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# Logical effects of inherited metaphoric expressions in discourse

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We encounter very many metaphors every day, and by using metaphors we often grasp things more easily and efficiently than by using literal expressions. This suggests that metaphor functions as our effective cognitive method.

There is usage of extending the talk further, by making the new metaphor of the same base domain as a certain one metaphor. This tends to tell richly about a target domain by extending the talk in a base domain. In this study, such a phenomenon is especially called inherited (metaphorical) description . The purpose of this study is to clarify efficacies of inherited description and to show classifications according to the structure of the constraints about inherited description through analyses of the examples collected from novels, essays, newspaper articles, etc.

As a phenomenon relevant to inherited description, already, Lakoff & Johnson (1980) argued about the productivity of metaphor that various metaphors are derived from one metaphor, and claimed that such the production of metaphors is due to the structural correspondence between a base and target domain. On the other hand, the special feature of this study is to argue about the efficacies of inherited description from the following two viewpoints.

- 1.The structure of the constraints in reasoning at a distance.
- 2.The patterns and effects of metaphor presentation.

First, inherited description is concerned deeply with reasoning at a distance. When we reason about a certain object *a*, there is the method of such a reasoning that we reason about object *b* expressing *a*. That is to say, we reason about *a* indirectly. This method is called reasoning at a distance. In this case, *a* is a target domain and *b* is a base domain. It is very important how far a logic structure or constraint in a target domain can be reproduced by a base domain. We showed four classifications according to the structure of the constraints about inherited description.

1. A constraint mapping of consequence.
2. A constraint mapping of non-consequence.
3. A constraint mapping of consistency.
4. A constraint mapping of inconsistency.

Each four constraints connects between the phenomena in a base domain. In this study, we analyze about mapping of each constraints to a target domain from a base domain.

The other point of this study is to argue about the patterns and effects of metaphor presentation. It hasn't been fully argued until now in metaphor studies. In analyses of metaphor presentation, the framework of a analysis of classifying metaphorical words and literal words within one sentence is based on the interaction theory of Black (1962). In this study, such descriptions that both domains are expressed in one sentence is called mixed description, and what can express each matter in the both domains at once is called converging description.

In actual case analyses, except a constraint mapping of inconsistency, other three constraints were mapped.

In this study, such the mapping of constraints on reasoning is argued through the comparison with the following three analogical mapping theories. The mapping theory of Lakoff & Turner (1989) mainly argues about the mapping of the relations between elements, but doesn't argue about higher order mappings enough. In the interaction theory of Indurkha (1993), although the expression of both domains is precise and promising as a mathematics model, it is also a relation mapping theory.

The structure mapping theory of Gentner (1983) can map not only first order relations but also higher order relations. The structure mapping theory is that relations which constitutes

higher order relations are preferentially mapped. But, Gentner uses these higher order relations in large meanings. If Gentner's theory is compared with constraint mapping in this study, it can be said that the original result of this study is to have shown four constraints clearly, and to have shown that these actually were mapped.

In case analyses of metaphor presentation, we showed the type of mapping called converging - mapping of constraints. This is the type of mapping that constraints are expressed by converging description. In such a case, converging description serves as the expression having logical effects and a high efficiency.

As a future subject, it is necessary to examine how far effective explanation can be performed from the viewpoint of the constraint mapping about poor metaphors, unclear metaphors, or the metaphor as skillful art of conversation that deceives a person. It is also better to grasp inherited description more richly from a broad viewpoint.

Moreover, although it was the analyses of a text in this study, it will be required to extend to analyses of inherited description in spontaneous utterance, and the actual proof of effects of the constraint mapping and metaphor presentation by dialog experiments will be required.

About inherited description, it can be said that a more significant argument is expectable with the integration with theoretical approaches and empirical approaches.