

Do panelists “monkey-pick” attributes in TDS studies and how relevant is it to know?



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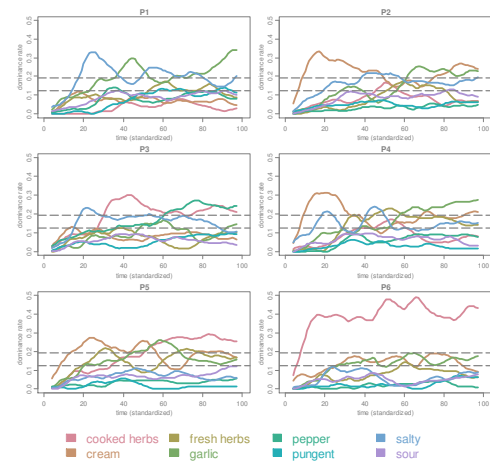


Background and objective

- Classical significance lines widely used in conjunction with TDS curves
- Implicit null hypothesis: Participants use attributes randomly with equal probability
- Results should resemble those from poor reading but task-engaged monkeys (“monkey-picking”, MP)
- Is it worth testing this hypothesis?

TDS curves: real fresh cheese data

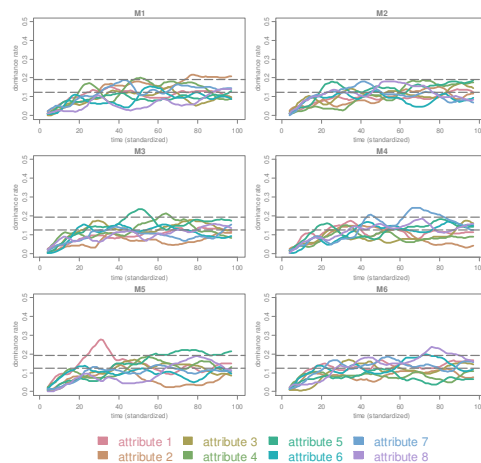
Figure 1 (data from Thomas et al., 2015, FQAP 40, 365-375)



- ↗ distinct product signatures
- ↗ “typical” TDS curves from real data

TDS curves: monkey-picking

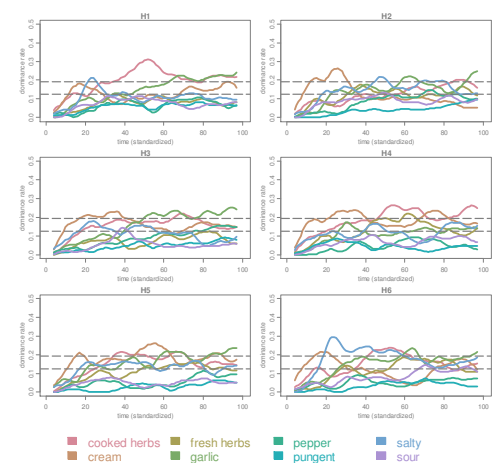
Figure 2



- ↗ permute attributes to simulate “monkey-picking”
- ↗ attributes = hybrids of real attributes
- ↗ few curves cross the significance line
- ↗ curves don’t look like typical TDS curves (too flat)

TDS curves: putative fresh cheeses

Figure 3

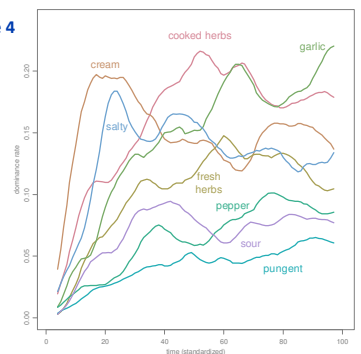


- ↗ permute products to get random TDS data
- ↗ products = hybrids of real products
- ↗ curves retain distinct temporal signatures
- ↗ seem to be interpretable as TDS curves (!?!?!?)

Implication

- We *never* observe curves as flat as in Fig. 2 in real TDS studies
- TDS “significance line” based on MP hypothesis, which known to be false a priori
- There is always a category signature: products share common characteristics
- Figure 4 gives estimated category profile for the product category (overall mean)

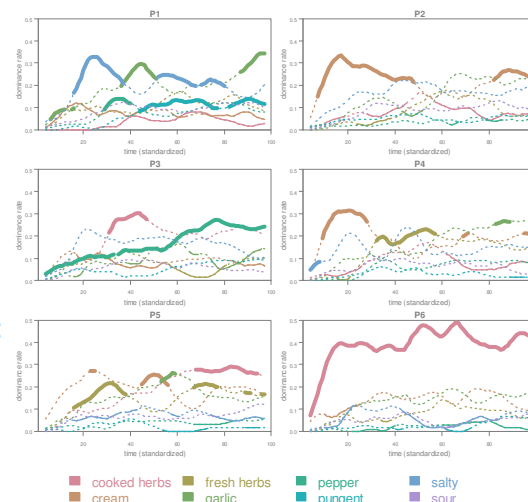
Figure 4



Alternative proposal

- Compare against relevant (category) signature, e.g. based on
 - Average overall dominance rate
 - Mean of “other” products
 - Historical data
 - Reference product
 - ...
- Significances indicated by solid lines: none = dotted; bold = higher; thin = lower
- Allows for much more detailed interpretation (Fig. 5)

Figure 5 (TDS curves are identical to Fig. 1, with significances highlighted)



Conclusions

- Hypothesis of “monkey-picking” is meaningless, as are classical TDS significance lines
- Better to compare against a category signature
- Enables richer interpretation

“How-to” details to appear in an upcoming paper.