSAL GRAMMAR
AN EXPLANATORY THEORY

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To the people responsible for my linguistic career:
my late grandmother
Barbara Klima ז"ל
who first introduced me to a language other than English
and my parents
Paul and Eva Falk ז"ל
who encouraged my mishegas with languages.
(Who would have thought that those Berlitz records would lead
to this?)

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1 *On subjects and explanation*

1.1 Overview

Explaining subjects and their properties is an important challenge in contemporary linguistics. For formalist approaches to linguistics, the clustering of properties that subjects display necessitates some special representational properties unique to subjects. Without such representational uniqueness, the properties of subjects that set them apart from other elements of the clause are mysterious. However, this only pushes the need for explanation back one level: such special representation itself calls out for explanation. For functionalist approaches, similar issues are raised, as it is not clear what the functional properties of subjects are that set them apart. From a typological perspective, the mystery of subjects is even deeper, as different language types appear to deploy subject properties in different (but systematic) ways. As a result of the discoveries of ergative languages, Philippine-type languages, active languages, and the like, interesting questions have been raised about the properties of subjects, the representation of subjects, and even the cross-linguistic validity of "subject" as an element of linguistic description.

The concept of "subject" is one with a long history in linguistics. As with most other such concepts, contemporary linguistics did not invent the subject. Instead, it has taken a traditional concept and attempted to provide it with theoretical content. Problems have arisen because the concept "subject" originates in traditional studies of classical Indo-European languages such as Greek and Latin, languages which are closely related genetically, areally, and typologically. Investing "subject" with theoretical content thus usually depends on either focusing on languages which are typologically similar to classical Indo-European languages or attempting to extend an Indo-European notion to languages which have very different typological properties. As a result, different researchers take varying positions on which languages are examined, and in some languages which element (if any) is to be identified as the subject. Much of the literature on such topics as ergativity and active languages focuses on

debates such as these. These issues need to be clarified if a true understanding of subjects and their properties is to be achieved.

All contemporary approaches to linguistics – formalist, functionalist, typological, etc. – appropriately take the goal of linguistics to be the explanation of linguistic phenomena. As such, they depart from merely being satisfied with describing linguistic facts, although proper description is, of course, a prerequisite for explanation. In the realm of subjecthood, this means that simply stipulating the properties of subjects is not sufficient: the properties should follow from a proper characterization of the nature of subjects. Since explanation is possible only in the context of a theory of the linguistic domain in question, the attempts that have been made at explaining subjects have been as varied as schools of linguistics, and have mirrored the drawbacks of the theoretical assumptions made by the researchers. Formal accounts tend to be characterized by a disregard for functional factors and often by inadequate cross-linguistic coverage. Functional and typological accounts are typically based on superficial surveys of languages and disregard the nature of the formal devices involved in syntax.

It is the thesis of this study that a truly explanatory theory of subjects has yet to be constructed, and its goal is the proposal of such a theory. A theory of subjects must be formally grounded, functionally aware, and achieve sufficiently broad typological coverage, including all of the types of languages which are potentially problematic. Unlike previous accounts, the theory of subjects to be proposed here meets all of these criteria. Naturally, it draws on insights of earlier approaches, but it synthesizes them in a way which results in true explanation of the properties of subjects as they are revealed in cross-linguistic study.

In this first chapter, we will enumerate the properties generally thought to be subject properties. We will also discuss typological issues related to subjecthood. Finally, we will discuss different types of approaches to subjects.

1.2 Subject properties

1.2.1 First approximation

As mentioned above, subjects display an array of properties which must be accounted for by a theory of subjecthood. Properties of subjects have been enumerated in studies like Keenan (1976) and Andrews (1985). We will review them here briefly, primarily using examples from English. However, before we discuss the properties of subjects, it is necessary to take heed of the following observation by Andrews (1985: 104):

At the outset we must note that there are no properties which in all languages are always exhibited by subjects and only exhibited by them. There may be some properties that are universally restricted to subjects [fn. omitted], but there are certainly none that they always have. Rather, we find properties that are exhibited by subjects in a wide range of languages, and which may be plausibly argued to be restricted to subjects in some of them.

This observation is not surprising – it is in line with the way typological properties typically apply (Comrie 1989). However, it violates the usual formalist preference for absolute universals, and thus is an important caveat for any formally based theory of subjects. In addition, the fact that typological properties typically emerge as tendencies rather than absolutes is itself something that needs to be explained.

The first property is that if a verb has an Agent argument, the Agent is realized as subject.

- (1) a. Predicate: 'eat'; Agent: 'the kid'; Patient: 'the sandwich'
- b. The kid ate the sandwich
- c. *The sandwich ate the kid.

A verb like the putative *eat* in (1c), in which the Patient is realized syntactically as subject and the Agent as object, is disallowed. Of course, while all Agent arguments are subjects, not all subjects are Agents. If the verb does not have an Agent argument, the subject will express some other thematic role. A special case of this is the passive construction, in which the Agent loses its expressed-argument status (Chomsky 1981, Bresnan 2001).

Another property of subjects is that the addressee of an imperative is a subject. This can be seen in each of the following imperatives: the addressee can have a variety of thematic roles, not necessarily Agent, but it must have the syntactic status of subject.

- (2) a. Eat the sandwich!
- b. Go to school!
- c. Freeze, if that's what you want! (Parent to child who refuses to put on a coat in freezing weather)
- d. Be happy!
- e. Be arrested by the municipal police, not the state police!

Another property which is apparent in the English imperative examples, although more clearly in other languages, is that the subject is more susceptible to being realized as a covert (null or empty) pronoun. It is telling that the empty-pronoun construction (or pro-drop) is often referred to in the

theoretical literature as the null-subject construction, a name which is based on this higher susceptibility. We will discuss the facts in more detail in Chapter 2.

A frequently discussed property of subjects is anaphoric prominence. The exact details vary from language to language (as will be discussed in Chapter 2), but one clear consequence which can be seen in all languages with reflexive pronouns¹ is that, in a transitive clause in which the subject and object are coreferential, it is the subject which is expressed as a full NP and the object as the reflexive pronoun.

- (3) a. Pnina saw herself.
b. *Herself saw Pnina.

In some languages the antecedent of a reflexive must be a subject, while in others (like English) it just has to have higher prominence, but in either case the most prominent element of the clause is the subject.

An anaphoric construction which does not exist in English, but in which the greater prominence of the subject is again apparent, is the switch-reference construction, in which a clause marks the anaphoric relation (coreference or disjoint reference) between its own subject and the subject of a superordinate and/or coordinate clause. This is exemplified in the following Diyari sentences (Austin 1981).

- (4) a. Karna wapa- ma warrayi, jukudu nanda- lha.
man go- PART AUX kangaroo kill- IMPLIC.SAME
'The man went to kill a kangaroo.'
b. Karna- li marda matha- ma warrayi, thalara
man- ERG stone bite- PART AUX rain
kurda- manthu.
fall- IMPLIC.DIFF
'The man bit the stone so the rain would fall.'

In (4a), the clauses have coreferential subjects, so the "same" morpheme is used in the subordinate clause. In (4b), on the other hand, the subjects are disjoint in reference, and the "different" morpheme is used.

1 An anonymous reviewer suggests that the data from Samoan in Chapin (1970) may be a counterexample. Chapin observes that there is no subject/non-subject asymmetry for a pronoun with a reflexive interpretation; the only condition is that the antecedent must precede the pronoun. However, he also notes that there are no distinct reflexive pronouns in the language. Since the Samoan forms are simply undifferentiated anaphoric elements, there is no reason to expect a restriction to subject.

Even in a language like English, which has no switch-reference system, subjects have a special status in coordination and subordination. In coordinated clauses, if the subjects of both clauses are identical, the subject can be omitted in the second clause. The object cannot be involved in this kind of relation.

- (5) a. Mati kissed Pnina and hugged Yoni. (= Mati hugged Yoni; ≠ Pnina hugged Yoni)
b. *Mati kissed Pnina and Yoni hugged. (intended reading: ... hugged Pnina)

More frequently discussed in the theoretical literature is the subordination construction known as control (or equi). In the control construction, the subordinate subject is covert (and modeled as a special null nominal called PRO in the transformational literature) if it is identical to an element of the main clause. While the coreferential main clause element need not be subject, the subordinate clause element must be.

- (6) a. They persuaded the starship captain [to kiss the alien woman].
b. *They persuaded the alien woman [(for) the starship captain to kiss].
c. They persuaded the alien woman [to be kissed by the starship captain].

A similar construction is raising,² in which an element which is a thematic (semantic) argument of the subordinate clause is expressed as part of the main clause, in which it is not a thematic argument. The only kind of subordinate clause element which can be raised in this fashion is the subject.

- (7) a. It seems [that lions eat zebras].
b. Lions seem [to eat zebras].
c. *Zebras seem [(for) lions to eat].
d. Zebras seem [to be eaten by lions].

Coordination, control, and raising are thus constructions in which the subject has a special status.

Subjecthood interacts in various ways with long-distance (*wh*) dependencies. One of the best-known cases is the fact, originally observed in Keenan and Comrie's (1977) classical study of relative clauses, that subjects are more prone to *wh*-movement cross-linguistically than other elements. In English, paradoxically, subjects appear to be more resistant to *wh*-movement than other elements of the clause: non-subjects can be extracted from a clause with an overt complementizer while subjects cannot (the *that*-trace effect).

2 Also known as matrix coding (Van Valin and LaPolla 1997).

- (8)
- Prina thinks that Yoni gave the ball to Gabi.
 - *Who does Prina think that gave the ball to Gabi?
 - What does Prina think that Yoni gave to Gabi?
 - Who does Prina think that Yoni gave the ball to?

There are other subjecthood-related aspects to long-distance dependency constructions, to be discussed in detail in Chapter 4.

There are other properties that are unique to subjects. For example, many languages require every sentence to have a subject (either overt or covert), a property enshrined in transformational theory's Extended Projection Principle (and analogous principles in other contemporary theories of syntax). Another property which has been built into the transformational model is that subjects often occupy a special "external" structural position (e.g., outside of VP), a position which provides them with structural prominence relative to other arguments of the verb. Subjects also have semantic and pragmatic prominence. For example, subjects are often definite. They also take wide scope over other elements of the clause.

- (9)
- A student didn't take my course. (*a* takes wide scope over negation)
 - I didn't see a student. (ambiguous)

Finally, the subject is usually the discourse topic.

We can summarize these subject properties in the following list.

- (10)
- Agent argument in the active voice
 - Most likely covert/empty argument
 - The addressee of an imperative
 - Anaphoric prominence
 - Switch-reference systems
 - Shared argument in coordinated clauses
 - Controlled argument (PRO)
 - Raising
 - Extraction properties
 - Obligatory element
 - "External" structural position
 - Definiteness or wide scope
 - Discourse topic

This catalog of properties³ represents the reason for the continued interest in the nature of subjects. There is no obvious pretheoretical reason for a single

³ Another construction which is often mentioned in the context of subject properties is Quantifier Float. While the ability to launch floating quantifiers is limited to subjects in some languages, it is clearly not true universally. We suspect that Quantifier Float is not a uniform syntactic construction cross-linguistically, but will not attempt to account for its properties here.

element of the sentence to have all these properties; the fact that one does in many languages calls out for explanation.

1.2.2 *Case and subjects*

To sharpen the conception of subject properties that we outlined in the previous section, we need to consider the relationship between subjecthood and morphological marking: Case⁴ and, to a lesser extent, agreement. Subjects in many languages are realized with either no overt Case marking or with the same Case marking that is used with citation forms, two situations we can unify under the heading "unmarked Case." This unmarked Case, often called nominative, is sometimes taken to be a defining property of subjects in Case-marking languages. However, typological study has shown that this is an overly simplistic view of the situation. We will outline the relevant facts in this section. Similarly, it is often stated that subjects have a special status in terms of agreement. Here again, the facts appear to be more complicated. We will return to the question of Case and agreement in Chapter 3.

Since we need to be able to refer to clausal participants without committing to their status as subjects and objects, we will follow much of the typological literature (see, for example, Comrie 1978, 1989) in using the following terminology:

- (11)
- Sole argument of intransitive verb: S
 - Agent-like argument of transitive: A
 - Patient-like argument of transitive: P (sometimes called O)

The most common (and most familiar) situation is one where S and A have unmarked Case (traditionally called nominative) and P has a marked Case (traditionally called accusative). Such a language is called nominative-accusative. In a nominative-accusative language, the traditional identification of S/A as "subject" and the hypothesis that subjects have the unmarked Case coincide.

However, in some languages, it is the S and P that have unmarked Case. The S/P unmarked Case is usually called absolutive rather than nominative. In this kind of language, the A has a marked Case which is called ergative. For this reason, these languages are usually referred to as ergative languages. As observed by Dixon (1994), ergative languages are found almost everywhere around the globe, including many languages of Australia (Dyirbal, Warlpiri,

⁴ See "Notes on the text" on page xvi for an explanatory of the capitalization of the word "Case".

Diyari, Yidin', etc.), Eskimo languages (Inuit, Yupik), Basque, Georgian, Avar, Chukchee, Hindi-Urdu, Tongan, Samoan, and many others.⁵

- (12) **Dyirbal** (Dixon 1994)
- a. Duma banaga- n'u
father.ABS return- NFUT
'Father returned.'
- b. Duma yabu- ngu bura- n
father.ABS mother- ERG see- NFUT
'Mother saw father.'
- (13) **Greenlandic Inuit** (Marantz 1984)
- a. Anut- ip arnaq taku- vaa.
man- ERG woman.ABS see- IND3SG.3SG
'The man saw the woman.'
- b. Anut autlar- puq.
man.ABS go.away- IND3SG
'The man went away.'
- (14) **Basque** (Bittner and Hale 1996b)
- a. Miren- ek ni jo n- au.
Miren- ERG me.ABS hit 1SG- have.3SG
'Miren hit me.'
- b. Miren erori d- a.
Miren.ABS fallen 3SG- be
'Miren fell.'
- (15) **Avar** (Mallinson and Blake 1981)
- a. Či v- ač?- ula.
man.ABS he- come- PRES
'The man comes.'
- b. Ebél- alda či v- ač- ula.
mother- ERG man.ABS he- discover- PST
'Mother discovers the man.'

⁵ Some of these (such as Dyirbal) are split ergative, meaning that some types of NPs display an ergative pattern and others a nominative-accusative pattern. Languages of that type have distinct ergative and accusative Cases, showing that the marked Cases differ from each other. There are also a few languages ("three-way" languages) in which all NPs are marked ergative in A function and accusative in P function. It has been claimed by Woolford (1997) that there are also four-way languages, in which two distinct markings are possible for P. However, in the languages she brings as examples, Nez Perce (in which the A may also be unmarked) and Kalkatungu, one of these P Cases is unmarked morphologically. Apparently she wants to distinguish unmarked P from unmarked S (or A in Nez Perce) because unmarked S and A trigger subject agreement (as does ergative A), while unmarked P triggers no agreement. However, while Case and agreement are both methods of identifying the arguments of verbs, there is no reason (outside of a particular theory of Case and/or agreement) to expect a straightforward relation between head marking (agreement) and dependent marking (Case).

The term "ergative language" is also generally used for languages, such as the Mayan languages, in which there is no Case marking, but agreement groups S and P together as opposed to A.

- (16) **Tzotzil** (Aissen 1983)
- a. Č- i- bat.
ASP- 1ABS- go
'I'm going.'
- b. L- i- s- ma.
ASP- 1ABS- 3ERG- hit
'He hit me.'
- c. Ta- Ø- h- mah.
ASP- 3ABS- 1ERG- hit
'I'm going to hit him.'

On the other hand, some ergative languages, like Warlpiri, have ergative Case marking but nominative-accusative agreement.

- (17) **Warlpiri** (Simpson 1983)
- a. Ngaju ka- ma pamka- mi.
1ABS PRES- 1SGSUBJ run- NPST
'I am running.'
- b. Ngajulu- rlu ka- ma- Ø nya- nyi kurdu.
I- ERG PRES- 1SG.SUBJ- 3SG.OBJ see- NPST child.
'I see the child.'
- c. Kurdu- ngku ka- Ø- ju nya- nyi ngaju.
child- ERG PRES- 3SG.SUBJ- 1SG.OBJ see- NPST 1ABS
'The child sees me.'

As noted above, nominative-accusative languages are plausibly analyzed by calling S/A the subject, and associating subject status with unmarked Case. One way to understand ergative languages would be to hypothesize that the absolutive argument, S/P, is subject instead of S/A. But if P is subject in ergative languages, it should have subject properties. Investigation has shown that things are not that simple. In some ergative languages, such as Basque and Warlpiri, the P argument of a transitive clause has no subject properties. For languages of this kind, called "morphologically ergative," P is clearly not the subject. For now, we leave it open whether S/A is the subject in such languages, or whether such languages can be said to have no subject. We will discuss one morphologically ergative language, Warlpiri, in Chapter 6.) It is clear, however, that in morphologically ergative languages unmarked Case cannot be said to be a subject property. For other ergative languages, such as Dyirbal and Inuit, subject properties are split. Some subject properties are properties of (S and) A,

just as in English. Other subject properties are S/P (absolutive) properties. So in some sense A and P are both subject-like in these languages, but in different ways. Since the ergative Case marking seems to be in some sense related to syntactic properties, these languages are said to be "syntactically ergative." We will return to syntactically ergative languages in the next section.

In another class of languages, the Philippine-type languages, any element of the clause can have unmarked Case (usually referred to as nominative); the verb is marked with an affix designating one of its arguments as the nominative. The nominative nominal is referred to by Philippinists as the topic, but as observed by Schachter (1976) it is not a topic in the sense that the term is usually used in linguistics.⁶

(18) *Tagalog* (Schachter 1987)

- a. Mag- aalis ang tindero ng bigas sa sako para
ACT- take.out NOM storekeeper ACC rice DAT sack for

sa babae.
DAT woman

'The storekeeper will take some rice out of a/the sack for a/the woman.'

- b. Aalis- in ng tindero ang bigas sa sako para
take.out- DO ERG storekeeper NOM rice DAT sack for

sa babae.
DAT woman

'A/The storekeeper will take the rice out of a/the sack for a/the woman.'

- c. Aalis- an ng tindero ng bigas ang sako para
take.out- IO ERG storekeeper ACC rice NOM sack for

sa babae.
DAT woman

'A/The storekeeper will take some rice out of the sack for a/the woman.'

- d. Ipag- aalis ng tindero ng bigas sa sako
BEN- take.out ERG storekeeper ACC rice DAT sack

ang babae.
NOM woman

'A/The storekeeper will take some rice out of a/the sack for the woman.'

- e. Ipang- aalis ng tindero ng bigas sa sako
INS- take.out ERG storekeeper ACC rice DAT sack

ang sandok.
NOM scoop

'A/The storekeeper will take some rice out of a/the sack with the scoop.'

6 The morphological Case marking for non-nominative A arguments, which is often glossed as genitive, we consider to be ergative Case and gloss it accordingly. Verbal aspect is not glossed.

As with the term "ergative language," the term "Philippine-type language" can also be used for languages that lack Case marking but have a similar system of marking the verb to designate one of the arguments as having a special status. These other Philippine-type languages are typically Western Austronesian languages not spoken in the Philippines, and with a less extensive marking system than the core case of Tagalog-type languages. One such language is Balinese, where the specially designated argument is preverbal.

(19) *Balinese* (Arka 1998)

- a. Nyoman ejuk polisi.
Nyoman DO.arrest police
'A policeman arrested Nyoman.'

- b. Polisi ng- ejuk Nyoman.
police ACT- arrest Nyoman
'A policeman arrested Nyoman.'

The same question can be asked for Philippine-type languages as for syntactically ergative languages concerning subjecthood and, as we will see in the next section, the answers are similar as well: the A has some subject properties, and the specially designated (nominative) argument has others.

Finally, there are languages in which S is not treated uniformly. Instead, agentive Ss are Case marked like A or trigger agreement like A and patientive Ss are Case marked like P or trigger agreement like P.

(20) *Manipuri* (intransitive examples from Dixon 1994, transitive from Bhat and Ningomba 1997)

- a. əy- nə celli
I- ERG ran
'I ran.'

- b. əy sawwi
I got.angry
'I got angry.'

- c. Nupsit- nə ce celli.
wind- ERG paper carried
'The wind carried away the paper.'

(21) *Lakhota* (Mallinson and Blake 1981)

- a. Wa- i'.
1SG.AGT- arrive
'I arrived.'

- b. Ma- si'ca.
1SG.PAT- bad
'I am bad.'

- c. Ma- ya- kte.
1SG.PAT- 2SG.AGT- kill
'You kill me.'
- (22) **Acehnese** (Durie 1985)
a. Gopnyan ka= geu= jak u= keude.
he already 3.AGT go to market
'He went to market.'
b. Gopnyan sakê= geuh.
he sick 3.PAT
'He is sick.'
c. Ji= kap= keuh.
3.AGT bite 2.PAT
'It'll bite you.'

These are often called active languages. It has been claimed that concepts like "subject" are irrelevant in active languages, because the realization and properties of arguments are determined on the basis of thematic roles. We will refer to these languages provisionally as "non-subject" languages. A theory of subjecthood must address the question of whether non-subject languages truly lack subjects, and, if it is determined that they do not, why they appear to exhibit different properties from other types of languages. It is insufficient to simply deal with languages that have one or two elements with subject properties. We will return to non-subject languages in Chapter 6.

1.2.3 *Second approximation*

The subject properties in (10) can be motivated for a wide range of languages, including nominative-accusative languages and possibly at least some morphologically ergative languages. We will henceforth refer to these as "uniform-subject languages." However, as alluded to in the previous section, the situation is more complicated in syntactically ergative and Philippine-type languages. In these languages, which we will call "mixed-subject languages," the subject properties are divided between two elements.

For example, consider West Greenlandic Inuit, a syntactically ergative language exemplified in (13) above. The antecedent of a possessive reflexive can be S or A (i.e., subject in the familiar sense) but not P (the Inuit examples in this section from Manning 1996).

- (23) a. Ataata- ni Juuna- p tatig(i- v)aa.
father- REFL.POSS Juuna- ERG trust- IND.TR.3SG.3SG
'Juuna; trusts his; father.'

- b. Aani illu- mi- nut ingerla- vo- q.
Anne house- REFL.POSS- DAT go- IND.INTR- 3SG
'Anne is going to her house.'
- c. *Anaana- mi Piita nag'ligi- jana.
mother- REFL.POSS(ERG) Piita love- 3SG.3SG
'His; mother loves Piita.'
- In control constructions, the controllee is S or A, not P.
- (24) a. Miqqat [Juuna iku- ssa- llu- gu] niriursui- pp- u- t.
children Juuna help- FUT- INF- 3SG promise- IND- INTR- 3PL
'The children promised to help Juuna.'
b. Miqqat [qiti- ssa- llu- tik] niriursui- pp- u- t.
children dance- FUT- INF- REFL.PL promise- IND- INTR- 3PL
'The children promised to dance.'

(In the other hand, the P is accessible to extraction (in relative clauses), as is the S. The A is not.

- (25) a. nanuq [Piita- p tuqu- ta- a]
polar bear Peter- ERG kill- TR.PART- 3SG
'a polar bear that Peter killed'
b. miiraq [kamat- tu- q]
child angry- REL.INTR- SG
'the child who is angry'
c. *angut [aallaat tigu- sima- sa- a]
man gun take- PERF- REL.TR- 3SG
'the man who took the gun'

As discussed by Bitner (1994), the S and P arguments obligatorily take wide scope over sentential operators such as negation, while the A need not.

- (26) a. Atuutu- p ataasi- p Juuna uqaluqatigi- sima- ngi-
student- ERG one- ERG Juuna talk-to- PERF- NEG-
la- a.
IND- 3SG.3SG
(i) 'No student has talked to Juuna (yet).'
(ii) 'One student hasn't talked to Juuna (yet).'
b. Atuagaq ataasiq tikis- sima- ngi- la- q.
book one come- PERF- NEG- IND- 3SG
'One book hasn't come (yet).'

/ 'This example is from the closely related language Inuktitut, spoken in Canada.

- c. Juuna- p atuagaq ataasiq tigu- sima- nngi- la- a.
Juuna- ERG book one get- PERF- NEG- IND- 3SG.3SG
'There is a book which Juuna hasn't got (yet).'

Thus, Inuit displays a split in subject properties, with some, as in English, as properties of the S and A arguments, and others as properties of the S and P arguments.

Another language which exhibits a split in subject properties is Tagalog, as first observed in the seminal study of Schachter (1976). Tagalog is a Philippine-type language, and is exemplified above in (18). Here the split is between those subject properties which are properties of the S or A regardless of verbal morphology, and those which are properties of the nominative. As the examples in (18) show, the A argument (thematically Agent in cases like this, where the verb takes an Agent argument) is the nominative when the verb has Agent-nominative marking; otherwise it is marked with what we are glossing as ergative Case. S arguments involve the same markings as A arguments. The A argument is the one that can act as antecedent for reflexives in Tagalog.

- (27) (Schachter 1976)
a. Sinakt- an ng babae ang kaniyang sarili.
hurt- IO ERG woman NOM her self
'A/The woman hurt herself.'
b. Iniisip nila ang kanilang sarili.
think.about.DO they.ERG NOM their self
'They think about themselves.'
c. Nag- iisip sila sa kanilang sarili.
ACT- think.about they.NOM DAT their self
'They think about themselves.'

The A is the addressee of an imperative, regardless of nominativity.

- (28) (Schachter 1987)
a. Mag- alis ka ng bigas sa sako.
ACT.INF- take.out you.NOM ACC rice DAT sack
'Take some rice out of the/a sack.'
b. Basah- in mo nga ang libro- ng ito.
read- DO.INF you.ERG please NOM book- LNK this
'Please read this book.'

On the other hand, it is the nominative that is accessible to extraction.

- (29) (Guilfoyle et al. 1992)
a. Sino ang bumili ng damit para sa bata?
who COMP ACT.bought ACC dress for DAT child

- b. *Sino ang binili para sa bata' ang damit?
who COMP DO.bought for DAT child NOM dress
c. *Sino ang ibinili ng damit ang bata'?
who COMP BEN.bought ACC dress NOM child
'who bought the dress for the child?'
(30)
a. *Ano ang bumili para sa bata ang tao?
what COMP ACT.bought for DAT child NOM man
b. Ano ang binili ng tao para sa bata?
what COMP DO.bought ERG man for DAT child
c. *Ano ang ibinili ng tao ang bata?
what COMP BEN.bought ERG man NOM child
'What was bought for the child by the man?'
(31)
a. *Sino ang bumili ng damit ang tao?
who COMP ACT.bought ACC dress NOM man
b. *Sino ang binili ng tao ang damit?
who COMP DO.bought ERG man NOM dress
c. Sino ang ibinili ng tao ng damit?
who COMP BEN.bought ERG man ACC dress
'Who was bought the dress (for) by the man?'

The nominative is also the argument that undergoes Raising.

- (32) (Kroeger 1993)
a. Pinang- aakalaan si Fidel [na
IMPERF- think.IO NOM Fidel COMP
makakagawa ng mabute].
ACT.NONVOL.FUT.do ACC good
'Fidel is thought to be able to do something good.'
b. Malapit na si Manuel [na hulihin
STAT.close already NOM Manuel COMP catch.DO
ng polis].
ERG police
'Manuel is about to be arrested by the police.'

And, as shown by the translations of (18), the nominative is interpreted as definite.

Inuit and Tagalog are thus mixed-subject languages, Inuit exemplifying the syntactically ergative subclass, and Tagalog the Philippine-type subclass. A survey of the literature on these types of languages reveals that the split in subject properties in mixed-subject languages is not random. Rather, it transpires that

the set of subject properties can be universally divided into what we can call Type 1 properties and Type 2 properties.

- (33) a. Type 1 subject properties (S/A)
 Agent argument in the active voice
 Most likely covert/empty argument
 The addressee of an imperative
 Anaphoric prominence
 Switch-reference systems
 Controlled argument (PRO) (in some languages)
 Discourse topic

- b. Type 2 subject properties
 (S/P in syntactically ergative languages; nominative in Philippine-type languages)
 Shared argument in coordinated clauses
 Controlled argument (PRO) (in some languages)
 Raising
 Extraction properties
 Obligatory element
 "External" structural position
 Definiteness or wide scope

In other words, the split in subject properties in mixed-subject languages is systematic. A theory of subjects thus needs to explain not only why subjects have the properties they do, but also why they split in this way in mixed-subject languages.

1.3 On explanation

1.3.1 General considerations

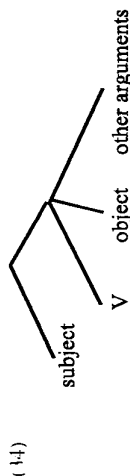
In order to develop an explanatory theory of subjects, first we need to determine what kind of entity a subject is. In the history of contemporary theoretical syntax, several approaches have been taken. In this section, we discuss the three primary views: subject as structural position, subject as grammatical relation, and subject as grammatical function.⁸ We show that the last of these is the most promising approach in which to develop an explanatory theory of subjects.

1.3.2 Subject as structural position

What is probably the leading view of subjects in formalist syntax is the one which is standard in transformational theory. Under such an approach, what

8 Of course, the term "subject" has also been used outside of syntax, either as a semantic function or a discourse pragmatic function. While there are interesting relationships between subject in the syntactic sense and subject in these other senses, and we will discuss these, our primary interest is in subject as a syntactic notion.

distinguishes subjects from objects is their position in constituent structure. Objects, like other arguments of the verb, occupy a structural position in the verb's "domain": VP or V', depending on the exact version of the theory. The subject, on the other hand, occupies a unique structural position outside of the verb's domain: under S, in specifier of IP, or in specifier of VP, depending on the precise implementation. Schematically:



It is by virtue of properties stipulated for this special structural position that subjects have their unique characteristics.

Consider, for example, the structural explanation of why only subjects can raise (Chomsky 1981, 2000).⁹ Subjects, by virtue of their special structural position, have their Case assigned/checked by Infl/Tense (which is assumed to occupy a structural position as the head of an IP/TP which takes VP as its complement) rather than by the verb. Depending on the version of the theory, the Case-checking domain is defined either in terms of the structural relation of government (1981) or in terms of the SPEC-head relation (2000). The Infl/Tense element in a raising infinitive (*to* in English) is stipulated to be defective in some way, thus preventing it from assigning/checking the subject's Case. In the 1981 version of the theory, the same defectiveness was attributed to the superficially identical Infl of equi (control) infinitives, but in the 2000 version the Tense of an equi infinitive assigns/checks a special "null Case" which, by stipulation, can only be carried by PRO. The subject of the raising infinitive moves in order to have its Case checked (or to have Case assigned to it). Since other elements of the clause are not in the government/checking domain of Infl/Tense (but rather of the verb), their Cases are assigned/checked in raising clauses the same way as in other clause types. Thus, the subject moves out of its clause while other arguments do not.

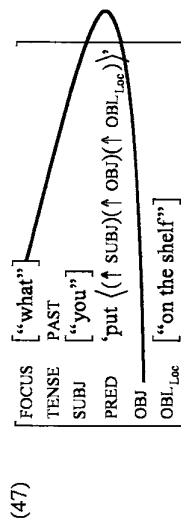
Structural accounts of subjecthood are claimed to be explanatory (Marantz 1982) because they do not directly attribute properties to an entity called "subject." Instead, these allegedly independent structural properties result in the subject having certain characteristics. However, there is a circularity to this kind of argumentation. The special government properties of infinitival *to* (or

⁹ While many of the details differ, the approaches of Government/Binding theory (Chomsky 1981) and the Minimalist Program (Chomsky 2000) are fundamentally the same. The discussion here includes both: the analysis in terms of Infl and Case assignment is GB; Tense and Case checking are MP.

properties of the predicate, and correspond approximately to the Θ Criterion of Government/Binding theory.

In addition to argument functions, LFG hypothesizes adjunct functions (primarily ADJ) and grammaticized discourse functions (such as FOCUS and TOPIC).¹⁶ These elements are not selected, but must still be licensed as specified in an extension of the Coherence Condition. The Extended Coherence Condition requires adjuncts to modify meaningful elements. For the grammaticized discourse functions, the Extended Coherence Condition specifies that any item bearing one of those functions must also bear an argument or adjunct function. For example, in our example (38) the same item that bears the FOCUS function also bears the argument OBJ function. An element that bears only the FOCUS function is ruled out by the Extended Coherence Condition.

The f-structure in (38) is more standardly drawn as follows:



Here, a curved line is used to show that one element has two different functions (or, more formally, is the value of two different attributes). It is more useful than the bracket we used informally earlier, as it can be used when the two functions are in two different clauses.

Formalism in linguistics provides a way to express descriptive generalizations precisely. In addition, if the formalism is well designed, properties of the formalism can themselves turn out to be part of the explanation of linguistic phenomena.

1.5 A look ahead

This book can be seen as a case study of the concept of grammatical functions, as well as an attempt to understand subjects. The analysis to be proposed here builds on ideas which have their origin in the work of Schachter (1976), Dixon

¹⁶ The grammaticized discourse functions should not be confused with an actual representation of such properties as topicality and focushood at the level of information structure. The grammaticized discourse functions are present only when topicality and focushood are expressed syntactically, and they are related to information structure concepts such as new information, givenness, and the like through mapping principles.

(1994), and others. We will propose that subjects in familiar uniform-subject languages have two distinct functions: the expression of the most prominent argument of the verb ($\widehat{GF}$) and the singling out of a particular clausal actant to be the element of cross-clausal continuity (PIV, or pivot). These two functions, both of which are syntactic functions represented at f-structure, will be discussed in chapters 2 and 3. These functions are dissociated in mixed-subject languages, resulting in the (predictable) split of properties that these languages display.

Chapters 4 and 5 will focus on two families of subject-sensitive constructions: long distance dependencies and control constructions, respectively. We will show how the proposed theory of subjecthood, combined with aspects of the LFG formalism, explains the properties of these constructions. Chapter 6 will then turn to the non-subject languages, and discuss the presence of each of these two grammatical functions in such languages.

The theory of subjects proposed here differs in important respects from the previous LFG analysis of subjects – that of Manning (1996). In Manning's theory, there is one grammatical function, called either SUBJ or PIVOT. This function is characterized as an argument function, unlike the characterization of the PIV function in the present study. Manning has no direct analog of the $\widehat{GF}$ function to be proposed here, considering our $\widehat{GF}$ -related properties to be based on argument structure. The theory proposed here also contrasts with functionalist and typological characterizations of the pivot function (e.g. Dixon 1994, Van Valin and LaPolla 1997), in that we view pivothood as a language-wide function rather than construction-specific. We will contrast our account with Manning's and functionalist-typological approaches throughout the book, and especially in Chapter 7. Chapter 7 will also discuss structurally based theories; it will argue that, despite the conceptual elements shared by all these theories, the implementation proposed here is superior.

those which are a consequence of the PIV function will be properties of the P argument (OBJ).

The difference between uniform-subject languages and mixed-subject languages can be illustrated with f-structures of corresponding sentences in the two types of languages. We showed in Chapter 1 that Inuit is a mixed-subject (syntactically ergative) language, with the P argument displaying Type 2 subject properties (extractability and wide scope). We present here the f-structure of an Inuit sentence (from Marantz 1984) and its translation into English, a uniform-subject (nominative-accusative) language.

- (10) **Inuit**
 a. Anut- ip arnaq taku- vaa.
 man- ERG woman see- IND.3SG.3SG
 'The man saw the woman.'

$\bar{G}\bar{F}$	["man"]
OBJ	["woman"]
TENSE	PAST
PRED	'see' $\langle (\uparrow \bar{G}\bar{F}) (\uparrow \text{OBJ}) \rangle$
PIV	

- (11) **English**
 a. The man saw the woman.

$\bar{G}\bar{F}$	["man"]
OBJ	["woman"]
TENSE	PAST
PRED	'see' $\langle (\uparrow \bar{G}\bar{F}) (\uparrow \text{OBJ}) \rangle$
PIV	

The arguments map to the same grammatical functions in the two languages: the Agent is $\bar{G}\bar{F}$ and the Patient is OBJ. The only difference is the identity of the PIV.

In Philippine-type languages, the lexical marking on the verb is governed by the "voice" morphology. As we showed in Chapter 1, the nominative nominal is the element with Type 2 subject properties (such as extractability and accessibility to raising), and thus it is the PIV.

- (12) with "Active voice" morphology: $(\uparrow \text{PIV}) = (\uparrow \bar{G}\bar{F})$
 with "Direct object voice" morphology: $(\uparrow \text{PIV}) = (\uparrow \text{OBJ})$
 with "Indirect object/locative voice": $(\uparrow \text{PIV}) = (\uparrow \text{OBJ}_{\text{Indirect}})$
 with "Instrumental voice" morphology: $(\uparrow \text{PIV}) = (\uparrow \text{OBL}_{\text{Instr}})$
 etc.

(Consider the following sentences from Schachter (1987: 941):

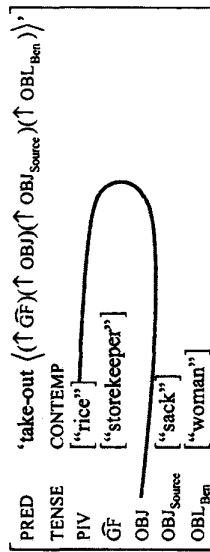
- (13) a. Mag- aalis ang tindero ng bigas
 ACT- CNTMP:take.out NOM storekeeper ACC rice
 sa sako para sa babae.
 DAT sack for DAT woman
 'The storekeeper will take some rice out of a/the sack for a/the woman.'
- b. Aalis- in ng tindero ang bigas
 CNTMP:take.out- DO ERG storekeeper NOM rice
 sa sako para sa babae.
 DAT sack for DAT woman
 'A/The storekeeper will take the rice out of a/the sack for a/the woman.'
- c. Aalis- an ng tindero ng bigas
 CNTMP:take.out- IO ERG storekeeper ACC rice
 ang sako para sa babae.
 NOM sack for DAT woman
 'A/The storekeeper will take some rice out of the sack for a/the woman.'
- d. Ipag- aalis ng tindero ng bigas
 BEN- CNTMP:take.out ERG storekeeper ACC rice
 sa sako ang babae.
 DAT sack NOM woman
 'A/The storekeeper will take some rice out of a/the sack for the woman.'

For each of these sentences, the lexical entry of the verb and the full f-structure are as follows.

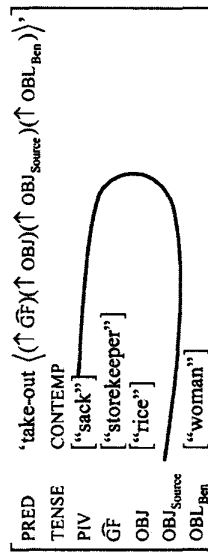
- (14) a. *magalis*: $(\uparrow \text{PRED}) = \text{'take-out'} ((\uparrow \bar{G}\bar{F}) (\uparrow \text{OBJ}) (\uparrow \text{OBJ}_{\text{Source}}) (\uparrow \text{OBL}_{\text{Ben}}))$
 $(\uparrow \text{TENSE}) = \text{CONTEMP}$
 $(\uparrow \text{PIV}) = (\uparrow \bar{G}\bar{F})$

PRED	'take-out' $\langle (\uparrow \bar{G}\bar{F}) (\uparrow \text{OBJ}) (\uparrow \text{OBJ}_{\text{Source}}) (\uparrow \text{OBL}_{\text{Ben}}) \rangle$
TENSE	CONTEMP
PIV	["storekeeper"]
$\bar{G}\bar{F}$	
OBJ	["rice"]
OBJ _{Source}	["sack"]
OBL _{Ben}	["woman"]

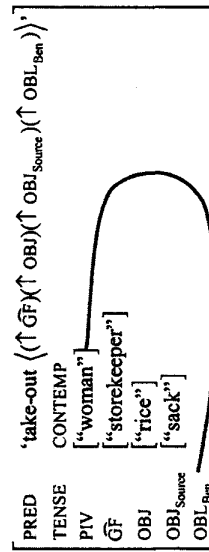
- b. *aalisin*: ($\uparrow$ PRED) = 'take-out ($\uparrow$ GF)($\uparrow$ OBJ)($\uparrow$ OBJ_{Source})($\uparrow$ OBJ_{Ben})',
 ($\uparrow$ TENSE) = CONTEMP
 ($\uparrow$ PIV) = ($\uparrow$ OBJ)



- c. *aalisin*: ($\uparrow$ PRED) = 'take-out ($\uparrow$ GF)($\uparrow$ OBJ)($\uparrow$ OBJ_{Source})($\uparrow$ OBJ_{Ben})',
 ($\uparrow$ TENSE) = CONTEMP
 ($\uparrow$ PIV) = ($\uparrow$ OBJ_{Ben})



- d. *ipagaalis*: ($\uparrow$ PRED) = 'take-out ($\uparrow$ GF)($\uparrow$ OBJ)($\uparrow$ OBJ_{Source})($\uparrow$ OBJ_{Ben})',
 ($\uparrow$ TENSE) = CONTEMP
 ($\uparrow$ PIV) = ($\uparrow$ OBJ_{Ben})



Under the theory proposed here, then, there is a natural account of the typological distinction between the uniform-subject languages and the different types of mixed-subject languages. The difference is not, as in inverse mapping theories, in the mapping of the arguments, but rather in the assignment of the PIV function to an argument. The unity of "subject" seen in uniform-subject languages is something of an illusion – a consequence of the identification of PIV with GF. GF and PIV are not types of subjects, or subclasses of the larger

class of subjects. The split of subject properties in mixed-subject languages is more revealing of the nature of the properties and the functions from which they derive: local, hierarchical, argumenthood properties are properties of GF, while cross-clausal properties are properties of PIV.

3.3 Pivothood and constructions

3.3.1 Types of constructions

The concept of pivothood which we have developed here owes much to previous work in the typological and functionalist literature, especially Dixon (1994). However, our PIV differs in one crucial respect from the pivot of these other researchers. Under our conception, the choice of PIV is determined by the grammar of the language: pivothood is a language-wide concept. In this respect, PIV is no different from any other grammatical function. However, the typological and functionalist literature often takes pivothood to depend on the construction involved, with different constructions using different pivots. For example, Dixon (1994: 175) states that "[s]ome languages combine S/A pivots and S/O pivots" and refers to these as mixed-pivot languages. Van Valin and LaPolla (1997: 275–278) are very emphatic about this.

A very important feature of the concepts of controller and pivot is that they exist only with reference to specific morphosyntactic phenomena, and each grammatical phenomenon may define one controller and/or one pivot... Pivots are construction-specific...

Moreover, as we said above, controller and pivot are *construction-specific* [emphasis in the original]. The usual notion of subject in syntactic theory, on the other hand, is not construction-specific but rather is a feature of the grammatical system as a whole. For this reason one does not talk about "the subject of finite verb agreement" or "the subject of the matrix-coding construction", since subject is not a construction-specific notion; rather, one can talk about "subject in English" or "subject in Malayasy", etc. Conversely, one does not speak of, for example, "the pivot of English" or "the controller of English", as there is no such concept. We can only speak in terms of the controllers and pivots of specific phenomena or constructions, such as "the controller of finite verb agreement" and "the pivot of the matrix coding-construction" in English.

In contrast to the position expressed by Van Valin and LaPolla, we claim that there is such a thing as the pivot of English/Dyirbal/etc. The grammar of English identifies the PIV as being a second function borne by the GF, the grammar of Dyirbal identifies PIV with OBJ, and the grammars of some languages supply a tool (such as verbal morphology in the Philippine-type languages) to assign the PIV function. We address the issue of alleged multiple pivots in this section.

We believe that the typological/functionalist approach is based on a misunderstanding of the concept of construction in cross-linguistic study.⁸ Our approach is based on a mixed formalist/functionalist perspective combined with the parallel architecture of the formal system we are assuming. From the functionalist perspective, we can identify a construction with the effect one wants it to have. We can call this a notional construction. For example, every language needs some way to distinguish the two major participants in a transitive clause. However, the formal linguistic system provides different ways to achieve this effect: Case marking, word order, verbal agreement markers, relative animacy, and so on. Formally, these are distinct devices which have little or nothing in common with each other. We can refer to a formal device as a formal construction.

It should not be controversial that notional constructions and formal constructions are distinct. The case discussed briefly in the previous paragraph is a relatively straightforward case.⁹ We will discuss one more example before returning to issues of pivothood. Suppose one wishes to express a transitive sentence with a generic (or arbitrary) Agent. "Transitive sentence with a generic Agent" is a notional construction. Different languages use different formal tools (i.e., different formal constructions) to express this. For example, in English one would use the passive, in Spanish the reflexive, in French a generic subject pronoun, and in Hebrew (a language in which subjects must be overt in the present tense, and generally in the third person in all tenses) a (third person) plural verb form with no overt subject.

- (15) a. **English**
English is spoken in America.
- b. **Spanish**
Se habla español en México.
REFL speak.PRES.3SG Spanish in Mexico
'Spanish is spoken (literally: 'speaks itself') in Mexico.'
- c. **French**
On parle français à Paris.
one speak.PRES.3SG French at Paris
'French is spoken (literally: 'one speaks French') in Paris.'
- d. **Hebrew**
Medabrim ivrit be Yisrael.
speak.PRES.MPL Hebrew in Israel
'Hebrew is spoken (literally: '[they] speak Hebrew') in Israel.'

8 This misunderstanding is not limited to researchers in the typological and functionalist tradition; one also finds it in much work in formalist frameworks. See footnote 9 for an example.

9 In some formal theories of syntax, particularly those in the GB/MP tradition, many of the methods used to distinguish the major participants in a transitive clause are subsumed under "Case marking." This is an example of formalist conflation of notional and formal constructions.

These four languages exhibit four different formal constructions for the same notional construction.

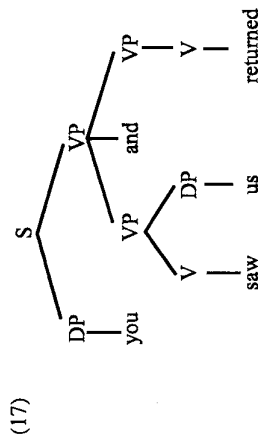
This distinction between notional and formal constructions is also relevant, we claim, for constructions that are potentially pivot-related. The PIV function is part of the formal syntactic system; more specifically, the Pivot Condition is a restriction on the form of formal syntactic constraints. Sensitivity to pivothood is therefore a property of formal constructions. It is inappropriate to define constructions notionally for the purpose of identifying pivots, as is often done in the functionalist and typological literature. In the coming chapters, we will take a detailed look at long-distance dependency constructions and especially control constructions, where the availability of more than one formal construction obscures the basic facts about subject properties. At this point, we will take a look at shared elements in coordination. Consider the following contrasting sentences in English and Dyirbal (Dixon 1994: 15).

- (16) a. **English**
You saw us and returned.
= 'You saw us and you returned.'
- b. **Dyirbal**
N'urra nana- na bura- n banaga- n'u.
you.all.NOM we.all- ACC see- NFUT return- NFUT
= 'You saw us and we returned.'

This contrast has often been cited (e.g., Comrie 1989, Dixon 1994, Palmer 1994) as evidence that English has an S/A (uniform-subject) pivot while Dyirbal has an S/P (mixed-subject syntactically ergative) pivot. However, a closer look reveals that the situation is more complicated. Give the formal tools of LFG, there are at least three formal ways for conjoined clauses to appear to share an element. Of these three formal constructions, only one is sensitive to pivothood. We will illustrate the three possibilities using the English sentence, and then return to the question of the correct analysis in English and Dyirbal.

One possible formal construction is subclausal constituent coordination, such as VP coordination.¹⁰

10 Following some analyses in LFG, we assume here, and throughout, that English sentences without auxiliaries (or with inverted auxiliaries in C) are S rather than IP. Readers who would prefer to see IP in the tree are welcome to make the appropriate substitutions. For some conceptions of constituent structure, the sentence in question might be better analyzed as I' coordination rather than VP coordination.



Under the LFG theory of coordination (Sadler 1999, Dalrymple and Kaplan 2000, Dalrymple 2001), coordinate structures are functionally sets. Some attributes which belong to the whole coordinate structures (including grammatical functions) are distributed over the conjuncts (that is to say, they are parts of both elements of the set). The constituent *[DPyou]*, which happens to bear the grammatical function PIV, is distributed over the two conjuncts. The two clauses thus share the PIV, but not because of any functional properties of the PIV. VP coordination is the result of c-structural properties – the ability of VP to be coordinated – as licensed by a phrase structure rule such as the following.

$$(18) \quad \begin{array}{ccccccc} \text{VP} & \rightarrow & \text{VP} & \text{CONJ} & \text{VP} \\ \downarrow \in \uparrow & & \downarrow \in \uparrow & & \downarrow \in \uparrow \end{array}$$

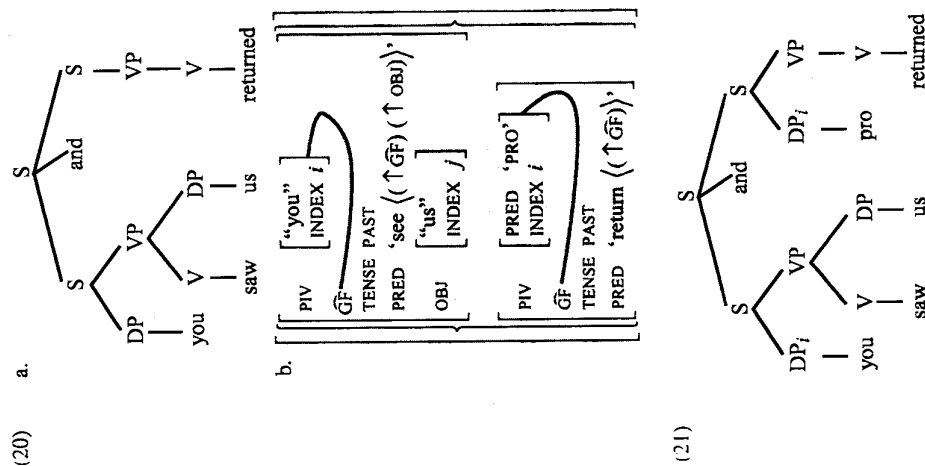
The function-sharing between the two clauses is merely a consequence of the c-structure properties of the language. Since, in English (and many other languages, but not universally) pivots have an external structural position, it is possible to coordinate constituents in such a way that the pivot will be shared. But pivothood (in our sense) is not directly implicated in constituent coordination. In fact, a topicalized OBJ can also be shared:

$$(19) \quad \text{This kind of salad, I like and you hate.}$$

This formal construction, as a structural (not functional) construction, is thus not pivot-sensitive.

A second possible formal method of achieving the result of not having to repeat a shared element in both conjuncts is to use some anaphoric device, such as a null pronoun or an incorporated-pronoun agreement form (for the distinction between these, which are normally both called pro-drop, see Chapter 2). Under such an analysis, the non-initial conjuncts have a pronoun which is

coreferential with an element in the first conjunct; however, this pronoun is not an overt pronounced element. This can be represented in the framework assumed here as the c-structure-f-structure pair (20), or in conventional c-structure-centric theories as (21).



In an anaphoric construction like this, there is no actual sharing of elements in the syntax; the elements in the conjuncts are merely coreferential, and the sharing is thus semantic rather than syntactic. From the perspective of the notional construction, the distinction between syntactic sharing and coreference is

hand, a pivot-restricted chaining analysis appears to be correct. Coordination of VPs (or any other subclausal constituent) is not a possible analysis, given the order of elements: the unshared 'you' is farther from the verb than the shared 'us', so the shared element cannot be structurally higher.¹² That is to say, there is no constituent that could be coordinated. In addition, Dyirbal does not allow free subclausal coordination the way English does (Dixon 1972). An analysis in terms of null pronouns is also untenable for Dyirbal. Dyirbal allows null pronouns only for transitive $\widehat{GF}$ (A), not for OBJ or intransitive $\widehat{GF}$ (S) (Dixon 1979), so a sentence like (16b) cannot involve a null pronoun. Unlike English, then, argument sharing in coordination does seem to be pivot-based in Dyirbal.

We can illustrate the kinds of properties that formal constructions have by comparing multifunctionality constructions (like chaining) and null/incorporated pronoun constructions: two of the three formal constructions that can be used for the notional construction of sharing across coordination. As we will see in Chapter 5, these two formal constructions are also involved in (at least some types of) control constructions. It is easy to see why these two formal constructions should be in competition to express the same notional constructions. Both constructions provide a way to avoid using an extra nominal phrase to mention an element overtly, resulting in a more economical expression. Both constructions involve the sharing of an element: in the case of multifunctionality directly in the syntax; and in the case of null/incorporated pronouns at a semantic/pragmatic level incorporating a representation of reference. However, despite their notional similarity, the two constructions are formally different. The difference results from the fact that multifunctionality is a purely syntactic construction, while anaphora (overt or covert) involves the interaction of several components of the grammar: reference (semantics/discourse), information structure, and thematic roles, as well as syntax. In fact, one can argue that the role of syntax in anaphora is relatively small. One of the characteristics of syntax is that it tends to be more rigid in its requirements than other components of language. The pure syntactic nature of sharing as opposed to the largely non-syntactic nature of anaphora therefore means that one would expect sharing to be stricter in its requirements than null/incorporated anaphora.

The flexibility of anaphoric constructions is easy to demonstrate. It is well known, for example, that anaphoric constructions do not always involve strict

coreference. For example, (26a) involves overlapping reference (given the relevant pragmatic context) and (26b) demonstrates a split antecedent.

- (26) a. Bill said that they enjoyed dinner with us last night. (*they* = Bill + others)
 b. Bill persuaded Jane that they should see the new *Star Trek* movie. (*they* = Bill + Jane)

Another type of flexibility involves pragmatically determined preferences in interpreting a pronoun. For example, in English, if there is a pronoun in a subordinate clause and a single possible antecedent in a higher clause, the usual preferred reading is for the pronoun to be coreferential with the higher nominal. However, given an appropriate discourse context, another reading may become more salient.

- (27) a. Sara said that she wants to major in generative basketweaving. (preferred reading: *she* = Sara)
 b. A lot of people told me that Miriam is going to study nuclear physics in college. However, Sara said that she wants to major in generative basketweaving. (preferred reading: *she* = Miriam)

While not all anaphoric constructions are equally flexible, some degree of flexibility is to be expected from a null/incorporated pronoun construction. A multifunctionality construction, on the other hand, should display none of these properties. The requirement that a certain element must be PIV, as a formal condition on the licensing constraint, should be absolute. Since a single syntactic element is literally being shared by two clauses, there should be no departures from strict identity.

In this context, it is useful to consider coordination sharing in Yidin'. As noted in much of the literature (such as Comrie 1989 and Dixon 1994), argument sharing across coordination in Yidin' differs from the Dyirbal construction: the shared elements bear unmarked Case. Since Yidin' has a split-ergative Case-marking system, this means P (OBJ) for lexical NPs and A ($\widehat{GF}$) for pronouns. This is very much unlike the Dyirbal situation, where (in transitive clauses) the shared element is invariably P (OBJ) – the PIV in Dyirbal. The Yidin' situation cannot be expressed in terms of pivothood, since the PIV in a transitive clause cannot be based on whether the argument in question is a lexical noun or a pronoun. For other constructions (such as extractability in relativization), as Dixon observes, Yidin' has a clear S/P pivot. From the perspective of the theory being developed here, we would want to claim that the Yidin' PIV is S/P (as in Dyirbal). We therefore hypothesize that the coordination

¹² The word order here corresponds to the most frequent word order in Dyirbal, but Dixon (1972) emphasizes that word order is very free in Dyirbal.

structure is not true pivot-based chaining. In addition, as in Dyirbal, the Yidin' word order facts make it unlikely to be a case of subclausal coordination. We therefore analyze argument sharing in Yidin' as a null-pronoun construction. Critically, this theoretically driven analysis receives clear empirical support, based on the difference in properties between null-pronoun constructions and multifunctional constructions. For instance, while the preference for unmarked Case elements in Yidin' is apparently very strong, it is only a preference, one which can be overridden by pragmatic considerations. This is illustrated by the following sentences (Dixon 1977).

- (28) a. Dayu buɲa wawa:l yargan'.
- 1.NOM woman see.PST be.frightened.PST
- 'I saw the woman and she was frightened.'
- **'I saw the woman and I was frightened.'
- b. Dan'an' buɲa :ŋ wawa:l yargan'.
- 1.ACC woman-ERG see.PST be.frightened.PST
- 'The woman saw me and she was frightened.'
- **'The woman saw me and I was frightened.'

This is not the behavior one expects from a syntactically conditioned pivot-based chaining construction, in which the restriction to a particular element is a result of the formal nature of the construction. Instead, this is a null-pronoun construction in which there is a strong preference for the pronoun and its antecedent to be null-Case elements. Other facts about the language also support this analysis: unlike Dyirbal, Yidin' freely allows OBJs as well as GFs to be null pronouns (Dixon 1977).

The differences between formal constructions are relatively subtle, and published language descriptions do not always include all the relevant information. In some cases, we must propose an analysis on the basis of the incomplete information available. Such an analysis, however, always makes predictions about other properties of the construction and the language.

3.3.3 Multiple pivots

The Yidin' coordination-sharing facts bring us back to the question of multiple pivots. Dixon (1994) cites these facts as an example of multiple pivots in a language, with Yidin' having an S/P pivot for relativization and some cases of coordination, and S/A for other cases of coordination. Our analysis, for which we have presented independent evidence, is a counterargument to Dixon's analysis. Dixon's claim that Yidin' has multiple pivots for coordination is odd in light of his rejection of a similar claim for Dyirbal by Heath (1979). Heath

notes that Dixon (1972) cites sequences of clauses in which there appear to be shared A arguments. Dixon cites sequences such as the following:

- (29) a. Bala yugu bagul yara- ŋgu nudi- n. Bayi n'alnga
- IV tree 1.ERG man-ERG cut- NFUT I child
- bunju- n.
- spank- NFUT
- 'The man cut the tree. [He] spanked the child.'
- b. Daja bala yugu yuba- n. Balan jugumbil jilwa- n.
- me IV stick put.down- NFUT II woman kick- NFUT
- 'I put down the stick; [and] kicked the woman.'

Sequences like (29a), with a full NP, are relatively rare; those like (29b), with a pronoun, are more common. Both of these are apparent counterexamples to the claim that sharing across coordination always involves S/P, and Heath argues that there is no S/P condition or, in more current terms, that there is no uniform S/P pivot. However, Dixon (1979) rejects this conclusion and notes that, since GF can pro-drop freely, (29) could (and should) be analyzed as involving a null pronoun.¹³ This is what we have argued for in the case of Yidin'. Yidin' is thus not a case of a language with different pivots for coordination and for relativization: it is a language with an S/P pivot (a mixed-subject language of the syntactically ergative type) in which the coordination construction is not pivot-dependent.

Our view is that all the cases that have been cited in the literature for constructions with different pivots in the same language will turn out, on closer inspection, to involve at least some formal constructions which are not pivot-restricted. We cannot discuss every such case here, but the basic approach that we used for Yidin' needs to be applied to other alleged multiple-pivot languages. As one final example, consider the case of the Mayan language Jakaltek, which Van Valin and LaPolla (1997) claim has multiple pivots. The following are the constructions that they mention.

- (30) **Jakaltek** (Van Valin and LaPolla 1997)

Control constructions

subject-triggered equi: controllee must be S of intransitive
 object-triggered equi: controllee either S of intransitive or derived passive
 S (← P)
 raising: either of the above, depending on dialect

[13] Dixon also notes that the Dyirbal sequences in (29) do not have the intonation of single syntactic units, but rather appear to be sequences of separate sentences in discourse. This is reflected in the way we have presented the sequences.

Long-distance dependencies

relatives: S or P (or derived S ($\leftarrow$ A) of antipassive)

wh-questions: S or P (or derived S ($\leftarrow$ A) of antipassive)

clefting: S or P (or derived S ($\leftarrow$ A) of antipassive)

Coordination

preference for sharing S, passive S, A

Even a superficial survey of this list reveals that different formal constructions are involved. The coordination case looks like an incorporated pronoun and a preference for $\bar{G}\bar{F}$ to be interpreted as the shared element, presumably because it is the most natural discourse topic. The limitation to S/A is only a preference, not an absolute requirement, and therefore displays the flexibility that one would expect from an anaphoric construction. In addition, agreement in the Mayan languages is pronominal, so the overall structure of the language supports an incorporated-pronoun analysis. Coordination thus does not involve pivots in Jakalteek. The long-distance dependency constructions seem to have a clear "ergative" pivot, like Dyirbal. In control and raising constructions, there may be a combination of a pivot-based construction with a semantic constraint ruling out P as controllee. In Chapter 5 we will propose such a semantic constraint. If this is correct, Jakalteek does not have different PIVs for different constructions. It has one PIV: an ergative S/P PIV.

The concept of different pivots for different constructions is inherently less interesting and less explanatory than the approach we are taking here. Stipulating that different constructions have different pivots does not explain why the constructions in question differ in this way. Under our approach, we can utilize the non-one-to-one relationship between notional constructions and formal constructions to explain why different constructions target different elements of the clause.

It is also important to realize that the distinction that we are drawing between notional and formal constructions is necessary in any case. The LFG formalism allows for all three methods of sharing elements between coordinated clauses that we have discussed. Nothing needs to be added to the framework to allow for these options: in fact, the theory would have to be complicated to prevent these three methods from all being available.

In conclusion, a formal multidimensional approach allows us to see past the appearance of multiple pivots. We do not believe that the difference between our approach and those of researchers in the typological/functionalist tradition is primarily a difference in the understanding of the concept of pivot, but rather a difference in the understanding of constructions. By recognizing the existence of

distinct formal constructions that can be used to express notional constructions, we can come to a clearer understanding of the constraints governing various constructions.

3.4 Clause-internal PIV properties

We turn now to a brief discussion of properties of PIV which are not cross-clausal, the properties mentioned in (1b). We view these properties as less central than the cross-clausal properties.

3.4.1 External position

Perhaps the most interesting of these properties is the external position which PIVs occupy in configurational languages. In c-structure-centric theories, this external position is taken to be a property which defines the subject, and thus is a stipulated property. Specifically, it is stipulated as an argumenthood property (the subject is often called the "external argument"): the Agent argument is said to be projected into the syntax externally.

There are several serious deficiencies in this relatively standard view of the external position of subjects. In the first place, the notion of Agent as external argument is entirely stipulative. Second, though it is generally thought to be true universally, it has been shown by Nordlinger (1998) and others that non-configurational languages do not have the same type of structure, and in particular do not have the subject in an external position.¹⁴ Third, the evidence suggests that in mixed-subject languages, if one element of the sentence is external, it is the PIV, not the $\bar{G}\bar{F}$. This is suggested by constituent order facts from ergative languages discussed by Dixon (1994), which appear to show that the PIV has a unique position in c-structure. Dixon mentions, without examples, the Maku language Nadëb, in which the S can either precede or follow the verb, and P can either precede or follow the sequence A-V. This suggests a structure in which A-V forms a verb-final constituent, with a higher structural position for S/P (which has free ordering relative to the A-V constituent). This is entirely parallel to the gross structure of configurational languages like English, but with A and P reversed.

[14] Arguments to the contrary that appear in the literature are circular, as they generally are based on showing that the language exhibits subject-object asymmetries. An argument of this kind only holds if one takes it as given that such asymmetries are to be explained on the grounds of asymmetrical constituent structure.