The Quantity Framing Effect: How Quantity Description Affects Perceived Value

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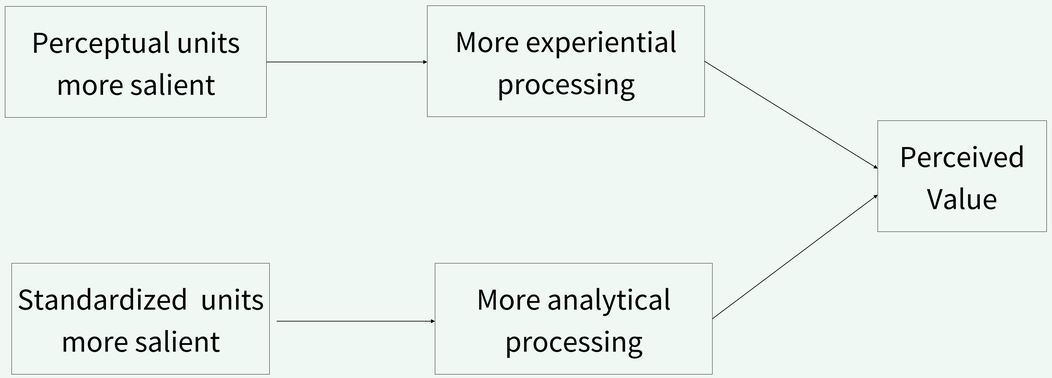
Main findings

- **Value judgments** can be either more **experiential**, based on how one feels about the product, or more **analytical**, based on price calculations relative to relevant standards
- Subtle changes in quantity description alter perceived economic value. Merely making **perceptual units** salient (e.g., Lay's Chips, 14 snack bags, each 1 oz.) **increases experiential processing**, and in turn **perceived value**, compared to making standardized units salient (e.g., Lay's Chips, 14 oz. in snack bags, each 1 oz.)

Theory - A dual-process model of price-quantity evaluations



Study 1 - The Amazon study (Archival Data)

- Data: 1,388 price-per-unit observations of the top 100 best sellers of 15 categories on Amazon.com
- IV: Quantity description (Perceptual unit salient vs. Standardized unit salient)
- DV: unit price ($ / oz.)
- Covariates: Pack size (weight in oz.) and sales ranking (we used random intercepts for product category)
- Results: Retailers charge higher unit price when perceptual (vs. standardized) units are used, $b = .29$, $p < .001$
- Results (2): The association between quantity description and unit price is attenuated for larger packs
- Discussion: Retailers tend to charge a higher unit price when quantity is described with a perceptual unit salient

Study 2a (n = 465) - Perceptual units increase WTP

- Perceptual unit salient:
  Lay's Chips, 14 snack bags
  14 oz. of chips in snack bags of 1 oz. each
- Standardized unit salient:
  Lay's Chips, 14 oz.
  14 oz. of chips in snack bags of 1 oz. each
- Results: The salience of perceptual (vs. standardized) units increases WTP, $M = \$5.56$ vs. $\$5.07$, $p < .001$

Study 2b (n = 939) - Moderation by pack size

- The effect is significant for the small pack (9 oz./bags), $M = \$5.34$ vs. $\$4.32$, $p < .001$, but not for the large pack (24 oz./bags), $M = \$7.88$ vs. $\$7.53$, $p = .21$.
- This is because when number magnitude in quantity description increases, attention shifts from the unit to the number

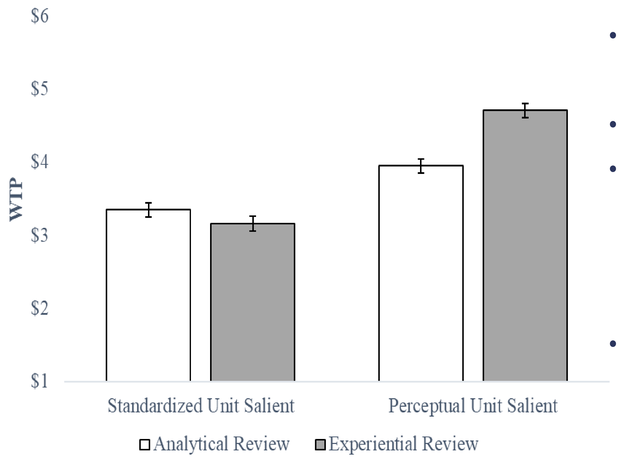
Study 3a (n = 400)

We manipulated between participants:

1) The salient unit in the first sentence: either perceptual (10 snack bags, see picture), or standardized (10 ounces)
2) The consumer review: either experiential (focused on taste and texture, see picture), or analytical (focused on unit price and value calculation)

Everything else was identical.

Study 3a – Results: The salience of perceptual units increases the influence of experiential input



- IV: 2 (Salient unit: Perceptual vs. Standardized) x 2 (Consumer review: Experiential vs. Analytical)
- DV: Personal WTP
- Results: The experiential review increased WTP when the perceptual units was salient ($M_{experiential} = \$4.71$, $M_{analytical} = \$3.95$, $p < .001$) but not when the standardized unit was salient ($M_{experiential} = \$3.16$, $M_{analytical} = \$3.35$, $p = .48$)
- This suggests that the salience of perceptual units facilitate experiential processing

Study 3b (n = 400) - Perceptual units increase the influence of product enjoyment

The positive effect of product enjoyment (measured, e.g., "How much do you enjoy eating this product?") on WTP is stronger when a perceptual unit is salient, suggesting that perceptual units facilitate experiential considerations

Study 4a (n = 210) - The distorting effect of the salient unit

- When only one unit is given, perceptual units increase WTP. The bias persists even when participants are given both units subsequently and can revise their WTP, suggesting information distortion due to the salient unit

Study 4b (n = 310) - What if both units are prominent?

- Results: We observe the positive effect of the perceptual unit on WTP even when the standardized unit is also salient
- The human mind favors experiential processing when this route is available

References

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- Lembregts, Christophe, and Bram Van den Bergh (2019), "Making Each Unit Count: The Role of Discretizing Units in Quantity Expressions," *Journal of Consumer Research*, 45 (5), 1051-1067.
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- Paivio, Allan (1990), *Mental representations: A dual coding approach*, Oxford University Press.

Note: Experiments 2a, 2b, 3a, 3b, 4a, and 4b were all preregistered