

**Title of Project : Studies of Language Evolution for Co-creative Human Communication**

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Research Project Number : 17H06378

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**【Purpose of the Research Project】**

The purpose of this research project is twofold: Firstly, we aim to construct a scenario of language evolution which is consistent with linguistics, biology, and human evolutionary and developmental studies, the adequacy of which is to be evaluated by constructive methods including mathematical models. Secondly, on the basis of the scenario we make proposals for our future communication. Through these endeavors, our ultimate goal is to form a new area of human science which studies language evolution for co-creative communication. We call it *Evolinguistics*.

Language is an epoch-making technology which allowed humans to integrate individual knowledge into civilizations. Currently we are about to create new forms of communication based on language and information technology.

We believe that by understanding the origins and evolution of language we can attain a deeper understanding of our human nature and design our future communication better. We will provide solutions to today's many problems, including international conflicts brought about by globalization, welfare gaps caused by unequal information accessibility and disorders to rapidly changing communication styles.

**【Content of the Research Project】**

Language is based on hierarchical structure for internal thought, which is then linearized for communication. This forces the speaker/hearer to share their intention. How did such co-creative communication start and evolve? We set hierarchy and intention sharing as the two main common grounds for our entire research project, and investigate them by closely interconnecting five research groups.

Of these, A01 combines latest outcomes of theoretical linguistics and provides a working hypothesis on the evolution of linguistic communication for the whole project. It is then scrutinized and revised experimentally by B01 (biology), B02 (anthropology and archaeology) and B03 (developmental psychology) on different time scales of phylogeny, human evolution and ontogeny, respectively. C01 will further test the hypothesis by constructive methods including psychological and robot experiments. In the end we will arrive at a new adequate scenario of the origins and evolution of human language and communication.

By putting together the three research layers (A,

B, C), we elucidate processes of language evolution and delineate the future of co-creative communication in a rapidly informationalized society. All these will contribute to the formation and establishment of *Evolinguistics* (Fig. 1).

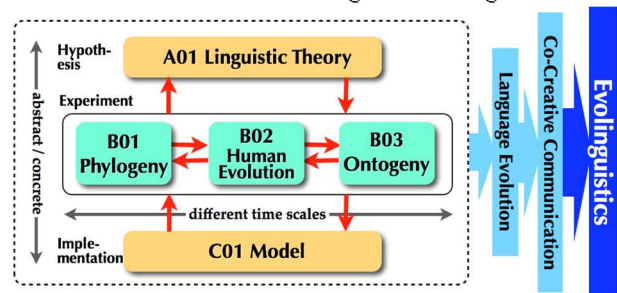


Fig.1 Research organization

**【Expected Research Achievements and Scientific Significance】**

Our project is especially significant in that it solves a variety of problems our society now faces by introducing a new form of communication which is superior to current empathy-based communication and secures our happy survival. It is expected that we will make practical contributions to many fields, including educational issues like multilingualism for globalization, medical and welfare issues like technology development, and innovative issues like co-creative AI which overcomes the limitations of current statistics-based AI.

**【Key Words】**

**Hierarchy:** Human language is hierarchically structured, instead of being linearly ordered, which gives rise to its remarkable creativity.

**Intention sharing:** Because hierarchy cannot be directly conveyed, understanding and sharing the intentions of the speaker/hearer is essential in meaningful communication.

**【Term of Project】** FY2017-2021

**【Budget Allocation】** 1,078,400 Thousand Yen

**【Homepage Address and Other Contact Information】** <http://evolinguistics.net>