

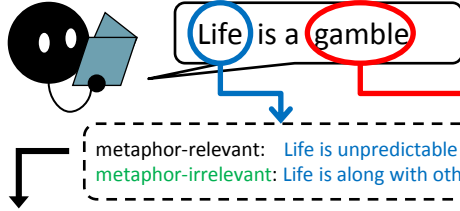
The Effect of Conventionality and Aptness on Suppression of Metaphor-irrelevant Meaning

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Introduction & Research Aims



This study examines the process of metaphor-irrelevant meaning in metaphor comprehension. Our experiment investigate whether topic and vehicle activate or suppress the metaphor-irrelevant meaning.

The topic and vehicle of metaphor activates the metaphor-relevant meaning in metaphor comprehension (topic: Taira & Kusumi, 2009; vehicle: Gernsbacher et al., 2001). In the vehicle, the strength of activation is related to the conventionality of vehicle and metaphor aptness (Taira & Kusumi, 2009).

Method

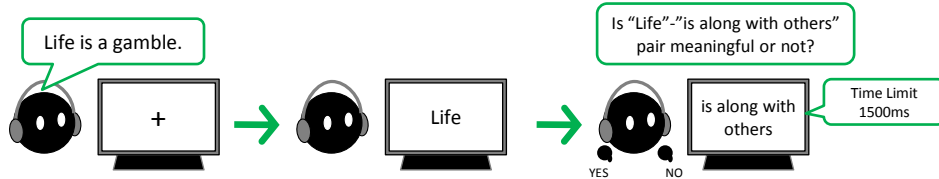
The experiment used priming method and meaningfulness decision task (MDT).

◆ Procedure

STEP1 : Priming stimulus was presented auditorily.

STEP2 : In a PC screen, a subject-predicate pair was presented separately and sequentially.

STEP3 : Participants were required to decide whether the pair is meaningful or not as quickly as possible immediately after the predicate was presented.



If the subject is activated as the meaning of predicate, decision time in STEP3 will take shorter. Otherwise, if the subject is suppressed as the meaning of predicate, the decision time will take longer.

◆ Materials (see Appendix)

Priming stimuli : 40 metaphors, 40 matched topic-control sentences, and 40 matched vehicle-control sentences. The metaphors could be classified by conventionality (High/Low conventional) and aptness (High/Low apt).

Subject-Predicate pairs: 40 topic-meaning pairs and 40 vehicle-meaning pairs. The meanings was relevant only to topic/vehicle, not to metaphors.

◆ Participants

39 native Japanese graduates and undergraduates were participated.

Results

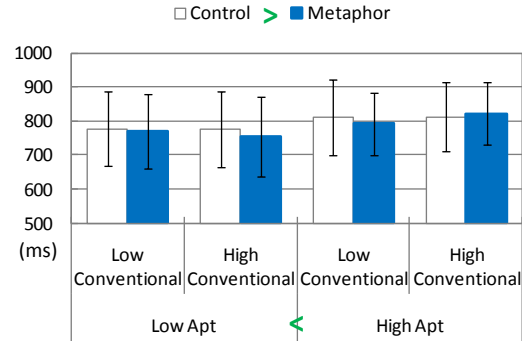


Fig.1 : Mean (SD) of the topic decision time

◆ Topic Result (Fig. 1)

- The main effects of priming stimuli (control vs. metaphor: $F(1, 38)=5.96, p<.05$) and aptness (high apt vs. low apt: $F(1, 38)=41.33, p<.001$) were significant.
- No interactions between 3 factors were significant ($F(1, 38)=0.95, n.s.$).
- Metaphor comprehension activated the metaphor-irrelevant meaning of topic in the same case as the metaphor-relevant meaning (Taira & Kusumi, 2009).

◆ Vehicle Result (Fig. 2)

- The main effects of priming stimuli (control vs. metaphor: $F(1, 38)=9.58, p<.01$) and conventionality (high conventional vs. low conventional: $F(1, 38)=58.83, p<.001$) were significant.
- No interactions between 3 factors were significant ($F(1, 38)=0.01, n.s.$).
- Metaphor comprehension suppressed the metaphor-irrelevant meaning of vehicle. Neither the effect of conventionality nor aptness was found.

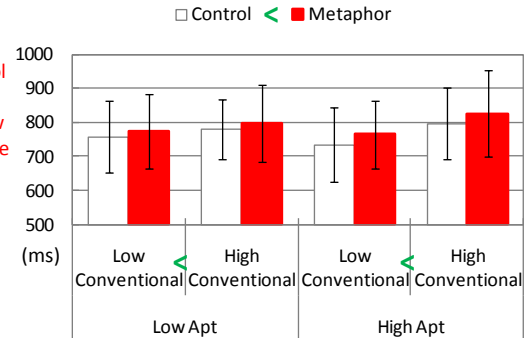


Fig.2 : Mean (SD) of the vehicle decision time

* The trials decided as not-meaningful pair were excluded from the analysis. Then, we also excluded the trials of the decision time which exceeded from 2SDs from the mean of logarithmic-transformed time.

Discussion

◆ Topic activation

- Metaphor comprehension activates topic meaning: not only metaphor-relevant meaning, but also metaphor-irrelevant meaning.
- Topic's metaphor-relevant meaning is activated even when the metaphor is not-apt and not-conventional (Taira & Kusumi, 2009). The topic in metaphor comprehension may activate all the possible topic-relevant meaning.

◆ Vehicle suppression

- The vehicle-suppressions on metaphor-irrelevant meaning is found in all types of metaphor.
- In metaphor comprehension, we may take notice only of saliency of relevant meaning: saliency is affected by various factors (e.g. Giora & Fein, 1999; Taira & Kusumi, 2009).
- Irrelevant meaning may be abandoned in the early stage of metaphor comprehension. Then, the suppression caused in all types of metaphor equally.

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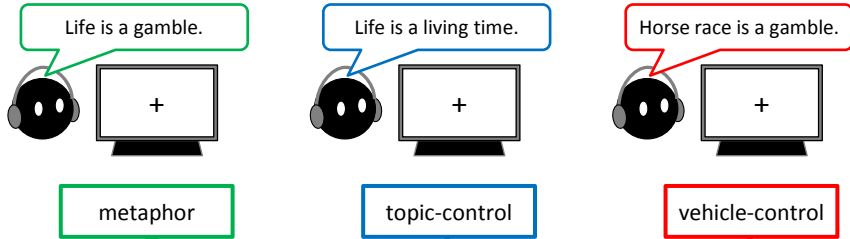
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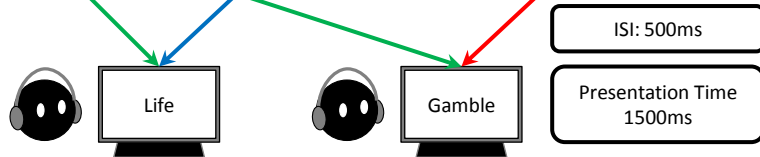
Appendix

Experiment Design

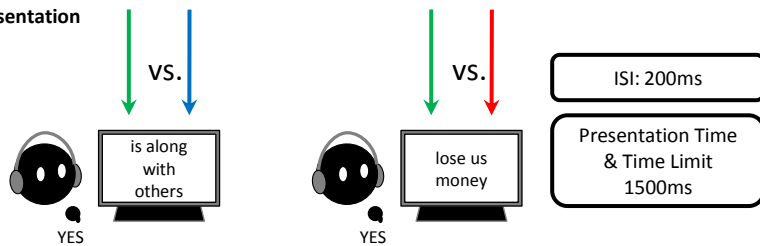
◆ Priming stimuli



◆ A subject presentation



◆ A predicate presentation



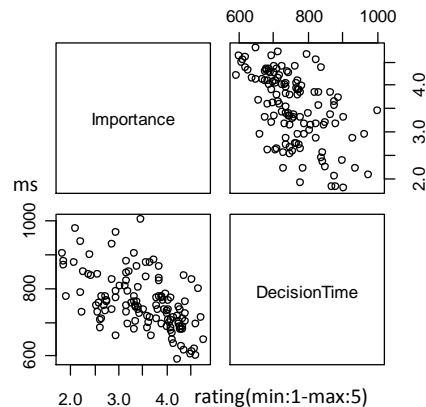
Validity of MDT

◆ What is decision time?

- The decision time speed of judging meaningful in the MDT reflects the strength which the meaning of the predicate can apply for the subject.

◆ Pre-study

- We investigate relationships between the importance rating of subject-predicate pair and the decision time of the pair in MDT.
- When the subject-predicate pair is rated as more important, the decision time of the pair get more rapidly ($N=124, r=-.55$).



Example of Experiment Materials

◆ Example of high apt and high conventional metaphor: Life is a gamble

Priming stimuli :

- metaphors
- matched topic-control sentences
- matched vehicle-control sentences

- Life is a gamble.
- Life is a living time.
- Horse race is a gamble.

Subject-Predicate pairs:

- topic meaning pair
- vehicle meaning pair

- "Life" - "is along with others"
- "Gamble" - "lose us money"

◆ Example of high apt and low conventional metaphor: Responsibility is a bag

Priming stimuli :

- metaphors
- matched topic-control sentences
- matched vehicle-control sentences

- Responsibility is a bag
- Responsibility is a duty.
- A briefcase is a bag.

Subject-Predicate pairs:

- topic meaning pair
- vehicle meaning pair

- "Responsibility" - "brings up human"
- "Bag" - "can be lifted up"

◆ Example of low apt and high conventional metaphor: Knowledge is an accessory

Priming stimuli :

- metaphors
- matched topic-control sentences
- matched vehicle-control sentences

- Knowledge is an accessory.
- Knowledge is information.
- A ring is an accessory.

Subject-Predicate pairs:

- topic meaning pair
- vehicle meaning pair

- "Knowledge" - "is spread"
- "Accessory" - "is expensive"

◆ Example of low apt and low conventional metaphor: Alcoholism is a parasite

Priming stimuli :

- metaphors
- matched topic-control sentences
- matched vehicle-control sentences

- Alcoholism is a parasite.
- Alcoholism is an addiction.
- A house tick is a parasite.

Subject-Predicate pairs:

- topic meaning pair
- vehicle meaning pair

- "Alcoholism" - "smells bad"
- "Parasite" - "moves from man to man"

Reference

- Gernsbacher, M. A., Keyser, B., Robertson, R. R. W., & Werner, N. K. (2001). The role of suppression and enhancement in understanding metaphors. *Journal of Memory and Language*, 45, 433-450.
- Giora, R., & Fein, O. (1999). On understanding familiar and less-familiar figurative language. *Journal of Pragmatics*, 33, 1601-1618.
- Taira, T., & Kusumi, T. (2009). Activation of topic and vehicle in metaphor comprehension. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*, 2057.