

Grammatical Devices in the Processing of [+Wh] and [+Focus]

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Cross-linguistically, there are three grammatical devices to process the question mark [+Wh]: the reduplication of certain elements in the predicate, Subject-Auxiliary Inversion, and the use of question particles. Also cross-linguistically, there are two devices for grammar to process the focus mark [-Focus]: the fronting of focused constituents and the insertion of a Focus Marker such as the English 'be' before focused constituents. In this mode of formulation, a set of language-particular and structure-particular grammatical properties such as those of English interrogative/cleft sentences, and the Archaic/Modern Chinese focus constructions are decomposed, reanalysed and thus significantly simplified.

1. INTRODUCTION

In the literature, "Focus" - related issues have been studied from different perspectives. Following Culicover and Rochemont (1983, 1990) and Horvath (1986), we in this paper assume that this essentially semantic conception of "Focus" can be characterized as a purely formal syntactic feature [+Focus] or [+F], which gets assigned to constituents at a certain appropriate level of syntactic representation, participating syntactic operations under the general syntactic principles and constraints. In Section 2 we will first review some basic assumptions about the formal characterization of [+F], then moving quickly onto the question of how [+F] is reflected in the formal syntax, especially how it is marked syntactically. Section 3 is devoted to a discussion of the so-called "Focus-Fronting", we in particular will argue that a constituent with feature [+F] will be fronted in exactly the same fashion in English no matter whether it is a Wh-phrase or not, and the so-called "Wh-Movement" is in fact one type of instantiation of "Focus-Fronting" so that postulation of the former in the grammar is essentially redundant. In Section 4 we will demonstrate that the cluster of properties normally being associated with English "Question-Formation" can be decomposed and simplified. Cleft-sentences and Wh-questions in the language, as well as in many others, have more similarities than differences, and their similarities can be attributed quite naturally to the fact that they both result from the instantiating of a single syntactic rule thus well expected, and their differences can be accounted for independently in a modularized theory of grammar. Our major conclusions are summarized briefly in Section 5.

2. [+FOCUS] AND ITS GRAMMATICAL PROCESSING

2.1. [+Focus]: Some Working Assumptions

It is noted in some early generative literature that one aspect of semantic interpretation of a sentence is a division of its reading into FOCUS and PRESUPPOSITION. As a working definition, we follow Jackendoff (1972) to assume (1) below.

(1) FOCUS: The information in the sentence that is assumed by the speaker not to be shared by him and the hearer.

PRESUPPOSITION: The information in the sentence that is assumed by the speaker to be shared by him and the hearer.

According to (1), for a normal sentence, the matter is whether the FOCUS or FOCI is reflected syntactically or not, rather than whether it has a FOCUS at all. Sentence (2) below, for example, may be analyzed as (3) in terms of FOCUS and PRESUPPOSITION, although it only has phonological but no syntactic FOCUS marking (The capitalized word represents the main stress and the highest pitch of the sentence).

(2) Mary hit JOHN.

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(3) PRESUPPOSITION: Mar hit someone

FOCUS: John

The unshared information is assumed by the speaker to be known to the speaker himself in declarative sentences, whereas it is known to the hearer but not to the speaker in interrogative sentences. e.g.

(4) Who did Mary hit?

(5) PRESUPPOSITION: Mary hit someone

FOCUS: who

Note that Jackendoff's definition of Focus as in (1), although being quite consistent with the intuition, is given more semantically or pragmatically than formal-syntactically. Given the line of pursuit adopted in this study, we here would follow Culicover and Rochemont (1983, 1990) and Horvath (1986) to postulate that Focus can also be characterized as a purely formal syntactic feature [+FOCUS], which gets assigned to constituents at an appropriate level of syntactic representation. We will refer to the process of associating the feature [+FOCUS] with particular constituents as "Focus-Assignment". We assume, leaving arguments and motivations to be offered later, that Focus-Assignment takes place at the level of D-Structure, and not until then does the issue of "Focus" turn into a syntactic one. If so, (6) below can be taken as the DS representation of sentence (2) above if the information about "Focus" is to be included.

(6) Mary hit John^[+F].

Although every sentence by definition has at least one focused constituent, degree of focalization (i.e., the degree of emphasis) on constituents may vary from one sentence to another. For expository convenience, we assume that there are two types of Focus which are formal-linguistically relevant: "Strong Focus" and "Weak Focus" (henceforth, "Fs" and "Fw" respectively when necessary). We assume that this information is also available at D-Structure to trigger certain syntactic processes. Also, given the existence of multiple wh questions, a single sentence may have more than one constituent being assigned the feature [+FOCUS].

2.2. A Device in the Grammatical Processing of [+F]: The Focus Marker in Chinese

The [+F] marking, resulting from Focus-Assignment may trigger phonological or/and syntactic processing. The phonological processing of [+F] such as primary stress and higher pitch have been well noted in the literature (e.g., Jackendoff (1972), Culicover and Rochemont (1983) among others). As for syntactic processing, the most conceivable one is simply to insert an overt Focus mark in the sentence whatever the marker is in a particular language. This possibility is attested in Chinese. e.g.

(7) *Shi* wo mingtian cheng huoche qu Guangzhou.

SHI I tomorrow ride train go Guangzhou

'I will go to Guangzhou by train tomorrow /

It is I who will go to Guangzhou by train tomorrow.'

(8) Wo *shi* mingtian cheng huoche qu Guangzhou.

I SHI tomorrow ride train go Guangzhou

'I will go to Guangzhou by train TOMORROW /

It is tomorrow when I will go to Guangzhou by train.'

(9) Wo mingtian *shi* cheng huoche qu Guangzhou.

I tomorrow SHI ride train go Guangzhou

'I will go to Guangzhou BY TRAIN tomorrow /

It is by train that I will go to Guangzhou tomorrow.'

(10) wo mingtian cheng huoche *shi* qu Guangzhou.

I tomorrow ride train SHI go Guangzhou

'I will go to GUANGZHOU by train tomorrow /

It is to Guangzhou that I will go by train tomorrow.'

As seen in the above examples, *shi* (literally 'to be') is employed to mark the focused constituents in Chinese. Of course, this is not the only usage of *shi* in Chinese. *Shi*, just like its English counterpart *to be*, may also be a regular copular verb as in '*Ta shi yige xuesheng*' ('He is a student'). We may call the *shi* in copular usage 'Copular *shi*'s and that in emphatic usage 'Emphatic *shi*'. In terms of parts of speech, *shi* is a verb in both usages. It also should be noted that the status of the emphatic *shi* as a Focus Marker is controversial in the literature. To my knowledge, it is Teng (1979) who first calls it a 'Focus Marker'. But, Huang (1989), among others, argues that *shi* cannot be analyzed as a pure Focus Marker, since it exhibits a whole set of features of regular Chinese verbs. For example, it may enter the so-called 'V-neg-V' questions as in (11) below; it can be negated by a negative adverb such as *bu* 'not' as in (12). More importantly, argues Huang, the distribution of

emphatic *shi* is very much restricted. It can be placed only before the subject NP or somewhere between the subject and the main verb, but never between a verb and its object as in (13) nor between a preposition and its object as in (14).

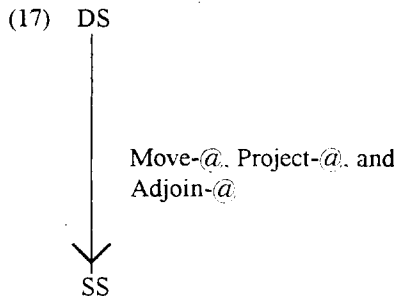
- (11) *Shi* bu *shi* ta zuotian jie-le ni de shu?
 SHI not SHI he yesterday borrow-Asp your book
 'Was it he who borrowed your book yesterday?'
- (12) Ta bu *shi* guai ni.
 he not SHI blame you
 'He does not blame YOU / It is not you that he blames.'
- (13) *Wo zuotian zai xuexiao pengjian-le *shi* ta.
 I yesterday on campus meet-Asp SHI him
 'Intended: I met HIM on the campus /
 It was him whom I met on the campus yesterday.'
- (14) *Wo bei *shi* ta pian-le.
 I by SHI him cheat-Asp
 'Intended: I have been cheated by HIM /
 It was he who has cheated me.'

These observations are true. All they suggest to us, however, is only that *shi* syntactically behaves as a verb while functioning as a Focus Marker, but don't contradict the claim that *shi* is a Focus Marker. The initial purpose of inserting *shi* may well be just to mark the focused constituent. But after being inserted into the sentence, *shi* takes up its own way of life, so exhibiting a set of properties of regular copular verbs. This is expected. Putting it in different words, we can say that the ungrammaticality of sentences like (13) and (14) has nothing to do with the insertion of *shi* as a Focus Marker. Rather, that they are ungrammatical is because such verbs as *pengjian* 'meet' may only have an NP but not a VP as its complement. In short, seen from different perspectives, *shi* could be different things. In terms of grammatical processing of [+F], *shi* is a Focus Marker. In terms of parts of speech, it is simply a verb. In employing this lexical item *shi* as a Focus Marker, the grammar automatically places it under the constraint of the conditions which govern verbs in general no matter whether you like it or not.

Theoretically, every and each sentence has at least one focused constituent. Superficially, some sentences don't appear to have focused constituents. But in fact it may be the case that they don't have presuppositions. The whole sentences, at least their predicates, are focused. But we all know that not all Chinese sentences employ the Focus Marker *shi* to mark the constituents. Here the division between Strong and Weak Focus proposed earlier in this paper plays crucial role in determining whether a focused constituent is syntactically processed through the insertion of Focus Marker *shi* in Chinese. Suppose that all focused constituents are all somehow phonologically reflected in the component of PF. The formal syntax is sensitive only to the marking of [+Fs] (Strong Focus). Assuming that *zai bangongshi li* 'in the office' is the focused constituent in both (15) and (16) below, and that it is strong (15), but weak in (16), we can analyze them as followings at different levels of representation.

- (15) DS: Wo zuotian [zai bangongshi li] ^[+Fs] deng ni.
 SS: Wo zuotian *shi* [zai bangongshi li] ^[+Fs] deng ni
 PF: Wo zuotian SHI ZAI BANGONGSHI LI deng ni.
 I yesterday SHI in office wait-for you
 'I waited for you IN THE OFFICE yesterday.' OR
 'It was in the office that I waited for you yesterday.'
- (16) DS: Wo zuotian [zai bangongshi li] ^[+Fw] deng ni.
 SS: Wo zuotian [zai bangongshi li] ^[+Fw] deng ni
 PF: Wo zuotian ZAI BANGONGSHI LI deng ni.
 I yesterday SHI in office wait-for you
 'I waited for you IN THE OFFICE yesterday.'

We propose that the insertion of Focus Marker *shi* is triggered by the [+Fs] marking from the DS representation. The process of Focus Mark insertion, we assume, is an instance of Adjoin-@ in the sense of Lebeaux (1991), which, along with Move-@ and Project-@, takes place in the course of derivation of SS from DS, i.e. (17) (Lebeaux (1991)).



This proposal amounts to saying that the Focus Marker *shi* is not present at DS, but be adjoined-in later in the course of derivation. According to Lebeaux's Principle of Licensing Well-Formedness as in (18), for an element to be present in the phrase marker, it has to be properly licensed perhaps in different ways for different grammatical elements. An element cannot be present until the relevant licensing relation allowing or requiring it into the phrase marker has applied.

(18) PRINCIPLE OF LICENSING WELL-FORMEDNESS (UG)

A subtree T_s may not appear in a major tree T_m prior to the point in the derivation that T_s is licensed in T_m (T_s , T_m relative).

Note that neither the Projection Principle nor anything else requires the presence of *shi* in the DS representation. *Shi* as an emphatic verb has to be analyzed not to participate in the Argument Structure, otherwise the obvious similarities among sentences (7) (8) (9) and (10) above which differ in nothing but in the Focus-Marking cannot be properly captured. We assume that these sentences share the same common DS representation in terms of the basic structure, but have different assignments of [+Fs], the latter eventually triggers the insertion of Focus Marker *shi* before different constituents, perhaps to satisfy an SS condition like (19) below.

(19) A constituent with [+Fs] marking must be reflected with Focus Marker *shi* at SS in Chinese.

Also note that the Focus Marker *shi* is absent at DS. But the [+Fs] marking has to be assigned or/and checked at the level to provide proper triggering for the insertion of *shi*. This proposal represents a nontrivial departure from those of Chomsky (1981), Jackendoff (1972) and Horvath (1986) who all explicitly or implicitly assume that Focus Assignment takes place at SS. One reason that forbids us from adopting the SS-Focus-Assignment approach is that it will put us in a dilemma in handling the Chinese case, since if so, *shi* will have to be pre-existing at DS on one hand because the necessary triggering which calls for its insertion will not be available before SS, but we know it cannot be there on the other hand as its licensing takes place at SS. Additional arguments will be provided for our DS-Focus-Assignment approach as we proceed.

The placement of the Focus Marker *shi* in linear word order is determined jointly by two factors: [1] *Shi*, as a verb in terms of parts of speech, has to observe all relevant syntactic conditions governing verbs in Chinese. For example, it cannot be inserted between a verb and its object even the object NP has an [+Fs] mark from DS representation. In this case, *shi* normally is placed immediately before the verb; [2] *Shi* is to be placed as close as possible to the focused constituent in a sentence should applicable conditions allow so.

A single sentence, as noted above, may have two or more focused constituents. Now it should be pointed out that only one of the several focused constituents can be marked overtly with *shi*. The following sentences are unacceptable.

(20)*Wo shi zuotian shi zai bangongshi li deng ni.
 I SHI yesterday SHI in office wait-for you
 "Intended: I waited for your IN THE OFFICE YESTERDAY."

(21)*Shi wo shi mei mai na ben shu.
 SHI I SHI not buy that book
 "Intended: It is I who did not buy THAT BOOK."

To account for this phenomenon, we propose a condition on Focus-Assignment (22).

(22) The Unique Strong Focus Condition

A simplex sentence can only have one constituent assigned a Strong Focus Mark [+Fs].

If so, then we can say that the Unique Strong Focus Condition is violated in (20) and (21) so that they are ungrammatical. Also note that (22) should be taken as a condition on clauses, i.e., unembedded simplex sentences. A sentence with embedded clauses, of course, may have two or more strongly focused constituents, and consequently may have two or more constituents being syntactically marked with *shi*. e.g.

(23) Shi Zhangsan zhidao [shi Lisi dasui-le nage beizi].

SHI Zhangsan know SHI Lisi break-Asp that cup

'It is Zhangsan who knows that it is Lisi who broke the cup.'

In wh-questions, only the wh-phrases but not any others could be the strongly focused constituents. With arguments to be provided later, we assume that this is because those wh-phrases have been assigned the Strong Focus mark [+Fs] already in the lexicon and carry the mark into syntax when they themselves are composed into the phrase marker. Such a lexical marking interacts with the syntactic marking in an interesting way. e.g.

(24) Shui^[+Fs] mai-le neiben zidian?

who buy-Asp that dictionary

'Who bought that dictionary?'

(25) Ni shenme shihou^[+Fs] nian-de daxue?

you what time attend-Asp college

'When did you attend college?'

If necessary, the Focus Marker *shi* may also be inserted to intensify the focus marking, giving rise to sentences like the following.

(24') Shi shui^[+Fs] mai-le neiben zidian?

SHI who buy-Asp that dictionary

'WHO bought that dictionary?'

(25') Ni *shi* shenme shihou^[+Fs] nian-de daxue?

you SHI what time attend-Asp college

'WHEN did you attend college?'

In case the wh-phrase is in an object position, the Focus Marker will have to be placed before the main verb rather than before the wh object.

(26) Zhangsan *shi* mai-le shenme^[+Fs] ?

Zhangsan SHI buy-Asp what

'WHAT did Zhangsan buy?'

The constituents with [+Fs] mark in sentences (23') (24') and (25') have double focus marking, one is brought in along with the wh-phrases from the lexicon, and another obtained through a syntactic process --- the insertion of Focus Marker *shi*. This kind of double focus marking is allowed in Chinese, but not in English. We will return to this issue in section 4.2.

The Unique Strong Focus Condition as stated in (22) which disallows a single clause to have more than one strongly focused constituent and the assumption that wh-phrases are assigned [+Fs] in the lexicon so that they carry the mark inherently jointly makes a prediction: the Focus Marker *shi* can be inserted only to mark the wh-phrases in wh questions. This prediction is borne out in Chinese as seen from the ungrammaticality of the following sentences.

(27)**Shi* Zhangsan^[+Fs] pian-le shui^[+Fs] ?

SHI Zhangsan cheat-Asp who

'Intended: *Is it Zhangsan who has cheated who? /

Who has ZHANGSAN cheated?'

(28)*Ni shenme shihou^[+Fs] *shi* zai Meiguo^[+Fs] gongzuo?

you what time SHI in America work

'Intended: When did you work IN AMERICA?'

(29)*Shui^[+Fs] *shi* mai-le nenme duo shu^[+Fs]?

who SHI buy-Asp so many book

'Intended: Who bought SO MANY BOOKS?'

The ungrammaticality of the above sentences may represent a puzzle for an alternative analysis of the Focus Assignment, since the Focus Marker *shi* in general may be inserted to mark any constituent which is strongly focused in a sentence. Given that the Unique Strong Focus Condition is independently motivated, the phenomenon can be taken as a strong argument for our assumption that wh-phrases are marked [+Fs] in the lexicon and carry the mark along into the syntax. In short, syntactic marking and lexical marking of strong focus must coincide.

3. FOCUS-FRONTING

Cross-linguistically, the insertion of a Focus Marker perhaps just represents one means of syntactic processing of strong focus. An alternative device is to move the focused constituent to a certain position, and in most cases

the constituent is preposed to a front position. This is what is so-called 'Focus-Fronting', which is observed in such languages as Archaic Chinese, Hungarian and English.

3.1 Focus-Fronting in Archaic Chinese

The basic word order of Archaic Chinese, just like that of modern Chinese, is of S-V-O, e.g.

(30) Wan min pi qi li. (Mozi, Shangxian Zhong)

ten-thousand people receive its benefit

'The people all benefit from it.'

(31) Qin king fu ji ke. (Zhanguoce, Yance)

Qin king again attack Ke

'The King of Qin attacked Ke again.'

As noted widely in the literature, an object NP may be preposed to a pre-verbal position under certain conditions. The best characterization of the so-called 'Object-Preposing' in Archaic Chinese can be found in Wang (1958) whereby the following patterns are identified.

[1] Object NPs which are question words (i.e., Wh-phrases) must be preposed, e.g.

(32) Wu shui qi? qi tian hu? (Lun Yu, Zihan)

I who cheat cheat God Q-Particle

'Who do I cheat? Do (I) cheat the God?'

(33) Chen shi bu cai. you shui gan yuan. (Zuozhuan, Chenggong Year 3)

I really not talented so who dare blame

'I am really not talented. Who do (I) dare to blame?'

[2] Object NPs in negative sentences may or may not be preposed as in (34) (35) and (36) respectively.

(34) Riyue shi yi, sui bu wo yu (Lun Yu, Yanghuo)

time pass Asp year not me wait-for

'Time flies. Time won't wait for me.'

(35) Wo wu er zha, er wu wo yu. (Zuozhuan, Xuangong Year 15)

I not you cheat you not me cheat

'I won't cheat you, and you won't cheat me.'

(36) Shenren bu ai ji. (Sunzi, Zhengming)

holy-person not love self

'The holy people don't love themselves.'

[3] Emphatic NPs must be preposed.

(37) Jun qun chen shi you. (Zuozhuan, Xigong Year 15)

King those ministers that concern

'The King concerns THOSE MINISTERS.'

(38) Yu wei li shi shi. (Zuozhuan, Chenggong Year 15)

I only interest that care

'I care about INTEREST only.'

Most of the authors including Wang (1958) attempt to relate this kind of 'Object-Preposing' to the formation of questions and negations. Note that this kind of structure-particular approach leaves a big question unresolved: What do those interrogative, negative and emphatic sentences have in common that eventually get their object NPs preposed? It is also a puzzle that all Wh-object NPs in questions, but only some object NPs in negative sentences get preposed. Taking a different line of approach, we here would propose that these superficially unrelated sentence patterns are all derived through one single syntactic process, the fronting of strongly focused constituents. As a first proximation, we propose (39).

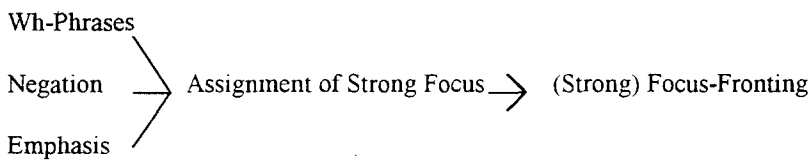
(39) Move those constituents with [+Fs] marking to pre-verbal positions in Archaic Chinese.

Under this proposal, the observed 'Object-Preposing' phenomena can all be accounted for neatly. Wh-phrases, as argued above, are all marked [+Fs] in the lexicon and they carry this mark into the syntax. Also, as proposed in Xu and Li (1993) on independent grounds, negative adverbs have dual functions: Negating and Focusing. In case the object NP in a negative sentence happen to be a focused constituent, its focalization will be intensified by a negative adverb and will become stronger. In addition to all of these, an object NP in a regular, non-interrogative and non-negative sentence still can be assigned the mark [+Fs] through Focus Assignment. In short, the above 'Object-Preposing' constructions all have their object NPs being marked [+Fs]

in different ways and at different level. (32) (35) and (38), for example, can be postulated as (32') (35') and (38') respectively at DS.

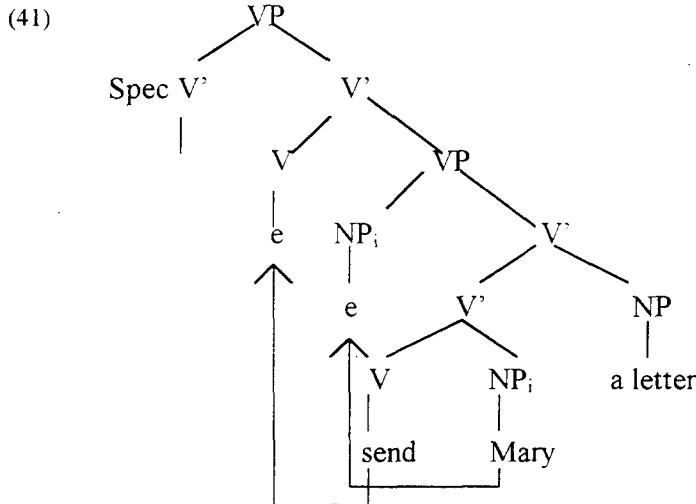
- (32') Wu qi shui^[+F_s]? qi tian hu? (Lun Yu. Zihan)
 I cheat who cheat God Q-Particle
 (35') Wo wu zha er^[+F_s]. er wu yu wo^[+F_s]. (Zuozhuan. Xuangong Year 15)
 I not cheat you you not cheat me
 (38') Yu wei shi shi. li^[+F_s] (Zuozhuan. Chenggong Year 15)
 I only that care interest

It is now not surprising at all that the object NP is preposed only in some negative sentences but remain in a post-verbal position in other negative sentences. Negative adverbs will intensify the focus, but what is being intensified does not have to be the object NP. It may, say, well be the subject NP. If the subject NP is strongly focused, the object NP of course will not be preposed. To generalize, we can say that the well noted 'Object-Preposing' phenomena are directly related neither to question nor to negation. Rather, it is related to focus. This point can best be illustrated as follows.



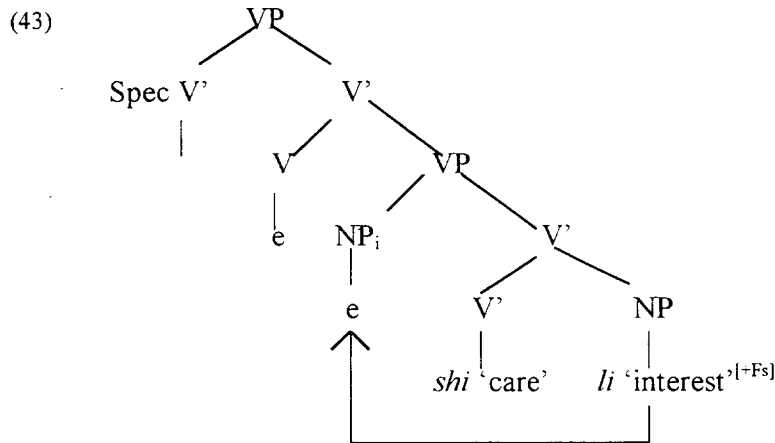
An obvious question for a movement account for the above phenomena is where the focused constituent moves to. That is to ask where the landing site is. To answer this question, we would like to appeal to a proposal made by Larson (1988) with regard to the VP complement in the double object construction. Details aside, one of Larson's important claims is that a VP may consist of an empty V position (i.e., VP shell) that takes another VP as a complement. Under this proposal, the VP structure underlying a double object construction like (40), for example, will be postulated as (41). And from their respective DS positions, the verb *send* as being driven by the Case assignment and tense/agreement requirements, raises up into the empty V position, and *Mary*, to receive Case assignment, moves to the 'subject' position of the complement VP in a fashion that Larson identifies with passivization.

(40) John sent Mary a letter. (Larson (1988:25))



Note that there is no principled reason for the VP structure that Larson postulates for the double object construction to be limited to that particular type of construction. Pushing a step further, we would rather assume that it is available generally to various types of transitive construction including the one under our consideration here. If so, we now can say that the VP structure underlying sentences like (38), repeated below as (42), is (43). And from its DS position, *li* 'benefit' moves into the higher NP position as an instance of substitution.

- (42) Yu wei li shi shi. (Zuozhuan. Chenggong Year 15)
 I only interest that care
 'I care about INTEREST only.'



The verb in Archaic Chinese, unlike its counterpart in the English double object construction, does not raise into the empty V position after the NP has been moved. Recall that the primary motivation for V-Raising in the English double object construction is the Case requirement of the moved NP. Suppose that such verbs as *send* can only assign one structural Accusative Case, which has been assigned to the NP in situ *a letter*. For *Mary* to be saved from the Case Filter, *send* has to raise up to assign Case to it, leaving behind a verbal trace to assign Case to the unmoved NP *a letter*. But if 'Focus-Fronting' is a type of A'-movement, we can say that moved NP in Archaic Chinese inherits the Case-Assignment from its trace. If so, then there will be no motivation triggering V-Raising in the language, the verb thus remains in situ, and the higher empty V position remains empty throughout the derivation.

Another problem there still demands an explanation. Note that an object NP can be assigned an Accusative Case in the post-verbal position, the problem is why the NP moves at all. Our answer is that there is an S-Structure condition as formulated in (44), which triggers such a movement.

(44) An NP with the strong focus mark [+Fs] must terminate in a Focus Position.

In the particular language of Archaic Chinese, the Focus Position is the pre-verbal (and after subject, if there is one) position. As will be illustrated later, this is just one of the options available in UG.

3.2. Focus-Fronting in Hungarian

Similar phenomena are also observed in Hungarian as reported in Horvath (1986) among others. In terms of the basic word order, Hungarian is also an S-V-O language. e.g.

(45) Attila felt a foldrengestol.

Attila feared the earthquake-from
'Attila was afraid of the earthquake.'

(46) Mari az asztalra tette az edenyeket.

Mary the table-onto put the dishes-Acc
'Mary put the dishes on the table.'

(47) Janos megcáfolta a professzor érveit.

John refuted-3sg the professor argument-3sg-Poss-Pl-Acc
'John refuted the professor's argument.'

(48) A fiuk mind legyoztek Marit.

the boys-Nom all-Nom defeated-3pl Mary-Acc
'The boys all defeated Mary.'

If an object NP is a Wh-phrase or a focused constituent, it won't remain in a postverbal position. Rather, it will move to a pre-verbal position obligatorily, otherwise the sentence will be ungrammatical.

(49) Attila A FOLDRENGESTOL_i felt t_i.

Attila the earthquake-from feared
'Attila was afraid of THE EARTHQUAKE /
It was the earthquake that Attila was afraid of.'

(50) Mari mit_i telt az asztalra t_i ?

Mary what-Acc put the table-onto
'What did Mary put on the table?'

(51) Mari kinek_i vett egy könyvet_t, ajandékba?
 Mary who-to bought-3sg a book-Acc present-into
 'Who did Mary buy a book as a present?'

(52)*Attila felt A FOLDRENGESTOL.
 Attila feared the earthquake-from

(53)*Mari telt az asztalra mit?
 Mary put the table-onto what-Acc

The movement exhibited in the above sentences is also triggered by the strong focus mark [+Fs] in Hungarian in the same sense as in Archaic Chinese to satisfy an SS condition such as (44). It is interesting to note that the formal syntax of Hungarian is not sensitive to whether a focused constituent is a wh-phrase or not. It will move it as long as it has the mark [+Fs] no matter whether it is a wh-phrase or not. Rather, it is sensitive only to whether the mark is strong '[+Fs]' or weak '[+Fw]'. The only difference is that mark [+Fs] is assigned to wh-phrases in the lexicon and to non-wh-phrases in syntax at the DS level. It is reasonable therefore to take (54) and (55) as the corresponding DS representations for (49) and (50). Another important point that should be made clear here is that the mark [+Fs] won't get deleted after triggering the movement of fronting. Rather, it has to remain there as the focused constituents have to be identifiable both in LF component to ensure the right interpretation and in the FP component to trigger appropriate assignment of primary stress and intonation peak.

(54) Attila felt a foldrengestol^[+Fs].
 Attila feared the earthquake-from

(55) Mari telt az asztalra mit^[+Fs]?
 Mary put the table-onto what-Acc

3.3. The English Cleft-Sentences

As demonstrated in the sections above, cross-linguistically there are two types of syntactic processing of [+Fs]-marked constituents. One is 'Insertion of Focus Marker' which inserts a Focus Marker (e.g., the copular verb *shi*) before the strongly focused constituent as attested in modern Chinese, and the other is 'Focus-Fronting' which moves the strongly focused constituent to a pre-verbal position as observed in Archaic Chinese and modern Hungarian. Now it makes a good sense to pose such a question as whether these two devices of processing can be jointly employed in a single construction from a single language. Theoretically, there is nothing in principle that disallows this possibility. In this section, we are to propose that the formation of the English cleft-sentences is an instantiation of this logical possibility. Consider the following examples.

(56) It is the new house_i that John will buy t_i for his mother tomorrow.

(57) It is tomorrow_i when John will buy the new house for his mother t_i.

(58) It is for his mother_i that John will buy the new house t_i tomorrow.

(59) It is John_i t_i who will buy the new house for his mother tomorrow.

Our proposal is that sentences (56-59) have a common DS representation in terms of the basic syntactic structure and they differ minimally in the assignment of focus, i.e.

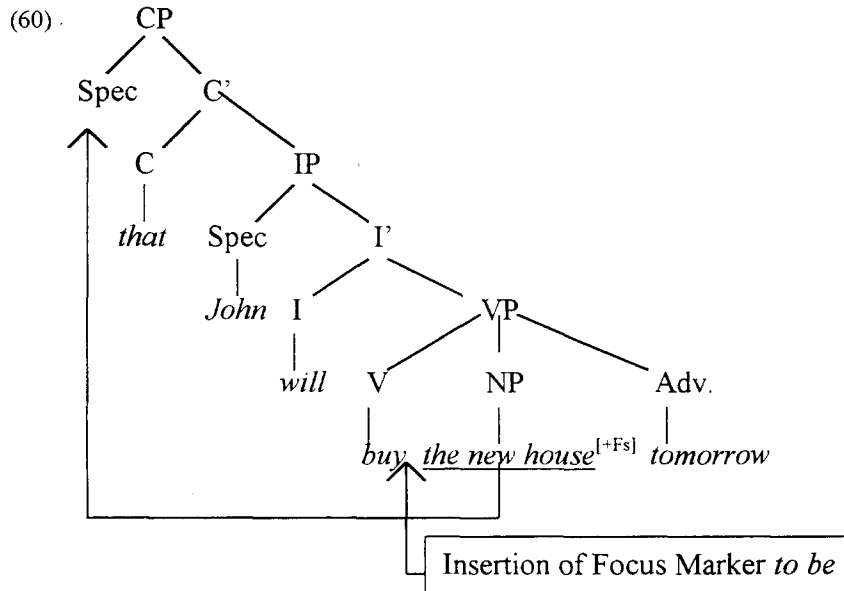
(56') John will buy the new house^[+Fs] for his mother tomorrow.

(57') John will buy the new house for his mother tomorrow^[+Fs].

(58') John will buy the new house for his mother^[+Fs] tomorrow.

(59') John^[+Fs] will buy the new house for his mother tomorrow.

To process the [+Fs] marking syntactically, English employs two devices: 'Focus-Fronting' and 'Insertion of Focus Marker', and the Focus Marker in English, interestingly, is also a copular verb *to be*. These two devices are both triggered by the same mark [+Fs] and both take place in the course of derivation of SS from DS. Since a complementizer such as *that* always co-occur with the moved focused constituents, it is reasonable to assume that the landing site of focused constituents is Spec/CP. Also, although evidence does not strongly choose between two options of application order of the two devices, we assume that 'Insertion of Focus Marker' takes place before 'Focus-Fronting'. In short, we postulate (60) as the derivational course for an English cleft-sentence such as (56).



This movement approach to the analysis of the English cleft-sentences may represent a non-trivial departure from the traditional analysis and some justifications are thus in order. For us, the following properties of this type of sentences, which could be mysterious for a non-movement account, all argue for the movement approach.

[1] These sentences all have a sentence-internal and co-referential gap, and this gap may be rewritten as a wh-resumptive pronoun *who*.

[2] The movement, very much like that in Hungarian noted above, can apply over an apparently unbounded domain. e.g.

- (61) It is the new house, that I think t_i (that) John will buy t_i for his mother tomorrow
 (62) It is for his mother, that I believe t_i (that) John will buy this new house t_i tomorrow

[3] The movement is also well under the constraint of the relevant locality conditions. For example, it cannot move a constituent out of a complex NP, as shown in the following sentences.

- (63)*It is the earthquake that Bill heard [_{NP} the news that Cathy had been afraid of t_i]
 (64)*It is the new house, that John knows [_{NP} his brother's promise that he will buy t_i for his mother].

[4] The focused NP inherits Case assignment from its post-verbal trace. The following variation in overt Case-marking is expected under a movement approach and it will be a puzzle otherwise.

- (65) It is he/*him who likes Mary.
 (66) It is him/*he whom Mary likes.

Note that the English Focus Marker *to be* is also a copular verb. As discussed above, a Focus Marker must be a certain part of speech so it must observe the relevant conditions that other members of its part of speech in general observe. *Shi* behaves just like a regular copular verb while functioning as a Focus Marker. This is also the case for the English *to be*. After being inserted into the sentence, *to be* behaves just like a verb. For instance, it may be reflected for tense as in (67) and exchange positions with the subject NP in questions (i.e., 'Subject-Auxiliary Inversion') as in (68).

- (67) It *was* your cat that I found in the park.
 (68) *Is* it Bill that Mary hates?

There seems to be a salient difference between English and Chinese in the insertion of Focus Marker. It is clear in Chinese that what is inserted as a focus marker is just *shi*, but in English what is inserted before focused constituents seems to be *it is*. We propose that the Focus Marker in English as well as in Chinese is the copular verb *shi/be*. The existence of expletive *it* has nothing to do with either focus or focus marking. Rather, the insertion of *it* is due to a completely different requirement of the English grammar which, presumably as an effect of the Null Subject Parameter setting, requires the subject position be fulfilled with a lexical NP. In other words, it has to be inserted there for the same reason which is responsible for the insertion of the same expletive pronoun in (69) (70) and (71).

(69) It is raining.

(70) It seems that John will buy the new house.

(71) It is assumed that John will buy the new house.

Given that the insertion of *it* is due to a motivation completely independent of Focus and Focus Marking, we should not be surprized if somebody says that there is a language which, unlike English, employs the two syntactic devices of Focus-Processing, but, unlike English, allows null subjects.

The cluster of properties that one normally relates to the formation of the English cleft-sentences now has been decomposed and made to follow from independently motivated principles. We take this feature of the approach as a simplification of the grammar. This is a welcome result in the spirit of modular theory of grammar. Superficially, the syntactic devices in processing strongly focused constituents appear to be very much different from one language to another. But we now see that those cross-linguistic diverse facts resulted from the choice between only two possible devices (a very limited number of options) in interaction with independently motivated principles.

Archaic Chinese and modern Hungarian on one hand and modern English on the other differ minimally in the landing sites of the focused constituents. Recall that focused constituents in Archaic Chinese and modern Hungarian move to a pre-verbal position, i.e., the Spec position of complement VP, while their counterparts in English move to the Spec position of a CP. Obviously, it will be an interesting question as why there is such a cross-linguistic difference. We leave this question open but simply point out that this difference may also be due to a reason independent of focus and explainable in a modular theory of grammar.

4. 'WH-MOVEMENT' AS FOCUS-FRONTING

Our proposal is that the movement of focused constituents is triggered by the strong focus mark [+Fs] both for Wh-phrases and non-Wh-phrases. Wh-phrases and non-Wh-phrases differ minimally in how and where the mark [+Fs] is assigned but neither in whether the mark is assigned nor in whether the [+Fs]-marked constituents will move. [+Fs] is assigned to Wh-phrases in the lexicon and be carried along the Wh-phrases into syntax, whereas it is assigned to non-Wh-phrases at DS through 'Focus-Assignment'. The formal syntax is sensitive only to whether a certain constituent is so marked, but not to where and how it is marked. If this approach is on the right track, we are in a position to say that the widely recognized, structure-particular rule ---- 'Wh-Movement' can be subsumed under the general 'Focus-Fronting', and there is no such thing as 'Wh-Movement' in the formal syntax.

The above unified account of wh-questions and cleft sentences works straightforwardly in Archaic Chinese and modern Hungarian as there is virtually no difference between Focus-Fronting of Wh-phrases and that of non-Wh-phrases. However, there appears to be an obvious problem when we take a second look at the English phenomenon. As demonstrated above, the formation of English cleft-sentences involves the joint application of two focus devices ---- the insertion of the Focus Marker *to be* and the fronting of the focused constituents. But the formation of Wh-questions seems to involve only the fronting of Wh-phrases but no insertion of Focus Marker. Also, the subject NP and the auxiliary verb are inverted in Wh-questions but not in cleft-sentences. In this section, we shall argue that the differences between Wh-questions and cleft-sentences in English can either be accounted for independently or made to follow from a minimal and reasonable assumption. Neither in Hungarian and Chinese nor in English is there a principled contrast between 'Focus-Fronting' and 'Wh-Movement'. The former is an instantiation of the latter. We will begin our discussion with a brief review the relationship between question formation and Wh-Movement since they have been widely assumed in the literature, explicitly or implicitly, to be inherently related.

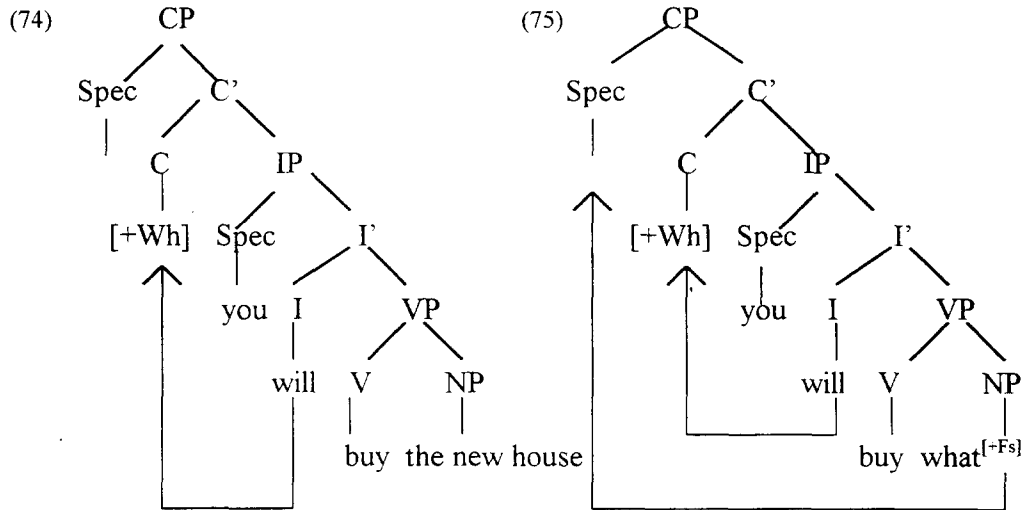
4.1. Decomposing 'Question-Formation'

There is a salient difference between questions and non-questions. The subject NP and the auxiliary verb have to be inverted in questions but not in non-questions. Additionally, some questions undergo Wh-Movement. These differences are often related to 'question-formation'. To make our discussion more concrete, it is necessary first to make it clear what 'question-formation' refers to. Consider the following two questions.

(72) Will you buy the new house?

(73) What will you buy?

The DS representations of these two questions can be postulated as (74) and (75) below respectively, whereby some kind of abstract question morpheme [+Wh] is included. Crucially, the abstract question morpheme as functional category is a property of the whole CP, rather than that of any lexical constituent in the CP. As a working hypothesis, people normally assume that this property of CP results from a percolating of the same property from its head, C. Also, the Wh-phrase *what* in sentence (73) should be marked [+Fs] in the lexicon and carries the mark into the phrase marker.



For a representation like (74) to surface, the auxiliary *will* has to move to the C position, while in (75), *what* also has to move into the Spec/CP position after the movement of auxiliary *will*. (75) involves two steps of movement while (74) involves only one. What they have in common are the presence of the abstract question morpheme [+Wh] at DS and the application of 'Subject-Auxiliary Inversion' and there is a systematic correlation between the two, so it must be the former that triggers the latter. It should be clear that 'the formation of questions' in English is simply the application of a syntactic process, 'Subject-Auxiliary Inversion'. The movement of the Wh-phrase *what* in (75) has nothing to do with question formation. Rather, it is triggered by a strong focus mark [+Fs] on completely independent ground assigned in the lexicon. As argued above, any constituent with mark [+Fs], no matter whether it is a Wh-phrase or not, has to move to the position Spec/CP in English. In other words, sentences like (73) result from the joint application of two syntactic processes --- the syntactic process of [+Fs] (i.e., 'Focus-Fronting' in English) and that of [+Wh] (i.e., 'Subject-Auxiliary Inversion' in English) --- and they are completely independent of each other, whereas sentences like (72) result only from the application of a single syntactic process, the process of [+Wh] as no constituent of it is marked [+Fs]. Let us look at another related example.

(76) *Is it the new house*, that you will buy t_i ?

(76) is like (73) in the sense that it is also derived from the joint application of 'Focus-Fronting' and 'Subject-Auxiliary Inversion'. But unlike (73), (76) is not a Wh-question. Interestingly, the auxiliary being inverted is the inserted Focus Marker *is* but not *will*, which suggests to us that Focus Marker insertion and Focus-Fronting both apply before Subject-Auxiliary Inversion in English, whereby the former feed the latter.

The cluster of properties that are normally related to 'question formation' have been successfully decomposed, with 'Wh-Movement' being recast as an instantiation of 'Focus-Fronting' which is completely independent of questions and 'Subject-Auxiliary Inversion' being analyzed as the only syntactic process of the abstract question morpheme [+Wh]. Subject-Auxiliary Inversion indiscriminately applied to all types of questions including yes-no questions and Wh-questions. For this decompositional approach, an interesting argument can be constructed on some language facts observed in the Early English grammar. As noted in Hyams (1986) and Weinberg (1991), the acquisition of the so-called 'Wh-Movement' in English occurs significantly earlier than that of Subject-Auxiliary Inversion. While the former may be observed in the speech of 28 month or younger children, the latter is rarely seen in the speech of children until they are around 38 month old. Following sentences have been collected from the speech of children around 28 month old (Hyams (1986)).

(77) What doing? (Cf: What are you doing?)

(78) What cowboy doing? (Cf: What is the cowboy doing?)

As expected, children of 28-38 month old often produce sentences like (79) and (80) below, whereby only 'Wh-Movement' has applied but no Subject-Auxiliary Inversion. (Data from Weinberg (1991)).

(79) What you are gonna wear? (Adult: What are you going to wear?)

(80) What the mouse is doing? (Adult: What is the mouse doing?)

For us, the difference in acquisition timing suggests that Subject-Auxiliary Inversion as the English process of [+Wh] and 'Wh-Movement' as the English process of [+Fs] are treated independently and thus acquired independently, confirming our proposal that they are of different conceptions. Given that 'Wh-Movement' is just an instantiation of Focus-Fronting, a prediction can be made here that Focus-Fronting in English cleft-sentences should also be acquired around 28 month old, and children of 28-38 month old may produce 'wrong' questions like (81) below.

(81) (It is) John you know? (Adult: Is it John that you know?)

4.2. Deriving the Superficial Contrasts between Wh-Focus and Non-Wh-Focus in English

There is a contrast between Wh-focus and non-Wh-focus in English. It is noted above that English represents a joint application of the two focus-processing devices ---- the insertion of Focus Marker *to be* and the movement of focused constituent. However, it has to be pointed out that this is the case only in cleft sentences with non-Wh-focus. In Wh-questions, there is only movement of focused constituent, but no insertion of Focus Marker. This contrast demands an explanation from our proposal under which 'Wh-Movement' and regular 'Focus-Fronting' are unified. To pose the question more concretely, why should sentences (84) and (85), which also have been inserted a Focus Marker, be ungrammatical while (82) and (83) are well acceptable sentences?

(82) Is it the new house_i that you will buy t_i ?

(83) Is it John_i who_i will buy the new house?

(84)*Is it what_i (that) you will buy t_i ?

(85)*It is what_i will you buy t_i ?

If we take cleft-sentences such as (82) and (83) as the canonical case of syntactic processing of [+Fs] in English, then the question is why Wh-questions don't allow the Focus Marker be inserted. To tackle this problem, here we would make a language-particular claim for English. We claim that Wh-phrases themselves represent a sort of overt Focus Marking (Let us call it 'F-wh'), which is comparable to *be* in English that also can be assumed to be [F-be] at an abstract level. Under this proposal, an enriched specification of sentences (86) and (87) at an abstract level will be (86') and (87') respectively, whereby they both have overt Focus Marking: [F-be] in (86) and [F-wh] in (87). The [F-be] mark is rewritten phonologically as *is*, whereas the [F-wh] mark is incorporated into the Wh-word *what* itself.

(86) It is the new house that I will buy.

(87) What will you buy?

(86') [F-be] the new house_i that I will buy t_i .

(87') [F-wh] what_i (that) you will buy t_i .

To generate a sentence like (84), repeated as (88) below, an abstract representation like (89) as a base form will be needed, whereby it has a double marking for the focused constituent: [F-wh] and [F-be].

(88)*Is it what_i (that) you will buy t_i ?

(89) [F-be] [F-wh] what_i (that) you will buy t_i .

We now can say that (84) and (85) are ungrammatical is because they have double overt marking on focused constituents, and the English grammar does not allow double overt focus marking presumably as a effect of redundancy avoidance requirement. Recall that in modern Chinese, the Focus Marker *shi* can be inserted before question words as well as non-question words indiscriminately, so the redundancy avoidance requirement may be language-particular.

4.3. A Language Typology

We now can generalize to say that there are two devices specified in UG to process the constituents with the mark [+Fs]: to insert a Focus Marker *be* before the focused constituent and to move the focused constituent to a more prominent position. Under the constraint of general principles and language-particular requirements, a particular language will make a choice between the two options or simply employs both of the two devices. Three types of language attested in terms of how the [+Fs] is syntactically processed. Figure 1 below may be considered as a language typology.

Figure 1

| | |
|--|-------------------------------------|
| Insertion of Focus Marker <i>be</i> before the Focused Constituent | Fronting of the Focused Constituent |
| Modern Chinese | Archaic Chinese Modern Hungarian |
| Modern English | |

The syntactic processing of [+Fs] is well under the constraint of the general grammatical principles and conditions. The Chinese Focus Marker *shi*, for instance, is also a verb while functioning as Focus Marker, the grammar must ensure that it will observe the conditions that are applicable to verbs in general. A syntactic restriction on the distribution of verbs does not allow *shi* to be inserted in between a verb and its object even when the object is strongly focused. The English Focus Marker *be* is also a verb. When being finite, it will be subject to the subject requirement so an extra expletive pronoun *it* has to be inserted along.

5. CONCLUSION

Starting with some minimal assumptions about 'Focus', we in this paper argue that the initially semantic conception of 'Focus' can be taken a purely formal syntactic property, and that this formal property is assigned and/or checked to certain sentential constituents at the DS level of syntactic representation. 'Focus' should be divided into two relative categories: Strong Focus [+Fs] and Weak Focus [+Fw]. While the [+Fw] marking generally triggers some phonological process such as the assignment of primary stress in one way or another, the [+Fs] marking normally triggers different syntactic processes in different languages. A language typology has been established about the syntactic processing of [+Fs] by which there are two devices of [+Fs] processing: the insertion of Focus Marker *be* before focused constituents and the fronting of focused constituents, and English represents the third type of languages which employ both devices. Other superficially complex cross-linguistic differences have been made to follow from the choice between these two limited options in interaction with independently needed principles.

On the assumption that Wh-phrases are all marked [+Fs] in the lexicon and they automatically carry this mark into the phrase marker, we also have argued that there virtually is no such thing as 'Wh-Movement' in the formal syntax of English. What is called 'Wh-Movement' is shown to be in fact an instantiation of a more generally applicable rule 'Focus-Fronting' in English Wh-questions. The so-called 'Question Formation' is thus decomposed into two independent processes: 'Subject-Auxiliary Inversion' and 'Focus Fronting', only the former is a syntactic process of the abstract question morpheme [+Wh] and the latter is completely independent of questions.

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