

Universal Grinder is universal:

An empirical study of animate nouns in Mandarin Chinese

The term ‘Universal Grinder’ is widely used to describe the flexible count-to-mass shift of countability in Indo-European languages such as English. It is originally proposed by Pelletier (1979) to refer to the idea that prototypical count nouns can have a mass sense. There are two basic assumptions in Pelletier’s idea of Universal Grinder. First, Universal Grinder applies to all nouns, no matter what ontological properties they have. Second, the mass sense is part of the original lexical meanings of a word (cf. Pelletier 2012). Recently, Cheng, Doetjes and Sybesma (2008) contends that the mass reading from Universal Grinder is a last-resort interpretation, coerced by the lack of the morpho-syntactic marking of a count noun, or by some real world knowledge. In the case of Mandarin Chinese, this work argues that animate nouns such as *gou* ‘dog’ can never denote dog-stuff, even though such substance-denoting readings may be available for some nouns such as *pingguo* ‘apple’ in restricted context (e.g., salad context). In a word, Cheng, Doetjes and Sybesma’s account goes against the abovementioned two assumptions in Pelletier’s idea of Universal Grinder.

To examine the thought experiment of Universal Grinder from a psycholinguistic perspective, we investigate the interpretation of Mandarin animate nouns by Mandarin-speaking adults and 5-year-old children. We are interested to know (i) whether substance-denoting readings are available for Mandarin animate nouns; (ii) and how substance-denoting readings are affected by the operation of Universal Grinder (i.e., the presence/absence of ground stuff). Using the Truth Value Judgement Task (Crain & Thornton 1998), we tested the interpretation of three animate nouns including *gou* ‘dog’, *ji* ‘chicken’ and *niu* ‘cow’ in three distinct contexts, including two substance-oriented contexts (i.e., with and without ground stuff) and one individual-oriented context. It is found that both the child and adult participants assigned substance-denoting readings in the two substance-oriented contexts over 70% of the times (Conditions 1 and 2), and they assigned individual-denoting readings to the same animate nouns in the individual-oriented contexts (children and adults: 100% (72/72 trials)) (Condition 3). The experimental data thus suggest that animate nouns admit of a significant percentage of substance-denoting readings, contra Cheng, Doetjes and Sybesma (2008). And we also know from the data that the triggering of the substance-denoting readings requires felicitous contexts as distinct from the contexts for the triggering of individual-denoting readings.

Moreover, a comparison of the data in the two substance-oriented contexts indicates that the presence/absence of the ground stuff did not affect the assignment of the substance-denoting readings in the adult group (with ground stuff: 75% (54/72 trials); without ground stuff: 70% (51/72 trials)), but the presence of ground stuff enhanced the percentage of the substance-denoting reading in the child group (with ground stuff: 90% (65/72 trials); without ground stuff: 75% (54/72 trials)). Based on the data, we discuss why our data are consistent with Pelletier’s original proposal that Universal Grinder is indeed universal and the substance-denoting reading via Universal Grinder is part of the lexical meaning of a word. (See Appendix for the details of the experiment).

Appendix :

Condition 1: Substance-oriented context with ground stuff (It is biased to quantify over the **volume** of mass)

Scenario: Bird Monster and Frog Monster likes eating, and they ate everything. But they did not have any teeth, so they had to use a grinder to grind their food. One day, Bird monster caught two big dogs. He ground the dogs into a big pile of food and ate it up and became very full. Frog monster caught four small dogs. He ground his dogs into a small pile of food and ate it up, but he was still hungry.

Test Sentences:

Daniao yaoguai chi le genduo gou
Bird-Monster eat Asp more dog
(lit.) 'Bird monster ate 'more dog'.'

Results: Both the children (90%% (65/72 trials)) and adults (75% (54/72 trials)) predominantly accepted the test sentences and assigned the substance-denoting reading to the animate nouns in the substance-oriented contexts with ground stuff (quantifying via volume of mass).



Condition 2: Substance-oriented context without ground stuff (It is biased to quantify over the **volume** of mass)

Condition 2 from Condition 1 only in one aspect: the lack of ground stuff (e.g., the two monsters ate their dogs without grinding them.)

Test Sentences:

Daniao yaoguai chi le genduo gou
Bird-Monster eat Asp more dog
'Bird monster ate 'more dog'.'

Results: Both children (75% (54/72 trials)) and adults (70% (51/72 trials)) predominantly accepted the sentences and assigned the **substance-denoting** readings (quantifying by **volume** of mass).



Condition 3: Individual-oriented context: (It is biased to quantify over the **number** of entities)

Scenario: Fairy Butterfly and Fairy Bird had a magic competition. Using their magic, Fairy Butterfly made two big dogs, and Fairy Bird made four small dogs. Fairy Bird won the competition and got a gold medal, and Fairy Butterfly only got a black cross.

Test sentences:

Hudie xiannv bianchu le gengduo gou
Fairy-Butterfly make Asp more dog
(lit.) 'Fairy Butterfly made 'more dog'.'

Results: Both children and adults **rejected** 100% of the time (72/72 trials) with appropriate justifications and assigned the **individual-denoting readings** (quantifying by **number**).

