Uncovering the Role of Structural Properties in Food Association Networks

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1 2

Scan here for details

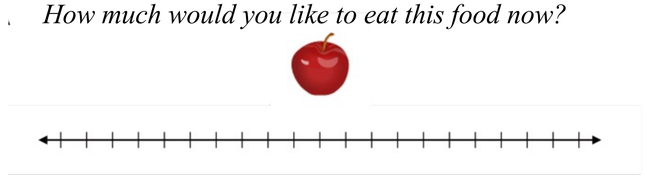
How do people choose between menus, like when choosing which restaurant to dine in?

Similar items, defined here as having associations between them, are liked more.[1,4,5]

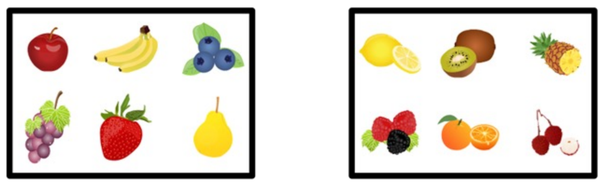
Do people prefer sets of items that are more *well-connected*?

Experimental Design

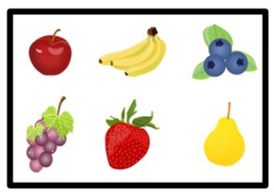
Rating *How much would you like to eat this food now?*



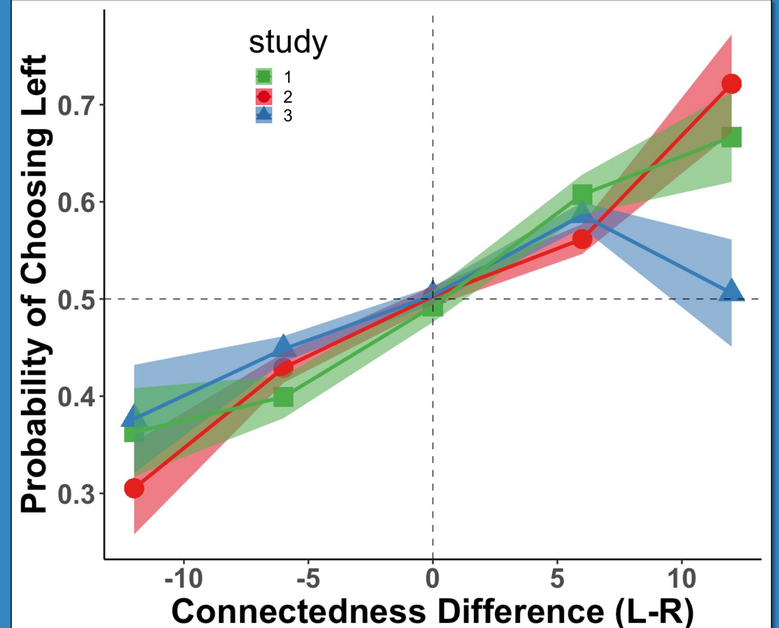
Choice *Choose which group of foods you would prefer to eat*



Similarity *If a person likes one of these foods, how likely is it that they similarly like the others?*

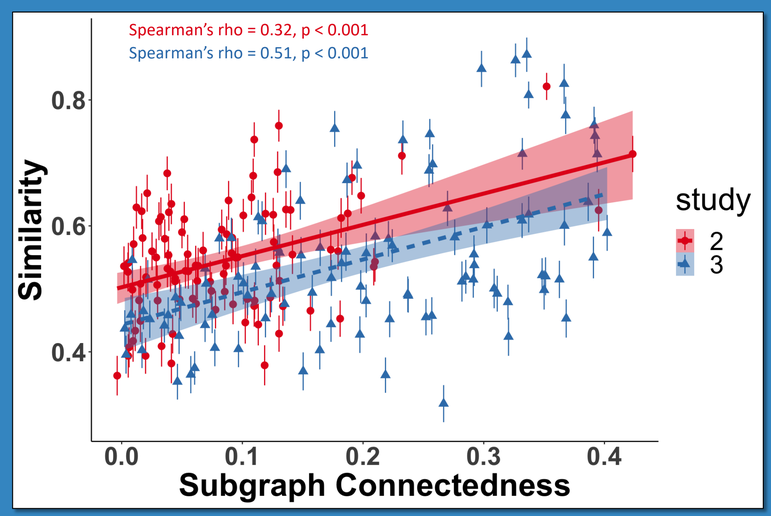


Study one; N = 30	Study two; N = 75	Study three; N = 79
A 60 food items	**A** 60 food items	**A** 60 food items
B 99 trials	**B** 100 trials	**B** 100 trials
	C 100 sets	**C** 100 sets



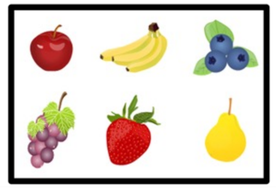
Relations affect people's choices between sets – people prefer sets with more well-connected items

Relational representations derived from preference data align well with subjective similarity



Network science allows us to assess preferences-based connectivity. [3,6]

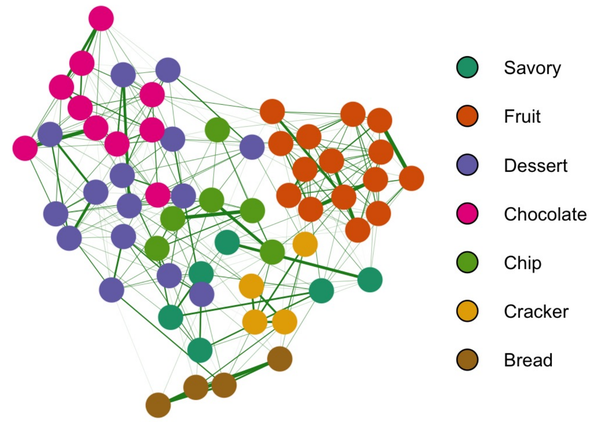
Extract *connectedness* scores for each item



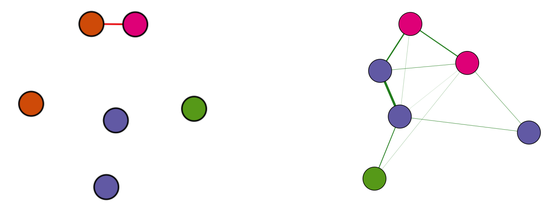
40	30	60
44	10	2

$$G = \sum_{i}^{6} score_i$$

Food Preference Association Network
(estimated from Lee & Holyoak, 2021)



Extract *subgraphs* for sets of items



Poorly-connected set **Well-connected set**