# ２０２１年度

## 大学院文学研究科博士課程前期２年の課程入学試験

## （　秋期・一般選抜　）問題

専門科目Ⅰ　　英　語　学　　専攻分野

試験開始の合図があるまで、この問題冊子を開いてはいけない。

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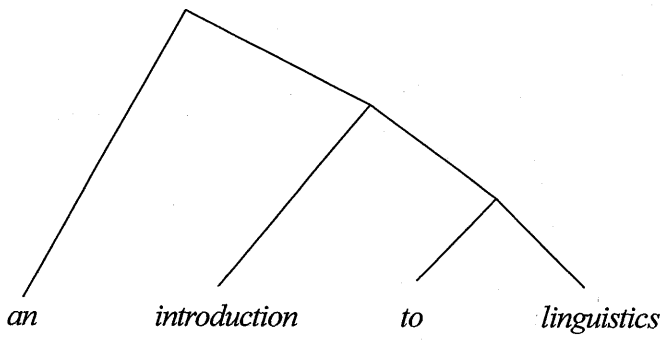
**（秋期・一般選抜）** 問題

専門科目Ⅰ（　英　語　学　専攻分野）

［Ⅰ］次の英文を読んで設問に答えなさい。

In addition to a mental lexicon, a language acquired by a speaker must have a means of combining items from the lexicon to form linguistic expressions that have a pronunciation (which we can characterize broadly as some form of externalization: speech, writing, or signing in the case of sign languages) and an interpretation. **(A)**The interpretation of a linguistic expression is determined in part by the interpretations of the individual lexical items it contains, but also by the way the expression is structured. We can think of the structures assigned to the lexical items in a linguistic expression as the output of a computational procedure that combines lexical items into structured expressions. For example, the structure of the expression *an introduction to linguistics* given as a tree diagram in (1) could be derived from a simple computational procedure that combines pairs of syntactic units, starting with the pair of lexical items *to* and *linguistics* and yielding a new syntactic unit {*to*, *linguistics*}, represented with braces (curly brackets) and a comma to indicate that the two lexical elements contained in them are unordered.

(1)




This procedure then reapplies to the new unit produced plus *introduction*, creating the new unit {*introduction*, {*to*, *linguistics*}} that is further combined with the article *an*, yielding {*an*, {*introduction*, {*to*, *linguistics*}}}, which is an equivalent representation for the hierarchical structure of the example expressed in (1).

In linguistics, the computational procedure that combines two syntactic units to form a new syntactic unit is called MERGE. The operation Merge creates a syntactic relation between the formerly separate syntactic units as SISTER constituents in the new syntactic unit constructed. For example, in the syntactic unit {*to*, *linguistics*} the preposition *to* is a sister of the noun *linguistics*, and that noun is also a sister of the preposition. Thus the sister relation is symmetric. In the syntactic unit {*introduction*, {*to*, *linguistics*}}, the constituent units *introduction* and {*to*, *linguistics*} are sisters. In this way, hierarchical structure can be expressed in terms of sister relations among syntactic units.

**(B)**In its simplest formulation, all Merge does is determine the hierarchical structure of syntactic units within a linguistic expression, but not their linear order. Think of the output of Merge as a three-dimensional object without a fixed linear order (much like a kinetic sculpture called a mobile), where a pair of syntactic units merged together can rotate 360°. When a mobile is flattened into two dimensions, the objects that it contains assume a fixed linear order; likewise for hierarchical structures created by Merge. For example, the syntactic unit {*to*, *linguistics*}, which technically has no linear order (even though to express it in writing we have to impose a linear order on the two lexical constituents), can potentially be linearized as [*to linguistics*] or [*linguistics to*]. Under the interpretation that the noun is the object of the preposition, the first linearization is legitimate in English while the second is not. However, in Japanese the reverse is true, demonstrating how the same hierarchical structure can have different linear orders in different languages.

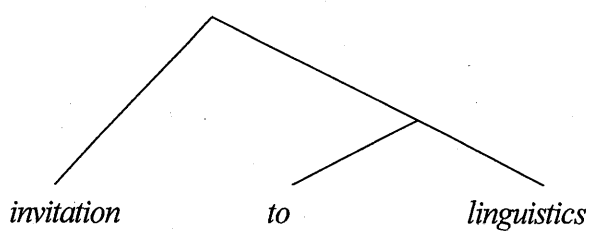
Consider a slightly more complicated pair of English/Japanese examples in (2), which could be titles of an introductory book on linguistics.

(2) a. *invitation to linguistics*

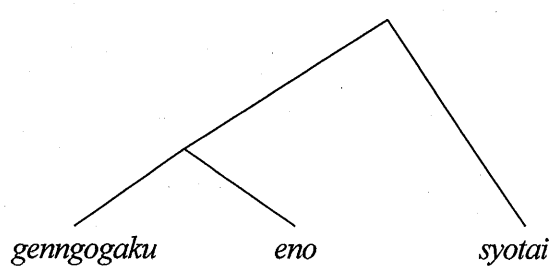
b. *genngogaku eno syotai*

In Japanese *genngogaku* is how you pronounce 'linguistics'. *Eno* corresponds to the English preposition *to*, and *syotai* corresponds to the English noun *invitation*, the Japanese word that would be used to paraphrase *introduction* in *introduction to linguistics* because the Japanese word *nyumon* 'introduction' would not be used in the title of an introductory linguistics course. While the order of words in Japanese seems radically different from the word order of English, the hierarchical structure of the two expressions is nonetheless identical, as illustrated in (3).

(3) a.




b.



**(C)**Given this hierarchical structure, there are actually 2 additional ways for (3. a) to linearize, which are of course impossible — illustrated for English in (4).

(4) a. **invitation linguistics to*

b. **to linguistics invitation*

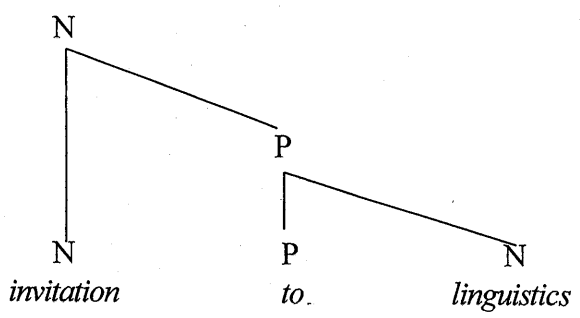
Likewise, (3. b) shows the only legitimate way to linearize this expression in Japanese.

Why (3. a) linearizes as it does in English depends in part on the hierarchical structure of the expression, where the first principle of linearization would be that sister syntactic units must be adjacent — that is, one sister must immediately precede the other. The relation 'precede' that determines linear order is, unlike the sister relation that determines hierarchical structure, asymmetric: if a sister syntactic unit A precedes its sister B, then B cannot also precede A. Linearization also depends on the syntactic relation between sisters in a syntactic unit.

Consider again {*to*, *linguistics*} where a preposition P is merged with a noun N, P and N being syntactic category labels of these lexical items. Following traditional grammar, we say that N is the object of P where P + N forms a PREPOSITIONAL PHRASE — that is, a syntactic unit labeled P that contains a preposition. This generalizes the labeling analysis of morphological structure. When P merges with N, the label of P is 'projected' as the label of the new syntactic unit created. The label of this new syntactic unit identifies the HEAD of the phrase created. In both the English and Japanese examples, P is the head of the phrase containing the P and N, but the linear order differs. In English, the head P precedes its object N, whereas in Japanese, the head P follows its object.

In the larger structure where the noun *invitation* merges with a prepositional phrase, it is the noun that projects its label to the syntactic unit constructed — which identifies the noun as the head of the larger phrase, a NOUN PHRASE. The prepositional phrase *to linguistics* modifies the noun *invitation* that functions as the head of the noun phrase *invitation to linguistics*. The full syntactic structure of (2. a) would be (5), where for clarity the vertical branches of the tree diagram identify the projections of a head.

(5)




(5) illustrates that in English syntactic units are generally linearized as head-initial (with of course qualifications when we consider the full range of syntactic structures in English), in contrast to Japanese, where linearization is head-final. Thus there appears to be a linearization parameter across languages where a head of certain syntactic units occurs either in initial position or final position.

Where this headedness parameter generalizes across syntactic categories (as it does for P and N in both English and Japanese), this explains why there is only one way to linearize the hierarchical structures in (3). The two impossible linearizations for English in (4) both involve one head-initial and one head-final order for N and P. And while the Japanese word order in (3. b) maintains the same headedness for N and P, it's the opposite order that occurs in English. The setting of the headedness parameter for N and P in English limits linearization to one possible outcome.

**(D)**What this simple comparison of English and Japanese shows is that interpretation depends on the semantic content of lexical items and their hierarchical structure in an expression, not on their linear order or pronunciation, which are the two properties required for the externalization of language.

The externalization of language requires that language interfaces with the motor cortex of the brain, which controls the production of speech, writing, and signing. In order for externalized language to be understood, it must first be perceived through the ears, the eyes, or in the case of braille, through the fingertips — and therefore it interfaces with the sensory cortex of the brain. Internal language in the mind of the speaker interfaces with the cognitive components of the brain related to thought and understanding. Given that there are no formal (that is, explicit) models for what a thought is — in contrast to the formal models for language that have been developed over the past sixty years, the relation between language and thought remains pretty much a mystery. **(E)**Unquestionably, language interfaces with cognition — which, apparently, is primarily concerned with the covert properties of linguistic expressions (hierarchical structure and the semantic content of lexical items it contains), but not with the properties specific to externalized language: linearization and the phonetic labeling of lexical items (both overt).

Our simple comparison of English and Japanese shows how languages involve three computational procedures: one for creating hierarchical structures with lexical items (Merge), one for the labeling of hierarchical structures (LABEL), and one for linearizing hierarchical structures for externalization of linguistic expressions (LINEARIZE). These three basic operations constitute the computational system for any human language, a system of operations that interacts with a lexicon to produce the linguistic expressions in a language. From this perspective, a language can be defined simply as a mental lexicon plus a computational system, also in the mind of a speaker. The lexicon incorporates the idiosyncratic properties of a language that distinguish one language from another (including dialects or idiolects of the 'same language'), the phonetic labels of lexical items and word order being the most obvious. In contrast, the basic operations of the computational system are part of all human languages.

Just as the mental lexicon constitutes the knowledge of individual speakers, a language (which includes the computational system) also constitutes a form of knowledge. What a speaker knows when she or he knows a language is a lexicon connected to a computational system that together account for the linguistic expressions in the language (in linguistics called a GRAMMAR). **(F)**A speaker of a language 'knows' the linguistic expressions of the language indirectly through an internal grammar. One reason for this is that the set of linguistic expressions (for example, sentences) in a language is unbounded. Imagine the longest sentence of English that exists in print (or was ever spoken); it is child's play to make this sentence longer, ad infinitum. In contrast, the lexicon and the computational system are both finite, containing a finite number of lexical items and a finite number of basic operations, respectively.

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The unbounded character of languages derives from Merge, an operation that can reapply to its own output indefinitely — a *recursive* operation. Given the recursive property of Merge, the use of any language will produce novel utterances — that is, utterances that are new to the experience of the speaker. Moreover, the production of utterances in a language is a matter of choice by the speaker, not any kind of automatic response to some external stimulus, linguistic or otherwise — in other words, a product of 'free will' as far as we can determine. **(G)**This contrasts with the interpretation of linguistic utterances, which involves the internalization of linguistic expressions and is virtually a reflex in the mind of the speaker because there is no choice of whether or not to interpret linguistic expressions that we see or hear; the mind automatically assigns an interpretation.

Normal language use is also generally coherent and appropriate to the situation. These properties, appropriateness to the situation and coherence, like freedom from stimulus control (which is part of free will), cannot be explained in terms of the computational system for human language and are fundamentally difficult to characterize precisely. They, along with the unboundedness of language and the production of novel utterances, constitute what Chomsky calls *the creative aspect of language use*, referring to normal language use among all speakers. Part of the problem is that coherence and appropriateness involve a speaker's (or pair of speakers') knowledge and beliefs, emotional states, and ways of reasoning that inevitably vary from speaker to speaker. Thus a general formulation for these properties will be excessively difficult if not impossible.

Therefore **(H)**it makes sense to distinguish between knowledge of a language and language use, under the assumption that with a language, knowledge of its lexicon and the computational system underlies linguistic behavior. Exactly how knowledge is translated into behavior remains a difficult question — in any domain, not just for language.

[adapted from Robert Freidin, *Adventures in English Syntax*, Cambridge University Press]

問１　下線部 **(A)** を日本語に訳しなさい。

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問２　下線部 **(B)** について、具体的内容を本文に即して説明しなさい。

問３　下線部 **(C)** について、(4)が許されない理由を本文に即して説明しなさい。

問４　下線部 **(D)** について、著者がこのように述べる理由を本文に即して説明しなさい。

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問５　下線部 **(E)** を日本語に訳しなさい。

問６　下線部 **(F)** について、著者がこのように述べる理由を本文に即して説明しなさい。

問７　下線部 **(G)** について、This が指示するものを明らかにした上で、具体的内容を本文に即して説明しなさい。

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問８　下線部 **(H)** について、著者がこのように述べる理由を本文に即して説明しなさい。

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［II］以下の日本語の文を英語に訳しなさい。

また、数学は機械的なものでもない。もしそうなら計算機にも数学の定理が発見できるはずである。しかしそのようなことは決してできない。黙々と計算だけを間断なく続けていたのでは決して気付くことができない「パターン」や、一見何の関係もありそうにも見えない現象の間に隠されている深くて美しい「対応関係」は、そのような計算や現象そのものからいったん距離をおいて冷静にかつ客観的に判断できる主体でなければ見出(みいだ)せない。そしてこのようなことができる主体は、少なくとも今のところ人間しかいない。

【加藤文元著『数学する精神　増補版』（中公新書）より】