

Choice Moments

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Which yogurt?

- Which is the healthiest and has lowest carbon footprint?
 - A has higher amount of fats and saturates
 - B has lower amount of CO2 grams
 - A says % per adult's daily amount and B per serving
 - A is priced at \$3 and B at \$1.50



- You choose the cheapest!

Which shirt?



How do people cope with lots of choice?



The CHOICE project*

- Food shopping involves vast amounts of decision-making and money spent
- The food decisions we make result in huge impacts on our health and environment
- How can we influence shoppers' decisions – to be healthier, greener, more ethical?

*With Steve Payne (Bath University) & Peter Todd (Indiana University)

Why not simply help the shopper...

By changing the supermarket layout

- adding a new section of ‘green’ or ‘healthy’ products

but...

Lots to choose from...



30,000 items in a typical supermarket



Amount of choice seems overwhelming



But even worse in DIY stores

Study Finds Paint Aisle At Lowe's Best Place To Have Complete Meltdown

The Onion, April 3, 2009 | [Issue 45•14](#)

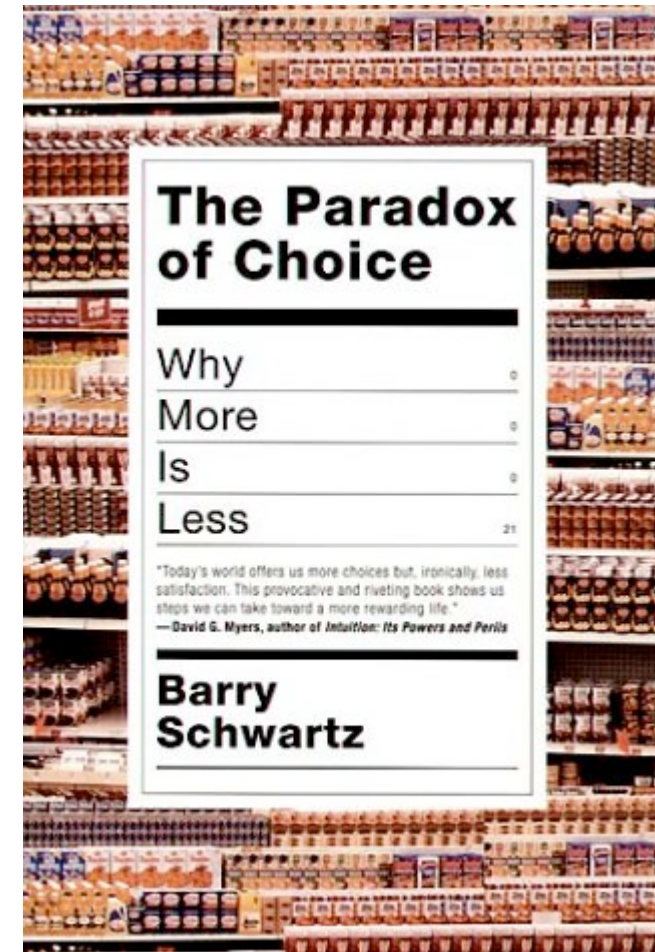


AUSTIN, TX—According to a study published Monday in the *Journal Of Mental Health*, the paint department inside a Lowe's Home Improvement Warehouse has surpassed the shelving section of Ikea as the location most **conductive to having a total psychological breakdown.**

The study, which observed a cross-section of 750 average, mentally sound Americans as they shopped at a variety of retail outlets, found that the singularly chaotic qualities of a Lowe's paint aisle, combined with its **overwhelming number of product choices, make it the ideal place to completely fall apart.**

Presumed perils of too much choice

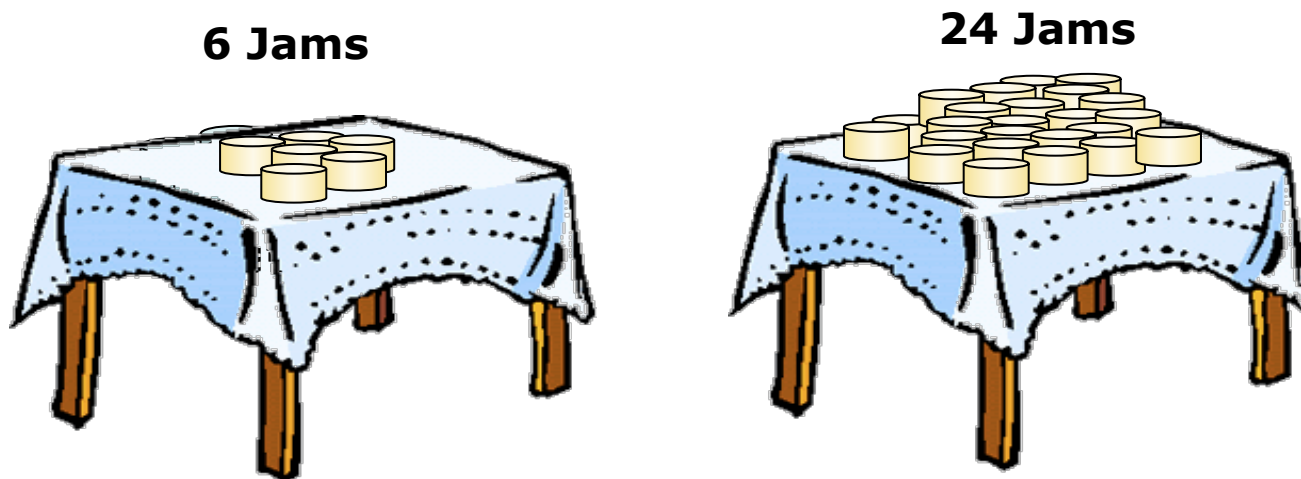
- Barry Schwartz (2004):
“Although some choice is undoubtedly better than none, more is not always better than less.”
- Assumed effects:
 - Procrastination
 - Regret
 - Disappointment
 - Lower satisfaction with chosen option



Empirical test of the too-much-choice effect

Experiment by Iyengar and Lepper (2000)

- Tasting table with exotic jam at the entrance of an upscale supermarket
- Varying number of different jams at tasting table
- Coupon to purchase jam at a reduced price



Evidence for the effect



6
alternatives

40% of customers stopped

30% of them bought



24
alternatives

60% of customers stopped

3% of them bought

Demotivating “too much choice” effect

But...

- Other studies have not replicated the “too much choice” effect (Todd)
- People are not overwhelmed by too much information
- They are much smarter than that...

Snap decisions

- Human minds have evolved to act quickly
- Make 'just good enough' decisions
- Use 'fast and frugal' heuristics
- Ignore most information
- Rely on a few salient cues
 - e.g., scary, attractive



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Speed dating



How do we help shoppers...

- Make more informed decisions?
- How do we get people to pay attention to and use **new** information?

Add information to packaging?

Kellogg's® Smart Start® Healthy Heart

Nutrition Facts		
Serving Size 1 1/4 Cups (60g/2.1 oz.)		
Servings Per Container About 7		
Cereal with 1/2 Cup Vitamins A&D		
Amount Per Serving	Cereal	Fat Free Milk
Calories	230	270
Calories from Fat	20	20
% Daily Value**		
Total Fat 3g*	5%	5%
Saturated Fat 0.5g	3%	3%
Trans Fat 0g		
Cholesterol 0mg	0%	0%
Sodium 140mg	6%	8%
Potassium 400mg	11%	17%
Total Carbohydrate 46g	15%	17%
Dietary Fiber 5g	23%	23%
Soluble Fiber 2g		
Insoluble Fiber 3g		
Sugars 17g		
Other Carbohydrate 24g		
Protein 7g		

Ingredients: Oat bran, rice, sugar, oat cluste (sugar, toasted oats [rolled oats, sugar, hi fructose corn syrup, partially hydrogenate soybean oil, molasses, honey], wheat flake crisp rice [rice, sugar, malt, salt], corn syru3, polydextrose, honey, cinnamon, BHT for fresi ness, artificial vanilla flavor), high fructose co syrup, malt flavoring, potassium chloride, sa baking soda, ascorbic acid (vitamin C), niacin mide, zinc oxide, reduced iron, calcium pai tothenate, pyridoxine hydrochloride (vitam B6), riboflavin (vitamin B2), thiamin hydrochl ride (vitamin B1), BHT (preservative), vitamin palmitate, folic acid, vitamin B12, vitamin D.

CONTAINS WHEAT INGREDIENTS.

Exchange: 3 Carbohydrates
The dietary exchanges are based on the *Exchange List for Meal Planning*, ©2003 by The American Diabet Association, Inc. and The American Dietetic Associatio

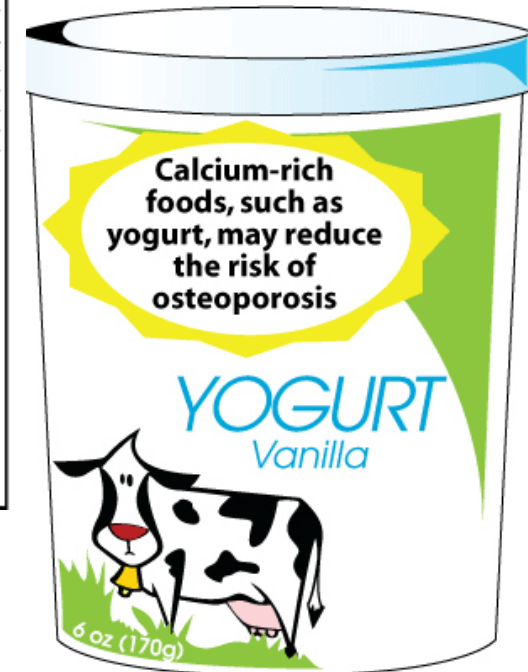
Nutrition Facts		
Serving Size 1 box (19g)		
Servings Per Container 2		
Amount Per Serving		
Calories	70	
Fat Calories	0	
% Daily Value*		
Total Fat	0g	0%
Saturated Fat	0g	0%
Cholesterol	0mg	0%
Sodium	200mg	8%
Total Carbohydrate	17g	6%
Dietary Fiber	1g	3%
Sugars	1g	
Protein	1g	
Vitamin A	8%	Vitamin C 15%
Calcium	0%	Iron 6%
Vitamin D	8%	Thiamin 15%
Riboflavin	15%	Niacin 15%
Vitamin B6	15%	Folate 15%

* Percent Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carb.		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Ingredients: Coen, sugar, salt, malt flavoring, coen syrup, niacinamide, ascorbic acid (C), iron, pyridoxine hydrochloride (B6), riboflavin (B2), vitamin A palmitate, thiamin hydrochloride (B1), folic acid and vitamin D. Quality protected with BHT.



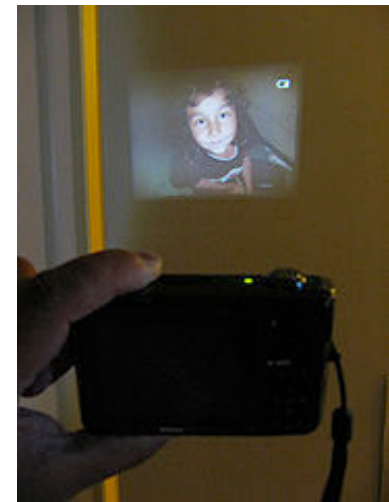
How effective?

- Shoppers simply do not read lots of information when in the supermarket
- Drawn to compelling cues



Can ubicomp technologies help?

- Mobile augmented reality is here...
 - Patty Maes 6th Sense project
 - smartphones and pico projectors



QR codes



Ambient information displays



“Ambient Orb” showing energy usage and cost by color

The future is bright

But the design of the representation is key...

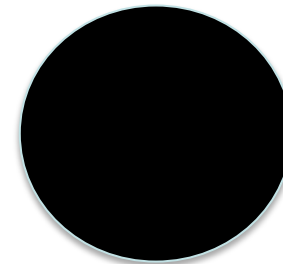
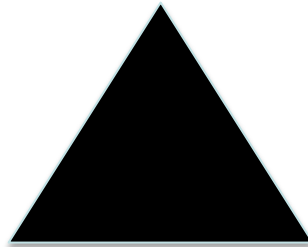
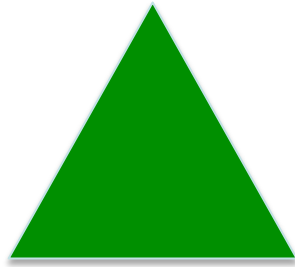
Three S's:

1. **Simplify** – information conveyed (including dimensions of healthiness, greenness, etc.)
2. **Summarize** – the dietary impact e.g. for a week
3. **Show** – make personal choices public



1. Simplify

- Concepts can be represented by one shape/colour varying in good or badness



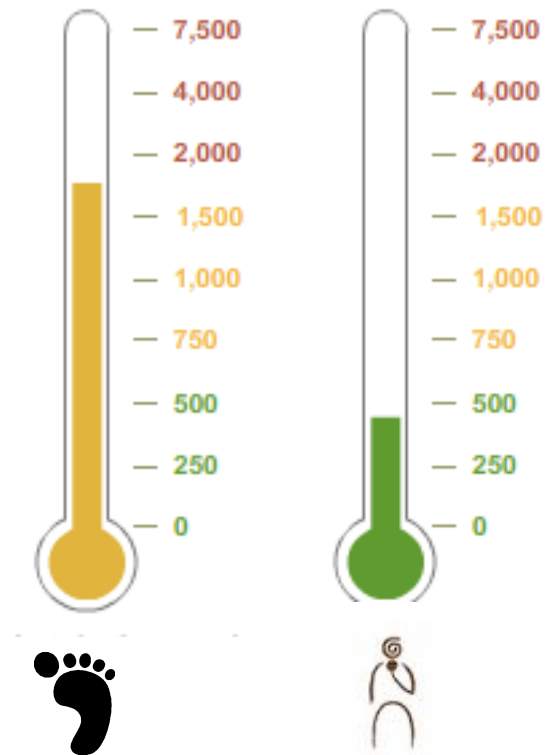
healthiness

greenness

locally
sourced

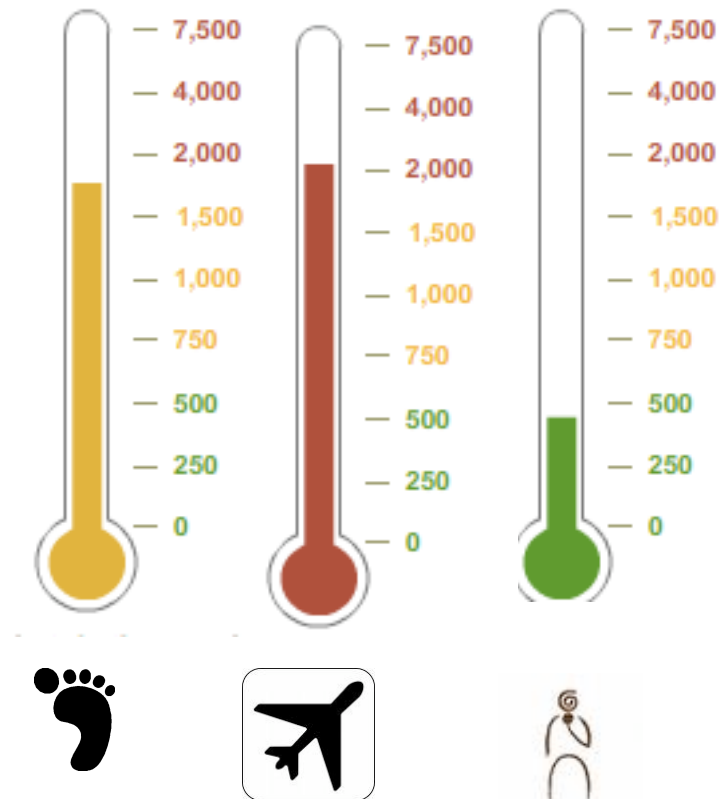
2. Summarize

- Weekly shop total for carbon footprint and healthiness



Multi-dimensional information

- Weekly shop total for carbon footprint, food miles and nutrition



3. Show

- Ambient orb display could show aggregate representation of carbon footprint relative to norm



- Suggest “good” or “bad” shoppers
- Would such public displays raise awareness?

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Implications

- Introducing new information into the environment is problematic
 - people often ignore it
 - act on salient cues
- We need to *change* the cues that people notice when making their choices
 - not simply by adding more information
 - developing salient representations conveyed via pervasive technologies

Salient and shocking

- What is your carbon footprint for daily computer usage?
 - two Google searches = boiling one kettle
 - 100 emails = ??
 - perpetual Facebook updating = ??
- What happens when provide feedback?

Individual



Yvonne

Individual



Paul

Compare with average



Yvonne



Average

Compare with average



Average

Paul

Effect of this feedback



Yvonne



Average



Paul

The boomerang effect

- Social norms can have a powerful effect on behavioural change
- People do not always change their behaviour towards the desired goal
- May increase undesired behaviour if below the norm



The price of Prius

- Hybrid cars produce less emissions than a comparably-sized petrol car
- Hybrid car owners drive more than those with conventional cars
- May save on fuel but emissions go up



Eliminating the boomerang

- Shultz et al (2007) study
 - (i) Householders told exact amount of energy consumption + average
 - (ii) Given additional smile faces



Findings

When given own consumption plus average:

- | | |
|---|-----------------|
| (i) Above average energy users
<i>decreased</i> consumption | 1255kW
950kW |
| (i) Below average energy users
<i>increased</i> consumption | 560kW
950kW |

The power of a nudge

When given an additional smile face:

(ii) Above average showed even ***larger decrease*** in consumption



(ii) Below average did **not change** their behaviour



Conclusions

- Key to helping people change their behaviour so as to be healthier, greener, nicer...
 - provide new information in a provocative and digestible form
 - to cue them so they notice it
 - understand how to **represent** and **present** information that capitalizes on human nature