On some issues concerning Lexicalization
and Grammaticalization

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1 . Introductory remarks and definitions

1 . 1 . In recent times the developments of brain science have caused the expansion of methodology of linguistics, and many recent researches of brain science seem to support the extension and development of contemporary linguistics. There are various hypothetical positions handling the linguistic processing in the inner-side of brain: from module-oriented methods based on the generative-transformational approaches, to the interactivity-network hypothesis based on the up-to-date cognitive science. The substantial difference between both view-points is mainly concerning the autonomy of linguistic components. As much as the progress of brain science has revealed many facts about the functions of human brain up to now, we have got the more questions about its functional systems, also. It is certain that the hypothesis of cognitive linguistics is going to remain as a mere hypothesis without the support of ultimate discovery of brain functions-especially the functional system of information processing inside a human brain.

1 . 2 . The mission of investigation into human intellectual capacity is being moved from the field of philosophy and psychology, to researching areas of neural science and information-data processing. The key-point of understanding human intellectual abilities is to understand the inner processes of restoring and organizing information-data: that is, to find out the functional structures of thoughts and mind. Although cognitive science has made contributions to understanding human nature through brain researches, it still remains as early stage of brain sciences. Cognitive linguistics is also an attempt to understand human linguistic nature, trying to overcome the abstract model theories. It insists that human linguistic ability is as same an ability as other abilities, i.e. perceptibility, logical, mathematical abilities and so on. It is clear that the more understanding of neural science and information-data processing is going to make us to understand the nature of human linguistic ability. Although it has bright prospects, cognitive linguistics still remains an early hypothetical stage as of now.

1 . 3 . The terms of 'lexicalization' and 'grammaticalization' refer to diachronic changes in this paper. On the other hand, the terms of 'lexical process' and 'morphological process', denoting the perception process of word meaning and word formation process, refer to synchronic linguistic processing. In the diachronic viewpoint of the module-oriented theory, the changes of lexicalization and grammaticalization are accepted as changes of narrowing down or grading down of semantic-functional load accompanied by hierarchy level shifting. The diachronic change of lexicalization could be explained with the terms of 'condensing and reducing' of broader concept-meaning associations, and also the diachronic change of grammaticalization with the idea of narrowing down

and reduction of meaning-function. Whether it is regarded as diachronic changes or synchronic variations depends on the criterion of retrievability. The diachronic change means irreversibility, and the synchronic variation recoverability. The changes and the variations, the diachronic procedures and the synchronic processes are dependent on the variable of outside network-communication-i.e. linguistic society. It is the main aim of this article to consider an effective interpretation for lexicalization and grammaticalization from a diachronic viewpoint, and with the methodological hypotheses of modularity theory and interactivity-network theory.

2. Relations between lexicalization and grammaticalization: retrievability

2.1. In this article the term 'lexicalization' implies the word (morpheme) formation procedures by condensing semantic feature associations. The term 'grammaticalization' implies two procedures: the first one is the morpheme formation procedure at which semantic feature associations are being condensed, for example, condensing the modality information into inflective pre-final endings such as agglutinative languages -Korean and Japanese, and the other one is the level down of its applicable domain, for example, affixes and inflective final endings. The terms 'condensing, reducing, level (narrowing) down, restoration, irreversibility' are employed as analyzing notions.

2.2. *On lexicalization*
2.2.1. The taxonomic treatment of new words could be specified under the criterion that new concept and usage are created, not under the criterion of novelty of formality:

      (1) linguistic (lexical) molding of concepts : coinage
      (2) the expansion of categories of meaning and usage : metaphor, conceptual join(association) et al.
      (3) the condensation of semantic feature associations (sentential meaning), for example, conjunction adverb

The traditional classifications of word formation are : inflection(including conjugation and declension), compounding, derivation. The classification of new words above would be different from traditional one. The processes of compounding and derivation could not play a role making new concepts. In contemporary word formation rules the transformation of forms-for example, acronym and all abbreviations- is playing a great part in making new words.

      In (3)[1], under the premise- if it is possible - that all the word, i.e. lexical meanings could be reduced to their concepts-semantic features, conjunction adverbs could be reduced to sentences.

2.2.2. Whether the lexicalization is accomplished or not could be confirmed with the criteria of irreversibility of form-concept connection. At the case of irreversibility the lexicalization has

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[1] For example, 그리고, 그래서 in Korea and そして，しかし，だが in Japanese

completed the procedure of lexicalization.

2.3. *On grammaticalization*

The grammaticalization argued at this article refers to the procedures after the change of lexicalization: the procedure of producing affix and final endings. It could be understood as consequent change procedures following lexicalization. The great parts of affixes in modern languages are originated from substantial lexical morphemes. At grammaticalization stage, it is almost irreversible to retrieve the word level, except rare cases[2].

It is significant to make the level-positioning of morphological processes explicit in the agglutinative languages. Adapting the hierarchical modularity hypothesis could be more efficient to explain morphophonemic processes and rule application in agglutinative languages. In cognitive theory, it is often uncertain about the role of syntactic-morphological levels. (see Fig. 1 .)

Although a practical aspect of human information-data processing and perception processes does not match with a hypothetical model, it could be compatible with a hypothetical modeling for the purpose of its explanation.

2.4. The relation of lexicalization and grammaticalization would be schematized as given below. (Fig. 2 .) The retrievability and interactions among the hierarchical levels in the synchronic process and diachronic procedure of lexicalization and grammaticalization lead us the idea that an explanatory model don't have to match with an actual mechanism.

The linguistic data procedures in lexicalization and grammaticalization are equal in both of the interpretation based on modularity and interactivity. Diachronic procedures of linguistic changes duplicate synchronic linguistic processes. In fact, the explanation based on neurophysiological processes is more persuasive and is more helpful to understanding the practical processing system of linguistic information-data.

3. *summary*

Cognitive linguistics explains that causes of diachronic changes arise from the cognitive processes within the networks: for example, the changes of existing lexical meanings. That is, the ceaseless reorganization processes of communication networks are the main causes of diachronic changes and synchronic variations. Constant spreads of variations among individuals causes the reformation of the processing rules. The spreading stage at grammaticalization level reveals the modification of processes and rules within inner network as well as the spread of processing rules within communication networks.

Both the procedures of lexicalization and grammaticalization as diachronic changes were managed to explain with the notions of condensing, leveling down, and retrievability. As to the relation between lexical and morphological processes as synchronic variations, it was attempted to confirm that the interactivity hypothesis was more persuasive than the modularity theory did in

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[2] Korean postposition '보다' （より）

the cases of agglutinative languages.

Fig. 1 . Schematic representations of language comprehension and speech production
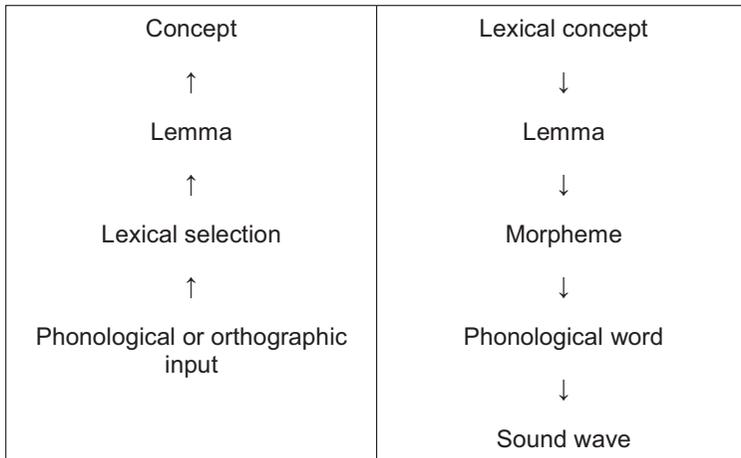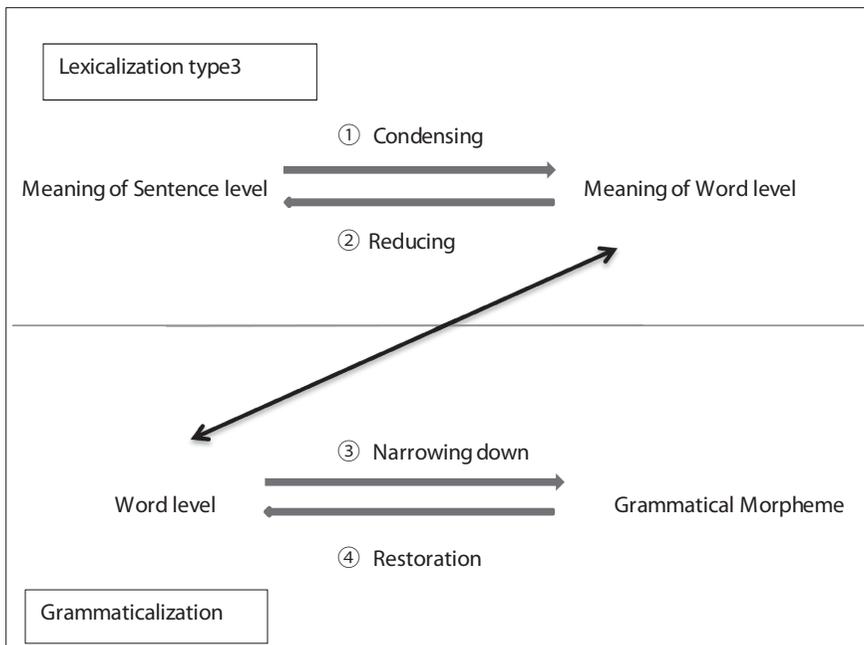   (Cognitive Neuroscience: 397, 420)

Concept	Lexical concept
↑	↓
Lemma	Lemma
↑	↓
Lexical selection	Morpheme
↑	↓
Phonological or orthographic input	Phonological word
	↓
	Sound wave

Fig. 2 . Relations between lexicalization and grammaticalization: retrievability

References

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Abstract

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Both the procedures of lexicalization and grammaticalization as diachronic changes were managed to explain with the notions of condensing, leveling down, and retrievability. As to the relation between lexical and morphological processes as synchronic variations, it was attempted to confirm that the interactivity hypothesis was more persuasive than the modularity theory did in the cases of agglutinative languages.