

# Measuring the effect of cancelling the Maxim of Quantity

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## Quantity and scalar implicature

Pragmatic Views (Gricean, neo-Gricean, Relevance-Theoretic (e.g., Grice, 1975, Horn and Ward, 2004, Sperber and Wilson, 1986))

Make your contribution to the conversation as informative as is required for the purposes of the exchange.

Susie ate cookies or ice-cream → not both.

Grammatical exhaustification (e.g., Fox, 2007, Chierchia et al., 2004; 2008)

Operator optionally applied with semantics similar to the term *only*.

Susie ate cookies or ice-cream → Susie only ate cookies or ice-cream

## Game-Show Scenario

Fox (2014, p. 7)

*There are 100 boxes and five of them contain a million dollars each (the rest of the boxes are empty). The show's host knows the identity of the five boxes, but will, of course, not disclose this information. At any point, contestants can take the risk of choosing a box. At various points hints are provided by the host, with the common understanding that these reveal only part of the relevant information available to the host.*

Hint: There is money in box 20 or 25.

## Competing Predictions

The pragmatic views make no predictions about what occurs when Quantity is not available, resulting in that when Quantity is unavailable, i.e., neither are scalar implicatures.

- Box 20 or 25 = Box 20 or 25 or both.

The grammatical views predict that scalar implicatures are available despite Quantity being unavailable.

- Box 20 or 25  $\Rightarrow$  Box 20 or 25 **and not both**.

# Experiment

Eight items, four disjunctions & four numerals

Pragmatic Approach

**Box 20 or 25 (S~~I~~)/Win** → **Another box**  $\approx$  **Box 25**

Box 20 or 25 or both/Win → Another box  $\approx$  Box 25

Box 20 or 25 (SI)/Lose → Box 25 > Another box

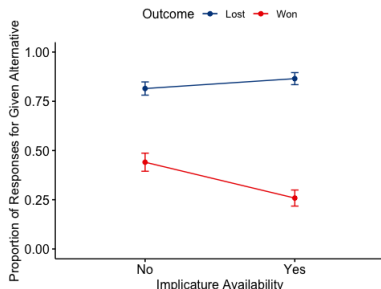
Box 20 or 25 or both/Lose → Box 25 > Another box

Grammatical Approach

**Box 20 or 25 (SI)/Win** → **Another box** > **Box 25**

210 participants from SONA and community sample  
**Box 20 or 25 (SI)/Win → Another box > Box 25**

Choice as a Function of Impicature Availability



$$\chi^2(1) = 5.93, p = 0.015$$

Box 20 or 25 or both/Win → Another box  $\approx$  Box 25

Box 20 or 25 (SI)/Lose → Box 25 > Another box

Box 20 or 25 or both/Lose → Box 25 > Another box

# Conclusion

Scalar Implicatures are still available when Quantity is cancelled.

- Support for the grammatical theory of scalar implicature.

Caveats:

- Hurford's disjunctions
- Conversational expectations in non-cooperative contexts.

## References

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## Numeral Experimental Item

Your task is to choose a numbered door. There are eight numbered doors and four of them are associated with a million dollar prize. The host tells the first contestant that there is money associated with **one/at least one** door with a number less than 3. The contestant before you picks Door 1 and **wins a million dollars/does not win any money**. Imagine you are the next contestant in this game. The host does not give you any new hints.

Which action are you most likely to take?

- a.) Choose Door 2.
- b.) Choose another door.

# Experiment 1: Predictions & Results

Frameworks	Disjunction	Previous Outcome	Predicted Choices
Pragmatic	<b>box 20 or 25</b>	<b>won</b>	<b>another box <math>\approx</math> box 25</b>
	box 20 or 25 or both	won	another box $\approx$ box 25
	box 20 or 25 or both	lost	box 25 > another box
	box 20 or 25	lost	box 25 > another box
Grammatical	<b>box or 25</b>	<b>won</b>	<b>another box &gt; box 25</b>
	box 20 or 25 or both	won	another box $\approx$ box 25
	box 20 or 25 or both	lost	box 25 > another box
	box 20 or 25	lost	box 25 > another box

Scalar Item	Implicature	Previous Outcome	Proportions (SE)	RT (SE)
Disjunctions	Available	Won	0.22 (0.05)	32.1 (1.6)
	Available	Lost	0.82 (0.05)	27.4 (1.5)
	Unavailable	Lost	0.86 (0.04)	29.2 (1.5)
	Unavailable	Won	0.39 (0.06)	33.6 (2.0)
Numerals	Available	Won	0.26 (0.06)	31.0 (1.8)
	Available	Lost	0.86 (0.04)	28.5 (1.8)
	Unavailable	Lost	0.81 (0.05)	27.8 (1.4)
	Unavailable	Won	0.44 (0.07)	33.1 (1.7)

# Attentional Pragmatics

Assumptions on the pragmatic views about the granularity of the semantics is made & Quantity.

Experiment 1: Distinction between *or* and *or both*

Attentional pragmatics provides an alternative solution to both issues by appealing to the maxim of Relevance (one's contribution ought to be relevant to the conversation)

## Shifting relevance

I want to go to Jasper.

I want to go to Jasper or Banff.

I want to go to Jasper or Banff or both.

Separability of Quantity and Relevance maxims in conversation

- Quantity-2 (Do not make your contribution more informative than is necessary) is subsumed by the Relevance maxim, in the sense that an extraneously informative claim is irrelevant to conversational goals.

Meyer (2013) - Quantity & Relevance are distinct, Quantity is constrained by the game show scenario but such information would also be relevant.