

平成30年度実施  
東北大学大学院情報科学研究科  
博士課程前期入学試験問題  
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専門試験科目 第5群  
(外国人留学生)

言語・メディア群

注意

- 以下には、専門科目2問題が印刷されている。
- 受験者は、この2問題に解答すること。
- 試験終了後、答案用紙に加えて、この問題冊子も回収する。

## 問題 1

次の文章を読んで、以下の問いに答えなさい。

People may say *Kim is taller* or *Kim's taller*, with *is* reduced. One can think of this as an operation  $is \rightarrow 's$ . Children hear both the full and reduced forms and can learn the operation on exposure to external data. However, the poverty-of-stimulus problem is that the operation sometimes may not apply: in (1) the underlined *is* never reduces.

(1) Kim's taller than Jim is.

The stimulus that children have does not convey this kind of information, usually referred to as negative evidence. Children hear things but they are not instructed in what does not occur, and therefore they do not learn the limitation. Helicopter parents may try to correct the occasional *goed* or *taked*, but they do not tell children that a reduced *is* does not occur in (1). That is partly because they do not know and partly because children do not misuse the reduced forms, so there is no need for correction – a lot of ingenious experimental work has shown how rich children's language capacities are.

This is no longer mysterious. Children are exposed to simple speech, what linguists call 'primary linguistic data'. That is part of external language (E-language), language out there, and acts as a triggering experience. The initial genetic inheritance (UG) blossoms into a specific internalized grammar (I-language), depending on whether the children are raised in Tromsø or Tokyo. Linguists try to tease apart internal and external factors, contributions of genetic inheritance and contributions of environmental factors. In this article, we argue that both internal, genetic factors, and external, environmental, elements shape a child's internal language system, and that <sup>(A)</sup>some of what children come to know is intrinsic, not learned.

This is not an uncontroversial issue in linguistics. Within the constructivist framework (see, for example, Tomasello 2003), it is argued that children generally learn language from input only, and that their early production is not rule governed and simply consists of strings of elements that they have encountered frequently in the input. When children produce non-target-consistent strings, this is argued to be due to a low frequency of the target forms in the primary linguistic data. However, it has been shown in various studies that also <sup>(B)</sup>children's non-target behavior is rule governed and always accords with universal principles; see, for example, Crain and Thornton (1998) on English-speaking children's production of multiple *wh*-elements or Westergaard and Bentzen (2007) on Norwegian children's non-target word order in embedded clauses.

Let us move on to another poverty-of-stimulus problem. English embedded clauses may start with a sentence introducer (a complementizer), a word like *that*, as illustrated in (2). Those words may be omitted and there may be an operation  $that \rightarrow \phi$ . Again, this is learnable: children hear the full forms (2) and the reduced forms without *that*. French and Dutch children hear no equivalent reduced forms and learn no comparable operation.

- (2) a. Peter said (that) Kay left.  
b. The book (that) Kay wrote arrived.  
c. It was obvious (that) Kay left.

Here is the poverty-of-stimulus problem: the operation deleting *that* does not apply to (3) and English speakers would not say the equivalent forms without *that*.

- (3) a. Ray said yesterday in Chicago [ $*(that)$  Kay had left].  
b. The book arrived yesterday [ $*(that)$  Kay wrote].  
c. Fay believes, but Kay doesn't, [ $*(that)$  Ray is smart].  
d. [ $*(that)$  Kay left] was obvious to all of us.

Again, children have no direct evidence for this limitation in the input. They sometimes hear forms with *that*, sometimes without *that*, but they are not explicitly told that the forms of (3) without *that* do not exist. Somehow they deduce that limitation, using both learned and intrinsic knowledge of language. Deletion is subject to various constraints, and the phenomena illustrated in (2) and (3) can be said to be due to a simple principle, which may be formulated as (4).

(4) Something can be deleted if it is (in) the complement of an adjacent, overt word.

In the simple forms of (2), the clause introduced by *that* completes the meaning of *said*, *book*, and *was obvious*, i.e., it is the complement. *That* is also adjacent to those words and may therefore be deleted. However, the bracketed clauses of (3) do not complete the meaning of the adjacent *Chicago*, *yesterday* or *doesn't*. And, in (3d), there is nothing preceding it. Therefore, in these cases *that* may not be deleted. That simple principle of our language capacity solves (c) this poverty-of-stimulus problem and accounts for a lot of other things, as we will see below.

Now consider another learned operation, whereby the second of two identical verbs may be deleted: *Gap V*. There may be an understood, empty verb in the second clause. So alongside (5a), we find (5b), perfectly normal, comprehensible speech, which has a representation with an empty verb (5c).

- (5) a. Jay introduced Kay to Ray and Jim introduced Kim to Tim.  
 b. Jay introduced Kay to Ray and Jim Kim to Tim.  
 c. Jay introduced Kay to Ray and Jim [e]<sub>v</sub> Kim to Tim

Example (6a) is another example of gapping. But we do not gap a verb and delete the sentence introducer *that* (6b), which would have the representation (6c). Again our principle has the explanation: *that* may not delete at the front of its clause (hence boldface), if it is not (in) the complement of an adjacent, overt verb. Here the verb is not overt.

- (6) a. Fay said Ray left and Tim that Jim stayed.  
 b. \*Fay said Ray left and Tim Jim stayed.  
 c. Fay said Ray left and Tim [e]<sub>v</sub> [**that** Jim stayed]

English speakers form questions by displacing the interrogative word to the front of its clause, deleting the original element in the position where it is understood; there is an operation *Copy wh-*. The simple expression *Who did Jay see?* has a representation in which *who* is copied to the front of the clause and the original *who* is deleted: *Who did Jay see ~~who~~?* It is the complement of *see* and the deletion conforms to our principle. (d) However, we do not find sentences like (7a), which would have the structure (7b), where the boldface *who* may not delete, because there is no adjacent overt verb.

- (7) a. \*Who did Jay introduce to Ray and who (did) Jim to Tim?  
 b. Who did Jay introduce who to Ray and who (did) Jim [e]<sub>v</sub> **who** to Tim

We now return to our first example and see that the same deletion principle accounts for the distinctions noted. A reduced *is* is absorbed into the preceding word and becomes an integral part of it (a clitic). It is pronounced differently, depending on the last segment of the word it attaches to, as a voiceless 's' in *Pat's*, as a voiced 'z' in *Doug's* and as an extra syllable in *Alice's* (8).

(8) Pat's happy, Doug's happy, and Alice's here.

Now we can see why we do not reduce *is* in certain contexts. Example (9a) has a representation (9b), where *tall* is deleted, adjacent to the verb *is*, of which it is the complement. However, (9c) does not exist, because *tall* has no adjacent verb. The representation would be (9d), where the reduced *is* has been absorbed into *Tim* and therefore is no longer a separate word that may license the deletion of *tall*.

- (9) a. Kim is taller than Tim is.  
 b. Kim is taller [than Tim is tall]  
 c. \*Kim is taller than Tim's.  
 d. Kim is taller [than Tim's **tall**]

Similarly one finds (10a), which has the representation (10b), where *what* deletes, licensed by the adjacent verb whose meaning it completes. On the other hand, we do not have (10c), which would have the representation (10d), where the reduced *is* has been absorbed into *that* and cannot license the deletion of *what*.

- (10) a. I wonder what that is up there.  
b. I wonder [what that is what up there]  
c. \*I wonder what that's up there.  
d. I wonder [what that's **what** up there]

Things are getting complex, but nothing complex is learned by children in this regard. One's language is a complex system but the complexity can be understood in terms of an interaction between some simple principles at the genetic level and simple generalizations that are triggered in children on exposure to the speech around them.

In short, we have sketched four operations, each learnable by children on exposure to the relevant sentence type:

that  $\rightarrow \phi$  : *Peter said Kay left*  
copy *wh-* : *Who did Jay see?*  
gap  $\nabla$  : *Jay saw Ray and Jim Kim*  
is  $\rightarrow$ 's : *Kim's happy*

And we have one simple principle of the human language capacity, governing how elements are deleted. That principle (4) is the source of many distinctions. The interaction between intrinsic and learned elements captures the immense complexity of a person's language capacity, revealing distinctions that most people are not aware of.

出典 Lightfoot and Westergaard (2007) "Language Acquisition and Language Change: Inter-relationships"より一部改変)

問1 下線部(A)について、本文中で具体的に提案されているのはどのような原理であるか。日本語で述べなさい。

問2 下線部(B)はどのようなことか。その内容を日本語で説明しなさい。

問3 下線部(C)はどのような問題のことであると述べられているか。例文(3)に関係づけて、日本語で説明しなさい。

問4 下線部(D)について、本文中ではこの事実はどのように説明されているか、日本語で説明しなさい。

## 問題 2

次の英文は、Fukushima, K. (2005) “Lexical V-V compounds in Japanese: Lexicon vs. syntax” という論文からとったものである。これを読み、以下の問いに答えなさい。

Some lexical  $V_1$ - $V_2$  compounds in Japanese are illustrated below. (General types of V-V compounds are indicated in parentheses.) Two intransitive verbs, *nak* ‘cry’ and *sakeb* ‘scream’, are compounded in 1a and the resulting form signifies that the subject *Taroo-ga* is both ‘crier’ and ‘screamer’. In this case, both  $V_1$  and  $V_2$  contribute to the semantics of the whole compound equally. A different semantic relationship is observed in 1b, where again two intransitive verbs, *odor* ‘dance’ and *tukare* ‘get exhausted’, are combined. This time the  $V_1$  acts as an element supplying the ‘cause’ for the state indicated by the  $V_2$ . Example 1c is an instance where intransitive verbs, *tob* ‘jump’ and *oki* ‘get up’, are compounded and the  $V_1$  indicates the ‘manner’ according to which the action indicated by the  $V_2$  is carried out. Lexical V-V compounds are also possible with verbs that are transitive (or ditransitive for that matter). For example, *tatak* ‘hit’ and *war* ‘break’ are put together in 1d where the subject *Masako-ga* is both ‘hitter’ and ‘destroyer’ and the object *sara-o* ‘plate’ is ‘hit’ and ‘destroyed’. The  $V_1$  represents a manner here as well. This last example can also be of the cause compound type, if hitting by Masako is construed as the cause for the plate’s destruction.

- (1) a. *Taroo-ga naki-saken-da.* (dvandva (coordinate) compound)  
       ‘Taroo cried and screamed.’  
       b. *Hanako-ga odori-tukare-ta.* (cause compound)  
       ‘Hanako got tired from dancing.’  
       c. *Ziroo-ga tobi-oki-ta.* (manner compound)  
       ‘Ziroo got up in a jumping motion.’  
       d. *Masako-ga sara-o tataki-wat-ta.* (manner/cause compound)  
       ‘Masako broke the plate by hitting it.’

In these examples, synthesis of the argument structures for the compound verbs is quite straightforward: simply merge two argument structures (ARG-STs) of  $V_1$  and  $V_2$  (i.e. ARG-ST <NP $ga$ > or ARG-ST <NP $ga$ , NP $o$ >) and retain the case-marking requirements for the arguments of respective verbs as is. (7) If argument-taking properties of all lexical V-V compounds were to be explained as straightforwardly as the examples in 1 are, matters would be simple and there would not be disagreements and controversies about the nature of lexical V-V compounds in Japanese.

HEAD/NON-HEAD-DRIVEN ARGUMENT SYNTHESIS. It is often said that it is the rightmost morpheme that decides the central properties of a complex word, namely, the ‘righthand head rule’ (Williams 1980, Kageyama 1993). Given the head-finality of Japanese, the transparent cases of argument synthesis seen in 1 above are considered to be the results of taking the argument structures of the head  $V_2$ s and ‘superimposing’ those of  $V_1$ s on them. Arguments from the nonhead members are reflected in the argument structure for the whole compound INDIRECTLY through some mechanism establishing ‘coreference’ between the arguments.

From this point of view, a direct and independent contribution of the nonhead member to argument synthesis is not expected to happen. As 2 shows, however, a nonhead member indeed makes a direct contribution to the argument structures of lexical V-V compounds. The object *kodomo-o* ‘child’ is the argument of *ture* ‘take’ ( $V_1$ ) but not of *sar* ‘leave’ ( $V_2$ ) in 2a. The accusative-marked object *sake-o* ‘sake’ in 2b is also the argument of *nom* ‘drink’ which is not the (right) head. It is noted that, in 2b’, b”, the two accusative-marked ‘objects’ *sake-o* ‘sake’ and *mati-o* ‘town’ cannot be simultaneously

inherited from *nom* ‘drink’ and *aruk* ‘walk’ respectively, due to the ‘double-*o* constraint’ (Harada 1973): But, if the accusative case-marker of *mati-o* ‘town’ is changed to *-de* ‘in’ as in 2b, then the two arguments from the two verbs can be retained.

- (2) a. Taroo-ga kodomo-o ture-sat-ta.  
 ‘Taroo left taking the child with him.’  
 b. Taroo-ga mati-de sake-o nomi-arui-ta.  
 ‘Taroo wandered around the town drinking sake.’  
 b’. \*Taroo-ga mati-o sake-o nomi-arui-ta.  
 b’’. \*Taroo-ga sake-o mati-o nomi-arui-ta.

For an account based on the righthand head rule, a way out of such a situation might be possible by appealing to Lieber’s (1980) idea about ‘feature percolation’ from a nonhead member. According to Lieber, information (expressed via features) from a nonhead member is transmitted to a higher level only if the information is absent from the head member. For such an idea to work then, there has to be a clear criterion determining which arguments (represented as a feature) of a nonhead member counts as a distinct (hence ‘absent’) argument vis-à-vis the arguments of the head. Since such percolation from a nonhead member is not allowable in all cases, we also need additional case-by-case constraints to rule out impossible cases.

FLEXIBLE ARGUMENT SYNTHESIS. Yet in some other cases, argument synthesis in lexical V-V compounding displays flexibility in terms of argument inheritance. The compound verb *katari-akas* ‘talk-spend the night’ appears with the accusative object *omoide-o* ‘the memories’ in 3a and with a distinct accusative object *itiya-o* ‘one night’ in 3b. *Omoide-o* is the original argument of *katari* ‘talk’ (V<sub>1</sub>) and *itiya-o* is that of *akas* ‘spend the night’ (V<sub>2</sub>). The former suggests that argument synthesis for lexical V-V compounds can ‘override’ an argument of a head verb in competition with a given argument of the nonhead verb. This situation is somewhat similar to 2b above where two direct objects get inherited separately, but distinct from it in such a way that a prevailing argument (in terms of the case-marking properties) can be from either V<sub>1</sub> or V<sub>2</sub>.

- (3) a. Karera-ga sono yoru-ni omoide-o katari-akasi-ta.  
 ‘They talked about the memories that night.’  
 b. Karera-ga omoidebanasi-de itiya-o katari-akasi-ta.  
 ‘They spend one night telling reminiscent stories.’  
 c. \*Karera-ga omoide-o itiya-o katari-akasi-ta.

Example 3c tells us that 3a, b also fall under the coverage of the double-*o* constraint like 2b does—independently inheriting different arguments simultaneously from head and nonhead verbs is permissible but ONLY one of them can retain the accusative case-marker *-o*.

MIRROR IMAGE ARGUMENT SYNTHESIS. Let us witness an instance of dynamism in argument synthesis in lexical V-V compound formation. In some limited but systematic cases, argument synthesis can ‘match up’ two argument structures from different verbs in the reverse order of each other (hence ‘mirror image’). Given two verbs *A* and *B* with the following argument structures: *verb A* with ARG-ST <NP<sub>1</sub>, NP<sub>2</sub>, NP<sub>3</sub>> and *verb B* with ARG-ST <NP<sub>a</sub>, NP<sub>b</sub>, NP<sub>c</sub>>, mirror image argument synthesis identifies (i) NP<sub>1</sub> with NP<sub>c</sub>, (ii) NP<sub>2</sub> with NP<sub>b</sub>, and (iii) NP<sub>3</sub> with NP<sub>a</sub>.

Actual examples are given in 4. The verb *yuzur* ‘yield’ (V<sub>1</sub>) in 4a takes three arguments, namely, NP<sub>ga</sub>, NP<sub>o</sub>, and NP<sub>ni</sub> corresponding to the ‘yielder’, ‘yielded’, and ‘yieldee’ roles, respectively. *Uke* ‘receive’ (V<sub>2</sub>), by contrast, needs three arguments, namely, NP<sub>ga</sub>, NP<sub>o</sub>, and NP<sub>kara</sub> corresponding to the ‘receiver’, ‘received’, and ‘sender’ roles. What is interesting is that the ‘yielder’ and ‘sender’ roles, the ‘yielded’ and ‘received’ roles, and the ‘yieldee’ and ‘receiver’ roles of the two verbs are identified in mirror image. In addition, the resulting argument structure for the whole compound reflects the case/postposition properties (*ga*, *o*, and *kara*) of the head V<sub>2</sub>. Exactly the same pattern of argument synthesis is observed in 4b as well.

- (4) a. Taroo-ga hon-o Hanako-kara yuzuri-uke-ta.  
 'Taroo received a book from Hanako who yielded it to him.'  
 b. Hanako-ga tyuumon-o kyaku-kara moosi-uke-ta.  
 'Hanako received the order from the guest who directed it to her.'

Though the actual examples are indeed limited, this mirror image pattern (in terms of token examples) per se is more widespread than one might imagine. A short internet search located examples like 5a used in online documents of various sorts, ranging from the customer service agreement of Kagoshima Xerox to the official transcripts of a session of the Social-Labor Committee of the Diet in Japan. Nor is the pattern limited to combinations involving *uke* 'receive' as V<sub>2</sub>. In 5b, note that the verb *kik* 'hear' is used to form *tutae-kik* 'transmit-hear' where the transmitter and the receiver of information have to be distinct persons.

- (5) a. Kaisya-ga daikin-o kokyaku-kara harai-uke-ta.  
 'The company received the fees from the customer who paid them to it.'  
 b. Masako-ga uwasa-o Ziroo-kara tutae-kii-ta.  
 'Masako heard the rumor from Ziroo who transmitted it to her.'

LEXICAL ACCOUNTS. Kageyama (1993) suggests that argument synthesis for lexical V-V compounds is a morphological process in the lexicon that forms new syntactic argument structures. Among the assumptions of Kageyama are the 'righthand head rule' (Williams 1980) and 'feature percolation' (Lieber 1980) in morphology. According to him, with two argument structures like 6a, for example, there are only three types of argument synthesis (6b-d) for V<sub>1</sub>-V<sub>2</sub> compounds in Japanese. In the descriptions below the equal sign indicates 'θ-identification' which is accomplished by Kageyama's TRANSITIVITY HARMONY PRINCIPLE. This principle limits lexical V-V compounds to being one of two types: (i) those showing a combination of verbs taking external arguments (i.e. a mix of unergative and transitive verbs), and (ii) those involving two verbs that do not have external arguments (i.e. unaccusative verbs). It is assumed that the argument structure of the (righthand) head is 'passed' (à la Lieber 1980) to the top level.

- (6) a. V<sub>1</sub>: (x<sub>1</sub>, <y<sub>1</sub>>) and V<sub>2</sub>: (x<sub>2</sub>, <y<sub>2</sub>>) (N.B.: The internal arguments are in '<...>').  
 b. x<sub>1</sub> = x<sub>2</sub> and y<sub>1</sub> = y<sub>2</sub> gives (x<sub>2</sub>, <y<sub>2</sub>>)  
 (e.g. *tataki-war* in 1d)  
 c. x<sub>1</sub> = x<sub>2</sub> and y<sub>1</sub> = 'possessor' for y<sub>2</sub> gives (x<sub>2</sub>, <[y<sub>1</sub>'s y<sub>2</sub>]>)  
 (e.g. *sime-koros* 'kill by choking')  
 d. x<sub>1</sub> = x<sub>2</sub> and, if y<sub>1</sub> ≠ y<sub>2</sub>, then y<sub>1</sub> and y<sub>2</sub> are retained to give (x<sub>2</sub>, <y<sub>1</sub>, y<sub>2</sub>>)  
 (e.g. *nomi-aruk* in 2b and *katari-akas* in 3a, b)

The transitivity harmony principle and the right-headedness assumption alone are not sufficient to adequately account for possible patterns of the compounding under discussion. For example, 6d is made possible thanks to Lieber (1980) who suggests that, when morphological information regarding an argument structure is missing from the head morpheme in a multi-morpheme structure, the missing information can be passed to a higher-level structure. Example 6d subsumes cases like 2a above (repeated in 7a) where the two 'agent' arguments of V<sub>1</sub> and V<sub>2</sub> (*Ziroo-ga*) are θ-identified and the remaining 'theme' argument (*kodomo-o*) of V<sub>1</sub> with no corresponding argument of the head V<sub>2</sub> is retained and passed to the resulting argument structure: (x<sub>2</sub><sup>agent</sup>, <y<sub>1</sub><sup>theme</sup>>). That is fine. But, as pointed out by Nishiyama (1998), Kageyama would also predict that 7b is possible,

- (7) a. Ziroo-ga kodomo-o ture-sat-ta.  
 'Ziroo left taking a child with him.'  
 b. \*John-ga sebiro-o ki-kuzure-ta.  
 '(Int.) The suit jacket lost its original shape due to John's wearing it.'

This is because, just as in 7a, after identifying the 'theme' arguments (*sebiro-ga*) of the head and nonhead, the remaining 'agent' argument of the nonhead V<sub>1</sub> should be inherited into the argument structure of the whole compound. There seems to be no principled remedy for this problem in

Kageyama's system.

(イ) Kageyama's account not only OVERgenerates as pointed out above but also UNDERgenerates with respect to, for example, mirror image compounds involving ditransitive verbs. The reason for this is that he employs traditional  $\theta$ -roles. It is well known that the traditional  $\theta$ -roles are unable to perform an explanatory role in linguistics. See convincing demonstrations to this effect by Ladusaw and Dowty (1988), Dowty (1991), and Davis (2001), inter alia. All that is allowed in his system with ' $\theta$ -identification', then, is simple matching of primitive  $\theta$ -role labels, leaving no room for flexibly accommodating examples like 4 and 5 involving verbs with alternative lexicalizations (Dowty 1991) where a reverse argument matching is called for.

出典: Fukushima, Kazuhiko. 2005. "Lexical V-V compounds in Japanese: Lexicon vs. syntax," *Language* 81 (3), 568-612.

[一部改変]

- 問1 複合動詞「泣き叫ぶ」は(1a)で *dvandva (coordinate) compound* と分類されている。どうしてこのように分類されているのか、本文に沿って日本語で説明しなさい。また、「踊り疲れる」、「飛び起きる」、「叩き割る」のそれぞれについても、どうして(1b)、(1c)、(1d)のように分類されるのか、本文に沿って日本語で説明しなさい。
- 問2 下線部(ア)について、(2)、(3)、(4)の事例のそれぞれ何が問題なのか。互いの異同を明確にしなから、本文に沿って日本語で説明しなさい。
- 問3 下線部(イ)を日本語に訳しなさい。
- 問4 あなたが興味をもっている日本語複合動詞について、Kageyama(1993)の *Lexical Account* を土台にして、10行以上の英文で説明しなさい。