

Chapter 1 : syntax - X-Bar theory and Trees - Linguistics Stack Exchange

X-bar theory is a theory of syntactic category formation. It embodies two independent claims: one, that phrases may contain intermediate constituents projected from a head X; and two, that this system of projected constituency may be common to more than one category (e.g., N, V, A, P, etc.).

Earliest comments[edit] Though this is an excellent explanation for x-bar syntax, I believe it does not encompass all of x-bar theory. I think there needs to be a separate section for x-bar theory, x-bar syntax, and x-bar morphosyntax, as well as the different syntactic theories. I must disagree with the example sentence tree. It states that the "He studies linguistics at the university" is a verb phrase. This is incorrect - it is a complete sentence or inflectional phrase, if you prefer. The noun phrase is not the specifier of the verb phrase, it is the specifier of the entire sentence. There is no specifier for the verb phrase in this case. So, I think that we would need another graphic to show both the Deep and the Surface structure. Everybody is welcome there: However, in Head-driven phrase structure grammar and probably some other theories, the subject remains in Spec,VP. I guess all this really needs is a good clarification. The principal reference is: A Study of Phrase Structure: Linguistic Inquiry Monograph 2. Thanks for the reference, and feel free to contribute more to Wikipedia as you see fit. DetP as a specifier of N?? I have never seen DetP as a specifier of N. I usually have Det as a specifier, though there is no consistency with the X-bar theory. But it is a traditional analysis. I think we should have a separate section on DP hypothesis only for complicated cases. In simple ones we may still use the old NP. Moreover, Chomsky claims that X-bar theory should be eliminated at all. What I meant is something like a la Chris Collins: This is the closest that we find to a definition: The letter X is used to signify an arbitrary lexical category; when analyzing a specific utterance, specific categories are assigned. In fact, I went back and had a look at the very first incarnation of the article, and it actually made sense! Who said that collaboration among many people makes a better Wikipedia article? I read the entire article and have no idea at all how X bar works. This article is as clear as mud. Sometimes you have to click on further links to fill in the missing pieces, but I feel that the only thing that would fill in the missing pieces here is a complete rewrite of the article. Okay, so a bunch of linguists discovered that: Now we can use XP to discuss any kind of that sort of thing. N-ary trees can be replaced by binary trees, while retaining the same information. A linear list in which the items are regarded at one level can actually be a linked list of frames which are themselves anonymous, constituting a lob-sided binary tree. They had to be invented to serve as the backbone that glues the "X-bar" trees together. Obvious so far, right? But what is important is that there is some mental reality to these binary trees. For instance, consider the English noun phrase "law school entrance requirement test administration procedure". The thing described by this phrase is, first and foremost, a kind of procedure. It is not a kind of law. The abstract syntax would be: The important thing is that this models the hierarchical nature of phrases. The theory asserts that all languages have phrases in which there is a main stem which heads off the phrase, and then the additional words represent a successive refinement of that stem, making the meaning more and more specific. In our example, the thing is a procedure. An examination administration procedure. An entrance examination administration procedure. What does the "X bar" mean? We used "N bar", but since the theory covers all kinds of phrases, not just noun phrases, X is used, and the characteristic glue nodes are "X bars". Inside a computer, we would use some unnamed memory objects instead of "X bars". For instance in the programming language Lisp we could represent the noun phrase as a list of symbols like this: Part of the tree can be shown in this diagram where the cells are depicted as [], showing that they are made of two information fields stuck together. Lisp lets us write the list another way, where we make it more explicit that there are cells. This is called the dot notation, and it looks like this: Likewise in the tree notations of X-bar theory you see nodes that only have one child; there is no further "X-bar" at the bottom! Even if you enter a list as a. So these X bars are like binary cells. Sometimes scientific theories are named due to some feature of the notations that they use, that is all! For instance, in category theory there are "comma categories". Why are they called comma categories? Because once upon a time, some notation using a comma was used in the notation used to manipulate these things on paper. Even though the notation is no longer used, the name has

stuck. From a compsci and a mathematical perspective, the theory is trying to make up a "fantastical discovery" from a quite trivial and pretty nonsential "obvious" observation such as "everything can be structured pairwise in any tree structure". Or so the article seems to allege. The article content confuses semantics matters with purely data representational issues. In fact, it was substitutions like the example that prompted linguists to develop the theory. One source is cited time and again, Carnie I fear that those who are conducting this effort are not yet knowledgeable enough to be adding information. Would one of the authors of these efforts please respond here. I may begin a more aggressive strategy to guard against these efforts. Any additions that either lack a citations with a page number or any addition that cites just Carnie may be removed without discussion. GPSG never adopted those. So I want to just have an explication of what X-bar is, and reduce the extraneous claims and evaluative prose. In my view, you are cutting out any sort of commentary that allows for critical reflection on value of X-bar theory. The article is now poorer because of the removals you have conducted. I am aware that you are now going to claim that whatever appears has to be sourced. That is of course a fair point. Let me see if we can come to some sort of compromise, though. For instance, do you disagree with the stance that X-bar theory as it is commonly understood in our modern times assumes strict binarity of branching? I will also be able to back up the stance that most modern versions of X-bar theory assume all structures to be endocentric.

Chapter 2 : Newest 'x-bar-theory' Questions - Linguistics Stack Exchange

Definition. X-bar theory is a generative theory of language conceived by Noam A. Chomsky. calendrierdelascience.com is a theory about the internal structure of syntactic constituents which was originally intended to place constraints on the power of phrase structure rules.

Refer to this sentence: This sentence is syntactically unsound because slept is an intransitive verb. Whether a verb is transitive or intransitive depends, of course, on the verb. Thus we may conclude that a subcategorisation frame in the lexicon tells us whether a verb is transitive. This phenomenon is not restricted to VPs by any means. We can similarly construct subcategorisation frames for APs: To solve this problem, linguists have proposed the X-bar theory. Projection[edit] Instead of having both phrase structure and subcategorisation rules, linguists have suggested that the structure of a phrase is derived from the lexicon by a process called projection. When we take a lexical constituent and plug it into our structure, it will take the subcategorisation information with it to project a structure. To understand this concept, we first need to know that there are only two phrase structure rules in X-bar theory. Yes, all our old ones will be discarded. Every phrase is named after the head. X itself is known as zero projection and can be written as X⁰. YP is the complement of the phrase. It is always a phrase. It is selected by the head with lexical information, i. This time, we include the auxiliary in our verb phrase as the specifier of the VP: This gives rise to our first principle, in the words of Chomsky: Projection Principle Representations at each level of syntax are projected from the lexicon in that they observe the subcategorisation properties of lexical items. Binary branching revisited[edit] Recall that in our introductory book, we met the Binary Branching Condition. Now we can make sense of this condition! Binary Branching Condition Each node must have at most two branches. Terminal nodes have no branches at all. We cannot get any more. Note that every phrase must have a head. Phrase structure rules get the boot[edit] Seeing the great generalisation powers of X-bar theory, we can get rid of phrase structure rules now. Just for fun, we will use a boot from the s: You may be thinking that our booting is quite premature because our new rewrite rule would result in nonsensical phrases: For now, though, we need to deal with a rather more pressing problem. What the heck do we do with the residue of our old phrase structure days The rewrite rule is still here, and it is not in X-bar format:

Chapter 3 : X-bar theory - Glottopedia

4 X-bar theory $\hat{\in}$ ϕ *X-bar theory elevates this to a principle of phrase structure; it hypothesizes that all phrases in a syntactic tree conform to this template.*

Core concepts[edit] There are three "syntax assembly" rules which form the basis of X-bar theory. These rules can be expressed in English, as immediate dominance rules for natural language useful for example for programmers in the field of natural language processing , or visually as parse trees. All three representations are presented below. An X Phrase consists of an optional specifier and an X-bar, in any order: One kind of X-bar consists of an X-bar and an adjunct , in either order: Another kind of X-bar consists of an X the head of the phrase and any number of complements possibly zero , in any order: However, in any given language, usually only one handedness for each rule is observed. The above example maps naturally onto the left-to-right phrase order used in English. A simple noun phrase[edit] The noun phrase "the cat" might be rendered like this: The word cat is the noun phrase NP which acts as the complement of the determiner phrase. More recently, it has been suggested that D is the head of the noun phrase. The DetP and NP above have no adjuncts or complements, so they end up being very linear. In English, specifiers precede the X-bar that contains the head. Thus, determiners always precede their nouns if they are in the same noun phrase. Other languages use different word order. A full sentence[edit] For more complex utterances, different theories of grammar assign X-bar theory elements to phrase types in different ways. Consider the sentence He studies linguistics at the university. A transformational grammar theory might parse this sentence as the following diagram shows: X-bar theory graph of the sentence: The "IP" is an inflectional phrase. Its specifier is the noun phrase NP which acts as the subject of the sentence. The complement of the IP is the predicate of the sentence, a verb phrase VP. There is no word in the sentence which explicitly acts as the head of the inflectional phrase, but this slot is usually considered to contain the unspoken "present tense" implied by the tense marker on the verb "studies". A head-driven phrase structure grammar might parse this sentence differently. In this theory, the sentence is modeled as a verb phrase VP. The noun phrase NP that is the subject of the sentence is located in the specifier of the verb phrase. The predicate parses the same way in both theories. Substitution test[edit] Evidence for the existence of X-bars may be provided by the various possibilities of substitution. For example, to the above sentence He studies linguistics at the university, someone may reply She does, also. Here the word does stands for the entire phrase studies linguistics at the university. However, had the reply been And she does at night-school, the word does would stand for just studies linguistics. This implies that significant constituents containing the verb exist at two levels; the constituent at the higher level here is named a verb phrase, and that at the lower level a V-bar coming above the verb itself, which is studies. Reduction[edit] In , Tim Stowell tried to derive X-bar theory from more general principles in his MIT thesis *Origins of phrase structure*, a pathbreaking but ultimately unsuccessful effort according to Andras Kornai and Geoffrey Pullum. Quantity of sentence structure[edit] Theories of syntax that build on the X-bar schema tend to posit a large amount of sentence structure. The constituency-based, binary branching structures of the X-bar schema increase the number of nodes in the parse tree to the upper limits of what is possible. The number of potential discontinuities increases, which increases the role of movement up the tree in a derivational theory, e. Government and Binding Theory or feature passing up and down the tree in a representational theory, e. The analysis of phenomena such as inversion and shifting becomes more complex because these phenomena will necessarily involve discontinuities and thus necessitate movement or feature passing. Whether the large amount of sentence structure associated with X-bar schemata is necessary or beneficial is a matter of debate. Endocentric structures only[edit] When the X-bar schema was introduced and generally adopted into generative grammar in the s, it was replacing a view of syntax that allowed for exocentric structures with one that views all sentence structure as endocentric. In this regard, the X-bar schema was taking generative grammar one step toward a dependency -based theory of syntax, since dependency-based structures are incapable of acknowledging exocentric divisions. At the same time, the X-bar schema was taking generative grammar two steps away from a dependency-based understanding of syntactic structure insofar as it was

allowing for an explosion in the amount of syntactic structure that the theory can posit. Dependency-based structures, in contrast, necessarily restrict the amount of sentence structure to an absolute minimum.

Chapter 4 : Project MUSE - The X-bar theory of phrase structure

I introduce X-Bar Theory, Specifiers, Adjuncts, and Complements, as well as many example phrases to show you how the structures are built. LIKE AND SHARE THE VIDEO IF IT HELPED!

These rules can be expressed in English, as immediate dominance rules for natural language useful for example for programmers in the field of NLP— natural language processing , or visually as parse trees. All three representations are presented below. An X Phrase consists of an optional specifier and an X-bar, in any order: One kind of X-bar consists of an X-bar and an adjunct , in either order: Another kind of X-bar consists of an X the head of the phrase and any number of complements possibly zero , in any order: However, in any given language, usually only one handedness for each rule is observed. The above example maps naturally onto the left-to-right phrase order used in English. A simple noun phrase The noun phrase "the cat" might be rendered like this: The word cat is the noun phrase NP which acts as the complement of the determiner phrase. More recently, it has been suggested that D is the head of the noun phrase. The DetP and NP above have no adjuncts or complements, so they end up being very linear. In English, specifiers precede the X-bar that contains the head. Thus, determiners always precede their nouns if they are in the same noun phrase. Other languages use different word order. A full sentence For more complex utterances, different theories of grammar assign X-bar theory elements to phrase types in different ways. Consider the sentence He studies linguistics at the university. A transformational grammar theory might parse this sentence as the following diagram shows: The "IP" is an inflectional phrase. Its specifier is the noun phrase NP which acts as the subject of the sentence. The complement of the IP is the predicate of the sentence, a verb phrase VP. There is no word in the sentence which explicitly acts as the head of the inflectional phrase, but this slot is usually considered to contain the unspoken "present tense" implied by the tense marker on the verb "studies". A head-driven phrase structure grammar might parse this sentence differently. In this theory, the sentence is modeled as a verb phrase VP. The noun phrase NP that is the subject of the sentence is located in the specifier of the verb phrase. The predicate parses the same way in both theories. Substitution test Evidence for the existence of X-bars may be provided by the various possibilities of substitution. For example, to the above sentence He studies linguistics at the university, someone may reply She does, also. Here the word does stands for the entire phrase studies linguistics at the university. However, had the reply been And she does at night-school, the word does would stand for just studies linguistics. This implies that significant constituents containing the verb exist at two levels; the constituent at the higher level here is named a verb phrase, and that at the lower level a V-bar coming above the verb itself, which is studies. Reduction In , Tim Stowell tried to derive X-bar theory from more general principles in his MIT thesis *Origins of phrase structure*, a pathbreaking but ultimately unsuccessful effort according to Andras Kornai and Geoffrey Pullum. Quantity of sentence structure Theories of syntax that build on the X-bar schema tend to posit a large amount of sentence structure. The constituency-based, binary branching structures of the X-bar schema increase the number of nodes in the parse tree to the upper limits of what is possible. The number of potential discontinuities increases, which increases the role of movement up the tree in a derivational theory, e. Government and Binding Theory or feature passing up and down the tree in a representational theory, e. The analysis of phenomena such as inversion and shifting becomes more complex because these phenomena will necessarily involve discontinuities and thus necessitate movement or feature passing. Whether the large amount of sentence structure associated with X-bar schemata is necessary or beneficial is a matter of debate. Endocentric structures only When the X-bar schema was introduced and generally adopted into generative grammar in the s, it was replacing a view of syntax that allowed for exocentric structures with one that views all sentence structure as endocentric. In this regard, the X-bar schema was taking generative grammar one step toward a dependency -based theory of syntax, since dependency-based structures are incapable of acknowledging exocentric divisions. At the same time, the X-bar schema was taking generative grammar two steps away from a dependency-based understanding of syntactic structure insofar as it was allowing for an explosion in the amount of syntactic structure that the theory can posit. Dependency-based structures, in contrast, necessarily

restrict the amount of sentence structure to an absolute minimum.

Chapter 5 : X-bar theory - Infogalactic: the planetary knowledge core

X-Bar Theory, Parse Trees & Ambiguity Basic Grammars for Computing Sentences In Human Languages Lessons about the very basics of modeling grammar, building on your understanding of words and sentences.

I will present a short overview of computational grammars and generative syntax. The terms "language" and "grammar" get thrown around a lot, and it would take me well beyond my time here to work out a sturdy definition with you. At this point, the notion of grammar becomes relevant. Under one approach, the grammar is something you have in your mind that gets configured in a certain way, allowing you to use a language. Under another approach, grammar is something you puzzle out of a language as you learn it. Instead, the linguistic understanding of grammar seeks out the fundamental mechanism for sentence production. The common way to conceive of this grammar of natural language is a to ground it in the speech of real speakers and b to explain it as a series of rules. These rules are statements or imperatives that tell the system how to handle chunks of language. The grammar using our linguistic definition takes some input, processes it using a series of rule statements, and produces or generates some output. This setup means that grammar allows certain sentences and disallows others. Its ability to generate language earns this broad-stroked model of grammar the title generative grammar. One tool for modeling linguistic grammar is X-Bar Theory. This model parses the grammar of sentences by looking for the relationships between word classes, determining how to group these words into phrases, working out the key word or head of the phrase and building back until we can view the grammar of a whole sentence as a single expanded tree. The major nodes on this tree are phrases. Each phrase has a head. For example, the head of a verb phrase is a verb. The other required elements in a phrase are either specifiers or complements. Specifiers are sisters of the subphrases, meaning that they branch off from the main phrase here and sit parallel to any subphrases below the main phrase. A specifier is first non-head non-complement branch from the phrase. Complements are sisters of the head, so they branch out next to the head word. The specifier still stays on the first branch of the Noun Phrase the NP. The tree still relies on terms for word classes which traditional grammarians call parts of speech like nouns abbreviated N , verbs V , prepositions P or determiners det or D. We have to expand the nodes in our Verb Phrase. On the contrary, do we have a rationale for adding some depth to this verb phrase? Consider two pieces of evidence natural language data: The boss ate soup at home. Core arguments fall adjacent to the verb. What it means for a sentence to be a negative example is a matter of debate. Expanding the parse tree Back to our tree. But they all behave in the same way, containing some head N, V, P and expanding out either to the left or the right. We can abstract and say that all of our phrases take the form XP "X-phrase" , where X stands for some head word class. What about our top node S? Consider a more appropriate name like IP Inflectional Phrase. Of course, it follows that the head of an Inflectional Phrase is some I. Walking the branches of the tree At this point we have a parse tree that we can walk. Starting at the top node, this IP node dominates all the nodes below it. The nodes below each dominate the nodes below them. Nodes falling to the left of other nodes on the same level precede nodes the the right. This precedence differs from dominance - for example, NP precedes VP. We continue to walk all of these branches to all of these branch nodes until we get to the leaves, which are the terminal symbols. These terminal symbols contain the actual morphemes or words of the sentence. This takes us from the top to the bottom of a tree. The rewrite rules above are typically reduced to the following expressions:

Chapter 6 : X-bar theory - Wikipedia

I am studying linguistics and now this semester my subject is Syntax. I tried a few times to draw a tree using X-Bar theory and Dp's but I couldn't achieve. Can someone please draw a tree of the se.

Chapter 7 : Grammar of Sentences: Parse Trees, X-Bar Theory, Ambiguity - online lessons

DOWNLOAD PDF X BAR THEORY SYNTAX

A short introduction to modern grammars of natural language. Use the fundamentals of generative grammar to learn about syntax (the grammar & rules of sentences).

Chapter 8 : 4 Introducing the X' schema of phrase structure

Earliest comments. Though this is an excellent explanation for x-bar syntax, I believe it does not encompass all of x-bar theory. I think there needs to be a separate section for x-bar theory, x-bar syntax, and x-bar morphosyntax, as well as the different syntactic theories (i.e. minimalism, LFG, and so on).

Chapter 9 : Government and Binding Theory/X-bar Theory - Wikibooks, open books for an open world

X-Bar Theory and Constituent Structure. General claim of X-Bar theory: The words in sentences (and phrases) have not just a linear order but also a hierarchical structure.. 1. Hierarchical structures.