# Teoria linguistica e struttura delle lingue (a.a. 2009/10) - class handouts

## 1) *Universal Grammar and language acquisition*

**Chomsky** (notes based on Roberts 2007: Introduction & Chapter 1)

- there exist **formal universals** of syntax (= principles of syntactic structure that all languages have in common)
- these formal universals are an aspect of human cognition; they are a characteristic of the human brain

Goal of linguistic theory (beyond **description** of individual languages but ultimately based on this):

- characterisation of a **possible human grammar**

Theory of formal universals = **Universal Grammar** (UG)

- UG embodies the essential invariant parts of the structure of language (the common core of rules that syntactic rules/principles that underlies all human languages)
    - Uniformitarian Hypothesis (diachronic): "languages of the past are not different in nature from those of the present" (Croft, quoted in Roberts 2007)

The languages of the world display **variation**

- the structures which they allow are observationally different, but:
    - any language can be acquired by any human child (it is sufficient for the child to be exposed to the language in question at the right stage in the former's development). The speed and ultimate success of the acquisition process does not vary from language to language or from child to child. Its outcome is not predetermined by the linguistic group of the parents
        - all languages must have **a lot in common** (despite observable variation)

- What is **universal** (= common to all languages) may be inherited (i.e. it comes with the human brain) or acquired.
- What is **not universal** (= specific to an individual language or perhaps to a group of languages) MUST be acquired.

**POS** ('poverty of the stimulus') argument

- there is a significant gap between what seems to be the experience facilitating first language acquisition (the PLD - 'primary linguistic data') and the nature of the linguistic knowledge which results from first language acquisition (i.e. one's knowledge of one's native language).
    - significant gap because of:
        - performance errors in adult speech (incomplete structures, ungrammatical structures etc)
        - lack of negative evidence (no feedback that a given structure is not correct/no check on overgeneralisation of rules)

Niyogi 2004: "the inherent difficulty of inferring an unknown target from finite

resources"

If all this linguistic knowledge does not come from 'outside' (= the linguistic environment), it must come from 'within' (i.e. it is present in the human brain, or **innate**)

> Guasti 2002: "How could the process of language acquisition proceed in virtually the same ways across modalities and across languages if it were not under the control of an innate capacity?"

Innateness Hypothesis

- idea that particular aspects of human cognition which constitute the language faculty are a consequence of **genetic inheritance**
- tabula rasa learning not possible
    - fact: children do not entertain every possible hypothesis that is consistent with the data they receive but **only a limited class of hypotheses**. This class of grammatical hypotheses H is the class of possible grammars that children can conceive and therefore constrains the range of possible languages that humans can invent and speak.

Observable structural variation between languages & learning problem

- all structures that are particular to a given language **must be acquired** (i.e. must come from 'without', not directly from 'within')
- languages show considerable variation in structure
- acquisition is successful (despite POS)
    - language vary **in systematic ways, not randomly**
    - systematic variation conceptualised as parameters ( = a series of hypotheses about **limited** ways in which variation is possible, and what alternative values exist)
- parametric variation hypothesis: reconciles POS considerations (evidence unreliable/inadequate) with crosslinguistic variation (observationally extensive)

## 2. Native speaker syntactic 'knowledge'

*What the native speaker 'knows'. Exemplification 1: the Subject in French*

1a. **Paul** est parti
1b. **Il** est parti
1c. Paul/he has left
2a. **Paul**, évidemment, est parti
2b. ***Il**, évidemment, est parti
2c. Paul/he, evidently, left
2d. Les filles sont **toutes** parties
3a. Les filles ont mangé [lefij(z)ɔmɑʒe]
3b. Ils ont mangé [il(*z)ɔmɑʒe]
4a. Il est parti/Madame Smith est partie
4b. *Il et Madame Smith sont partis
4c. He and Mrs Smith have left
5a. **Moi**, je suis malade

5a'. ***Je**, je suis malade
5b. Partir? **Paul/lui**? Jamais!
5b' *Partir? **Il**? Jamais!
6a. il arrive et **(il)** repart
6b. Le journal, je l'achète et **(je) *(le)** lis tous les jours
7a. On arrive et ***(on)** repart
7b. **Nous**, nous partons demain (= quant à nous)
7c. **Nous**, **on** part demain
7d. ***On**, on part demain

*What the native speaker 'knows'. Exemplification 2: Order or elements in French*
1a. Paul a **franchement** besoin de se laver
1a`. *Paul **franchement** a besoin de se laver
1b. Microsoft dépense **franchement** beaucoup d'argent en marketing.
1b`. *Microsoft **franchement** dépense beaucoup d'argent en marketing.
1c. *Microsoft spends **frankly** a lot of money on marketing
1c`. Microsoft **frankly** spends a lot of money on marketing
2a. Paul a **tout** vu
2a`. Paul a vu TOUT
2b. **Tout** voir....
2c. En **tout** voyant, ....
2d. *Paul **tout** voit
2d`. Paul voit **tout**/Paul voit TOUT
3a. Je leur ai **tous tout** montré
3b. *Je leur ai **tout tous** montré
[Source of examples: Rowlet 2007; Internet]

## 3. Introductory: Main clausal constituents - linear ordering ('Order of Elements')

1. The farmer bought the cow (English - SVO)

2. Hasan öküz-ü aldi (Turkish - SOV)
Hasan ox (+Acc) bought
'Hasan bought the ox'

3. Sensei wa Taroo o sikata (Japanese - SOV)
teacher (TOP) Taro (+ Acc) scolded
'The teacher scolded Taro'

4. Lladdodd y ddraig y dyn (Welsh - VSO)
killed the dragon the man
'The dragon killed the man'

5. Nahita ny mpianatra ny vehivavy (Malagasy (Madagascar) - VOS)
saw the student the woman
'The woman saw the student'

6. Toto yahosiye kamara (Hixkaryana (language spoken in tropical rain forest of Brasil) - OVS)
man it-grabbed-him jaguar
'The jaguar grabbed the man'

7. Der Mann sah den Jungen (German - independent clause - SVO)
The man (+ Nomin) saw the boy (+ Acc)

Ich weiss, dass der Mann den Jungen sah. (German - dependent clause - SOV)

**4. Introductory: hierarchical structure vs linear order**

**a. Verbs and their complements:**
solve/résoudre/lösen
a problem/a mystery/a crime/a murder/an equation
[*solve a matter/*solve an issue/*solve a difficulty]

**solve** a problem
**résoudre** un problème
= V + NP
V (**head** - lexical category) + NP (**complement** - phrasal/syntagmatic category)
ein Problem **lösen**
= NP + V
NP (**complement** - phrasal/syntagmatic category) + V (**head** - lexical category)

**b. Adjectives and their complements:**
faithful/fidèle/treu

**faithful** to his principles
**fidèle** à ses principes
seinem Grundsätzen **treu**
his principles (+ Dat) faithful
'faithful to his principles'
sehr seinem Grundsätzen **treu**

des Französischen **mächtig**
French (+ Gen) capable
'French-speaking'
sehr des Französischen **mächtig**

**c. 'Adpositions' and their complements - linear ordering**
1. **in** the house (English - prepositional = P head + NP complement)
2. **yn** y tŷ (Welsh - prepositional = P + NP)
'in the house'

3. adam **için** (Turkish - postpositional = NP complement + P head)
the man for
'for the man'

4. Nihon **kara** (Japanese - postpositional = NP + P)
Japan from
'from Japan'

## 5. Syntactic Theory: Preliminary considerations

*Describing languages*
- what all languages have in common (linguistic universals)
- how languages (or groups of languages) differ from each other (language typology)

Descriptive level necessary: no serious explanatory theory of language can be developed if the object of explanation has not been adequately described. But no description possible without some idea of the categories and principles of syntax.

*From description to theory construction*

**Observational adequacy**

An observationally adequate grammar of a given language must be capable of specifying for any random string of words in that language whether that string is a well-formed sentence of that language.

**Descriptive adequacy**

It is not enough for a grammar simply to define the set of well-formed sentences of a language, it must also assign a structural description to each well-formed sentence that provides a basis for explaining native speakers' judgements about meaning, structure and structural relationships.

**Explanatory adequacy**

Besides being descriptively adequate, the grammar is part of a theory which provides an account 'of how these facts arise in the mind of the speaker-hearer' (Chomsky 1994), i.e. how they are acquired/can be acquired.

*Candidates for what a linguistic theory should explain* (From Van Valin, R. & LaPolla, R (1997) *Syntax. Structure, meaning and function*. Cambridge: CUP - all extracts from Chapter 1)

a. how speakers use language in different social situations:
b. **why human languages have the structures that they do;**
c. **what is common to all human languages;**
d. **why human languages vary structurally the way they do;**
e. **how human languages change over time;**
f. how speakers produce and understand language in real time;
g. **the nature of native speakers' knowledge of their language;**
h. **how children learn language.**

*'Language' in the Chomskyan conception*

From Van Valin, R. & LaPolla, R (1997)

Chomsky has explicitly denied that communication is a necessary or even important function of language (e.g. 1975: 56-7, 1980: 229-30). For him 'human language is a system for free expression of thought, essentially independent of stimulus control, need-satisfaction or

instrumental purpose' (1980: 239) and 'a set of structural descriptions of sentences, where a full structural description determines (in particular) the sound and meaning of the linguistic expression' (Chomsky 1977; 81). In any case, it is not the use of language that generative linguists are to investigate. Chomsky (1965) proposed a fundamental distinction between linguistic **competence** and linguistic **performance**: competence is a native speaker's knowledge of language, whereas performance is the actual use of language on particular occasions. For Chomsky the proper object of study for linguistics is competence only, and linguistic theory will have something to say about performance only insofar as a plausible theory of performance would of necessity incorporate a theory of competence. In his more recent work, (e.g. 1986), he has further distinguished between 'E[xternal] -language' and 'I[nternal]-language', where E-language corresponds roughly to the pretheoretical idea of what a language is and I-language is a speaker's internal grammar.

> The study of generative grammar in the modern sense ... was marked by a significant shift in focus in the study of language. To put it briefly, the focus of attention was shifted from 'language' to 'grammar' ... The shift of focus from language (an obscure and I believe ultimately unimportant notion) to grammar is essential if we are to proceed towards assimilating the study of language to the natural sciences. (Chomsky 1981).

E-language consists of the overt phenomena of linguistic interaction in the sociocultural realm; on the other hand, I-language (the grammar) is an abstract object accessible only through native speaker intuitions, and in this view only I-language falls within the scope of linguistic inquiry. Thus linguistics, in this conception, is the science of grammar, not of language. Universals for Chomsky are generalisations about I-languages (properties of grammars e.g. 'all grammars make use of the syntactic categories NOUN and VERB'). [....]

From Van Valin, R. & LaPolla, R (1997)

Competing, descriptively adequate grammars are to be evaluated solely with respect to economy, motivation and predictiveness.

This is reflected in Chomsky's overall theory of mind: language is a fully self-contained mental module, the inner workings of which are independent of and not accessible to other mental modules, e.g. reasoning, perception, vision, common sense etc.

It might be suggested that interest in language acquisition must involve psycholinguistic research and therefore reflects a more psychological perspective. This does not follow, however. For Chomsky, language acquisition is a *logical* problem, not a psycholinguistic one, and therefore it requires no psycholinguistic research or even study of child language. The logical problem may be formulated as follows: given an account of adult grammatical competence (what Chomsky calls the 'final state' of the organism), we may deduce the initial state of the language acquirer by factoring out what is supplied by experience. This may be represented graphically as follows:

Final knowledge state (= adult grammatical competence)
- Input from experience (exposure to language)
= Initial knowledge state ( = language acquisition device - LAD)

If there is some element of the final knowledge state which is not attributable to experience, then it must be part of the initial knowledge state or language acquisition device (LAD); this is known as 'the argument from the poverty of the stimulus' (APS). It is assumed that the input to the child

from experience is variable and degenerate and that it contains little or no information regarding the relevant grammatical principles. Hence it is claimed that the initial state, the LAD, is very rich and contains virtually all of the formal content of the final knowledge state. This claim has often been presented as a claim that 'language is innate', but this is in fact a misleading formulation. Chomsky's position is much stronger than the common-sense view that because humans alone possess true language, we must be genetically predetermined in some way to acquire it; language is innate in this sense, which is uncontroversial. Chomsky maintains that human beings are born with *a generative grammar hard-wired into an autonomous language module in the mind*; what enables humans to acquire language, the LAD, is *specific to language and independent of all other cognitive capacities*. Hence the real issue for Chomsky is the *autonomy* of the LAD, not whether it is innate. [end of quote - emphasis added]

Generative linguistics is very much targeted at determining what the basic endowment of grammatical principles has to be if acquisition is to be assured, given the poverty of the stimulus, in particular the lack of negative evidence (= lack of conclusive evidence that a given structure is NOT grammatical in a given language). The basic idea is that the grammar of a language must be so organised that a small 'trigger' (a linguistic fact encountered through experience of the language, i.e. exposure to raw language data from the language in question) is enough to signal unequivocally to the child that the language he/she is learning allows a given structure *x* (or, better, a given group of structures resulting from an interaction of the same underlying principles).

Since individual languages differ in their observable structures, Universal Grammar, the body of principles/rules that is thought to underlie *all* human languages, must include a (limited) number of crucial areas where the system allows for variation (these are the areas that are said to be 'parametrised'). The grammar of an individual language needs to be so organised in these areas that minimal contact with the raw input (with all its defects from the point of view of acquisition) will be sufficient to determine the choice between a limited set of possibilities (eg. null subject or non-null subject).

Basically, the Chomskyan hypothesis says that since the acquisition process is not favoured by the nature of the input (given the chaotic nature of the raw linguistic data and the absence of important evidence - negative evidence - that would be necessary to allow efficient acquisition), languages must be (internally) organised in a certain way to compensate for this. This internal organisation must necessarily be highly constraining, i.e. it is likely to consist of a network of interlocking abstract principles of structure such that a given linguistic fact - i.e. the fact that a structure $\alpha$ is instantiated in that language and is fully grammatical - implies, or must imply within the system of interlocking principles, that this language also has structures $\beta$, $\gamma$, $\delta$, $\epsilon$ etc. The main aim of the study of syntax (at a theoretical level) is to identify these general principles, as well as posit a number of areas that are parametrised (i.e. areas where the system makes a number of choices available - thus allowing individual languages to present observable structural differences). To all intents and purposes, Universal Grammar and the LAD, the natural endowment of principles in the brain of the child learner, are the same. Both must have the constraining character just described: they must be organised so as to invest certain small linguistic facts that are encountered by the learner during his/her exposure to the language with crucial implicational significance in the context of the grammatical system.

To give a practical example: in English structures such as **Who did you say that met Tom yesterday* (involving 'extraction' from the subject position of an embedded complement clause introduced by *that*) are ungrammatical. This is surprising in view of the fact that an otherwise similar structure but with *that* omitted is perfectly acceptable (*Who did you say met Tom*

*yesterday*), and also in view of the fact that the direct equivalent of the original structure (with realised complementiser or conjunction) is grammatical in many other languages (*Chi hai detto che mi ha colpito?* - Graffi 1994). In addition, extraction of a similar element from the object position of an embedded clause is perfectly grammatical, even when *that* is present (*Who did you say that Tom met yesterday*). How can the child learner of English know/find out that the original structure with *that* is not grammatical? The difference between it and the grammatical structure is minimal, and concerns an element (*that*) which is otherwise generally omissible in English. In addition, it is made up of 'bits' that are in themselves well-formed (the higher clause is basically well-formed, the lower clause is basically well-formed, the two are combined in a well-formed manner), so the structure is a not implausible one. Thus the fact that the learner eventually winds up with a grammatical system (steady state) in which this structure is (rightly) excluded is puzzling, to say the least. What is it that stops the learner from integrating this (perfectly plausible) structure into his repertoire? The structure is not produced spontaneously by native speakers, so the learner (it is true) will not encounter it, but given its high plausibility this is not in itself a sufficient explanation of why it is not adopted. Crucially, the learner will never encounter the only evidence that would be conclusive: an occurrence of the ungrammatical structure clearly marked as ungrammatical. Such evidence is not available in the data encountered. Thus, we are forced to the conclusion that if the learner succeeds in avoiding this structure (as indeed he/she does), it must be because his/her developing system (the combination of the natural endowment and what he/she has already discovered about the language) excludes it, i.e. involves constraints that rule it out.

It is common to use the 'poverty of the stimulus' argument to support the idea that the natural endowment (LAD) must be rich (leaving little that has to be acquired and only minimal space for linguistic diversity), but it is above all an argument in favour of the idea that syntactic structure must be organised in a highly constrained fashion so that certain key details are allowed to function as unambiguous tokens of certain wider choices (in the sense of clusters of phenomena) among the options available.

*Psychological questions about language*

*Processing:* what cognitive processes are involved when human beings produce and understand language in real time? How specialised to language are these processes?

*Knowledge:* what constitutes knowledge of language? How is it organised? How is it represented? How is it employed in language processing? How does knowledge of language relate to knowledge in other cognitive domains?

*Acquisition:* how do humans come to have knowledge of language? What is the nature of the acquisition process? Is coming to know language similar to or different from acquiring knowledge in other cognitive domains? Does it involve knowledge from other cognitive domains?

*The abstract nature of UG*

In saying that UG defines a possible human language, I mean that UG is intended as a general theory of the structure of human language, and not simply an account of the structure of the set of languages that happens to exist at this - or any other - historical moment. To be more precise, UG is intended to give an account of the nature of human *grammar,* rather than *language*; the notion of grammar is more precise and less subject to confusion due to social, political and cultural factors than that of language. Moreover, whilst a language can be thought of just as a set of strings of symbols, a grammar is more abstract, being the device which determines which sets of symbols are admitted in the language. In other words, even if we had at our disposal the means, both intellectual and practical, to write an exhaustive description of the grammar of every language currently spoken and every language for which textual evidence survives, any resulting inductive distillation of the results of such a survey would not yield UG. It could yield an extensional definition of the common features of all currently (and recently) existing grammars, and would be universal in this weak sense. But what UG aims for is an intensional characterisation of the class of human grammars: a characterisation of what makes a grammar what it is. UG should tell us what the defining properties of any possible human grammar are.

**Roberts** (2007: 12-13)

## 6. Chomskyan linguistics as a scientific inquiry

*Inductive science* - Bloomfield/Greenberg

Data examined and hypothesis formulated based on data

*Deductive science* - Chomsky

Hypothesis tested against data (predictions against linguistic reality)

Philosophers of science typically divide theories into two basic types, **inductive** and **deductive**. Inductive theories derive generalisations from the observation of many exemplars of the phenomena under investigation; the hypotheses so generated are descriptive in nature. If one, for example, examined a large number of birds of various species and concluded 'all birds have wings', this would be an inductive generalisation describing a property of birds. The generalisations of structural linguistics are inductive in nature, as are the language universals proposed in the work of Greenberg (e.g. Greenberg 1966). The relationship between data and theory with respect to inductive theories is **data —> hypothesis**.

In deductive theories, on the other hand, hypotheses are formulated and then tested against data in order to ascertain their validity. Theories in the so-called 'hard' sciences, e.g. physics, are primarily of this kind. Typically, the hypotheses grow out of observations of phenomena but not directly as in inductive theories. For example, a physicist might examine the results of a series of experiments involving particle interactions and conclude that in order to account for them it is necessary to posit a type of particle that had not previously been observed. He/she would then formulate hypotheses which are intended to *explain* the observed facts and predict the results of additional experiments with respect to the postulated particle. The validity of the hypothesis would be determined relative to the accuracy of the predictions it made regarding the experimental results. Deductive theories are explanatory theories, and the relationship between data and theory is **hypothesis ---> data**. (Van Valin, R. & LaPolla, R (1997)

*Theory-internal criteria* (Van Valin, R. & LaPolla, R (1997))

- **economy** (is it the simplest theory?)
- **motivation** (are the crucial explanatory concepts independently motivated or are they *ad hoc*?)

- **predictiveness** (do the hypotheses predict phenomena beyond those for which they were formulated?)

*Independently motivated rules*
An account in which the explanatory constructs have no other function beyond dealing with the problem at hand is less highly valued than one in which they play a role in the explanation of other phenomena; in this case the constructs are said to be *independently motivated*, because they are required by the theory for problems other than the one at hand. An example [...] would be contrast between two hypothetical accounts of contrasting pairs of sentences:

a. Who did Mary see?
a`. Mary saw who?
b. *Sandy* Robin doesn't like.
b`. Robin doesn't like Sandy.

In English a question word normally appears at the beginning of the sentence, as in (a) and is interpreted as if it were in its usual position, as in (a`). It is also possible for an NP that is not a question word to occur initially before the subject, as in (b), and it too is interpreted as if it were in its usual position, as in (b`). Let us suppose further that there are two competing accounts of the relationship between the two (b) sentences, one which invokes the same rule which relates to the two (a) sentences (call it 'displacement') and another one which applies just to the two (b) sentences (call it 'topicalisation'). Assuming everything else to be equal (including that they are empirically accurate), the first solution is to be preferred, for two reasons: first, it is simpler (one rule vs. two rules); and second, the rule invoked to account for the (b) sentences in the first account is independently needed in the grammar to account for the (a) sentences, whereas in the second account the 'topicalisation' account applies only to sentences like those in (b) and nowhere else in the grammar. Hence the second account is not independently motivated, whereas the first one is.
From Van Valin, R. & LaPolla, R (1997)

*Atomistic approach (one construction >> one 'rule') replaced by clustering of phenomena*
A typical cluster of phenomena ('null subject parameter')
- **possibility of null Subject**
È arrivato alle cinque
He arrived at 5pm
Il est arrivé à cinq heures
*[ ] arrived at 5pm
*[ ] est arrivé à cinq heures
- **possibility of free inversion**
È saltata <u>la riunione</u>
<u>The meeting</u> has been cancelled
*Has been cancelled <u>the meeting</u>
- **impossibility of pleonastic Subject NP**
Piove
*Esso piove
<u>It</u> is raining
<u>Il</u> pleut

*[ ] is raining/*[ ] pleut
- **possibility of extraction of Subject NP from embedded clause (realised complementiser)**
Chi dici **che** mi ha colpito?
*Who did you say **that** [ ] hit me?
*Wer hast du gesagt **dass** [ ] mich geschlagen hat

## 7. The notion of 'mental grammar' and the innateness hypothesis. Extracts from R Jackendoff (1997) *The Architecture of the Language Faculty* Cambridge (Massachusetts): MIT Press. (All extracts from Chapter 1.)

The Mentalist Stance
The basic stance of generative linguistics is that we are studying the "nature of language", not as some sort of abstract phenomenon or social artifact, but as the way a human being understands and uses language. In other words, *we are interested ultimately in the manner in which language ability is embodied in the human brain*. Chomsky makes this distinction nowadays by saying that we are studying "internalised language" (I - language) rather than "externalised language" (E - language). [.....]

What about the abstract and social aspects of language? One can maintain a mentalist stance without simply dismissing them, as Chomsky sometimes seems to. It might be, for instance, that there are purely abstract properties that any system must have in order to serve the expressive purposes that language serves, and there might be properties that language has because of the social context in which it is embedded. The mentalist stance would say, though, that we eventually need to investigate how such properties are spelled out in the brains of language users, so that people can use language. [.....]

The Notion of Mental Grammar
The phenomenon that motivated Chomsky's *Syntactic Structures* was the unlimited possibility of expression in human language, what Chomsky now calls the "**discrete infinity**" of language. In order for speakers of a language to create and understand sentences they have never heard before, there must be a way to combine some finite number of memorised units - the words or morphemes of the language - into phrases and sentences of arbitrary length. The only way this is possible is for the speaker's knowledge of the language to include a set of principles of combination that determine which combinations are well formed and what they mean. Such principles are a conceptually necessary part of a theory of language. [.....]

Learnability and Universal Grammar
Chomsky's next question is: if linguistic knowledge consists of a mental grammar, how does the mental grammar get into the speaker's mind? Clearly a certain amount of environmental input is necessary, since children acquire mental grammars appropriate to their linguistic communities. However, the combinatorial principles of mental grammar cannot be directly perceived in the environmental input. Therefore the language learner must come to the task of acquisition equipped with a capacity to construct I-linguistic generalisations on the basis of E-linguistic input. How do we characterise this capacity?

The standard lore outside the linguistics community has it that this capacity is simply general-purpose intelligence of a very simple sort. This lore is remarkably persuasive and persistent, and over and over it finds its way into psychological theories of language. Chomsky's

(1959) response to Skinner (1957) and Pinker and Prince's (1988) to Rumelhart and McClelland (1986) are detailed attempts to dispel it, nearly thirty years apart. As linguistic theory has demonstrated, the complexities of language are such that general-purpose problem solving would not seem enough. I like to put the problem as the "Paradox of Language Acquisition": if general-purpose intelligence were sufficient to extract the principles of mental grammar, linguists (or psycholinguists or computer scientists), at least some of whom have more than adequate general intelligence, would have discovered the principles long ago. The fact that we are all still searching and arguing, while every normal child manages to extract the principles unaided, suggests that the normal child is using something other than general-purpose intelligence. Following standard practice in linguistics, let's call this extra something *Universal Grammar* (UG). [.....]

Innateness

The next step in Chomsky's argument is to ask how the child gets UG. Since UG provides the basis for learning, it cannot itself be learned. It therefore must be present in the brain prior to language acquisition. The only way it can get into the brain, then, is by virtue of genetic inheritance. That is, UG is innate. At a gross level, we can imagine the human genome specifying the structure of the brain in such a way that UG comes "pre-installed", the way an operating system comes pre-installed on a computer. But of course we do not "install software" in the brain: the brain just grows a certain way. So we might be slightly more sophisticated and say that the human genome specifies the growth of the brain in such a way that UG is an emergent functional property of the neural wiring. [.....]

Evolutionary issues

If language is a specialised mental capacity, it *might* in principle be different from every other cognitive capacity. Under such a conception, linguistic theory is isolated from the rest of cognitive psychology. Again, I find a less exclusionary stance of more interest. The claim that language is a specialised mental capacity does not preclude the possibility that it is in part the specialisation of preexisting brain mechanisms. That's characteristic of evolutionary engineering. For example, many mental phenomena, such as the organisation of the visual field, music, and motor control, involve hierarchical part-whole relations (or constituent structure); so it should be no surprise that language does too. [.....]

## 8. Another attempt to justify the idea that the Language Faculty is an autonomous module. Extracted from: Y. Grodzinsky 'The Language Faculty, Broca's Region, and the Mirror System' ms. McGill University

It is worthwhile to be reminded of past empirical arguments for a modular view of language, and see how well they fare now – whether current views on cognition and action can accommodate them. A classical paradigm (dating back to Chomsky, 1957) regards Subject-Auxiliary Inversion (SAI) in English yes/no questions in sentences that contain auxiliary verbs. The facts in (1)-(3) suggest a "structure-dependent" relation between an auxiliary *is* and the position marked by "__" (with the fronted element in bold, and '*' denoting ungrammaticality):

(1) a. John is tall
b. **Is** John __ tall?

(2) a. The man [who is in the room] is tall
b. ***Is** the man [who __ in the room] is tall?
c. **Is** the man [who is in the room ] __ tall?

(3) a. John is the man [who is in the room]
b. *Is John is the man [who __ in the room]?
c. **Is** John __ the man [who is in the room]?

A yes/no question here is formed by extracting an auxiliary verb, and putting it in the front (1). Yet, how does SAI determine which auxiliary is fronted when there is more than one auxiliary? From (2) and (3) we see that extraction and fronting must somehow be constrained, otherwise, certain applications would result in ungrammatical strings [e.g., (2b), (3b)]. Can a constraint on SAI be formulated over linear sequences of words (i.e., one that makes reference only to terms like first, second, last in the string, etc.)?

Looking at (2), a linearly based account seems to work. It would say that in English, only the fronting of the first (or perhaps the penultimate) auxiliary in a sequence is illicit. Since in (2b) the first auxiliary is fronted, a violation of this rule follows, hence ungrammaticality. Curiously, (3) shows that this account is inadequate, because the situation may be reversed: in (3b), it is the fronting of the second (or maybe last) auxiliary that leads to ungrammaticality. Our attempt failed. To reconcile the contradiction, we must find a property common to both illicit representations (2b)-(3b), so that the fronting of the auxiliary they contain can be blocked by a single statement. Observe that in both ungrammatical cases the fronting is from an embedded clause (marked by brackets). What seems to block auxiliary extraction in these cases is not the linear ordering of auxiliaries, but the fact that it is done from an embedded sentence. SAI thus allows auxiliary extraction only from a main clause, as Chomsky (1957) proposes. A rule that blocks auxiliary extraction, or fronting, from an embedded clause, covers (1)-(3) and many related facts, and is said to be part of speakers' knowledge of English.

However, a ban of this type presupposes hierarchical, as opposed to linear, relations to exist in sentences. A reader may argue that this type of facts demonstrates nothing beyond the need for hierarchical relations in linguistic analysis. Hierarchy, she would note, is characteristic of many biological systems, and thus a demonstration that it exists does not show that a particular system (in this case language) is special. Yet if she agrees on the existence of a hierarchy here, we are more than half way done. First, it is now agreed that the facts in (1)-(3) are relevant, which opens the way to more; second, such agreement immediately excludes a class of rather popular frequency-driven accounts of linguistic ability (which use concepts like 'frequent structure', 'adaptation', 'habituation','transition probability' to explain syntactic regularity), because such accounts are incapable of handling (1)-(3). Indeed, Chomsky (1957) originally introduced these facts in an argument against a probabilistic, Markov-source based, approach to syntactic analysis.

Still, there is arguably some road ahead; namely, it remains to be shown that the particular hierarchy we see here has a special, linguistic, character. For that, one must reflect on the nature of rule SAI. To convince the skeptical reader, what is needed is evidence that the formulation of SAI makes crucial reference to grammatical notions. What is given below is precisely this kind of evidence. I will now show a set of related grammaticality contrasts with respect to yes/no question formation, indicating that SAI must appeal to grammatical types. The extraction operation that SAI constrains is complex (simple as its yes/no question output might appear). Importantly, even in a main clause, SAI cannot take just any word and move it to any location. It can only front a verb. Furthermore, it cannot front just any verb to form a yes/no question (4b), although a yes/no question can always be formed (4c); nor can SAI freely extract just any auxiliary verb, if there is more than one [(5b) vs. (5c)]; and it cannot front more than one either (5d). SAI, then, is a not only a ban on extraction of an auxiliary verb from an embedded clause; it also constrains the fronting of auxiliaries in main clauses:

(4) a. George saw John

b. *Saw George __ John?
c. Did George see John?

(5) a. George will be asked to leave
b. Will George __ be asked to leave?
c. *Be George will __ asked to leave?
d. *Will be George __ __ asked to leave?

Even this handful of snippets (chosen for brevity, as this short essay isn't meant to be an introductory syntax course) leads to a reasonably clear conclusion: Sentences are not only organized hierarchically, but also, the rules that compose them from words must make reference to grammatical notions. And these do not seem easily derivable from other vocabulary, let alone the one used to describe the motor system. And, as many have pointed out (most succinctly Osherson, 1981), a unifying approach to cognitive modules must require that the relevant facts from the respective cognitive domains follow from the same theory. Here, a unified linguistic/motor theory would require that what appear to be specialized grammatical systems [usually invoked to account for facts like (1)-(5)] can be put under the same umbrella with systems that govern motor behavior. Yet (1)-(5) seem to be governed by a linguistic rule. Is it possible to construct an account that unifies these facts with facts that pertain to the mirror system? Perhaps, yet it would seem to be an exceedingly difficult task.

**9. Introductory: syntactic structure**

1a. During the summer Tom revised his manuscript
1b. During the summer Tom worked on his manuscript
1a`. During the summer Tom reworked his manuscript
1c. Tom revised his manuscript during the summer
1c`. *Tom revised during the summer his manuscript
1d. Tom worked on his manuscript during the summer
1d`. Tom worked during the summer on his manuscript
2a. Last summer Tom revised his manuscript
2b. Last summer Tom worked on his manuscript
2c. *Tom revised last summer his manuscript
2d. Tom worked on his manuscript last summer
3a. Tom spent last summer in Paris
3a`. *Tom spent in Paris last summer
3b. Last summer Tom spent in Paris [but the winter he spent in Nice]
4a. [It wasn't clear] which manuscript Tom revised in Paris
4b. [It wasn't clear] which summer Tom spent in Paris
4c. [It wasn't clear] which summer Tom revised his manuscript in Paris.

1) oblique (= prepositional/PP) versus non-oblique (Object NP)
2) nuclear (= semantically dependent on verb) versus non-nuclear (not semantically dependent on verb)
3) located in nuclear clause versus not located in nuclear clause

**10. Clause structure: exercise**.

*Give a structural analysis of the following sentences: put brackets around the constituents and label each one so as to indicate (i) the formal category that it belongs to (NP, VP, AP, AdjP, PP etc), and (ii) its grammatical function (subject, object, (predicative)*

*complement, adverbial). Your analysis should identify the immediate constituents of S and VP (do not analyse the internal structure of other phrasal constituents). Indicate your brackets and labels as clearly as possible.*

a. A few participants concealed their objections to the idea.
b. Tom's uncle threw the remaining fish into the sea.
c. The new biography of Malraux is an impressive effort
d. No older members objected to the proposal**.**
e. At the end of the meeting everyone was tired and irritable.
f. Presumably all the boys ate fish for lunch.
g. In these circumstances, the best thing is to leave immediately.
h. Unfortunately, the manuscript was in poor condition.
i. The boys behaved badly on account of the heat.
j. Seven years after his marriage, Tom turned into a real monster

## 11. Views of the lexical categories (Extracts from Baker, M. (2003) *Lexical Categories. Verbs, Nouns, and Adjectives* Cambridge: CUP)

The characteristic leading ideas of the functionalist views is that the lexical categories are prototype notions with fuzzy boundaries and that they are grounded in **semantic** and/or **pragmatic** distinctions. Hopper & Thompson (1984) and Givón (1984) argue that the different categories typically differ in the temporal properties of the things that they refer to: verbs denote events, which are dynamic, short-term states of affairs; adjectives denote states or properties, which are typically medium-length states of affairs; nouns denote things, which are long-term states of affairs. The emphasis is somewhat different for Croft (1991), Hengevelt (1992), Bhat (1994). These authors distinguish the categories in terms of their prototypical functions in an act of communication: nouns are words that are typically used to refer; verbs are typically used to predicate; adjectives are typically used to modify. Langacker (1987) blends aspects of both these two views: he distinguishes nouns from adjectives and verbs in that only the latter are intrinsically relational (i.e. predicative), whereas he distinguishes verbs from adjectives and nouns in that they tend to denote a process that develops over time. The word "typically" is crucial here. Nouns *can* be used as predicates in predicate nominal constructions, and verbs *can* be used to refer to events in gerund constructions. These are not the prototypical uses of these words, however, and extra morphological or syntactic marking often accompanies them in their nontypical usage (see especially Croft 1991, chap. 2). [....]

Another concern is what functionalist views imply about the nontypical members of a category, beyond the fact that they can exist. *Eat* is a prototypical instance of the category verb because it describes a process of limited duration, whereas *hunger* is a less typical instance of a verb. This judgement about prototypicality fits well with the fact that *hunger* is related to the more common adjective *hungry*, but there is no adjective equivalent to *eat* in English or other languages. This is all well and good, but it says little about why the syntaxes of *hunger* and *hungry* are so different, even though they express essentially the same property. *Hungry* differs from *hunger* in requiring a copula (1a), in being able to modify a noun directly (1b), and in not bearing past tense morphology (1c), in being compatible with degree expressions (1d), and in being usable as a resultative secondary predicate (1e):

| | | |
|---|---|---|
| 1a. | Chris hungers | Chris *(is) hungry |
| 1b. | a hungry person | *a hunger person |
| 1c. | Chris hungered | *Chris hungried |
| 1d. | Chris is as hungry as Tom | *Chris as hungers as Tom |
| 1e. | The vet told them that they must walk their dog hungry every evening | |
| | *The vet told them that they must walk their dog hunger every evening | |

In all these respects, *hungry* is identical to more prototypical adjectives like *small*, and *hunger* is identical to more prototypical verbs like *eat*. If one is interested in why this particular cluster of discrete consequences results from which lexical category a particular word happens to be in, a prototype theory is unlikely to hold the answer. Nor does the answer seem to lie in the nature of the eventuality being described, since *hungry* and *hunger* are a very close minimal pair in this regard. This seems to be a job for a relatively autonomous theory of grammar.

## 12. Syntactic functions within phrasal categories ("sintagmi")

A lexical element may be followed by one or more phrasal elements within its projection. Thus after the verb *destroy* we may have an NP and a PP (as in *[They] destroyed the city in 1945*) or after the verb place we may have the same string of elements (as in *[They] placed the flowers on the table*). Similarly with nouns we may have a string of phrasal elements that follow within the NP: *[the] destruction of the city in 1945* (in this case we have two PPs: *of the city* and *in 1945*). It is well established that not all these elements necessarily have the same syntactic status (which is another way of saying that they do not all realise the same syntactic function). This is evident if we consider the simple fact that with the V *destroy* and the N *destruction* the second element (corresponding to the PP *in 1945*) may be freely omitted without any loss of syntactic acceptability (there is of course some loss of content) whereas this is not the case with the first element:

[They] destroyed the city [ ]. vs. *[They] destroyed [ ] in 1945.

[the] destruction of the city [ ] vs. *[the] destruction [ ] in 1945.

It appears then that the first element following the lexical head - the NP *the city* in the case of the V and the PP *of the city* in the case of the N - are "required" - or "selected" - by the head. The other elements appear to be in a freer relation with the head (i.e. they are not linked to it by a relation of lexical selection). The different status of these elements is generally thought of as corresponding to different syntactic functions, that of Complement for the lexically selected elements and that of Modifier for the non-lexically-selected elements.

That certain elements are more closely connected with the lexical head than others is also shown by a substitution test based on the substitute elements *do so* (for V) and *one* (for N). We see these tests at work in Sections A and B following.

A.
1a. Tom rang the bell at 6pm and Anne **did so** at 7pm.
1a'. Tom [rang the bell] at 6pm and Anne [did so] at 7pm.
1b. *Tom [rang] the upstairs bell at 6pm and Anne [did so] the downstairs one at 7pm.
2a. Tom read a book in the garden and Anne did so in the house.
2a'. Tom [read a book] in the garden and Anne [did so] in the house.
2b. *Tom [read] a book in the garden and Anne [did so] a magazine in the house.
4a. Tom arrived at 6pm and Anne **did so** at 7pm.
4a'. Tom [arrived] at 6pm and Anne [did so] at 7pm.

4b. *Tom [arrived] at the airport and Anne [did so] at the central station.
5a. Tom bumped into a lamppost on the way home and Anne **did so** while walking in the park.
5a'. Tom [bumped into a lamppost] on the way home and Anne [did so] while walking in the park.
5b. *Tom [bumped] into a lamppost and Anne [did so] into a badly parked lorry.
6a. Tom clung to the rock with great determination and Anne **did so** with a look of terror in her eyes.
6a'. Tom [clung to the rock] with great determination and Anne [did so] with a look of terror in her eyes.
6b. *Tom [clung] to the rock and Anne [did so] to the tree trunk.

B. 1a. Jane married [$_{NP}$ the student [$_{PP}$ with long hair]] and Anne married [$_{NP}$ the one [$_{PP}$ with short hair]].
1a'. Jane married the [student] with long hair and Anne married the [one] with short hair.
1b. Jane married [$_{NP}$ the student [$_{PP}$ of physics] [$_{PP}$ with long hair]] and Anne married [$_{NP}$ the one [$_{PP}$ with short hair]].
1b'. Jane married the [student of physics] with long hair and Anne married the [one] with short hair.
1c. ??Jane married the [student] of physics and Anne married the [one] of chemistry.

Essentially what the two tests in A and B show is that the syntactic relation between a lexical head and its complement is much closer than that between a lexical head and a modifier. Indeed, in English two substitution elements exist - *do so* and *one* - which minimally replace a lexical head (a V in the first case, an N in the second case) and its complement(s), **excluding any modifiers**.

The question that arises is how to collocate these two different syntactic functions - Complement and Modifier - in an explicit representation. Another way of formulating this problem is as follows: since what we are calling a complement is much more closely linked to the lexical head than what we are calling a modifier, how can this difference be represented explicitly? Our basic assumption is that when a close relation of syntactic interdependence can be shown to exist between two elements, A (an N or a V for instance) & B (in the sense that the presence of B depends on the presence of A and vice versa), this should be represented in configurational terms (as a relation of 'sisterhood'). What this means is that we will think of - and represent - the two interdependent elements A & B as constituents of some abstract (= non-lexical) higher element; thus A & B will be shown as going together to form an inner unit (or "node") *within the overall phrasal category* (whether it is NP or VP). For expository purposes, we will call this inner unit Z. Thus:

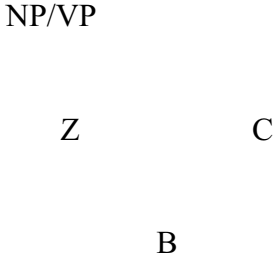
NP/VP

Z

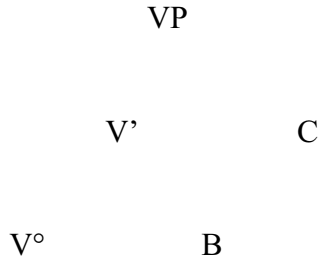
A B

In other words, since A & B are closely interdependent, they will be represented as forming an "inner nucleus" (with B as 'sister' of A) in the configurational representation, i.e. a unit within a unit (the overall phrasal category NP or VP). This inner nucleus by definition excludes other elements such as 'modifiers', which will accordingly have to be represented at some other level within the phrasal category to which they belong.

We may assume (for the moment) that modifiers - for which we will use the letter C - hang directly from the highest node:




Thus, if A is the head (the V *destroy* or the N *destruction* in our original examples) and B the lexically selected element or complement (some sort of phrasal category = YP), we see that C (the modifier) is clearly outside the inner node formed by the first two (Z). This inner node (Z) is situated hierarchically between the lexical level (A = V or N) and the full phrasal level (NP/VP). Given this, it is reasonable to assume that it should be labelled as a projection of A, that is to say as an intermediate projection of V or N. In the literature this intermediate projection is known as V' or N' respectively (pronounced 'bar'). Thus we have at least three levels in a projection of V (or N): the lexical level (V°), the intermediate level (V') and the phrasal level (VP):




## 13. The four syntactic functions:

### A. The Head function

The head is the only syntactic function within phrase structure that is truly obligatory in the sense that it must always be realised (with very few exceptions, cf. the NPs *the rich, the poor* etc, where no member of the category N is present); modifiers and specifiers are always optional and complements (lexically selected elements) are by definition only present when required by the specific lexical item functioning as head. The head is the dominant element in that it is the element that determines the syntactic characteristics of the phrase as a whole: if in a given phrasal structure the head is an N, then the overall structure will necessarily be an NP (i.e. it will reflect the nominal characteristics of its head).

1. (1a) We dislike/drink [**wine**].
   (1b) We dislike/drink [red **wine**].

(1c) We dislike/drink [the **wine** which we are given].
(1d) We dislike/drink [the **wine** at that restaurant].
(1e) We dislike/drink [**wine** served in tall glasses].
(2a) We dislike/*drink [**wine** experts] NB: *wine* not head

2. (1a) The boys were [**inside**].
(1b) The boys were [right **inside**].
(1c) The boys were [**inside** the cave].
(1d) The boys were [right **inside** the cave].
(2a) *The boys were [the office **inside**] NB: *inside* not head
(2b) The boys were [two metres **inside**].
(2b`) The boys were [two metres **inside** the cave].

3. (1a) The girls were [**satisfied**].
(1b) The girls were [very **satisfied**].
(1c) The girls were [very **satisfied** with their results].
(1d) The girls were [very **satisfied** that they had obtained such results].

4. (1a) The boys behaved [**differently**].
(1b) The boys behaved [very **differently**].
(1c) The boys behaved [very **differently** from their fathers].

5. (1a) The girls started [**cleaning**]
(1b) The girls started [**cleaning** the house]
(1c) The girls started [thoroughly **cleaning** the house]

B. **The Complement function (relation of lexical selection by the Head)**

`Complement' is the syntactic function that is associated with the constituent or constituents selected by a (lexical) head (see above, Section G).

In semantic terms a complement is an **argument** ("argomento") of the head. Only heads with "relational" meanings have argument structures - compare the two Ns *demolition* and *brick*, the first of which has an inherently relational meaning - its denotatum (an event) necessarily implies the participation of other entities -and the second of which does not.

In principle, a complement can be realised by any formal category of phrasal level (NP, PP, AP, AdjP etc.) or by an S (as in *[$_{AdjP}$ worried [$_{S}$ that they would not arrive in time]]*, where the complement function of the adjectival head *worried* is realised by the *that* clause). Of the principal lexical categories only V & P generally allow complements in the form of NPs; N, Adj & A (to the extent that this last category allows complements, see below) generally require their complement to be introduced by a preposition (in the case of N, most commonly *of*).

The syntactic functions Direct Object, Indirect Object & Predicative Complement (eg. the AdjP that functions as complement of the V *become* in the VP of *Tom [$_{VP}$ became [$_{AdjP}$ very arrogant]]*) are all *subtypes of Complement* (all are lexically selected elements).

The selectional properties of lexical heads are manifested both positively (eg. in the fact that an N such as *containment* selects a PP such as *of the enemy forces*) and also negatively (eg. in the fact that a V such as *collapse* refuses any type of complement; it may be said to require "zero complementation").

The clearest cases of complements are those elements that must obligatorily appear after a given lexical head (this applies to English - in other languages the Head-Complement order may be different); examples of these are given below at the beginning of each section. Complements that are obligatorily realised with a given head contrast sharply with modifiers, which are always optional. It should not be forgotten, however, (i) that not all complements are obligatorily realised, and (ii) that the same `word' can have more than one use (often these uses are closely connected) with an obligatory complement in one use and no complement in another (see discussion of complements of adjectives below).

Terminological note: in the Italian grammatical tradition the term `complemento' covers both what we are calling complements, viz the Direct & Indirect Objects, locative complements etc., and also non-selected elements that we are terming modifiers. Thus it is common to hear terms such as `complemento di luogo', `complemento di modo' for elements that are not lexically selected by the verb (such as *in giardino* in *I ragazzi stanno giocando in giardino*). Modern syntactic analyses of Italian generally adopt the standard terminology used here.

**Adjectives**

1a. unaware [of the news]
>Jane is [$_{AdjP}$ unaware [$_{PP}$ of the news]]
1b. ??unaware [ ]
2a. familiar [with the data]
2b. *familiar [ ] (ungrammatical without complement in appropriate sense)
3a. satisfied [with the results]
3b. satisfied [ ]
4a. concerned [about his health]
4b. concerned [ ]

In all the above cases (*unaware, familiar, satisfied, concerned*) full interpretation of the Adj is impossible without the complement; thus, even in those cases (*satisfied, concerned*) where the complement is not obligatorily realised, it must be assumed to be understood. In other words, *Jane is very concerned* is necessarily interpreted as meaning `Jane is concerned about something specific'; from that point of view it is no different from *Jane is concerned about the health of her cactus* (where the complement PP is actually realised).

Often an Adj can have two different senses, one of which is more specific and appears to require a complement while the other is more general and appears not to require a complement. Thus *ignorant* can be used with a general meaning, as in *Tom is very ignorant*, or alternatively with a specific meaning, as in *Tom is completely ignorant of our plans*. In the second case the adjective is followed by a PP complement; in the first case it is not normally followed by a complement.

**Choice of preposition**: in one of the two cases where the complement is obligatorily realised (*unaware*) the P required (*of*) might be said to lack any semantic content of its own. This same P is found in the complementation of the vast majority of nouns (see below: *student of physics, destruction of the city* etc) and we may assume that its function is structural rather than semantic (this means that it contributes no lexical content). With other As we find that a semantically non-empty P is chosen; in these cases the choice usually depends on a general semantic compatibility between A & P. An example of this might be the P *about*, which signifies roughly "in connection with" and appears with a whole range of adjectives - *well-informed, knowledgeable, worried, anxious, explicit, clear, informative, confused* etc. In all these cases there is an obvious compatibility between the semantic of the P and the meaning of the A. A third case is where the choice of P that introduces the complement of the A appears to be idiosyncratic (i.e.

not attributable to a general semantic compatibility). An example of this might be the A *keen*, which selects the P *on* (while semantically similar As such as *enthusiastic, passionate, crazy* (in its informal sense of "enthusiastic") select *about*). The majority of Adjs are quite unlike those just discussed: they in no way require (or even admit) a complement in order to be fully interpretable (cf. *Tom is absent-minded*).

5a. rectangular
5b. rectangular [$_{PP}$ in outline]
6a. red
6b. red [with embarrassment]

**Nouns**

1a. re-establishment [$_{PP}$ of diplomatic relations]
1b. *re-establishment [ ]
2a. extension [of the building]
2b. extension [ ] (same interpretation??)
3a. student [of physics]
3b. student [ ]

**Prepositions**

1a. to [$_{NP}$ the end]
1b. *to [ ]
1c. through [the wood]
1d. through [ ]
2a. out [$_{PP}$ of the door]
2b. ??out [$_{NP}$ the door]
2c. out [ ]

**Adverbs**

1a. independently [$_{PP}$ of our wishes]
1b. independently [ ]
2a. irrespective [of the outcome]
2b. *irrespective [ ]
3a. indépendamment [$_{PP}$ de nôtre volonté]
3b. indipendentemente [della nostra volontà]
4a. fondly cf. [fond [of his parents]]
4b. *fondly [of his parents]

**Verbs**

1a. devoured [the cheese]
1b. *devoured [ ]
2a. step [on the cat's tail]
2b. *step [ ]
3a. stutter (= balbettare)
>Tom was stuttering
3b. stutter [an apology]
4a. chat
4b. *chat [the latest film]
4c. chat [about the latest film]
4d. ?Richard and Jane chatted about the latest film, while Mary and Sarah did so about the novels they had been reading.
4e. ?Richard and Jane chatted with the Mayor, while Mary and Sarah did so with the

local Education Officer.

4f. Richard and Jane chatted in the garden, while Mary and Sarah did so in the sitting room.

4g. Richard and Jane chatted for five minutes, while Mary and Sarah did so for more than half an hour.

C. **The Modifier function (general semantic compatibility)**

The Modifier is a syntactic function corresponding to a non-lexically selected element within the projection of a lexical head. Unlike complements, then, modifiers are neither obligatory nor obligatorily excluded. All that is required for a modifier to be fully acceptable in a given structure is a general semantic compatibility (on this point see examples (4a) & (4b) under **Nouns** below).

**Adjectives**

1a. famous

1b. famous [in literary circles]
>Tom is [$_{AdjP}$ famous [$_{PP}$ in literary circles]]

2a. red

2b. red [in the face]

**Nouns**

1a. party [in the garden]
>Did you enjoy [$_{NP}$ the party [in the garden]]?
>Did you enjoy [$_{NP}$ it]?

1b. party [ ]

2a. [[re-establishment [of diplomatic relations]] [in record time]]

2b. [[re-establishment [of diplomatic relations]]

2c. *[[re-establishment [ ]] [in record time]]

3a. [preparation [of the room]] [for the party]

3b. [preparation [ ]] [for the party]

3c. disagreement [about basic questions of policy]

3d. disagreement [over the title]

3e. *disagreement [of the policy]

4a. *bridge [in 1945]

4b. destruction [of the city] [in 1945]

5a. [[$_{AdjP}$ delicious] wine]

5b. [[$_{AdjP}$ absolutely charming] behaviour]

Other types of structure usually considered to be modifiers (in NP):

Relative clauses: [the wine [that you drink]]

Participial clauses: [the people [standing on the platform]]/[the prisoners [arrested yesterday]]

**Verbs**

1a. stroll [in the garden]
>After lunch we [$_{VP}$ strolled [in the garden]]

1b. sleep [in the garden]

1c. sleep [with his clothes on]

1d. sleep [very deeply]

**A note on Modifiers in VP:** we are using the term Modifier to designate a syntactic function that we assume is realised in the projections of a number of lexical categories, V included (we are making exactly the same assumption about two other functions: Complement & Specifier). As we saw above, Modifiers are by definition non-selected elements, which accordingly are not arguments of the head (in VP of the V). In VP they are generally realised as APs or PPs but they can also be realised as NPs and AdjPs (*Tom opened it [$_{NP}$ the same way]/Tom arrived [$_{AdjP}$ drunk]*). As we saw above, the same formal categories that are most frequent realisations of the Modifier function, PPs and APs, can also be lexically selected elements, as is clear from cases such as *Tom stepped on the cat's tail* and *The boys behaved badly*; in these cases they are not considered to be modifiers but complements.

## D. The Specifier function (categorial selection)

The Specifier is an element that has functional character: it can be some sort of degree word (as in the case of Adjs, As & Ps) or an element realising a choice of "definitiness" (in the case of Ns).

**Adjectives**

1a. **very** [$_{Adj'}$ satisfied [with the results]]
1b. **extremely** [satisfied [with the results]]
1c. **not inconsiderably** [relieved [at the news]]
1d. **to some degree** [disappointed [with the results]]
1e. **del tutto** [inconsapevole [dei suoi doveri]]

**Adverbs**

1a. **very** [$_{A'}$ unwillingly]
1b. **very** [independently]
1c. **très** [indépendamment [de nôtre volonté]]
1d. **more than a little** [differently [from what we expected]]

**Prepositions**

1a. **right** [$_{P'}$ through [the gap]]
1b. **right** [over [the hill]]
1c. **right** [under [the painting]]
2a. **just** [after [two in the morning]]
2b. **right** [after [the show]]
3a. **two miles** [beyond [the frontier]]
3b. **a long way** [beyond [the frontier]]
3b. **two miles** [beyond [ ]]

**Nouns**

1a. **the** [$_{N'}$ destruction [of the city]]
1b. **his** [failure [to warn them]]
1c. **most** [students [of physics]]
1d. **no** [expert [on tropical diseases]]
1e. **much** [discussion [of this problem]]

**Verbs**

1a. **fully** [$_{V'}$ lock [the door]]
1b. **greatly** [exaggerate [the cost]]
1c. **completely** [abandon [the project]]
1d. **formally** [approve [the plan]]

**Examples of coordinated X' units combining with shared specifier:**

1a. $[_{AdjP}$ **very** $[_{Adj'}$ satisfied with the results] and $[_{Adj'}$ reluctant to change method]]
1b. $[_{NP}$ **the** $[_{N'}$ expert on tropical diseases] and $[_{N'}$ fellow of the British Academy]]
1c. $[_{PP}$ **right** $[_{P'}$ across the square] and $[_{P'}$ down the lane]]
1d. $[_{VP}$ **completely** $[_{V'}$ remove the debris] and $[_{V'}$ flatten the ground]]

E. **X' Structure:**

1a. very satisfied with the results
1a`. $[_{AdjP + Adj"}$ $[_{Spec}$ very] $[_{Adj'}$ $[_{Head/Adj0}$ satisfied] $[_{Compl/PP}$ with the results]]]
1b. sehr mit den Resultaten zufrieden
very - with the results - satisfied
1b`. $[_{AdjP + Adj"}$ $[_{Spec}$ sehr] $[_{Adj'}$ $[_{Compl/PP}$ mit den Resultaten] $[_{Head/Adj0}$ zufrieden]]]

**Structures:**

(i) not including modifier:

X (= XP: full phrasal projection)

ZP X
Spec

$X^0$ YP
Head Compl

(ii) including modifier:

X (= XP)

ZP X
Spec

WP X WP
Modifier Modifier

$X^0$ YP
Head Compl

**14. Pragmatic functions mapping onto clause structure (Topic, Focus etc). The linguistic**

**realisation of information packaging.**

a. The pipes are [$_F$ RUSTY ]
b. The pipes [$_F$ are RUSTY ]
c. [$_F$ The PIPES are rusty ]
d. [$_F$ The PIPES ] are rusty
e. The pipes [$_F$ ARE ] rusty

1. What about the pipes? What condition are they in?
2. What about the pipes? What's wrong with them?
3. Why does the water from the tap come out brown?
4. I have some rust remover. Do you have any rusty things?
5. I doubt that the pipes are rusty.

1. Tell me about the people in the White House. Anything I should know?
   The president [$_F$ hates CHOCOLATE ]
2. And what about the president? How does *he* feel about chocolate?
   The president [$_F$ HATES ] chocolate
3. The president has a weakness
   [$_F$ He hates CHOCOLATE ]
4. You shouldn't have bought chocolates for the president
   [$_F$ He HATES ] chocolate
5. So, did anything happen while I was out?
   [$_F$ The PRESIDENT called ]

6. Where can I find the cutlery?
a. *The forks* are in the CUPBOARD.....
b. but *the knives* I left in the DRAWER
b`. but I left *the knives* in the DRAWER

7a. John [$_F$ left a note [$_F$ on the TABLE ]
7b. John [$_F$ left [$_F$ a NOTE ]] on the table
8. Què en fareu, del gavinet?
   'What will you do with the knife?'
a. #[$_F$ Ficarem el gavinet al CALAIX ]
b. [$_F$ El ficarem al CALAIX ]
9. On el ficareu, el gavinet?
   'Where will you put the knife?'
a. #Ficarem el gavinet [$_F$ al CALAIX ]
b. [$_F$ al CALAIX ]
10. On és, el gavinet?
    'Where is the knife?'
a. [$_F$ El vaig ficar al CALAIX ]

[Vallduví & Engdahl 1996: 'The linguistic realisation of information packaging' *Linguistics* 34]

**The basic idea of information packaging:**

a. Mary hates chocolate
b. Chocolate Mary hates
c. Chocolate Mary loves

Sentences (a) and (b) are truth-conditionally equivalent. They differ not in what they say about the world but in how they say what they say about the world; that is, they differ in the way they are packaged. Compare now (b) and (c). Even though they differ in their truth conditions, they nevertheless display a certain interpretative equivalence. This is a result of the fact that they are packaged in the same way. In other words, (b) and (c) differ in what they say about the world, but not in how they say it.

Sentence (a) is a felicitous answer to the question *What does Mary hate?,* (b) is not. The infelicity of (b) is due to the fact that its packaging is not appropriate in the context constituted by the above question.

Different information packagings can be viewed as different 'instructions' for information update.

**Main informational partitions:**

**focus - ground** What does the president think about chocolate'
The president [$_F$ HATES ] chocolate (focus marked; the rest = ground)

**topic - comment** Tell me something about the people in the White House.
[$_T$ The president ] [$_C$ hates chocolate ]

There is a wealth of characterisations of **focus-ground**, but they all have one thing in common: focus-ground divides the sentence into a part that anchors the sentence to the previous discourse or the hearer's 'mental world', and a part that makes **some contribution** to the discourse or the hearer's 'mental world'.

Jackendoff 1972: [the ground is] the information in the sentence that is assumed by the speaker to be shared by him and the hearer, what the speaker assumes the hearer knows or believes to be true and is attending to at the time of utterance.

**Structural differences** between languages relevant to the question of information packaging:

1. **subject pronouns**: languages may have unstressed subject pronouns (English, French) or may be 'null-subject' (the equivalent of an unstressed pronoun is a null element, i.e. a pronoun without phonological matrix). [NB: part of the Subject Parameter]
2. **postverbal subject**: structurally a given language may allow the subject to appear in postverbal position (Catalan, Italian) or not normally allow this (English). [NB: part of the Subject Parameter]
3. **head - complement order**: a given language may realise the complement of V (object/PP complement etc) before the verb (German) or after it (English, Catalan, Italian) . [NB: the Head-Complement Parameter]
4. **status of auxiliaries**: a given language may have auxiliary verbs that can be stressed (English) or else auxiliaries that cannot normally be stressed (Catalan, Italian).
5. **mobility of main sentence stress**: a given language may have the freedom to place the main tonic stress on any constituent (even outside VP, the unmarked focus domain), or else the tonic stress may be limited to the focus domain, i.e to a constituent in VP.

**Basic order of elements:**

*English:* **SVO** *Catalan:* **VOS**

System proposed by Vallduvì & Engdahl 1996:

**focus ground**

**link tail**

**Definitions:**
The *focus* is defined as the actual update potential of a sentence S, that is, the only contribution that (according to the speaker) S makes to the information state of the hearer at the time of utterance. Since all sentences have some update potential, they all have a focal segment.
The *ground*, in contrast, is already subsumed by the information state of the hearer and acts as an 'usher' for the focus: it indicates how the information update is to be carried out. Sentences have a ground only if the ushering is (thought by the speaker) to be required.
The *ground* is further divided into *link* and *tail*. Link and tail each contribute in their own way to the ushering role of the ground. Links indicate WHERE the focus should go in the input information state: they establish a particular locus of update in the input information state. A tail indicates HOW the focus of fits there: the presence of the tail indicates that the nondefault mode of update is (in the speaker's eyes) required at that point in the discourse.

**Vallduvì & Engdahl 1996 propose the following way of thinking of 'links':**

In order to see exactly how the elements in the ground carry out their task, something must be said about the structure of information states. For current purposes, let us view an information state as a filelike data structure (cf. Heim's [1982] files in *file change semantics*). Files are collections of cards. Each card has a number of records or conditions written on it listing attributes and relations concerning the entity it denotes. The content of these file cards is updated during communication. Information packaging reflects the way the speakers take into account - when formulating their utterances - their assumptions about the structure of the hearer's information state in order to optimise information update. [...]

In this light, links are argued to designate a specific file card in the input file where information update is to be carried out. The term 'link' is borrowed from Trávnicek, who describes his 'theme' as "the sentence element that links up directly with the object of thought, proceeds from it, and opens the sentence thereby" (cited in Firbas 1964: 269). The parallelism between designating a specific locus of update in the input file and linking with the 'object of thought' is clear. Similar proposals are Reinhart (1982: 24), where it is suggested that links ('topics' for her) "are one of the means available in the language to organise or classify the information exchanged in linguistic communication - they are a signal for how to construct the context set, or under which entries to classify a new proposition", and Kuno (1972), where it is proposed that links should be viewed as 'sort keys' to file and access information.

The tail segment encompasses ground material that does not display linklike behaviour. As part of the ground, the tail further specifies how the update must be effected. In particular, it indicates that the focal information is not simply added to the file card designated by the link as a new condition (default mode), but rather that the focus must complete or alter a condition that is already there and is designated by the tail (nondefault mode). The ground, both link and tail, performs an 'ushering' role for the focus: it guarantees that the update potential of the sentence is 'discharged' in the appropriate location (from the speaker's perspective) in the input file. If the

speaker assumes that no usher is needed, a sentence will have no ground. If only some ushering is needed, a sentence may have a link but no tail, or vice-versa.

Regarding the realisation of informational functions (link, tail, ground, focus) languages differ in the following ways:

1) regarding **tails**: does a given language allow them to remain *in situ* (i.e. in their normal positions) or do they obligatorily remove them from the focus domain (i.e. right-dislocate them)?
2) regarding **links**: does a given language allow non-subject links to remain *in situ* (i.e. in their normal positions) or do they obligatorily front them (or left-dislocate them)?
3) regarding **all focus sentences**: if these have a full NP/subject (rather than a pronominal one), is this allowed to appear in preverbal subject position or must it appear in VP/focus domain?
4) regarding **narrow focus on the verb (polarity)**: does a given language realise this on the lexical verb (in the focus domain) or on an auxiliary?

**Contrastive exemplification** (English & Catalan) - from Vallduvì & Engdahl 1996:
1. What about the boys? What did they do?
English: *Fred* [$_F$ ate the BEANS ]
Catalan: El Pere$_1$ [$_F$ es va menjar els FESOLS t$_1$ ]

2. What about the boys? What did they eat?
English: *Fred* ate [$_F$ the BEANS ]
Catalan: El Pere$_1$ [$_F$ t$_v$ els FESOLS t$_1$ ], es va menjar$_v$

3. What about the boys? What did they do with the beans?
English: *Fred* [$_F$ ATE ] the beans
Catalan: El Pere$_1$ [$_F$ se'ls$_2$ va MENJAR t$_2$ t$_1$ ], els fesols$_2$

4. What about the vegetarian dishes? What happened to *them*?
English: [$_F$ FRED ate ] *the beans*
*The beans*$_1$ [$_F$ FRED ate t$_1$ ]
Catalan: Els fesols$_1$ [$_F$ se'ls$_1$ va menjar el PERE ]

5. What about the vegetarian dishes? What did Fred do with them?
English: Fred [$_F$ ATE ] *the beans*
*The beans*$_1$ Fred [$_F$ ATE t$_1$ ]
Catalan: Els fesols$_1$ [$_F$ se'ls$_1$ va MENJAR t$_2$ t$_1$ ], el Pere

6. What about the vegetarian dishes? Who ate *them*?
English: [$_F$ FRED ] ate *the beans*
*The beans*$_1$ [$_F$ FRED ] ate
Catalan: Els fesols$_1$ [$_F$ t$_v$ t$_1$ el PERE ], se'ls va menjar

An important consequence of the fact that Catalan does not allow tails to remain *in situ*, while English does:
El Joan$_1$ [$_F$ va deixar una nota damunt la TAULA t$_1$ ] 'John - left - a note - on the table'

= contextualised by 'What did John do?' (Wide focus reading only)
El Joan$_1$ [$_F$ hi$_2$ va deixar una NOTA t$_2$ t$_1$ ], damunt la taula$_2$
= contextualised by 'Before lunch I cleared all the rubbish off the table'
Equivalent English string in both cases: John left a note on the table

**Links & strong pronouns:**
[$_L$ La Sió$_1$ ] [$_F$ va insultar la COIA$_2$ t$_1$ ] i [$_L$ ella$_2$ ] [$_F$ li$_1$ va fotre una HOSTIA t$_2$ ]
'Sió$_1$ insulted Coia$_2$ and she$_2$ hit HER$_1$
[$_L$ La Sió$_1$ ] [$_F$ va insultar la COIA$_2$ t$_1$ ] i [$_F$ Li$_1$ va fotre una HOSTIA t$_2$ ]
'Sió insulted Coia. She hit her.'

**Summary:**
Both languages recognise VP as unmarked 'focus domain' or 'focal segment', i.e. the normal locus of the focus.
**English:** focal constituents do not normally undergo any syntactic operations such as movement; they appear in their canonical positions (both when these are in the focus domain & when they are outside it). Different ground-focus partitions are structurally encoded by shifting the position of the nuclear stress over a clause structure that remains invariable.
**Catalan:** sentence accent (nuclear stress) falls on the final lexical head of the core clause (in practice the same as the focus domain) and syntactic detachment (dislocation, fronting) is used to remove nonfocal (= ground) material from this. Thus the only constituents that are allowed to remain in the focus domain are those which are actually focal.

## 15. Distribuzionalismo pre-chomskiano

SYNTACTIC RESEARCH BEFORE CHOMSKY - **distributional analysis**
In the period prior to the development of Chomsky's theory of grammar in the 1950s many linguists [chiefly followers of L. Bloomfield] argued that linguistics should concern itself with the description of regularities observable in corpora of utterances ['enunciati'] produced spontaneously by native speakers of the language under investigation. Such utterances were felt to constitute 'hard facts' in sharp distinction to information volunteered by a native speaker about his language.

One of Chomsky's great achievements is that by extending the scope of the subject to include native speakers' judgements of structure, relatedness, ambiguity, acceptability and so on, he effectively liberated the discipline from the straightjacket of **physicalism**.
**Horrocks** (1987: 11).

## 16. The idea of transformations

Transformational relation between two structures - structure (b) or ©) are 'transformationally derived' from structure (a):

Passive transformation:

1. a. Tom polished the table
   b. The table was polished by Tom
   c. The table was polished

a. NP1 + VP
   V + NP2

>>

b. NP2 + AUX(*be*) + VP
   V(-*en*)

| | X | NP | Aux | V | NP | Y |
|---|---|---|---|---|---|---|
| **SD** | 1. | 2. | 3. | 4. | 5. | 6. |
| **SC** | 1. | 5. | 3+*be* | 4+*en* | [*by*+2 | 6] |

Passive 'transformation' - this is meant to reflect the intuition (which native speakers have) that the passive structure is somehow related to the active one. It is thus implicitly an attempt to give an explicit representation of the linguistic knowledge of a native speaker, and can thus be considered a step forward in terms of **descriptive adequacy**.
It is neutral to the semantic content: it says that for any clause matching the structural description (SD), a 'passive' version can be derived on the basis of the structural change (SC) indicated (see below).
The transformation rule has the merit of showing precisely how the elements are rearranged; more importantly, in positing two levels of structure (a D structure from which the S structure is derived) the idea of transformation helps to account for the fact that the basic interpretation remains the same (in the sense that the referent of NP2 is understood to participate in the event in exactly the same way - i.e. to have the same semantic role - in both the active and the passive version). These meaning relationships can thus be 'photographed' in the D structure, where they have their basic configurational realisation.

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*Parenthesis:* what are linguists interested in saying about the passive?
*Some* are interested in understanding what the passive is used for (that is to say, why it or something like it exists in so many languages). This amounts to a search for a functional justification (in terms of structuring the informational content) for the existence of the passive.
*Some* are interested in constructing an inventory of passive constructions in various languages and seeing how they differ (for instance to see how the range of verbs involved in passivisation varies from one language to another).
*Others again* are interested in asking questions like the following:

> Is the NP movement we observe in what is called the 'passive transformation' similar to other constructions that appear to involve constituents that move? If this is the case, are

there common principles determining which NPs can be moved, from which positions and to which positions?

- why does NP2 in the passive transformation move to a different position?
- why doesn't (can't) it stay in the position it occupies in (a)?
- how is it that the position it occupies in (b) is available for it?
- what correlation exists between the two facts just stated and the fact the verb is in the *-en* form (how the *-en* form of the verb differs from other forms)?

**17. Brief discussion of transformational rules.**

When transformational rules were first proposed, the assumption was that their method of operation was entirely syntactic, in the sense that they operate on one syntactic structure to produce another. Thus the starting point for each rule was the specification of the syntactic configuration on which it operates (called the 'structural description'); this is followed by a specification of the changes that are effected by the rule (movement of elements, morphological changes etc). This is referred to as the 'structural change'. Rules of this type operate on the syntactic structure (as we have said) and are consequently supposed to be 'blind' to the lexical content. Thus the passive transformation operates on *any* syntactic string that contains an NP + [VP V __NP] configuration, that is to say on any clause in which the lexical verb is followed by an NP/Object. It does not matter what the verb is or what its NP/Object is; what matters is that together they correspond to the configuration of elements that is specified in the structural description of the rule. Once again, given that these rules are pure manipulators of syntactic structure, it is assumed that they can have **no effect on meaning** (i.e. the meaning of the lexical items involved cannot undergo any sort of change asa result of the application of the transformational rule). In the case of the passive transformation, this condition appears to be satisfied (but there are problems such as *Beavers build dams/Dams are built by beavers*). A further assumption is that transformational rules should not be allowed to introduce new lexis (though an exception maybe made for functional elements) or change the category of existing items (at least in the case of core elements). Thus if the structural description contains an NP, the structural change cannot normally make this into a PP (the '*by* phrase' introduced in the passive transformation is an exception: it is not a core element but rather an optional adverbial).

During the same period there was also a 'nominalisation transformation'. Like the passive transformation, this rule was an attempt to account for the fact that native speakers 'know' that two syntactically different structures are (somehow) closely related. The two structures in question were clauses such as *The Goths destroyed the city* (again clauses in which the lexical verb is followed by an NP/Object) and complex event NPs such as *The Goths' destruction of the city*. The rule takes the clause as its structural description (i.e. the initial configuration) and turns it into an NP.

Obviously, for a transformational rule of this type to be posited in the first place, it is necessary for the correspondence between the two structures to be highly systematic, and not disturbed by frequent lexical idiosyncrasies (which would have to be specified explicitly). In the case in point, the most striking correspondence concerns the propositional content: as with the active/passive transformation, it is evident that the two structures (the clause & the NP) formulate the same propositional content. Beyond this, it is certainly the case that there are many transitive verbs for which there exists a derived nominal (*destroy -> destruction, execute -> execution, reduce -> reduction, imprison -> imprisonment, refuse -> refusal* etc).

The examples that follow are intended to form the basis for a critique of the nominalisation rule. Examine them carefully, and try to decide in what way they show that the nominalisation

transformation - a transformation that supposes complex event nominals are systematically derivable from clauses on the basis of a rule that simply manipulates the syntactic items while being 'blind' the lexis - is unworkable.

1a. Bush cancelled the aid programme
1b. Bush's cancellation of the aid programme
2a. Chirac opposed the invasion
2b. Chirac's opposition **to** the invasion
2c. *Chirac's opposition **of** the invasion
3a. Charles married Camilla
3b. Charles's marriage **to** Camilla
3c. *Charles's marriage **of** Camilla
4a. Chirac criticised the American invasion
4b. Chirac's criticism of the American invasion
4c. Chirac's three criticism**s** of the American invasion
4d. *Chirac three criticised the American invasion
5a. Blair **ignored** the facts about Iraq
5b. Blair's **ignorance** of the facts about Iraq
6a. Blair despises the Conservatives
6b. >> no deverbal N derivable from V *despise*
7a. >> no V from which N *contempt* is derived
7b. Blair's contempt **for** the Conservatives

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*Multiplication of transformational rules - incompatible with general objective of **explanatory adequacy** (referenced to language acquisition).*

> The basic problem with such an approach is that it *excludes nothing as impossible.* Any conceivable construction is *predicted* to be a possible construction of some natural language, every conceivable grammatical rule or principle is *predicted* to be a possible rule or principle of the grammar of some language. (Horrocks, G. (1987) *Generative Grammar* London: Longman - emphasis added)

## 18. Raising Verbs, Ergatives, Passives, - a new concept of transformations

**A. Verbs of the *seem* class.**

(i) **D structures**

a. $[_{NP}\ ]\ [_{VP}$ seems $[_{COMP}$ that $[_{s}$ Tom be+FINITE ill ]]
b. $[_{NP}\ ]\ [_{VP}$ seems $[_{s}$ Tom to be ill ]]
c. $[_{NP}\ ]\ [_{VP}$ sembra $[_{COMP}$ che $[_{s}$ Gianni stare+FINITE male]]
d. $[_{NP}\ ]\ [_{VP}$ sembra $[_{s}$ Gianni stare male ]]

(ii) **S structures**

a. $[_{NP}$ it $]\ [_{VP}$ seems $[_{COMP}$ that $[_{s}$ Tom is ill ]]
b. $[_{NP}$ Tom $]\ [_{VP}$ seems $[_{s}[$ t ] to be ill ]]
b'. $*[_{NP}$ it $]\ [_{VP}$ seems $[_{s}$ Tom to be ill ]]
c. $[_{NP}\ ]\ [_{VP}$ sembra $[_{COMP}$ che $[_{s}$ Gianni stia male]]

d. [$_{NP}$ Gianni ] [$_{VP}$ sembra [$_{s}$ [ t ] stare male ]]
d'. *[$_{NP}$ ] [$_{VP}$ sembra [$_{s}$ Gianni stare male ]]
e. *[$_{NP}$ Tom ] [$_{VP}$ seems [$_{COMP}$ that [$_{s}$ [ t ] is ill ]]
f. *[$_{NP}$ Gianni ] [$_{VP}$ sembra [$_{COMP}$ che [$_{s}$ [ t ] stia male]]

(v) a. [$_{NP}$ There ] [$_{VP}$ seems [$_{P}$ [ t ] to be another station]]
b. *There seems another station.

(vi) a. I ragazzi sembrano essere arrivati/*arrivato alle sei.
b. [$_{NP}$ ][$_{VP}$ sembrare [$_{P}$ [ i ragazzi ] essere arrivati alle sei ]]
c. [$_{NP}$ i ragazzi ][$_{VP}$ sembrano [$_{P}$ [ t ] essere arrivati alle sei ]]

7. a. *[ their desire [[ **Jane** ] to arrive on time ]]
8. a. *[ her willingness [[ **her husband** ] to seek a divorce ]]

**B. Ergative verbs vs Passives**

1. [1] It was in the mid and late Victorian period that two developments **took place** that were to determine university development in Britain for almost a hundred years. [2] First, the colleges of Oxford and Cambridge, which had long functioned as a cross between finishing schools for the sons of the landed classes and seminaries for the Anglican Church, **were reformed**. [3] The public-school idea of character formation **took hold**; 'modern' subjects, such as history, languages and science, **were introduced**; a new self-consciousness **developed** about educating the governing and administrative class of the future; and the sense of the universities' place in the national culture **grew**. [4] Second, in the 1870s and 1880s new universities **were established** in the great cities which **had grown up** as a result of industrialisation, such as Birmingham, Manchester, Leeds and Liverpool. LRB

2 a. The enemy sank the ship
b. The ship sank

3 a. Il nemico ha affondato la nave
b. La nave è affondata/È affondata la nave

4 a. Tom ate his dinner
b. Tom ate

2a/3a. $NP_1$ `verbed' $NP_2$
2b/3b. $NP_2$ `verbed' [in Italian also: `verbed' $NP_2$]
4a'. $NP_1$ `verbed' $NP_2$
4b'. $NP_1$ `verbed'

3b'. Patient Semantic roles
*The ship sank*
Subject/NP Predicate/VP Syntactic structure

5. a. The tower collapsed
b. A parcel has arrived
c. A disaster has happened
d. A problem has arisen
e. The dog has died

5`. a. È crollata la torre
b. È arrivato un pacco

c. È successo un disastro
d. Si è verificato un problema
e. È morto il cane

6a. Gi è caduto **un carabiniere** adosso/Gli è caduto adosso **un carabiniere**
6b. Gli ha sparato adosso **un carabiniere**/*Gli ha sparato **un carabiniere** adosso
6c. *Hanno rotto a Piero **il naso** /Hanno rotto **il naso** a Piero.
6d. Si è capovolta la barca **a Piero**/*Si è capovolta **a Piero** la barca
7a. Ti piacciono questi dolci? Gianni **ne** ha mangiati quattro
7b. Vedi quelle ragazze? *Gianni **ne** ha parlato con due [ne = delle ragazze]
7c. Ti ricordi di quelle ragazze? ***Ne** hanno telefonato due [ne = delle ragazze]
7d. Ti ricordi di quelle navi? **Ne** sono affondate due [ne = di navi]

**Participial postmodifier possible in NP (generally in Italian):**

2a. *Uno studente **telefonato** poco fa.
2b. Una nave **costruita** pochi anni fa.
2c. Una nave **affondata** poco fa.

**Participial (absolute) clauses:**

3a. ***Telefonato** Gianni, abbiamo deciso di cambiare programma.
3b. **Letto** il primo libro, abbiamo deciso di non comprare il secondo.
3c. **Affondata** la nave, non ci restava che prendere il treno.
3d. *Tom **phoned**, we decided to change our plans.
3e. (With) the book **finished**, we decided to contact some publishers.
3f. With Tom **fallen** ill, we decided that it was impossible to finish the project.
3g. But, the symptoms **gone**, I soon returned to my usual pursuits.

**Participial (control) clauses:**

4a. ***Telefonato** a tutti gli amici, Gianni ha deciso di rimandare la cena.
4b. **Abbandonato** da tutti gli amici, Gianni non ha saputo cosa fare.
4c. **Ammalatosi** improvvisamente, Gianni ha dovuto abbandonare la vita politica.
4d. **Diventato** cieco, Gianni ha deciso di smettere di fumare
4e. ***Danced** for hours, Cynthia decided to go home.
4f. **Abandoned** by all his friends, Tom did not know what to do.
4g. Unexpectedly **fallen** ill, John was forced to abandon his political career.
4h. **Come** to the end of his career, Tom felt that the best thing to do was to retire gracefully.

**Past participles of (putatively) ergative verbs: examples from English:**

1. There was a family involvement, for Hugh Lane, **drowned** on the Lusitania, was Gregory's nephew. LRB
2. The expansion of a European Union **grown** beyond all prophesy over the intervening decades. GUAR
3. There's a symmetry as two young men **grown old** finally talk about putting it together again. GUAR
4. Everything about his [= Maurice Papon's] trial aroused intense attention: the age of the accused and his prominence, the fifty years **elapsed** since the incriminating acts, the gravity of the charges and their implications for the French national self-image. NYR
5. It is a curious situation of a **recovered** patient, a convalescent who has been weak, who has been ill and has finally been built up and had good food and good care, been in a warm house and a warm bed and suddenly he says, "I'm a big man, I don't need any more food,

no more doctors, no more house, I want to get out in the wind and the rain, the ice and the snow. I don't need any of this protection". Acheson

6. In that case [= in the case of a large-scale terrorist attack by an Islamic group], it is hardly unthinkable that a **panicked** legal system would roll over and treat Arab-Americans as it did the Japanese-Americans who were herded into concentration camps after Pearl Harbour. FA
7. Christopher Isherwood rang me Friday morning, **just arrived** from New York.
8. **Gathered** in Washington, the highest-ranking US military experts considered the implications of the new situation.
9. The little figures carrying hoods and working their picks in panoramic photographs of canal, dam or highway projects may be labourers recruited from far away and indebted for their travel costs on extortionate scales of usurious interest, or bondesmen hired out by their masters **turned** subcontractors for the occasion. TLS
10. The potatoes, **once cooked**, should be transferred to a heated oven dish.
11. **Once arrived**, the participants are asked to make their own arrangements for dinner.
12. A patchwork quilt of evidence **accumulated** in the last half century suggests that pesticides and their effects are far more difficult to control than had been anticipated. NYR

**Extraposition possible from (preverbal) subject NP (English):**

8a. [A man [with green eyes]] **appeared**
8a'. [A man] **appeared** [with green eyes]
8b. A new study on ergative verbs **came out**
8b'. A new study **came out** on ergative verbs
8c. A paper on ergative verbs **was presented**
8c. A paper **was presented** on ergative verbs
8d. *A guy **was smoking** with green eyes
8e. *A guy **was smoking** with a large briefcase

**Agentive *-er* nouns cannot be formed from ergative verbs:**

9a. *a good **sinker**; *a quick **collapser**; *a prompt **arriver**; *an easy **capsizer**
9b. a killer, a runner, a signaller, a hunter, a walker

**Case Filter**:

*NP, if the NP does not receive case.

**Derivations of passive and ergative structures**

1. **Passives**

a. [ ] was [$_{VP}$ interrogated [ Tom ]] **D structure(configuration in which θ role is assigned)**

θ

*Application of movement rules*

b. [ Tom ] was [$_{VP}$ interrogated [ e ]] **S structure (result of movement)**

(1) shows the movement of the sole argument of the passive verb from its base position to the subject position. This movement is obligatory (in English).We can represent the derivation with ergative-intransitive verbs in exactly the same way:

2. **Ergatives**

a. [ ] [$_{VP}$ sank [ the ship ] ] **D structure (configuration in which θ role is assigned)**

θ

*Application of movement rules*

[ the ship ] [$_{VP}$ sank [ ] ] **S structure (result of movement)**

3. **'Normal' transitive use of ergative:**

| | |
|---|---|
| [ the enemy ] [$_{VP}$ sank [ the ship ] ] | **D structure (configuration in which θ role is assigned)** |
| θ role | |
| *Application of movement rules* | **(vacuous, i.e. nothing moves)** |
| [ the enemy ] [$_{VP}$ sank [ the ship ] ] | **S structure (result of movement)** |

**Verbs of the *seem* class**:
The aim is to understand why (only) the structures which are grammatical with these verbs are grammatical and why the others (see asterisked examples in A(ii) above - page 18) are ruled out.

- The basic assumption is that the same interlocking system of principles that allow certain structures to surface as grammatical also conspire to rule out those which are not allowed.

**Note on the property of selecting a 'complement':**
Structural grammar recognises the function of 'complement' (of which 'object' is a subtype). A transitive verb selects (for instance) an NP/object (i.e. the semantics of the verb are such that an NP/object is required/allowed) and assigns (accusative) case to that NP, this case is the morphological reflection of its syntactic function (visible only on certain personal pronouns in English & Italian). The two properties (selecting an object & legitimising it through case assignment) are normally considered to go together (i.e to be inseparable). In the analysis we are presenting they are regarded as separate: thus it is possible for a lexical head (a verb) to select a complement/object (i.e. by projecting a θ role, which results in a syntactic argument being generated) but to be unable to legitimise it through case assignment (because it is deficient in this lexical property). Similarly a head (lexical or otherwise) can have a case available for assignment but not have an argument of its own to assign it to. It may end up assigning it to an NP that it has not selected.

Seen from the point of view of the argument, this is only fully legitimised if 1) it receives a θ role from some lexical head, and 2) it receives a case (nominative, accusative or other).

**Assumptions regarding θ role (= semantic role) projection:**

1. A given verb will have as many syntactic arguments as it has θ roles. Basically a θ role is the syntactic expression of a semantic 'participant' role (in the process or event denoted by the verb) and thus of the selection properties of the verb.
2. θ roles are projected in deep structure (DS): wherever a θ role is projected a syntactic argument (of the lexical verb projecting the role) will be created (at DS).
3. Some verbs fail to project a θ role (*rain, piovere*). In other words they involve no participants & select nothing as a lexical property.

4. Some verbs project a θ role (i.e. they select something), but not onto their subject (*seem/ sembrare*).

**Assumptions regarding case assignment:**

1. Verbs (finite and non-finite) assign accusative case(as a lexical property) to NPs in object position (i.e. NPs that they select & govern).
2. Nominative case may also be assigned (when there is a finite verb) but assigning this case is not a lexical property of the verb. Thus transitive lexical verbs (i.e. verbs which project 2 θ roles) can only directly legitimise ONE of their arguments through case assignment (the object but not the subject).
3. Where assigned, nominative case is assigned by the finiteness feature (tense, agreement) of the verb, not by the verb as such (i.e. it is not a lexical property of the verb). Nominative case is assigned to NPs in subject position.
4. Non-finite verbs (i.e. verbs without the finiteness features - infinitives in infinitival clauses) do not assign nominative case. As a result, infinitival clauses normally do not have overt subjects.

**Assumptions regarding subject-object asymmetry and movement:**

1. The difference between the object position and the subject position is that the former is 'lexically governed' (it is not only the result of selection by a lexical verb but is also realised configurationally as its sister, i.e. within the V` projection) the while the latter is not.
2. In finite complement clauses movement ('raising') of the NP/subject is often problematic; extraction of the NP/object is unproblematic.
3. In non-finite complement clauses movement ('raising') of the NP/subject is unproblematic.

**Assumptions regarding clause boundaries, case assignment and movement:**

1. Certain structures count as 'barriers', in the sense that elements within them cannot entertain relations with - i.e. be selected by, be governed by or receive case from - heads outside them.

1a. Finite complement clauses are barriers: they do not allow case assignment to the NP/subject - across the clause boundary - by a higher verb ('verbo reggente'). Finite complement clauses have extra structure (compared to non-finite clauses) in the form of the 'complementiser' (*that, che, que, dass* - absent in infinitive clauses).

1b. Non-finite complement clauses are normally not barriers. They allow (accusative) case assignment - across the clause boundary - to the NP/subject by a higher verb.

**Case Filter**: An NP that does not receive a case (nominative, accusative or other) from a case-assigning element (verb or preposition) is not fully legitimised/licensed (and is thus capable of giving rise to ungrammaticality)

**- Consequence of the Case Filter**

NPs that are not fully licensed (= do not receive a case) in the (DS) position where they are generated (as a result of lexical selection & thus θ role projection) are forced to move into another position where a case can be assigned.

- Thus one motivating force for movement is the failure to receive a case *in situ*. In other words, 'Move α' is triggered ('fatto scattare') when an NP fails to receive a case in the position in which it is generated.

**Θ Criterion**: Every argument must receive a θ role, and may receive one only. Each θ role (projected by a given lexical head) may be assigned to one, and only one, syntactic argument.

**- Consequence of the Θ Criterion**

Movement of NP arguments is limited; they cannot move to a position onto which a θ role is projected, as this would result in them having 2 θ roles.

**With *seem* verbs:**

1. When a finite complement clause is chosen, the NP/subject (of the complement clause) receives its θ role from the lexical verb and is assigned nominative case by the [+ Finite] inflectional head in the clause. It is thus fully legitimised *in situ* and does not need to move.
2. When a non- finite complement clause is chosen, the NP/subject (of the complement clause) receives its θ role from the lexical verb but fails to receive case. The [- Finite] inflectional head in the clause means that nominative case is not assigned. Consequently, the NP is not fully legitimised and cannot remain *in situ*.
3. Movement (of the NP/subject of the lower clause) is possible into the subject position of the higher clause, thanks to the fact that the verb *seem* has no subject of its own (i.e. it fails to project a θ role onto its subject position and thus has no deep structure subject).

**The same analysis applied to ergatives & passives**

The two limitations on the movement rule 'Move α' - the θ Criterion & the Case Filter - can account for the grammatical and ungrammatical structures with the verb *seem*. The ungrammatical structures involve violations of the Case Filter and/or of the θ Criterion.

The Case Filter forces NPs that do not receive abstract case to move to a position where case is available, and the θ Criterion establishes that movement must be to a position onto which no θ role is projected.

Can these two principles be applied to ergative verbs and passives, in order to throw light on the derivation of clausal structures involving these types of verb?

What do we need to account for with these two types of verb?

1) the fact that the syntactic argument bearing the patient role moves out of its DS position (object - NB: this movement applies obligatorily in English, optionally in Italian).

2) the fact that the same syntactic argument can move to subject position (without this involving a violation of the θ Criterion).

3) the fact that structures involving ergative verbs and passives appear to have the same derivation (despite the fact that ergatives are not the same as passives from the morphological point of view, having none of the explicit morphology of the latter type of verb).

The mysterious behaviour of these two categories of verb can be explained if one makes two simple assumptions:

1) ergatives and passives share the lexical property of not projecting an 'agent' θ role;
2) ergatives and passives share the lexical property of not assigning accusative case.

[NB: what we are assuming is that ergative verbs (both the 'ergative only' type such as *collapse/crollare* and those with a transitive homonym such as *sink/affondare*) and passive participles (of ordinary transitive verbs) are specified in the lexicon as having the two negative properties above. The positive property they share is that of projecting a 'patient' θ role. ]

On the basis of these two assumptions (together with the θ Criterion & Case Filter):

The failure to assign accusative case explains why the syntactic argument bearing the 'patient' θ role cannot remain *in situ* (i.e. in object position).

The failure to project an 'agent' θ role (which normally would be projected onto the subject position) explains why the syntactic argument bearing the 'patient' θ role is free to move into the subject position (i.e. without this giving rise to a violation of the θ Criterion).
In subject position the syntactic argument bearing the 'patient' θ role can be legitimised by receiving nominative case (assigned by the finite inflection).

**Burzio's Generalisation** (L. Burzio 1986): A verb which fails to assign accusative casse will also fail to project an 'agent' θ role.
Passives and ergatives are considered to belong to the category 'Unaccusative Verbs' ('verbi inaccusativi') - verbs that fail to assign accusative case.

The importance of the analysis is that it suggests that the elaborate transformational apparatus of the 1960s theory is not necessary. There is simply no need to invent an *ad hoc* 'transformational rule' in order to show how one ends up with the surface structures that are found with ergatives and passives. These (and thus the derivation that produces them starting from a DS configuration assumed to be a direct projection of the lexical properties of these verbs) can be accounted for (largely) on the basis of two general principles, both of which are needed in any case to account for other structures. A further important aspect of the analysis is that it shows that some of the work previously attributed to the syntax (again, to transformational rules) - for instance deriving an ergative intransitive from a homonymous transitive verb or forming the passive participle of a verb - are more properly attributed to the lexicon.

**Syntactic Derivation in GB Theory (Chomsky 1981):**

**D structure** **[= direct projection of θ properties of lexical heads]**

θ Criterion & Projection Principle

*NP Movement ('Move α')*

Case Filter

**S structure** **[= input to Phonetic Form]**

## 19. Functional categories and the verb

**A. Unmarked contexts: position of finite verb in English varies depending on whether it is a lexical verb or an auxiliary** [EMONDS 1976 /POLLOCK 1989]:

(1a) Tom has **always** rewritten his CV before each interview

(1b) $[_{NP}$ Tom$]$ $[_{VP1}$ has$]$ $[_{AP}$ frequency$]$ $[_{VP2}$ rewritten his CV$]$
[+ finite] [- finite]

(2a) *Tom rewrites **always** his CV before each interview

(2b) *$[_{NP}$ Tom$]$ $[_{VP1}$ rewrites$]$ $[_{AP}$ frequency$]$ $[_{VP2}$ [ ] his CV$]$
[+ finite] [- finite]

(3a) Tom **always** rewrites his CV before each interview

(3b) $[_{NP}$ Tom$]$ $[_{VP1}$ ] $[_{AP}$ frequency$]$ $[_{VP2}$ rewrites his CV$]$
[empty] [+ finite]

**Contrast with Italian, French, Greek (and many other languages): in these languages the finite verb always occurs in the same position (VP1), irrespective of whether it is an auxiliary or a lexical verb**:

(4a) Gianni ha **sempre** riscritto il suo curriculum....

(4b) $[_{NP}$ Gianni$]$ $[_{VP1}$ ha ] $[_{AP}$ frequency$]$ $[_{VP2}$ [riscritto] il suo CV$]$
[+ finite] [- finite]

(5a) Gianni riscrive **sempre** il suo curriculum....

(5b) $[_{NP}$ Gianni$]$ $[_{VP1}$ riscrive$]$ $[_{AP}$ frequency$]$ $[_{VP2}$ [ ] il suo CV$]$
[+ finite] [- finite]

(6a) *Gianni **sempre** riscrive il suo curriculum....

(6b) *$[_{NP}$ Gianni$]$ $[_{VP1}$ ] $[_{AP}$ frequency$]$ $[_{VP2}$ [riscrive] il suo CV$]$
[empty] [+ finite]

(7a) Gianni riscrive **sempre** il suo curriculum....

(7b) $[_{NP}$ Gianni$]$ $[_{VP1}$ riscrive$]$ $[_{AP}$ frequency$]$ $[_{VP2}$ [ ] il suo CV$]$
[+ finite] [- finite]

8a. John **often** kisses Mary.

8b. Jean embrasse **souvent** Marie.

8c. *Jean **souvent** embrasse Marie.

9a. *My friends love **all** Mary.

9b. Mes amis aiment **tous** Marie.

9c. My friends **all** love Mary.

9d. *Mes amis **tous** aiment Marie.

**Note**

Assuming that the higher position (VP1) is the basic one for finite verbs (i.e. it is the syntactic locus of inflectional affixes associated with finiteness), for English lexical verbs we must posit a special system of "affix-lowering" (in cases where no verb appears in VP1 the finite affixes appear to be "lowered" into VP2):

(3b') $[_{NP}$ Tom$]$ $[_{VP1}$ +s ] $[_{AP}$ frequency$]$ $[_{VP2}$ rewrite+s his CV$]$
----------> [+ finite]

In Italian sentences such as (7a) we will assume that the lexical verb has "moved" from its basic position in VP2, where it may remain when an auxiliary is present in VP1 (compare (4a/b)) and

where it is accompanied by its complement, to the "finiteness" position VP1.
The higher VP - VP1 - may be occupied in English exclusively by verbs from the following list: aspectual auxiliaries (*have/be*), passive auxiliary (*be*), modals (*will/would, shall/should, can/could, may/might, ought, need*), "lexical" *be* & *have* (in certain senses & subject to certain restrictions), auxiliary *do*.
The higher VP (VP1) is considered to be a 'functional projection': in English it hosts only verbs that are functional in character (i.e. they no argument structure of their own). The name normally given to this projection is 'Inflection' or INFL.

**B. Behaviour of English verbs in marked contexts:** *negation, inversion, emphatic polarity* **and** *postverbal ellipsis*:

(i) **Negation of a finite verb:**

(1a) Tom has **not** seen the film
(1b) *Tom saw **not** the film
(1c) Tom did **not** see that film
(2a) Jean **ne** lit **pas** ce journal
(2b) Gianni **non** legge quel giornale
(2c) o Yiannis **then** thiavazi afti tin efimeritha

(ii) **Inversion structures:**

(3a) Tom has seen the film
(3b) Has Tom seen the film?
(4a) Tom saw the film
(4b) *Saw Tom the film?

(iii) **Emphatic positive polarity**

(6a) Tom HAS rung the bell
(6b) Tom DID ring the bell
(6c) !!Tom RANG the bell
(6d) *Tom DOES have rung the bell
(7a) No, Gianni PUÒ venire domani
(7b) Gianni, sì che può venire domani

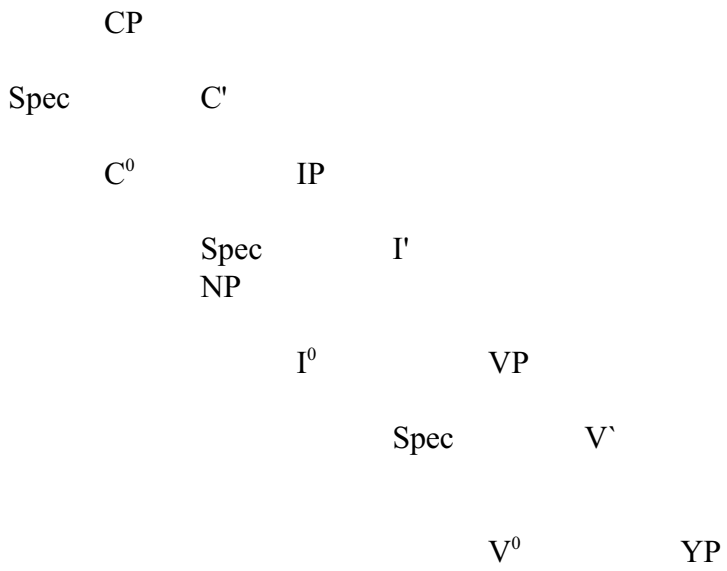
(iv) **Postverbal ellipsis.**

(8a) Speaker A: Tom has sent in his application, I understand
Speaker B: He has [ ]
(8b) Speaker A: Tom began shouting, I understand
Speaker B: *Yes, he began [ ]/Yes, he did [ ]

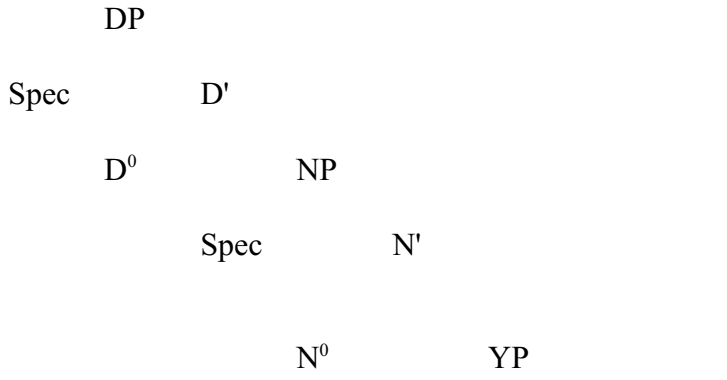
**C. Functional Projections:** the INFL & D

1. The **INFL** ('Inflection'/ 'Flessione') Projection

The syntactic structure of clauses has at least two functional positions in addition to the lexical projections NP and VP: COMP (complementiser) and INFL (inflection) [CHOMSKY 1986]. These are full X` projections of the (closed/functional) categories Complementiser (= conjunction) and Auxiliary verb.




2. The **D** ('Determiner') Projection.
The Determiner (a functional category linked to nominals) is considered to head its own functional X' projection (i.e. projecting to DP). Complement of D is NP (the basic projection of N).




**Characteristics of functional elements (Abney 1987):**

a. they constitute closed lexical classes;
b. they are generally phonologically and morphologically dependent (normally unstressed, often clitics or affixes, sometimes phonologically null);
c. they permit only one complement, which is in general not an argument;
d. they are usually inseparable from their complement;
e. they lack 'descriptive content'. Their semantic contribution is second order, regulating or contributing to the interpretation of the complement. They mark grammatical or relational features, rather than picking out a class of objects (D vs. N) or events (IP vs. VP).

**Functional categories and their realisations**

In this section we briefly explore the implications of the fact (which we observed above in our brief discussion of 'subjunctive clauses') that languages appear to differ in the sort of

realisation they give to the heads of functional projections. Some languages (French, Italian, German) have a system based on **affixal heads**, i.e. elements that are not 'word-level' elements (free morphemes or $X^0$ elements) but rather affixes (bound morphemes or $X^{-1}$ elements) and thus need to attach to a lexical root. In this type of system, the affixes in question are assumed to be generated in the head position of the functional projection (IP) and to 'attract' the lexical verb (or aspectual auxiliary), which systematically moves to this position (where it unites with - or 'incorporates into' - the affixes). This movement is what we have referred to as 'verb raising'. We will expect to find this system for realising functional categories in languages which have a rich morphological endowment (since it is the morphology - the affixes - that are responsible for triggering the raising). Other languages (the prime example being English) have a system that we have characterised as **lexical insertion**, meaning that values in the mood/aspect system will be expressed by 'free morphemes' (i.e. full lexical items) rather than affixes. In such a system, as we have seen, the free morpheme representing the mood value is inserted directly ('generated') in the head position of the functional projection ($I^0$). The result of this is that the position is filled (by a word-level element), and thus no verb raising will be needed or indeed possible. This is the system typically used by languages whose verbal systems are morphologically poor, having weakened or reduced inflectional paradigms. A further refinement of this system, which is suggested by our discussion of English 'subjunctive clauses', is that the inserted element may (in certain cases) have a null phonetic realisation. Thus we may obtain a structure where $I^0$ appears superficially to be empty but where a value in the functional system is nevertheless expressed. Summarising, we may say that languages have 3 different ways of dealing with their functional categories:

(i) realise them with affixal elements ($X^{-1}$) and move lexical items into the functional head position to unite with the affixes;
(ii) realise them directly with dedicated word-level ($X^0$) elements;
(iii) realise them with abstract elements (i.e. elements with no phonetic matrix).

Comparing IP with another functional domain, that of the determiner (DP), we may observe the same range of possible realisations:

(i) $D^0$ realised with affixal elements (triggering movement of N) - **Rumanian**
[ $D^0$ **-ul**] cesta frumos baiat
[ $D^0$ baiat-**ul**] cesta frumos
(boy - the this nice - 'this nice boy')

(ii) $D^0$ realised with dedicated word-level elements - **English, Italian, French etc**
[ $D^0$ **the** ] Roman people

(iii) $D^0$ realised with an abstract element (or perhaps not realised at all) - **Latin**
[ $D^0$ ∅ ] populus Romanus
('the Roman people')

The point about this hypothesis regarding (three-way) variation in the realisation of functional categories is that it brings together two important areas where languages are known to differ:

(i) in the order of elements
(ii) in their morphological endowments.

Movement - i.e. change in the basic order of elements, with elements moving to positions in functional projections - is assumed to be triggered by morphological elements (often referred to as 'cues' for movement); absence of adequate morphological cues means that movement is not triggered and thus the basic order of elements in not changed. Some languages are endowed with

sufficiently rich morphology (agreement morphology, tense aspect and mood morphology in the case of verbs) to trigger movement consistently. These languages will consequently display a quite different order of elements from those languages whose morphological endowment is poor and insufficient to trigger movement.

This correlation between morphological richness and movement (or between deficient morphology and lack of movement) offers considerable explanatory potential. A strong hypothesis would be that *all* variation in the order of elements (from one language to another) is connected with the different realisations given to functional categories in those languages, and thus with their differing (morphology-based) capacities to trigger movement. In terms of a theory that distinguishes between fixed principles of linguistic structure common to all languages (i.e. the principles of UG) and areas where variation (albeit highly constrained variation) is possible (i.e. the 'Principles and Parameters Theory'), this amounts to saying that *parametric variation will be variation in the realisation of functional categories*. And, since, in a theory of this type, the task of the child learner consists principally in determining the values for the parameters in his/her language, it follows that his/her main task will in effect be that of determining the realisation of functional categories (which categories are instantiated in his/her language and by what system).

## D. Morphological properties of English verbs:

### (a) concerning lexical verbs:

(1) English lexical verbs have very limited morphological agreement:

Tom hate-s the Times 3rd/singular
Tom and Jane hate-∅ the Times 3rd/plural
I hate-∅ the Times 1st/sing
We hate-∅ the Times 1st/plur
You hate-∅ the Times 2nd/sing+plur
Compare Latin Greek Italian French German etc

Note: the form which occurs in all contexts except 3rd/singular is morphologically non-distinct from the form occurring in contexts traditionally known as Imperative, Subjunctive and Infinitive (see below).

(2) English lexical verbs can realise morphological inflections of Agreement **or** Tense but never both together (except for verb *be*):

Tom hate-*s* the Times
Tom hate-*d* the Times
*Tom hate-*d-s* the Times
Gianni odia-*v-a* il Corriere della Sera

(3) English lexical verbs have no morphologically distinct Mood forms (= Subjunctive ('congiuntivo') or Conditional):

a. "Subjunctive" clauses:
Jane insisted [that Tom <u>bring</u> a copy of the newspaper] (cf It. *portasse* - 'Past' Subjunctive)
b. Protasis of hypothetical conditionals ('past for remote/unreal'):
If Jane <u>lived</u> in a larger flat, she could keep three cats instead of two (cf. It . vivesse

- 'Past' Subjunctive)

c. Apodosis of 'unreal' conditionals ('past form' modal verb required):

If Jane had more money, she would buy a new car (cf. It. *comprerebbe* - Conditional form of lexical verb)

**Note:** in all three cases the lexical verb appears in its base form (non-finite); in (a) the Subjunctive inflection that we would find in other languages appears not to be replaced by anything at all; in (b) we have a finite form of the lexical verb (Simple Past) but the normal time reference value of this is missing; in (c) we have lexical insertion (of a modal auxiliary that is morphologically Past but yields no past time interpretation (similar in this respect to (b)).

(4) English lexical verbs have no morphologically distinct "Infinitive" form:

| | |
|---|---|
| Tom and Jane could live in London | ('Infinitive') |
| Tom and Jane have decided to live in London | ('Infinitive') |
| What they did was go to the police | ('Infinitive') |
| Tom and Jane live in London | ('Indicative') |

(5) English lexical verbs have no morphologically distinct "Imperative" form:

| | |
|---|---|
| Vote Labour! | ('Imperative') |
| Tom and Jane vote Labour | ('Indicative') |

**(b) concerning modal auxiliaries:**

(6) English modal auxiliaries are finite forms but show no Agreement:

*Jane must-*s* go to the station

(7) English modal auxiliaries either have no distinct Past Tense forms at all (*must*)or, where these forms exist, they do not normally yield past time interpretation:

*Yesterday Tom must see the doctor again

*Yesterday Tom should see the doctor again

For a past time reading, an indirect speech context is required:

Tom **was convinced** that there must/could be another way of solving the problem

(8) English modal auxiliaries have no non-finite forms (confined to first position in string of verbs - only in finite clauses):

*After his accident Tom wants to can fly again as soon as possible

*Must*ing* see the doctor again, Tom has taken a day off work

From this it follows that modals can never co-occur (except in Scottish English!):

*Tom will must see the doctor again

It also follows that modals cannot co-occur with *do*-support:

*Tom does must see the doctor

Given their status as auxiliaries and their exclusively finite nature, modals occur on the left of frequency adverbs etc (i.e. in IP, never in VP):

Tom must always have the biggest slice of cake

*Tom always must have the biggest slice of cake

(9) English modals have no θ roles to project

1. *He can something. - Hij kan iets.

2. *You can it. - Jullie kunnen het.
3. *That can away. - Dat kan weg.
4. *May I an apple? - Mag ik een appel?
5. Er kann etwas.
6. Ihr könnt es.
7. Das kann jetzt weg.
8. Ich möchte einen Apfel/*Darf ich einen Apfel?

(10) English modal verbs are normally 'transparent' in regard to passivisation (of complement clause) - compare with 'catenatives' (*want* etc).

1a. John wants to meet Mary
1b. Mary wants to be met by John
2a. John happened to see Mary
2b. Mary happened to be seen by John
3a. John will meet Mary
3b. Mary will be met by John
4a. John won't meet Mary
4b. Mary won't be met by John
5a. John may/can meet Mary
5b. Mary may/can be met by John
6a. Dr Jones daren't examine Lady Metroland
6b. Lady Metroland daren't be examined by Dr Jones
7a. This is a major work that daren't be ignored by students
7b. This is a major work that students daren't ignore

**Notes:**
(i) English contrasts with the languages in which lexical verbs move from VP2 to VP1 (Italian/French/German/Greek) in respect of the richness of verbal inflection (English has practically no verbal inflection whereas the other languages have rich verbal morphology). Among English verbs that can occur in VP1, one (*be*) shows much richer inflectional morphology than is standard (Present Indic: *am/are/is*; Past: *was/were*; Indicative forms morphologically distinct from Infin./Imperat./Subjunct. (*be*)).
(ii) English contrasts with the other languages in having no morphological way of realising Mood (Subjunctive/ Conditional). It also contrasts with these languages in respect of its modals, which are obligatorily finite (they can only occur in VP1 of a finite clause) and yet are (curiously) incompatible with agreement morphemes.

## E. Subjunctive Clauses

### a. `Subjunctive' clauses vs other types

1. [1] Speaking as a former comprehensive school pupil and Oxford graduate, I do not believe that candidates would want to win their place at Oxford for any reason other than their own individual merits, but it is crucially important that we test those merits in the fairest possible way, while dispelling ideas of quotas and positive discrimination. [2] Likewise, although we are always happy to receive applications from the children of Mertonians, it is clearly appropriate that we should treat these candidates in the same way as all others

when it comes to the final selection. (College Newsletter)

2. [1] To get their man, the clumsy architects of the impeachment suggested that any lying under oath, regardless of content or context, merited ejection from office. NYR
   >[1'] To get their man, the clumsy architects of the impeachment suggested that any lying under oath, regardless of content or context, should merit ejection from office.
   >[1"] ?To get their man, the clumsy architects of the impeachment suggested that any lying under oath, regardless of content or context, merit ejection from office.

3. [1] He [= Dean Acheson] saw to it that the speech got world coverage and when James Rushton of *The New York Times* asked Truman if that was his policy, Truman said it was. NYR
   >[1'] *He [= Dean Acheson] saw to it that the speech get world coverage and when James Rushton of *The New York Times* asked Truman if that was his policy, Truman said it was.

4. [1] Instead of an invasion he [= Kennedy] favoured an air strike on missile bases; instead of a blanket air strike he favoured selected strikes only; he insisted that no strikes, however selective, should happen until warning had been given. NYR
   >[1'] .....instead of a blanket air strike he favoured selected strikes only; he insisted that no strikes, however selective, happen until warning had been given.
   >[1"] .....instead of a blanket air strike he favoured selected strikes only; he insisted that no strikes, however selective, happened until warning had been given.

**b. Examples of Subjunctive Clauses**

1. [1] When Findlay's proposals were contested, as they often were, he insisted that he discuss the matter privately with Isaacs later. LRB
2. [1] He [= Dean Acheson] felt affection for Bevin and liked Ambassador Oliver Franks, but that did not affect his demand that all copies of a document drawn up by the Foreign Office entitled "The Special Relationship" be destroyed. NYR
3. [1] In the Mediterranean he [= Stalin] demanded that Russian bases be established in the Dardanelles and laid claim to Russian territory lost to Turkey after the First World War. NYR
4. [1] Washington only agreed to send the Apaches and rockets on the condition that they not be used in combat without the formal approval of President Bill Clinton.
5. [1] If Kennedy and his colleagues had known what Krushchev's real purposes were, they might have been able to defuse the whole business quietly and privately (though Bundy and other commentators always insisted that Krushchev's own bluff required a public response, lest he suppose that the US wasn't serious about resisting him). NYR
6. [1] And just to be sure there were no mistakes, on October 27 he instructed that those same Jupiter missiles be defused so that if he had to authorise air strikes on Cuba, and the Soviets responded with an attack on the Turkish missile sites, there would be minimal risk of further escalation. NYR
7. [1] In the 1920s the Chief Inspecting Officer of Railways recommended that the AWS [= Automatic Warning System] be installed across the entire network. LRB

**Other (minor) types:**

8. If any person <u>be</u> found guilty, he shall have the right of appeal QGLS
9. Whether she <u>be</u> in agreement or not, we will continue QGLS
10. <u>Be</u> it here or elsewhere we will carry this through to completion QGLS

**c. Some semantico-syntactic distinctions ('subjunctive clauses')**

1a. I insisted (suasive) that he change his clothes
1b. I insisted (suasive) that he should change his clothes
1c. I insisted (suasive or assertive) that he changed his clothes
2a. She suggested that I be/should be responsible for all the arrangements
2b. She suggested that I was responsible for all the arrangements
[3a. I am surprised that he should feel lonely
3b. I am surprised that he feels lonely
Quirk at al. (1985): "While the first questions the loneliness, the second accepts it as true". ]

The syntactic tree is a representation of *[They] require that Tom ∅/should take the car* ('subjunctive' complement clause).

V ----------> $CP^{[+ SUBJUNCTIVE]}$
*require*
*demand* etc

Spec $C'^{[+ SUBJUNCTIVE]}$

$C^{0[+ SUBJUNCTIVE]}$ ----------> $IP^{[+ SUBJUNCTIVE]}$
*that*

Spec $I'^{[+ SUBJUNCTIVE]}$
NP
*Tom*

$I^{0[+ SUBJUNCTIVE]}$ VP
∅/*should* *take the car*

**d. Types of head selecting subjunctive clauses:**

| | |
|---|---|
| Verbal: | Congress has **voted** that the present law be maintained |
| Nominal: | They expressed the **wish** that she accept the award |
| Adjectival: | It is **essential** that a meeting be convened this week |
| Complementiser: | The Federal Reserve might want to think twice before continuing to lower interest rates, **lest** it <u>precipitate</u> a further move away from the dollar. There can be worse things than a recession. FA |

**F. Some facts about earlier (= pre sixteenth century) varieties of English**

Modals as non-finites (infinitives, gerunds, participles) and as verbs with argument structures; lexical verbs raising to I.

**a. Modals appear in non-finite contexts:**

d. As infinitives:

I shall not konne answere
'I shall not be able to answer'
1386 Chaucer
Who this booke shall wylle lerne..
'He who wishes to master this book..'
c.1425 Loll. Serm.

(ii) As gerunds:

They are doumbe dogges, not mowende berken
'They are dumb dogs, not being able to bark'
1380

(iii) As participles:

If he had wolde....
'If he had wanted'
1525

**b. Modals appear with directs objects (and thus arguably have θ roles):**

(i) She koude much of wandrynge by the weye
'She knew much about wandering by the way'
Chaucer

(ii) Euerych bakere of the town...shal to the clerke of the town a penny
'Every baker owes the clerk of the town a penny'
1400

(iii) Wultu [= wilt thou] kastles and kinedomes?
'Do you want castles and kingdoms?'
1225

**c. Lexical verbs in INFL**

(i) Lexical verb directly negated
if I gave not this accompt to you..
'if I did not give this account to you..'
1557

(ii) Lexical verb involved in Inversion
How cam'st thou hither?
'How did you come here?'
1594 Shakespeare

(iii) The Turkes ...made anone redy a grete ordonnaunce
'The Turks soon prepared a great ordnance' (*anone* = 'soon')
1482: Kaye, *The Delectable Newsse of the Glorious Victorye of the Rhodyans agaynst the Turkes*
In doleful wise they ended both their days
'They both ended their days in sorrow'
1589 Marlowe

All quoted in Roberts (1993) or Roberts & Roussou (2003)

## G. Modality and the English Modals: types of modal interpretation

From: Palmer, F. `Mood and Modality', in Asher. R.E. (1994) *The Encyclopaedia of Language and Linguistics*, Oxford University Press (pp. 2535-2540):

**Non-factuality and Subjectivity**

Two features clearly associated with modality are non-factuality and subjectivity. There is no doubt that they are characteristics of epistemic modality. Thus epistemic MAY and MUST make judgements about the possibility etc., of states of affairs: *John may/must be in his office* draws some kind of conclusion concerning the likelihood of John being in his office. They do not make straightforward statements of fact or categorical assertions, as does *John is in his office*. They are also subjective, reflecting the view of the speaker; although, in theory, epistemic modality could be either objective or subjective, in natural language epistemic judgements are almost always those of the speaker. They are also performative, in the sense that their use is itself the making of the judgement. This is reflected in the grammar, in that epistemic modal verbs do not normally appear in the past tense with past time reference (except in reported speech); the notion that it was possible (in the past) that John was in his office, is not normally expressed by a modal verb (and certainly not by *John might be in his office*, where *might* expresses only a judgement of weaker possibility, or by *John may have been in his office*, which makes a present time (and still performative) judgement about a past state of affairs; significantly, MUST does not even have a past tense form. The point is clear: epistemic modals express performative judgements by speakers, and thus can be used only in the present.

Deontic modality is equally non-factual. In English deontic MAY and MUST are used as what Searle (1983: 166) calls `directives' (`where we get others to do things'); they give permission and lay obligation for the performance of actions (in the future). They are often subjective, too, in that it is the speaker who gives the permission or lays the obligation; MUST, however, is often fairly neutral in this respect as in *If you want to be rich, you must work hard*, where it is clear that the speaker does not impose the obligation and is merely commenting on the conditions required for becoming rich. Yet it is important to note that English also has HAVE TO (HAVE GOT TO), which is often quite different from MUST in that the speaker is clearly not involved in the obligation as in *He's got to go into hospital*. It is also the case that in English, at least, past tense forms of MAY and MUST (MUST has none) are not used to refer to permission or obligation in the past, though, by contrast, the past tense form of HAVE TO is perfectly regular. This again suggests their subjective and performative nature; but the absence of past tense usage is a characteristic of English alone, and not of, e.g., French or German, which regularly use the corresponding verbs deontically in the past tense with past time reference.

From: Chung, S. & Timberlake, A. `Tense, aspect and mood' in Shopen, T. (1985) *Language, typology and syntactic description* (3 vols), Cambridge University Press.

**Epistemic mode**

The epistemic mode characterises the actuality of an event in terms of alternative possible situations, or worlds. At any point in time, there is an actual world, and there are also a number of alternative worlds that could exist at that time. (In one sense there is always an infinite number of such worlds. To describe the epistemic mode in language, it is appropriate to restrict the notion of alternative worlds to those that the speaker considers in some sense reasonably close to the actual world.) The epistemic mode characterises the event with respect to the actual world and its

possible alternatives. If the event belongs to the actual world, it is actual; if it belongs to some possible alternative world (although not necessarily to the actual world), it is possible; and so on.

Two subtypes of epistemic mode are often distinguished: necessity (the event belongs to all alternative worlds) and possibility (the event belongs to at least one alternative world). These subtypes are illustrated by one sense of the English modal auxiliaries; consider *John must be in Phoenix by now* (= in all alternative worlds that one could imagine at this time, John is in Phoenix) and *John can/may be in Phoenix now* (= there is at least one world one could imagine in which John is in Phoenix).

**Deontic mode** (*deontic vs. epistemic*)

The deontic mode characterises an event as non-actual by virtue of the fact that it is imposed on a given situation. Given the actual world at any given time, there are a number of worlds that could conceivably develop out of that world. The deontic mode restricts these subsequent worlds with respect to an event, such that the event has to belong to some or all of the subsequent worlds.

As in the epistemic mode, two subtypes of deontic mode are often distinguished: obligation (the event must hold in all subsequent worlds) and permission (the event may hold in some subsequent world). These subtypes are illustrated by the non-epistemic sense of the English modal auxiliaries, as in *John must go to Phoenix* (= in all worlds developing out of the given world, John goes to Phoenix) and *John may go to Phoenix* (= there is some world subsequent to the given world in which John goes to Phoenix).

## H. Background for discussion of English Modals

English lacks verb raising: lexical verbs never raise to $I^0$ position. They remain in VP, where exceptionally they may display the limited morphological features of finiteness that are available in this language (the Past Tense *-ed* morpheme and the *-s* morpheme, associated with agreement in Present Indicative, 3rd Person singular). The discussion of Subjunctive clauses has shown that the $I^0$ position in English may remain empty and that a finite clausal environment may have no finite verb whatsoever, all the verbs in cases like the following being non-finite and outside the I projection (even auxiliary *be*):

1a. [Washington only agreed to send the Apaches and rockets on the condition] that they [$_{I^o}$ ] **not** [$_{VP}$ be [$_{VP}$ used in combat without the formal approval of President Bill Clinton]]

The fact that not even the Passive auxiliary *be* appears in $I^0$ in such cases suggests very strongly that this position is 'blocked': the most straightforward way of accounting for this would be to assume that it is occupied by a lexical element without a phonetic matrix (i.e. a 'null' element). Given the special nature of the syntactic environment (subordinate clauses selected by 'intensional' predicates - *require, demand, be essential* etc), it seems likely that this element is something like an abstract modal (a modal operator) and that its function is to express the value [+ Mood]. Alongside Subjunctive clauses with 'empty' $I^0$ positions English also has a variant in which INFL is filled by an explicit modal:

1b. .....on the condition] that they [$_{I^o}$ *should* ] **not** [$_{VP}$ be [$_{VP}$ used in combat without the formal approval of President Bill Clinton]]

The mere existence of this alternative offers a degree of confirmation of the analysis proposed for the type exemplified in (1a): it seems clear that in English, a language with no appropriate inflectional morphology, the value [+ Mood] - i.e. Subjunctive not Indicative - must be expressed

*through insertion of an item [= a free morpheme - an $X^0$] in INFL*, either a phonetically realised element (a normal modal verb) or an abstract operator. This is revealing because it suggests (i) that the Mood system of English is based on **lexical insertion** in $I^0$, (ii) that the inserted element may phonetically realised or abstract, (iii) that a modal verb may represent one of the values of the Mood system.

It should be remembered that Subjunctive clauses are subordinate clausal structures subject to lexical selection by higher predicates. It is generally assumed that the higher predicate selects a value for the C of its complement clause and that this is transmitted to the lower Io position.

'Intensional predicates' (*require, demand, insist* etc) select a CP (a clausal complement) whose C position ('complementiser' or 'conjunction' - realised by *that*) has the feature [+ Subjunctive]. This same feature is then transmitted to the functional node $I^0$, where important functional categories in the verbal system are realised. In such an environment (selection of an abstract feature [+ Subjunctive] in C by a higher predicate and its transmission to $I^0$, the feature in question, though a marked choice in absolute terms ([+ Mood] rather than [- Mood]), may be realised by a phonetically null element. See tree diagram on page 48 above.

Given that a system of this sort operates in subordinate clauses of the type exemplified above, what happens in independent clauses? Can the system illustrated throw any light on the more puzzling facts of the English verbal system: the fact that there is no Verb Raising, the fact that the modal verbs have such strange syntactic properties? The relevance to the first point is clear enough: in independent clauses the $I^0$ position is frequently empty (if no auxiliary or modal verb is selected) and in this respect these clauses appear to resemble Subjunctive clauses of the type exemplified in (1a): might the resemblance be more than just superficial? Might it be that lexical verbs do not raise to $I^0$ in English independent clauses for the same reason that no verb raises to $I^0$ in Subjunctive clauses like (1a), viz that the position is blocked by an abstract (indicative) operator? The relevance of the second point is also not difficult to grasp: subjunctive clauses have shown modal verbs effectively functioning to replace inflectional morphology (*should* or an equivalent abstract mood operator - i.e. an element with the same interpretational characteristics as *should* but no phonetic matrix - fill $I^0$ and give the same value as an inflectional morpheme in other languages). Might it be that the peculiar morphosyntactic properties of English modals (compulsory occurrence in $I^0$ & lack of non-finite forms) can be explained by assuming that in the evolution of the language they have been 'grammaticalised'? It is clear that they are grammaticalised forms; what is not immediately clear is exactly what value they have assumed as a result of this grammaticalisation) *as functional heads* (lexical-level elements inserted as heads of the functional projection I in a language where this projection is not headed by sub-lexical level elements, i.e. inflectional affixes - as it is in Italian for instance). This possibility raises two immediate questions: (i) why should the grammaticalisation of modal verbs as functional heads (of I) be accompanied by a loss of non-finite forms? (ii) what value do these grammaticalised functional heads express and can any of their other strange properties be derived from this (for instance failure to express agreement, non-transparent Past Tense reference)?

Notice that it has long been assumed that modal verbs are grammaticalised forms: they constitute a closed class (new modal verbs cannot be invented in the way that new lexical verbs can) characterised by well-defined shared morphosyntactic behaviour (obligatory occurrence in $I^0$, followed by infinitive of lexical verb without *to*, no agreement). They appear to have undergone 'semantic bleaching' (losing their original lexical meanings and the argument structures that accompanied this - as a result they no longer select NP or CP complements). At a certain point in

the evolution of English they begin to appear systematically in environments where inflected Subjunctive forms had previously appeared. Intuitively, then, it is clear that modal verbs develop logico-semantic content similar to that associated with Mood inflections and finally come to take the place of those inflections in the system. We need to reach a more precise understanding of what it means for a lexical element to become a functional head expressing a value in the Mood system. We need to search for an account of this that will simultaneously explain why modals cannot appear in non-finite contexts, cannot show agreement, do not have normal Past Tenses with past time reference (see below). In addition, we might say 'if this also produces - or contributes significantly to - an explanation of why English has no Verb Raising, so much the better'. In fact we should *expect* - rather than just hoping - that an adequate explanation will throw light on this: the observed alternation of modals with a null realisation of I in the particular environment of Subjunctive clauses constitutes important evidence in favour of the idea that realisation of $I^0$ as a modal verb or as a null operator are complementary possibilities. And this suggests that they may be found *mutatis mutandis* in other syntactic environments. In fact this is exactly what one appears to find in independent clauses: if one factors out those cases where $I^0$ is filled by a non-modal auxiliary (*be* or *have*), then the situation in English independent clauses ends up bearing a striking resemblance to that in Subjunctive clauses. Either the $I^0$ position is empty (in which case the only verbal element is the lexical verb in VP) or it is filled by a modal:

**Subjunctive clauses:**

3a. We insist $[_{CP(SUBJ)}$ that the boys $[_{I^o}$ ∅ ] $[_{VP}$ come home at three in the afternoon]

3b. We insist $[_{CP(SUBJ)}$ that the boys $[_{I^o}$ *should* ] $[_{VP}$ come home at three in the afternoon]

**Independent clauses:**

4a. The boys $[_{I^o}$ ∅ ] $[_{VP}$ come home at three in the afternoon]

4b. The boys $[_{I^o}$ *should* ] $[_{VP}$ come home at three in the afternoon]

The key difference is that whereas in Subjunctive clauses both realisations correspond to the value [+ Mood], in independent clauses the two realisations correspond to opposed values:

**Mood system** (binary choice [+/- Mood])
[+ Mood] = insertion of modal verb
[- Mood] = insertion of null operator

A further refinement of this system is possible if we analyse support *do* as the spell-out of [- Mood] in marked contexts where a null element is not sufficient:

**Mood system** (binary choice [+/- Mood])
[+ Mood] = insertion of modal verb
[- Mood] = insertion of null operator (unmarked contexts)
= insertion of *do* (marked contexts)

Having put forward the view that English modals are functional heads (inserted in the $I^0$ position) and that they represent the [+ Mood] value of a binary system in which the [- Mood] value is represented by a null operator, we now need to show that the behaviour of these elements (their various syntactic, morphological and semantic properties) corroborates the analysis of them as functional heads in the Mood system. The main properties of the modals that we will be concerned with are as follows:

(i) compulsory occurrence in finite $I^0$& lack of non-finite forms (**They had musted*);

(ii) lack of agreement (**musts*);

(iii) lack of a transparent relationship between Past Tense morphology (*could, would, should, might, ought*) and past time interpretation (**Yesterday afternoon he should see the doctor*); in verbal strings headed by modals and interpreted as referring to past time, the past time reference appears to be obtained through the choice of the Perfect auxiliary *have* and the Past Participle morphology on the lexical verb (*Tom must have seen Richard yesterday*).

More generally, we will need to take account of the fact that in certain environments in English a modal verb is necessary:

(i) in the apodosis of 'unreal' conditionals (*If Tom had more money he would keep three poodles instead of two*) and more generally in any clause where the intention is to evoke an unreal situation, especially counterfactuals (*Tom should have sold those shares in Mediaset while he still had the chance*);

(ii) in clauses with future time reference (*It will rain tomorrow*).

Modals display a systematic (though not exclusive) association with epistemic and deontic modality (see extract from Chung & Timberlake above), often appearing in sentences that are completely ambiguous between these two readings: *Tom should have arrived by now*). Certain of them also appear in sentences that are in some way generic (*A drop of oil will make it work better/In that area of the country a local politician might easily have close connections with the Mafia*). A reasonable generalisation appears to be that modal verbs indicate that the propositional content of the sentence is the result of an evaluation on the part of the speaker, rather than being asserted as known fact. This is suggested by very straightforward cases like the following:

5a. There is no problem: Tom should arrive by 6pm

5b. There is no problem: Tom intends to arrive by 6pm

Here we have two sentences which differ in the verb chosen as first verbal element in the second clause: in (5a) we find modal *should* and in (5b) 'catenative' *intend* (this has none of the properties of a modal: *Does Tom intend to arrive by 6pm?/ Tom doesn't intend to arrive by 6pm/ Tom intended to arrive by 6pm* (= genuine past time interpretation) etc). In both of these clauses a proposition ('Tom - arrive by 6pm') appears; crucially, in (5a) it is understood to be based on the speaker's evaluation (the speaker evaluates this proposition as near certain), while in (5b) it is simply presented descriptively as the content of Tom's intention (and not as evaluated by the speaker) - on the evaluative (and therefore 'subjective') nature of the modals, see the extract from Palmer above). This subective/evaluative use of *should* also contrasts with semi-modal *have to*:

5c. There is no problem: Tom has to arrive by 6pm

In the normal interpretation this sentence describes an objectively existing necessity/obligation, rather than presenting this as the speaker's evaluation. It is consequently closer to 'descriptive' *intend* than to subjective/evaluative *should.*

## I. A complementary idea based on the interpretation of the Past Tense morpheme in modals

But how does it come about that the Past Tense morpheme is associated with epistemic and deontic types of meaning (which are crucially linked to act of enunciation)? Could this matter have any bearing on the general inquiry into the unusual syntactic properties of the English modals? In other words, could it some how be made to yield an account of why they have no non-finite forms (and possibly also why they do not agree)?

The problem that English faces is that it has no affixal morpheme for typically

modal/evaluative meanings. But it is not just that it lacks a specific morpheme; rather the problem is that it must press another morpheme (the Past Tense morpheme) into service to realise this type of meaning (i.e. the [+ remote] meaning of the morphologically Past Tense modals *might, could, should, would*). In languages where mood choices are achieved through morphological affixation, a special series of morphemes exist which are attached to the verb. In French and Italian two morphemes appear to be added to the verb to create the forms known as 'Future' and 'Conditional'. The first of these morphemes (*-er*) is similar in the two languages and bears a striking resemblance to morpheme found in the infinitive (*travaill-**er***):

| | | | |
|---|---|---|---|
| **French:** | travailler | travaill-**er**-a | 'Future' |
| | | travaill-**er**-ait | 'Conditional' |
| **Italian:** | lavorare | lavor-**er** - à | 'Future' |
| | | lavor-**er** - ebbe | 'Conditional' |

What we see is that in the two languages the highlighted morpheme precedes the final morphemes, whose function is plainly to distinguish 'Future' from 'Conditional'. The - *er* morpheme, then, appears to be common to both these paradigms: it is as if it expresses some value which is common to - and thus presumably the necessary basis for - the values expressed by the morphemes that follow. We can safely assume here that the traditional names 'Future' and 'Conditional' only reflect the meanings of these paradigms very loosely; indeed, both of them seem to be associated with some sort of 'prediction' meaning, the so-called 'Future' being a prediction in a world whose existence is in no way precluded (at enunciation time), while the 'Conditional' represents a prediction regarding a world that (at enunciation time) is precluded (by some factor or other) from coming into being.

The similarities between Italian and French that we have just noted are very striking, but there is also a striking similarity between the latter language and English. In the French 'Conditional' the second morpheme that is added (*-ait*) also appears in the 'Imperfect' paradigm (the third person singular version is given):

| | |
|---|---|
| travaill-*ait* | 'Imperfect' |
| travaill-**er**-*ait* | 'Conditional' |

When used in the Imperfect, the morpheme in question (- *ait* ) is normally associated with past time reference; this is the value it assumes if attached directly to a verb stem, with no intervening morpheme. Now, if we factor out the intervening *-er* morpheme, this is very similar to what we get in English with modal verbs: with a modal verb (as we saw in the preceding section) the result of adding a Past Tense morpheme is not usually to obtain past time reference; rather the value obtained is a further modal one ('remote'). Thus *can*, with the Past Tense morpheme added (= *could*), yields various possibilities of 'remote' modal meaning; *may*, with the Past morpheme added (= *might*), can be used to access an unreal world, and so on. This is exactly what we get in French: a Past Tense morpheme (in this case 'Imperfect') added to what is presumably a Mood morpheme (*-er*) is reinterpreted as expressing a *modal*, not a normal *temporal* value. The difference between the two languages are (i) that in English but not in French this happens only when the verb in question is a modal (when added to ordinary lexical verbs in English, the addition of the Past Tense morpheme produces past time reference); (ii) that in French for the Past Tense morpheme to yield

a modal rather than a temporal interpretation it must be preceded by the morpheme (*-er*): without this, the interpretation is straightforwardly 'past'. What we see very clearly, then, is that - as regards the interpretation of the Past Tense morpheme - the presence of the Mood morpheme *-er* (in French) or the choice of modal verb (in English) have an equivalent effect: both 'convert' the Past Tense morpheme into a further mood choice ([+ remote]). We can represent this as follows:

**French:** [verb + **-er**] + *Past Tense morpheme* = mood choice
**English:** [modal verb] + *Past Tense morpheme* = mood choice

What this suggests is that the English modals should be regarded as lexically incorporating (i.e. incorporating as a lexical property) a modal operator similar to that represented by the French morpheme *-er*.

## J. Dummy *do*

- originally (in Middle English - approximately 11th century till last quarter of 15th century) *do* was a causative verb similar to CE *have/get* (*Tom had Richard repair his car*).

1. Sche dede him etyn & drynkyn
   'She did him eat and drink'
   She made him eat and drink

2. Thanne he dide the clerk of the council seek it
   'then he did the clerk of the council seek it'
   He had the clerk of the council seek it

NB: *do* projects a θ role onto its subject and the complement clause has its own NP/subject (which presumably receives case from *do*).This structure was lost in the 16th century.

- alongside the above causative use, where the complement structure has its own expressed subject, we find structures where there is no NP/subject in the complement clause. These are considered to be equivalent to the French *faire (par)*.. structure *Un maire .. fait peindre les chats en fluo/Jean a fait boire de l'acide à son fils de trois ans*

3. He is innocent and can not write, nor hath done written, the certaynte of the dayes and tymes thereof
   'He is innocent and cannot write, nor has done write, the certainty of the days and times of it'

4. They shall putt or done putt in any certaine place
   'they shall put or do put in any certain place'

NB: *do* projects a θ role onto its subject. This structure was lost in the 16th century.

- alongside the *faire par* type of structure we find a structure that is superficially similar, except that it appears to involve subject raising:

6. They worshipped the sonne whanne he dede arise
   'They worshipped the sun when he did arise'

7. In Faguell, ... a great lord sometyme did dwell
   'In Faguell ...a great lord once did live'

In these cases there is no plausible causative interpretation available. The only convincing analysis is to treat it as a raising verb. According to Denison (1985) this *do* was a perfective aspect marker.

Roberts (1993: 290):
As a raising verb marking aspect, *do* was clearly close in function to $T^0$. However, *do* could not be reanalysed as a member of $T^0$ as long as the infinitival *-en* remained in $T^{-1}$. [.....] All these circumstances changed early in the 16th century, when *do* was reanalysed as a functional element base generated in $T^0$. [....]
Evidence that dummy *do* was a main verb was no longer available in the 16th century, after the loss of the infinitival ending.

8. He did carye grete quantitee of Armure to the Guyldehalle (1386)

'He did carry great quantity of armour to the Guildhall'
a. = He had a great quantity of armour carried to the Guildhall
b. = He carried a great quantity of armour to the Guildhall

9. Thus **con**science does make **cow**ards of us all (Skakespeare 1605: *Hamlet*)

10. *I do* is a verbe muche comenly used in our tonge to be before other verbes, as, it is all one to say *I do speake* and such like and *I speake*. (Palsgrave *Esclaircissement de la langue françoyse* 1530)

All above quoted in Roberts 1993

## 20) Argument Structure of verbs

### 1. Some common types of argument alternation

A - **Conative alternation**

1a. Jane hit her uncle
1b. Jane hit at her uncle
2a. Tom stabbed the bread (with a knife)
2b. Tom stabbed at the bread (with a knife)
3a. The cat clawed the policeman
3b. The cat clawed at the policeman's coat

B - **Indefinite object alternation**

1a. Tom swept the floor
1b. Tom swept

C - **Causative/inchoative alternation** (otherwise known as the 'Ergative Alternation')

1a. The enemy sank the ship
1b. The ship sank
2a. Jane melted the ice-cream
2b. The ice-cream melted
3a. Jane broke the cup
3b. The cup broke
4a. Tom banged the door
4b. The door banged
5a. Jane cut the bread
5b. *The bread cut

D - **Induced action alternation**

1a. Bill danced
1b. Bill danced Sue into the room
1c. *Bill danced Sue
2a. Sylvia jumped
2b. Sylvia jumped the horse over the fence

2c. *Sylvia jumped the horse
3a. Tom walked to the station
3b. Tom walked his wife to the station
3c. *Tom walked his wife

E - **Middle alternation**

1a. The butcher cuts the meat
1b. The meat cuts easily
2a. The girl polishes the table
2b. The table polished nicely
3a. Bill pounded the metal
3b. *This metal won't pound well
3a'. Bill pounded the metal flat
3b'. This metal won't pound flat

F - **Locative (*spray/load*) alternation**

1a. Tom loaded the cart with the hay
1b. Tom loaded the hay onto the cart
2a. Tom sprayed the wall with the paint
2b. Tom sprayed the paint onto the wall
3a. Tom stuffed the cushion with the banknotes
3b. Tom stuffed the banknotes into the cushion
4a. Tom filled the glass with wine
4b. *Tom filled the wine into the glass
5a. Tom poured the wine into the glass
5b. *Tom poured the glass with wine

G - **Dative alternation**

1a. Tom gave the books to Richard
1b. Tom gave Richard the books
2a. Tom sent the books to Mary
2b. Tom sent Mary the books
3a. Tom donated the books to the library
3b. *Tom donated the library the books
4a. Tom addressed his letter to the minister
4b. *Tom addressed the minister his letter
5a. They accorded Tom certain privileges
5b. ?They accorded certain privileges to Tom
6a. Tom gave the dog a bath
6b. *Tom gave a bath to the dog (*in intended meaning)

H - **Instrument subject alternation**

1a. Jane cut the bread with this knife
1b. Yesterday this knife cut the bread (perfectly well).
1c. This knife doesn't cut

2. **The realisation of arguments - the UTAH**

Basic hypothesis about Objects vs PP Complements: the direct object seems to represent an entity that is directly involved in the verbal action or affected by it, while a PP represents some less directly involved entity.

1a. The lion ate the antelope
1b. Rust was eating at the lower parts of the pipe
2a. He shouted at his uncle
2b. *He shouted his uncle
2c. He shouted his name (to the guard/across the fence)
2d. *He shouted at his name
2e. He shouted his uncle down
2f. *He shouted at his uncle down
3a. Tom looked at the manuscript
3b. Tom inspected the manuscript
3c. Tom looked the manuscript through
3d. *Tom looked the manuscript
3e. *Tom inspected at the manuscript

**UTAH: The Uniformity of Theta Assignment Hypothesis (Baker 1988)**
Identical thematic relationships between items are represented by identical structural relationships between those items (at the level of D-structure)

3. **Psychological predicates**

1a. John likes long novels
2a. John fears dogs
3a John worries about the ozone layer
1b. Long novels please John
2b. Dogs frighten John
3b. The ozone layer worries John

Possibilities:
(i) the above data show that the UTAH is false - different predicates require different linking patterns as an idiosyncratic lexical property;
(ii) the (a) and the (b) sentences have similar underlying configurations but at least one of them involves some non-trivial syntactic derivation;
(iii) the thematic roles in the (b) sentences are actually different from those in the (a) sentences. (Baker 1998)

4. **How NOT to reason about argument structure and thematic roles**. Example from Huddleston & Pullum (2000: 229)

1. Kim married Pat
1a. Pat married Kim
2a. Kim's writing resembles Pat's
2b. Pat's writing resembles Kim's
3a. Kim's promotion preceded Pat's
3b. Pat's promotion followed Kim's
4a. Kim bought the car from Pat
4b. Pat sold the car to Kim

In (1) *marry* (in the sense it has here) is semantically **symmetric**. *X married Y* and *Y married X* entail each other. It follows that there is no linguistically significant difference between the semantic roles of the two arguments: both are agents. Either can be aligned with the subject without any difference in syntactic construction. The choice between them depends on whether the event is presented from Kim's perspective or Pat's. In (2) *resemble* is likewise symmetric, so that again the choice between (a) and (b) depends on perspective, not role. The only difference is that this time the common role is not agent, but rather one that we will subsume under 'theme'.

Example (3) differs from (1) & (2) in that (a) & (b) contain different lexical verbs, *precede* and *follow*. These verbs (as used here) are converses in that each of *X precedes Y* and *Y follows X* entails the other. Again the difference is not in the situation itself but in the way it is presented, (a) giving greater prominence to Kim's promotion, (b) to Pat's. Differences in presentational status thus determine not simply which argument is aligned with subject and which with object, but also which lexical verb is selected. Different verbs are needed because neither *precede* nor *follow* is symmetric, like *marry*, and this implies that the arguments do not have identical roles. - they might be distinguished at a very specific level as 'prior' and 'subsequent'. But the difference between these is of no significance for more general roles, and these too we will include under the concept of theme.

In (4), *buy* and *sell* are likewise converses: (a) and (b) entail each other. Both describe the same situation, but again from different perspectives. It is worth emphasising in this connection that *buy* and *sell* do not differ according to whether it is the buyer or the seller who initiates the deal: (a) and (b) are both consistent with either party making the first move. We very often take the perspective of the one who initiates the deal, but there may be other factors that override this. In one respect, then, *Kim* and *Pat* are both agents, just as they are in the *marry* example (1). In another respect they are obviously different, in that the car goes from **to** Kim **from** Pat - and this time, in contrast to (3), the difference is of significance at higher levels of generality, where we will analyse *Kim* as goal and *Pat* as source. But either goal or source can be aligned with subject in a syntactically elementary construction [= non-passive], depending on the lexical properties of the particular verb selected.

Alternative view:

*buy* has **agent, patient & source**

*sell* has **agent, patient & goal**

The goal role is not projected by *buy* and the source role is not projected by *sell.* The two verbs do not have the same array of thematic roles.

The fact that two verbs can be used to describe the same real world situation in no way guarantees that they project the same thematic roles.

## 5. 'Argument augmentation': exemplification from English

**A** (various innovative uses)

1. The cleaner the vinyl the more potential information in the grooves. In my opinion there are only 15 or 20 truly remarkable articles on the subject. One of the best is located on Michael Fremer's web site - just **google** until you find it. WWW

2. It has become fashionable, of late, to blame the high unemployment **on companies relocating their production facilities to China**. GUAR

3. But what was most striking at Nasiriya in those very early days of the war was the absence of that grand coalescence of freedom-deprived Iraqis who were to come forward and support coalition forces. At best, civilians stood by and watched the US war machine **thunder into town.** GUAR

4. Predicting the end of Robert Mugabe's regime in Zimbabwe has always been a risky business. The end has been nigh for at least seven years, but Mr Mugabe has **outfoxed** friend and foe alike. GUAR

5. Obviously, we now all know that NCL's desire of creating a highly profitable American based company has become a reality, and NCL America is now in full operation, however, whilst they may have achieved their goals, both the United States and Independence remain laid up, rapidly **rusting away**. WWW

**B1** (verbs that are normally transitive - but the NP/obj may be semantically different from the normal one)

1. Danner points out that Schlesinger could as easily have written: "American interrogators have **tortured** at least five prisoners **to death**." GUAR

2. They have had to **revise upwards** their estimate of the number of dead. GUAR

3. During Bruce's four-week run Cook **fought off** attacks from members of the audience and kept the comedian supplied with his favourite delicacy, cream buns. WEB

4. No one tried to **jolt** the country **out of** its contradictory wish for Scandinavian services paid for on American tax rates. GUAR

5. At least David Blunkett tried to craft a debate that had a place for the benefits of migration alongside the controls. But in the end he **drowned out** his own efforts. GUAR

6. In January, **a common position on Cyprus was hammered out** with the Turkish military on the National Security Council, and the next day Erdogan travelled to Davos to brief Annan, flying on to meet Bush in Washington. LRB

7. It is a measure of the government's concern about its inability to **shake off** the controversy over Iraq that the prime minister felt it necessary to alter his schedule to deliver a lengthy philosophical defence of his actions in Sedgefield last Friday. GUAR

8. He could never now, for instance, **see** Britain safely **through** a referendum on the European constitution. GUAR

9. With a coquettishness without parallel in the rest of her journalism she murmured that 'Labour sympathisers are being urged to use the new Freedom of Information Act to **dredge up** ancient information to discredit Michael Howard relating to family matters.' OBS

10. He is apparently important enough to attend Whitehall committees and influential enough for the cabinet secretary to have ordered colleagues to **copy him in** on all strategic proposals for the future. GUAR

11. In the meeting last Thursday at which Wolfowitz's nomination was confirmed, the bank's executive directors decided to approve the construction of the Nam Theun 2 dam in Laos. This will **flood 6,000 people out of their homes**, damage the livelihoods of a further 120,000, destroy a critical ecosystem and produce electricity not for the people of Laos but for their richer neighbours in Thailand. GUAR

**B2** (verbs that are normally intransitive)

1. He continues to insist that the US occupation will end well—but he cannot **talk away** the news about Americans and Iraqis being killed every day and the horrifying pictures from Abu Ghraib prison. NYRB

2. Previous conductors have either chosen to go themselves or died in post. If players vote against keeping Rattle, he would be the first conductor to have been **voted out**. WWW

3. The vitriol directed at him from pig-ignorant, Irish-American quarters didn't seem to bother him either. In fact he **laughed most of it off.** OBS

4. He married Adeline, a cousin of Virginia Woolf's and had just finished the London Symphony when war broke out and he **lied his age down to 39** to enlist as a private soldier. WWW

5. 'They say it's presidential, that the Blairs have bought this socking great house and they can't afford it and it's sort of demeaning to have the Prime Minister's wife **drumming up** money,' said a senior Tory official. OBS

6. Defendants were poorly represented, convicted on highly dubious evidence, often from dodgy informers, or after having confessions **beaten out of them**, by judges who were usually highly prejudiced. LRB

**B3** (zero-derived denominal/deadjectival verbs)

1. The president then **singled out** Syria, which he said "still allows its territory and parts of Lebanon to be used by terrorists who seek to destroy every chance of peace in the region." GUAR

2. Every decision has to be **dumbed down** through negotiation with countless agencies, many of which lack vision and specialist skills. GUAR

3. Blakey called on the cellphone from Chicago to say she had just read about it [= the death

of Susan Sontag] online; it would be on the front page of the *New York Times* the next day. It was, but news of the Asian tsunami **crowded it out**. LRB

4. In academia, in short, no less than in other privileged corners of American life, money is being **funnelled into** the hands of a relative few. NYRB

5. If one widely quoted statistic is true, around three million dismayed Labour supporters claim they won't vote for Blair again. Iraq seems to have been their tipping point, but the war surely isn't the only reason for their unease. Among other issues, I'd also **factor in** a widespread sense that private companies are being waved into places where they really don't belong. GUAR

**D** (verbs that are normally intransitive but here appear with reflexive pseudo-object)

1. Angus's mum weeps desperate small-hours tears as she pleads with him to sleep. Elizabeth **screams herself sick**, literally. GUAR

2. Like Reagan, he [= George Bush] wants his first term, in which he was demonised as a warmonger by many Europeans, to be followed by a second term in which he **writes himself into the history books** as both peacemaker and freedom spreader. (Into some history books, depending whose you read.) GUAR

**E** (verbs that are normally either transitive or intransitive but here appear with 'path' pseudo-object)

1. By definition it has to be prompted by something a little more serious than tittle-tattle. In this case, it's been prompted by the story of how John Haase and Paul Bennett, two of the most dangerous gangsters Liverpool has produced, managed to **swindle their way out of prison**. OBS

2. One of them told him, years later, that he left the room convulsed with mirth at the raging ambition of a 21-year-old who **successfully bluffed his way to a Fulbright**. "It changed my life," says Maazel. WWW

3. Or more recently still, as veterans described in the BBC Empire Warriors series, British soldiers **thrashed and tortured their way** through Aden's Crater City - the details of which one explained he couldn't go into because of the risk of war crimes prosecutions. GUAR

4. At the end, as the audience gave way to enormous, relieved clapping – thank God that's over – she made a beeline towards me. Sideswiping the smiling president of Stanford and an eager throng of autograph-seekers, she **elbowed her way towards me**, enveloped me rakishly in her arms and said very loudly: 'Terry, we've got to stop meeting like this.' LRB

5. A false allegation that asylum seekers had tried to **blackmail their way into the country** by throwing children overboard prompted John Howard's notorious slogan in the final days of the campaign: "We decide who will come into this country." GUAR

**English vs Romance languages** (from Levin & Rappaport Hovav - 'Constraints on the Complexity of Verb Meaning & VP Structure' ms. Stanford)

**Manner of motion verbs** (*hobble/boiter*)

1a. An old woman hobbled in from the back
1b. Une vieille femme arriva en boitant de l'arrière-boutique.
1c. He swam under the bridge
1d. Il a nagé sous le pont.

**Instrument Verbs + Resultative Secondary Predication**

2a. Mary sponged the table clean.
2b. Mary a nettoyé la table avec une éponge.

3a. The cat licked the plate clean.
3b. Le chat a nettoyé l'assiette à coups de langue.

**Effected Objects with Manner of Acting Verbs**

4a. She wrote some words.
4b. Escribiò unas palabras.
5a. She scratched/scrawled on paper.
5b. Rayò/grabateò un papel.
6a. She scratched/scrawled some words.
6b. *Rayò/grabateò unas palabras.

**How to approach the data above from a theoretical point of view - Ramchand** (2008: 4)

Two approaches:

(i) The **lexical-thematic approach**, which allows for the semantic classification of role types within the lexicon, readable by a 'linking' theory that places these different roles in different places within the structure. In this approach, the relevant information is *projected from the lexicon*. Under this view, the lexicon is a 'submodule' of the language faculty, since it has its own distinct primitives and modes of combination.

(ii) The **generative-constructionist approach,** which allows free building of syntactic terminals, but allows general encyclopedic knowledge to mediate whether a particular lexical item may be inserted in those terminals or not (Borer 2005, Marantz 2001). Under this view, the lexicon is not a submodule, **since it contains no grammatically relevant information or processes.**

## 6. "Dative" or "Double Object" (alternating) structures

A. Definition of the Dative Alternation

1a. Tom gave the cake to the children
1b. Tom gave the children the cake
2a. Tom showed the picture to the children
2b. Tom showed the children the picture

The Dative Alternation is - at least superficially - reminiscent of the *load* alternation:
3a. Tom loaded the hay onto the truck
3b. Tom loaded the truck with the hay
As with the *load* alternation the two syntactic possibilities can be used to describe the same real world event.
It has often been assumed that in the two realisations of the Dative Alternation the same thematic roles are involved (**Agent, Patient, Recipient**). It follows from this that for the Recipient role we must assume that there are two canonical realisations: NP & PP(*to*).
An alternative to considering (1a) and (1b) realisations of the same argument structure is to assume that *give* allows two different conceptualisations (on the model of what we have assumed for *load*) and two (slightly) different argument structures. Each of the syntactic realisations would then be the canonical structural realisation of that particular conceptualisation/argument structure. Thus the arguments - or more precisely the argument which appears alternatively as an NP or a PP - would be slightly different (perhaps Recipient in (1b) and Goal in (1a)).
A third possibility is to assume a single conceptualisation yielding a single argument structure (with a single canonical structural realisation) and argue that one of the two structural realisations - for example the IO realisation - is a superficial rearrangement of the other (i.e. the result of a movement transformation - but the problem here is accounting for the fact that lexical material - the P - is absorbed).
Those accounts of the double object structure which assume that what we have are two entirely equivalent structures (derived from a single conceptualisation and a single argument structure) normally suppose that in the prepositional realisation the P *to* is an empty case assigner ("segnacaso") without semantic content of its own. The question of whether the *to* phrase has anything in common with other uses of the same P (as in: *walk to the station*) is not given any consideration.

B> Semantic restrictions on the Recipient IO
It is generally the case that the IO has to have the feature [+ animate] or [+ human]. This does not apply to the PP realisation of the same argument:
4a. Tom sent Richard the documents
4b. Tom sent the documents to Richard
4c. Tom sent each office a copy of the document
4d. Tom sent a copy of the document to each office
4e. Tom sent London the documents
4f. Tom sent the documents to London
Notice that (4c) is presumably acceptable because an office is basically an organisation of human beings (i.e. it can be thought of as "the people who work in it"). Sentence (4e) is only acceptable if we assume that *London* is metonymic for "our London office"; it cannot be interpreted simply as a locative goal ("the place London"). No such restriction applies to (4f). This restriction does not apply with certain light verb structures that use double object syntax:
5a. Tom gave the soup a stir
5b. Tom gave the car a push
5c. Tom gave the office a fresh coat of paint
5d. Try to give sincerity some consideration (Green 1974)
The semantic restrictions applying to the IO but not to the (recipient) PP are often thought to be the reason why certain verbs are not associated with double object syntax:
6a. Tom donated the pictures to the Walker Art Gallery

6b. *Tom donated the Walker Art Gallery the pictures
7a. Tom contributed many ideas to the project
7b. *Tom contributed the project many ideas

Thus *donate* and *contribute* encode specific information regarding the Recipient: that it must be an institution in the first case and that it must have the feature [+ abstract] in the second case. This rules out double object syntax in the case of these verbs. That things are more complicated than this is evident from the following:

8a. Tom distributed the copies to all the participants
8b. *Tom distributed all the participants the copies

Here the Recipient role is realised as a [+ human] NP and this is still not acceptable in the double object structure with this verb. It is true that this verb specifies the Recipient role more narrowly than *give* but this in fact amounts to specifying that the argument must have the feature [+ set].

C. Lexical restrictions on the Dative Alternation[1]

Certain verbs admit the Double Object structure and others (with similar meaning and apparently similar argument structures) do not admit it

***to**-only (non-alternating):*

1a. *Tom mentioned me the problem (mention the problem to me)
1b. *She repeated me her name (repeat her name to me)
1c. *They recommended me that course (recommend that course to me)
1d. *She confessed me her crimes (confess her crimes to me)
1e. *She declared me her intentions (declare her intentions to me)
1f. *She revealed me her intentions (reveal her intentions to me)
**1g. *She carried him the coffee (carry the coffee to him)**
**1h. *She pushed him the vase (push the vase to him)**
**present, provide, entrust** etc.
1i. *She presented me the book (presented the book to me/me with the book)
1j. *They entrusted us their dog (entrust their dog to us/us with her dog)
1l. *She provided me paper (*provide the paper to me/provide me with paper)

*Indirect object only (non-alternating)*:

**accord, ask, cost, deny, envy, forgive, guarantee, save**

2a. ??They accorded certain privileges to us (accord us certain privileges)
2b. *They asked various questions to us (asked us various questions)

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[1] *Common alternating verbs (selected from lists given in Levin 1993):*

**feed, give, lend, loan, pass, pay, refund, rent, repay, sell, serve, grant, offer, owe, promise, allocate, assign, award**
**bring, take, hand, mail, post, send, ship**
**kick, push, carry,throw, toss, chuck**
**read, teach, tell, quote**
**cable, e-mail, fax, phone, radio, signal, telegraph, wire**

***to**-only (non-alternating):*

**address, contribute, deliver, demonstrate, describe, dictate, dispatch, donate, express, introduce, recommend, return**
**admit, allege, announce, articulate, assert, communicate, confess, declare, mention, propose, repeat, reveal, say, state**

2c. *The tickets cost more to us (cost us more)
2d. ??They denied access to us (deny us access)
2e. *They envied our success to us (envy us our success)
2f. *She forgave our errors to us (forgive us our errors)
2g. *She guaranteed some places to us (guarantee us some places)

**charge, fine, save**

2h. *They charged ten pounds to us (charge us ten pounds)
2i. *They fined ten pounds to us (fine us ten pounds)
2j. *Those reductions saved a lot of money to us (save us a lot of money)

D. Problem of lexical specification of the Recipient:

Further specification regarding the destination of the entity transferred (in the shape of a particle such as *away/up*) rules out the IO structure:

1a. John gave his money away/gave away his money
1b. John gave away his money to his relatives
1c. Tom gave up his rights to his children
1d. *John gave his relatives away his money
1e. *Tom gave his children up his rights

Such specification is arguably already lexicalised by verbs such as *distribute/donate* which do not allow double object syntax. In any case particles are excluded by these verbs.

2a. Tom distributed his money to his relatives
2b. *Tom distributed away his money
2c. *Tom distributed his relatives his money
2d. *John donated away his money
2e. *John donated the homeless people his money

F. Syntactic peculiarities of the Indirect Object

There are various respects in which the IO does not behave syntactically as a normal Object NP (the exception to this is its ability to become Subject of a Passive structure):

Depictive secondary predication:

3a. I put *the food* onto the table *hot*
3b. *I put the ice-cream into *the oven hot*
4a. I gave *the meat* to Mary *raw*
4b. *I gave the meat to *Mary hungry*
4c. I gave Mary *the meat raw*
4d. *I gave *Mary* the meat *hungry*

*Wh*-movement:

5a. Tom should give [which woman] the perfume
5a'. ??[Which woman] should Tom give the perfume?
5b. Tom should give the woman [which perfume]
5b'. [Which perfume] should Tom give the woman?
6a. [Which boxes] should Tom load onto the truck?
6b. [Which truck] should Tom load with the boxes?

Heavy-NP shift:

7a. *I gave [ t ] a cake [every child that came to the door]
7b. I gave [ t ] to Jane [every cake that I could find]
8a. I loaded [ t ] with hay [three carts and one wheelbarrow]
8b. I loaded [ t ] onto the cart [a stack of books that had arrived that morning]

Derived nominals:

9a. Tom's giving of a book to Mary
9b. their renting of the house to those men
9c. their teaching of mathematics to Jane
9a'. ??Tom's giving of Mary the book
9b'. ??the renting of those men the house
9c. ??their teaching of Jane mathematics
10a. Tom's loading of the truck with hay
10b. Mary's spraying of the wall with paint
10a'. his loading of the hay onto the truck
10b'. her spraying of paint onto the wall

Scope interactions:

11a. The teacher assigned one problem to every student
11b. The teacher assigned one student every problem
12a. I loaded one crate of books onto every library cart
12b. I loaded one library cart with every crate of books

The above examples (from Baker 1998) suggest that the Indirect Object is subject to some special licensing requirement perhaps involving assignment of a special abstract case (in many languages dative case is assigned to such arguments). This special abstract case (which spells out in English as accusative) has been termed "inherent case". Further facts confirm that the IO is subject to special case-licensing requirements; these reveal a sort of "adjacency constraint" on the IO:

13a. The British Government gave back the Elgin Marbles to Greece
13a'. The British Government gave back the Elgin Marbles
13b. The British Government gave the Elgin Marbles back to Greece
13c. ?The British Government gave Greece back the Elgin Marbles
13d. *The British Government gave back Greece the Elgin Marbles

The slight unacceptability of *gave Greece back the EM* may be due to informational factors (a pronoun in the same position is perfectly acceptable):