

# Role-denoting nouns are more suitable for metaphoric uses than object-denoting nouns

Keiko Nakamoto (nakamoto@koshigaya.bunkyo.ac.jp)

Faculty of Education, Bunkyo University, 3337 Minami-Ogishima, Koshigaya, Saitama, 343-8511, Japan

Kow Kuroda (kuroda@nict.go.jp)

Computational Linguistic Group, NICT, 3-5 Hikaridai, Seika-cho, Soraku-gun, Kyoto, 619-0289, Japan

## Introduction

Today, there is a claim that there are, at least, two semantic classes of nouns. The first class, termed as “object names” (Kuroda *et al.*, 2005) or “entity categories” (Gentner & Kurtz, 2005), comprises nouns such as *bulldog* that refer to a specific class of natural objects. The second class, known as “role names” or “relational role categories,” denotes a role or a set of role-bearing objects (e.g., *watchdog*) that are defined on the basis of a specific situation. Note that *bulldog* denotes a subtype of dogs, while *watchdog* is not really a subtype of dogs, only referring to a set of dogs of arbitrary kinds that serve as *watchdog*. An object noun is defined by the intrinsic properties shared by a set of objects, and reference to objects is the primary function of object nouns, while these are not true of role nouns.

In today’s metaphor research, it has been suggested that (non-) referentiality of the vehicle terms is one of the factors that affects people’s preferences on grammatical form of the metaphorical comparisons. Since referential “literal” meanings of the vehicles must be suppressed in metaphor comprehension (e.g., Gernsbacher *et al.*, 2001), it is predicted that role-denoting nouns are preferred vehicles for metaphor form over simile form, than object-denoting nouns. To test this prediction, we conducted a rating study in Study 1. In Study 2, we examined the uses of the nouns in a corpus.

## Study 1

### Method

**Materials** Sixteen pairs of Japanese object and role nouns from the same natural categories (e.g., *bulldog*–*watchdog*) were selected for the vehicles of figurative comparisons through a preliminary study. Four nouns were selected for the topic. Each of these vehicles and topics were combined and made up the figurative comparisons. These comparisons were then embedded in either the metaphor form (*A person called “Suyu” was really a watchdog*) or the simile form (*A person called “Suyu” was like a watchdog*).

**Procedure** Forty university students, all native Japanese speakers, were asked to rate which grammatical form (metaphor or simile) was more natural or sensible for each comparison on the 10-point scale.

### Results

The responses were transformed so that higher numbers would imply greater preferences for the metaphor form over the simile form. As Table 1 shows, the strength of the preferences for the metaphor form over the simile form was greater when the vehicle of the comparison was a role noun than when it was an object noun ( $F(1, 39) = 22.63, p$

$< .0001; F(1,30) = 9.22, p < .001$ ).

Table 1. The mean preference scores for the metaphor forms.

Topic Noun	Type of Vehicle	
	Object	Role
Person	3.7 (1.3)	4.2 (1.7)
Musical instrument	3.9 (1.5)	4.6 (1.3)
Country	4.3 (1.5)	5.1 (1.7)
Fish	3.6 (1.1)	4.2 (1.4)

## Study 2

### Method

**Materials** Sentences that included 16 pairs of vehicle nouns in Study 1 were collected from a Japanese corpus. 13610 sentences were collected in total.

**Procedure** For a target noun in each case, the authors judged whether it was used as a metaphor (e.g., *We are not watchdog(s) of the Government*), as a simile (e.g., *This software works like a watchdog for computers*), or as a literal expression. Judgments were made conservatively not to include dubious instances that could invite disagreements in judgment.

### Results

One pair of the vehicle nouns were excluded from the analysis because of the paucity of instances. The mean proportions of the metaphoric and the simile uses for each type of the nouns are as shown in Table 2. The role-denoting nouns tended to be used figuratively than the object nouns did.

Table 2. The mean % of the figurative uses.

	object noun		role noun	
	metaphor	simile	metaphor	simile
metaphor	0.03 (.13)	1.17 (2.73)	7.86 (14.50)	2.1 (4.04)
simile	1.17 (2.73)	2.1 (4.04)	7.86 (14.50)	2.1 (4.04)

## General Discussion

The results in Study 1 and 2 were both consistent with our prediction, suggesting that the situationally-based subclassification of concrete nouns needs to be done to fully account for the metaphoric uses of them.

## References

- Gentner, D., & Kurtz, K. (2005). Learning and using relational categories. In *Categorization inside and outside the laboratory*. Washington, DC: APA.
- Gernsbacher, et al. (2001). The role of suppression and enhancement in understanding metaphors. *J. of Memory and Language*, 45, 433-450.
- Kuroda, et al. (2006). Remarks on relational nouns and relational categories. *Conference handbook of the 23rd Annual Meeting of JCSS*, 54-59.