

# A Dynamic-Epistemic-Logical Explanation of Presupposition Projection

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Presupposition projection is one of the much-discussed subjects in the fields of philosophy of language and linguistics. According to Beaver et al. [3], the following at least ten lexical classes constructions are widely agreed to be presupposition triggers: (i) factives, (ii) aspectual verbs, (iii) temporal clauses headed by “before”, “after”, “since”, etc., (iv) manner adverbs, (v) sortally restricted predicates of various categories, (vi) cleft sentences, (vii) quantifiers, (viii) definite descriptions, (ix) names, and (x) intonation. In this talk, we focus on (i),(ii) and (v). In (1)-(5), the presupposition that John used to smoke is canceled: (1) John used to smoke and he stopped smoking. (2) If John used to smoke, then he stopped smoking. (3) John did not use to smoke or he stopped smoking. (4) John used to smoke or he stopped smoking. (5) John used to smoke and Mary knows that John used to smoke. In (6)-(10), the presupposition is projected (inherited): (6) John did not stop smoking. (7) If John moved to Japan, then he stopped smoking. (8) John did not moved to Japan or he stopped smoking. (9) John is a bachelor. (10) Mary does not knows that John used to smoke. We call this the cancellation/inheritance phenomena of presupposition (CIP). Dynamic semantics is one of the most well-known models for explaining CIP. Stalnaker [8] observes that a context plays an essential role in presupposition and that presupposition is based on common ground (common knowledge). In (6)-(10), each context requires that it is common knowledge that John used to smoke. On the other hand, in (1)-(5), it does not. Heim [5] is one of the pioneering works on dynamic semantics. Heim considers that a context plays an essential role in presupposition and adopts a kind of the dynamic view of meaning: The semantic value of a sentence is a context change potential (CCP). The dynamic view forms a contrast with the static view: The semantic value of a sentence is its truth condition. Soames [7] points out the explanatory incompleteness problem of Heim’s dynamic semantics. Dynamic epistemic logic (DEL) (cf. [1]) shares dynamic-semantic factor with dynamic semantics. Rothschild and Yalcin [6] discuss the status of dynamic-semantic factor in theoretical analyses of linguistic phenomena. The aim of this talk is to give solutions to **Problem 1**: *What is the dynamic-semantic factor necessary to express presupposition projection when we adopt the language of DEL that holds the static view of meaning and so avoids the explanatory incompleteness*

problem as a language fragment that contains such a factive as “know” and such an aspectual verb as “stop”? and **Problem 2**: How can we give a DEL explanation of CIP?. In DEL,  $[\psi]\varphi$  expresses the statement  $\varphi$  is true after a public announcement  $\psi$ . To evaluate  $[\psi]\varphi$  at a pointed Kripke model  $(\mathfrak{M}, w)$ , we transform  $\mathfrak{M}$  according to the prescriptions of  $\psi$  and then obtain a new model  $(\mathfrak{M}', w')$  at which we evaluate  $\varphi$ . So DEL holds the static view of meaning, whereas it has a dynamic semantics across model transformations. In DEL, the changes of context are modeled by model transformations. Although van Eijck and Unger [4] formalize presupposition projection about (v) sortally restricted predicates above in terms of DEL, they do not deal with CIP. In this talk, according to van Eijck and Unger [4], we model a presupposition  $\varphi$  as a public announcement “it is common knowledge between a speaker and her hearer that  $\varphi$ ” ( $[C_{s,h}(\varphi)]$ ), and as a system of DEL we use Public Announce Logic with common knowledge between a speaker and her hearer (PAL +  $C_{s,h}$ ). Baltag et al. [2] prove the following theorems: **Fact 1 (Reduction)** *Every wff (well-formed formula)  $\varphi$  in the language of PAL without common knowledge is equivalent in PAL to a wff  $\varphi^\circ$  in the public announcement-free fragment.* **Fact 2 (Irreducibility)** *It is not possible to find any public announcement-free equivalent of each wff of PAL +  $C_{s,h}$ .* We can derive the next corollary from Facts 1 and 2: **Corollary 1 (Necessary Dynamic-Semantic Factor)** *The dynamic-semantic factor necessary to express presupposition projection when we adopt the language of DEL is only a model transformation based on  $[C_{s,h}(\varphi)]$  that models a presupposition but not any types of semantic changes of logical connectives.* **Corollary 1** gives a solution to **Problem 1**. However, DEL alone cannot deal with CIP in general, as van Eijck and Unger [4] cannot. So, in order to deal with CIP in general, we would like to introduce an interface between DEL and focused pragmatic principles. As such an interface, by making use of PAL +  $C_{s,h}$ , we propose a test of whether a presupposition is projected or not (Presupposition Projection Test (**PPT**)). **PPT** gives a solution to **Problem 2**. (使用言語 : 日本語)

## 参考文献

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