

Additional notes along chp. 4 of the Kaplan Book

Everything on this handout is relevant for the final exam!

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May 25, 2006

1 Preliminaries

Most of this section should be known from the EPRO. If you have serious problems understanding all or some of it, I recommend the accessible and erudite Fromkin (2000).

This class deals with syntax, that is: how words are concatenated to larger strings that have the status of a sentence. This sets syntax apart from

- phonology and morphology, which deal with the **form** of words (like inflection or word formation) in such syntactic strings,
- semantics, which tells us how certain strings (viz. sentences and its parts) can be **interpreted** logically (that is, semantics will as the primary goal tell us whether and why a sentence is true or false under which states of affairs)
- pragmatics, which gives us the **discourse dependent** conditions on sentence interpretation and usage. Pragmatics deals with aspects of usage and meaning which are not related to the simple truth or falsity of sentences (in short: it deals with aspects of meaning and use of language beyond **truth values**).

Nevertheless, all of these aspects interact. Certain semantic distinctions have syntactic consequences (such as the mass/count distinction for nouns), and certain pragmatic factors influence syntax as well. We talked about the fact that in German independent sentences the verb always comes second and almost anything can be put before the verb. What exactly is actually put there, however, seems to depend on the speaker's pragmatic evaluations and the structure of the previous discourse. It will, however, be irrelevant to the truth of the sentence (viz., its semantics) whether you say 'Peter sah das Auto gestern.' or 'Gestern sah Peter das Auto.'

1.1 Some Terminology

This is just a random collection. Note every paragraph is connected to the previous one.

The **object language** is the object of our scientific inquiry, in our case mostly English as it is spoken and written by speakers of English. The **meta language** is the language we use when talking about the object language. It is the language of our scientific community. By accident, it is also English in our case. You should keep these terms apart and carefully think about whether you're making a linguistic statement about English or whether you are just using English. You always enclose object language expressions in quotes '...', such that when you use words to talk about the word form 'words' of your English object language, one occurrence of the same chain of letters has to occur in quotes.

In linguistics, we think of items of object languages as **signs** which stand in a conventionalized (fixed, determined by the language user community) relation to real-world **objects** and maybe **mental representations** of such objects. This is the **semiotic** base of linguistics, semiotics being the general theory of signs. We take it that these objects have a **form**, namely a chain of sounds, and certain grammatically relevant features (cf. below) which determine the interpretation and – this is what is most interesting for us – their syntactic behavior, i.e., how they are allowed to combine with other words to form **grammatically correct** and interpretable strings (which are usually just called **grammatical**).

The meaning and features of a sign are called **arbitrary**, which means there is no constructive link between a word's (clause's, sentence's,...) form on the one hand and its meaning and grammatical features on the other hand. Put simply, it is by accident that trees are called 'tree' in English, etc.

Features are simply the grammatical properties of the object language items (words, clauses, sentences). They are usually given in our theory as **binary**, allowing only two options to be chosen from (e.g., a noun can be [\pm countable]). They can of course be **n-ary** (n a natural number). E.g., a German noun can be [masc], [fem], or [neuter] for GENDER, thus GENDER is **3-ary**, which is read **ternary**.

A **category** is a class of linguistic items. That is, usually it should be a collection of words, clauses,... that have some feature(s) in common. The (sub-)category of count nouns could be defined by assigning all count nouns the feature [+countable], for example. The class of verbs and nouns could be distinguished by something as general as a feature [\pm noun] and a feature [\pm verb]. Such features which are part of the definitions of some signs thus **define** a class of signs (the class which has exactly that feature). Of course, this becomes interesting when feature specifications interact and create complex subclasses. We also very often entertain the option of leaving features **underspecified** to allow a lexical item to be ambiguous.

The following semantic terminological conventions are very important: We **describe** items of the object language using the meta language, and language users might *use* the object language to describe objects or states of affairs in the world. We can describe items of a language by giv-

ing a list of its features, for example. But a word of the object language itself never describes any object of the object language itself: it **has** features, and it **denotes** (or **refers to**) objects or states of affairs in the real world. For example, a name refers to a specific object (e.g., a person), a noun like 'house' refers to the set of all house objects, an intransitive verb like 'walk' refers to the class of objects (in this case, persons) that walk, etc. A sentence can then be thought of as referring to a **state of affairs**, namely the one under which it is true. 'Peters walks.' then refers to the state of affairs when Peter actually walks, and the state of affairs when Peter walks is the one under which the sentence 'Peter walks.' is true.

The **referent** of an expression is just its denotation. One usually uses the term **referent** in such cases where the denotation is a specific object (and not a set of objects or a truth value).

On the multiple reference problem: You might think it's impossible to say that 'Peter' refers to Peter, because there are so many Peters in the world. Now, think about **homonyms** in general: 'bank' refers to banks in the park and to banks as in money transfers etc. You will, thanks to the context, always know whether you use the one word 'bank' or the other. They are two different words which accidentally sound the same. The same can be assumed for 'Peter' and any other name. There are actually hundreds of thousands of words which read 'Peter' – they sound the same by accident. We are lucky that in almost every single situation we can be quite sure which of these words was actually used (and to which Peter we are referring). If not, we have ways of disambiguating it (like adding the last name, giving additional information in form of a relative clauses, etc.).

It is customary to say that some category **expresses** a certain notion. For example, one says that 'the imperative expresses a command'. This is sort of sloppy. It would be better to say the imperative **marks** the sentence as a command.

In linguistics, it is assumed that the (mental or scientific) description of a language must involve a **lexicon**. The lexicon is basically the exhaustive list of words of the language. It can also contain complex signs, for example in the case of idioms. These **lexical entries** have all the phonological, morphological, syntactic, semantic, etc. features we need to give the entry its correct treatment in the syntax and semantics. Thus by saying that some feature is a **lexical feature** we mean that it must be stored (because it is in principle arbitrarily assigned to a sign). In German, for example, GENDER is a lexical feature because it must be stored in the lexicon. There is no way of guessing the gender of a noun. This implies that we sometimes might have to postulate several lexical entries for what looks like the same word on the surface. These are cases in which that word (rather: these different words which sound the same) can behave differently in the syntax.

We also think of lexical items as carrying information about other items they have to co-appear with. It's called the **subcategorization** or in some cases **valence** of a word. All verbs want to have a noun phrase to their left (the subject) to be happy. Some verbs even want one or two additional noun phrases to their right to be happy. A nice description for this process is that a word **consumes** certain other words before it is **saturated**. Again, features come in handy! We

can formulate the condition above as *A verb wants some item with the feature [+noun] to its left.*

The distinction between **arguments** and **adjuncts** is based on the aforementioned notion. An argument is a word or phrase required by some other word (like a subject is required by the verb). The required word is **the argument of the other item**. If some item in a sentence does not get all the arguments that it needs, the sentence will be ungrammatical. There are also elements which are not strictly required by another element. All such elements introduced freely or optionally are adjuncts. An adjunct (such as an adjective or an adverb) **modifies** some other element, and in this case it seems that it's the adjunct that carries the information about what it can modify. So, if an adjunct appears in a sentence, it must appear at the right place so it can modify something which has the right features (an adjective needs to modify a noun, most adverbs need to modify a verb, etc.), but the sentence will still be correct if you omit the adjunct. This is one of the most important distinctions in syntax and semantics.

The lexicon is accessed by the **rules** or more generally the **(computational) system** of the language, which takes the lexical entries and processes them to form larger units (largely according to their subcategorization information). The meaning will change, of course. This mechanism is sometimes just called the **system**, the **grammar** or just the **syntax**.

The evidence on which we base our theory is indirect. The structuralists believed that by just looking at actual sentences of a language one could extract the **distributional classes** or **environments** of lexical items, then group the items according to whether they appear in the same environments or not (thus finding the **paradigms** of the language), and then call it a day. In modern **Generative Linguistics**, one wants to find the mechanisms that produce or **generate** utterances from lexical material. We are just not satisfied with finding simple distributional patterns. We want to discover the machinery which produces them! To find out the right rules which produce **all and only the utterances** of some language like English, we first postulate rules, then test which utterances they produce. Finally, we test the output with native speakers. The native speaker gives a **grammaticality judgement**: (S)he marks the sentences our artificial grammar produces as grammatical or ungrammatical according to his/her **internal grammar**. This internal grammar is the one (s)he uses when speaking and understanding her/his language. One might call it the feeling for his/her native language. The asterisk * in front of a sentence marks that speakers judge it as **ungrammatical**. If our postulated grammar produces exactly the right sentences and none more, we made it!

2 Chapter 4: Word Classes

2.1 Preliminaries

We use the following abbreviations:

- noun N

- verb V
- adjective A
- determiner D
- demonstrative Dem
- adverb Adv
- Preposition P
- conjunction Conj
- auxiliary Aux
- sentence S

We distinguish **closed and open classes** of words. Open classes are open to new additions and to easy change in the history of a language (such as nouns, verbs, adjectives). Closed classes contain mostly **functional** words like Aux or Conj. They usually don't change easily.

2.2 NP vs. N

Actually it is unwise to classify names like 'Peter' and words like 'car' both as nouns, because they don't appear in the same environments. Compare:

- (1) Peter drives down the road.
- (2) *Car drives down the road.

You will notice that names stand in for a noun plus all its adjectives, relative clauses, articles, etc. So we refer to the whole complex as noun phrase (NP) and classify names as NPs.

2.3 Determiners

We distinguish articles ('a(n) the'), demonstratives ('this that these those') and quantifiers ('all much many some three ...').

Actually, articles, demonstratives, and quantifiers can all be modelled as quantifiers. As you will notice, 'a unicorn' denotes one unspecified unicorn, and 'the unicorn' denotes one existing unicorn which is the only one of its kind. So, the article/quantifier distinction is sort of weak.

Dem are like the definite article, only they add a **deictic component**: They point to the location of the hearer (**local**) or to a location away from her/him (**remote**).

Whether a quantifier takes a singular or plural noun or a count ('many') or mass ('much') noun (cf. below) is one of its lexical properties. 'some' is ambiguous between a singular and a plural reading.

There are of course NPs without a determiner, namely **bare plural NPs** such as ‘cars’ which are involved in **generic statements** such as ‘Cars drive.’

One major interesting property of **indefinite NPs** (those introduced by an indefinite article) and **definite NPs** (those introduced by the definite article, a demonstrative, or a prenominal genitive as in ‘Mulder’s sister’) is that by using an indefinite NP you can start talking about something or someone that hasn’t been mentioned before in the discourse, something that is completely unknown to the hearer. That’s not a very good strategy with definite NPs, however. Suppose that the speakers in the following artificial dialogues haven’t met before and don’t share any common knowledge about any dogs. Also assume that there is no dog around. Dialogue 4 will be perceived as odd (signalled by the #) and will probably provoke a response like ‘What do you mean? Which dog?’.

(3) A: What did you do in the pet shop.

B: I bought **a dog**.

(4) # A: What did you do in the pet shop.

B: I bought **the dog**.

2.4 Auxiliaries

Aux’es are like verbs in that they take subject agreement inflection, tense, etc. Some of them, namely ‘have’ and ‘be’ and have normal verbal counterparts. An Aux has, however the following distinguishing properties:

N Negation comes between the Aux and the V, and it affixes to the Aux (‘don’t’).

I Inversion between Aux and the subject takes place in questions.

C Code: Aux can be used anaphorically. ‘I like Twin Peaks, but **he doesn’t**.’

E Emphasis: Stressing the Aux focusses on the truth of the sentence (verum focus). ‘I DO apologize.’

The Aux actually takes away all inflection from the full verb which then appears in the bare infinitive.

2.5 The infinitive marker *to*

‘to’ has none of the NICE properties, so it cannot be a normal Aux. It is like Aux in as much as it also consumes an infinitival verb. What ‘to’ clauses lack is a subject, although there is always some unexpressed referent which is **understood** as the subject. So, let’s say there is an invisible (or **covert**) subject in such clauses and we call it PRO (*big PRO*). This PRO needs to get its interpretation from somewhere else, since it’s not a normal NP which has a well-defined denotation. Observe the following sentences, where I have inserted PRO to stand in for the inaudible subject:

- (5) Agent Cooper wants [PRO to find the murderer of Laura Palmer].
- (6) Laura Palmer wondered [whether PRO to meet J. that night].
- (7) Sheriff Truman thinks it's important [PRO to protect oneself/himself].
- (8) Audrey wants [PRO to work at the perfume counter [PRO to find out what happened to Laura]].

In 5, the bracketed part is the object (a clausal object or object clause), and its subject PRO is identified as referring to the same individual as the subject of the main clause. 'Agent Cooper' and PRO **corefer**. You will agree that the one whom Agent Cooper wants to find Laura Palmer is himself. The subject is said to **control** the PRO in the lower clause. The same is true for the 'whether' clause in 6. In 7, it can be 'Sheriff Truman' what controls PRO (in which case you have to say 'himself' at the end), or it can be a generic utterance. In that case Sheriff Truman thinks it's important for everyone to protect himself, and it has to be 'oneself' at the end. This kind of control is called **arbitrary control**. In 8 you see that PRO itself can be a controller of another PRO in another embedded clause! Whether the subject or the object control PRO is a lexical property of the verb of the main clause.

2.6 Participles

Remember that adjectives can be used **attributively**, modifying a noun as in 'the [red chord]', or **predicatively** with a form of 'be' in the place of a verb: 'A chord [is red]'. The same goes for participles in their adjectival usage:

- (9) The Cannibal Corpse gig [was thrilling].
- (10) The [thrilling Cannibal Corpse gig] ...

The main diagnostic of the verbal usage (in the sense of Kaplan) is that verbal participles cannot appear with the adjectival intensifiers 'very' or 'more'. Special uses are the progressive tense with the present continuous participle 'be V-ing' and a usage similar to infinitives as in the following:

- (11) Leo sold drugs, PRO making Laura addicted to cocaine.

Special constructions with the past participle involve the passive and the perfect to be discussed below.

2.7 Gerunds as nouns

Notice that if you use a gerund as a noun, you can take the subject and the object over into the noun phrase. Compare the following sentences:

- (12) [Sherrif Truman drove the car] such that Agent Cooper was impressed.
- (13) [Sheriff Truman's driving of the car] impressed Agent Cooper.

In 12, the subject and object are expressed as a normal subject/object NPs, in 13 they bear the same relation to the nominalized ‘driving’ as to the verbal ‘drove’, only they are realized as a prenominal genitive and a postnominal *of* phrase. This shows that what kinds of NPs a verb takes is encoded deep in its lexical makeup. And when we transform the verb into a noun, the information is preserved. The only difference is that the subject has to be realized as a genitive and the object as an *of* phrase in the nominalization.

2.8 Coordination

I want to add that the logics of conjunction (logical **and**) and disjunction (logical **or**) play a major role in the semantic analysis of natural language coordination. Much of Kaplan’s criticism can be explained away by additional conditions on the conditions under which we coordinate sentences and which additional connections between the sentences are assumed under those conditions.

But first let’s note that almost every two items can be coordinated as long as they are of the **same word or clause type**. Behold:

- N: She wants to be a [mother and president].
- NP: [Peter and [the red chord]] have nothing in common.
- V: Peter [walks and talks].
- VP: Peter [[eats an apple] and [reads the paper]].
- S: [[Peter walks] and [Peter talks]].
- A: Mount Kōya is [mystical and beautiful].
- Adv: I climbed Mount Kōya [slowly and respectfully].

Different types do not coordinate, however. Violation of this criterion leads to what is called a *zeugma*, as in 14.

(14) * Peter reads [slowly and [the paper]].

A deeper semantic analysis can unify many of these uses to a general one. We will not deal with that, however.

However, like many subordinating conjunctions, ‘and’ and ‘or’ can also be used as **discourse connectives** for sentences. What that means is that they have a usage in which they still connect sentences, but they loose or transcend their simple logical meaning (in the sense of truth tables). Instead they create a temporal or argumentative sequence as in 15 (temporal).

(15) He traveled to Japan. And he visited Mount Kōya.

For Kaplan's non-same-type paradox as in 16, a similar explanation (discourse connective) can be found. The 'or' connects the imperative and the affirmative sentence, but what the 'or' is (metaphorically speaking) interested in is the result of the order if it is followed. It thus constructs from the actual structure an interpretation which is something like that of 17.

(16) Put back the book or I'll throw you out.

(17) Either you put back the book or I'll throw you out.

2.9 Subordinating conjunctions as complementizers

Arguments of the verb (its subcategorized NPs) are sometimes called **complements**. From that comes the word **complementizer** for conjunctions like 'that'. Actually, what they do is they turn full sentences into arguments of a verb (forming **subject and object clauses**).

(18) Tokugawa Ieyasu thinks [that the Asahi Shinbun is a superficial newspaper].

2.10 Pronouns and Binding

First notice that pronouns (like names) stand in for an NP rather than an N.

(19) * The vivid she was Laura Palmer.

Pronouns are either **indexical** (first and second person) or **anaphoric** (third person). The denotation of an indexical pronouns can only be determined in a specific situation, viz. when the speaker/hearer to which the indexical points is known.

Anaphoric pronouns have no fixed denotation either, but they receive theirs by **coindexation** with an NP either mentioned in the previous discourse or in the sentence in which they occur. Coindexation means that they take over the semantic value of the NP they are coindexed with. If 'Peter' and some occurrence of 'he' are coindexed, they both refer to Peter. We mark this by putting identical indices on the NP and the Pro: 'Peter_{*i*}', 'he_{*i*}'. If an NP and a Pro are coindexed, the NP **binds** the Pro. When discussing **binding options** we sometimes add several indices to Pro and mark the ones which are impossible by the asterisk as in 'he_{*i*/**j*}', where *i* is an index which leads to a good interpretation, and *j* leads to ungrammaticality. The phenomena discussed here are of course related to semantic interpretation, but they have hard syntactic consequences. It seems to be syntax that determines what the semantics can do or can't. Binding is thus a major field of syntactic research.

When looking at the following examples, keep in mind that we're considering whether in certain syntactic configurations things can mean or be interpreted as one thing or another. So, if for some sentences you just think 'Why do we have to do this, these sentences are nonsense or just cannot have the interpretation that they are supposed to have. No wonder they are marked with the *!', then you're right in as much as they really cannot have the quirky interpretation. But it's exactly to find out *why* this is the case that we're thinking about them.

Personal pronouns (abbr. **Pro**) can be bound within the same sentence or from outside the sentence, viz. by some NP used earlier. However, they *must not* be bound within the NP or S they occur in. One says they must be **free** in their **minimal domain**.¹ This is called **Principle B of Binding Theory**.

Reflexive or reciprocal pronouns (Refl) like ‘herself’ however *must* be bound within that same domain in which Pro must be free. That is **Principle A**. One could say that in exactly those cases where Pro cannot be used, Refl must be used and v.v.

Principle C says that non-pronominal NPs (full NPs which have a fixed denotation, like ‘Peter’, ‘the vegan soup I ate in NYC on August 18 1996’) must never be bound at all; they must be free everywhere. We call such NPs R(efering)-expressions. Principle C just tells us that the fixed denotation of an NP cannot be overwritten by coindexation, that ‘Peter’ cannot suddenly refer to Mary just because it occurred in a certain syntactic configuration with the NP ‘Mary’. Principle C is really trivial once you get the idea behind it.

Some examples, please!

(20) [Agent Cooper]_i is aware of him_j.

(21) * [Agent Cooper]_i is aware of him_i.

(22) * [Agent Cooper]_i is aware of himself_j.

(23) [Agent Cooper]_i is aware of himself_i.

Here you see that within the same sentence, if the object is a pronoun bound by the subject, then we must use the Refl and cannot use the Pro (20 and 21). In 21, the indices must not be identical, ‘him’ is automatically interpreted as referring to someone else, not Agent Cooper. In 22 and 23 you see the opposite pattern: If you use the Refl in the object position, then the Refl cannot carry an index different from that of the subject (as it does in 22).

Some more examples about how the minimal domains are identified:

(24) [Dept. Brennan_i finds him_{*i/j}/himself_{i/*j} a good officer].

(25) Dept. Brennan_i finds [that he_{i/j}/himself_{*i/*j} is a good officer].

In 24 and 25, the angled brackets mark the sentence which is the minimal domain. You see that the ‘that’ clause obviously counts as a full sentence. You cannot use the Refl at all, because in its minimal domain (the ‘that’ clause), there is no binder. The Pro can be bound by ‘Dept. Brennan’, because ‘Dept. Brennan’ is outside of the minimal domain of ‘he’, and it could be bound by an NP mentioned in an earlier sentence. But the other construction (where the pronoun is basically the object of the main clause) does not isolate the pronoun enough from the subject to allow the Pro to be bound by it, because then it would be bound within its minimal domain. So, using the Refl is obligatory if we want to express that Dept. Brennan is actually thinking about himself.

Here are the principles again in slow motion:

¹ Things are not that easy, but narrowing down the minimal domain to NP and S is a good first approximation.

(26) **Principle A** Reflexives must be bound in their minimal domain.

Principle B Pronouns must be free in their minimal domain.

Principle C R-expressions must be free everywhere.

2.11 Prepositions and Adverbs

Notice that adverbs and prepositional phrase (PPs, a preposition plus its NP) occur in similar, sometimes the same environments.

(27) Peter walks [homewards].

(28) Peter walks [to the station].

This allows us to generalize and put them into one class. After the P has consumed its NP ('the station' in the example above), the result behaves like an adverb. We can say that Adv's are P's not subcategorizing for an NP or that P's are Adv's subcategorizing for an NP. Either way, they are very much related classes.

2.12 Particle Verbs

The particle is somehow part of the verb (as in 'drink down'), and Kaplan gives you the necessary tests to determine that. Very importantly, notice that under one special condition verb and particle **have to be** separated, viz. when the object is a pronoun. Cf. 29–31.

(29) Agent Cooper drank **it** down.

(30) * Agent Cooper drank down **it**.

(31) Agent Cooper drank down **the coffee**.

Usually, particles cannot be stressed.

References

FROMKIN, VICTORIA A. 2000. *Linguistics: An Introduction to Linguistic Theory*. Oxford: Blackwell.