

Food Choice and Nutrition Labels: The UK Traffic Light System as a Case Study

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Context

- UK FOP (Front-of-Package) food labelling is optional/voluntary
- Purpose – inform choice, healthy diet, reduce obesity, etc.
- 2006 – FSA – guidelines that manufacturers employ when labelling food nutrient content
 - Fat, Sugar, Saturates and Salt (Calories)
- The Traffic Light System (TLS) – Red, Amber and Green
- Colour – content nutrient per 100grams any food type
- But many manufacturers/retailers adopted own

An example of the UK Traffic Light System.

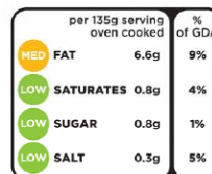
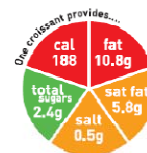
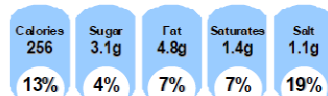


RED - high nutrient content is present in a product
AMBER - is in the middle
GREEN - indicates much lower content

A **RED** - something we should be trying to cut down on
 A **GREEN** - low in that nutrient
 More **GREEN** lights - a healthier the choice

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The coexistence of different label types



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Policy Environment

- June 2010 – MEPs voted on form of nutritional labelling in EU - TLS vs GDA
- Rejected TLS as compulsory - adopted GDA on a mandatory basis
- Many manufacturers stay with GDA - some modified the TLS
- FSA move toward “Integrated Labels” - combine:
 - Text (High, medium, low)
 - Traffic Light Colours
 - % GDA
- *“Food labelling has become a collage of disparate, sometimes competing messages.”*
- More generally, a *“policy cacophony on obesity”*

Research on TLS

- Large amount of research on consumer understanding
- Much less research on consumer use (use is typically self-reported, not actual)
- Some research on response by food sector to the TLS
- Choice Experiments (CE) examine information/price trade-off
- CE FOP and eye-tracking (pilot results)

Understanding of TLS

- Example - Borgmeier and Westenhoefer (2009)
- Examined 5 labels – asked identify in pair-wise comparison the healthy option
- TLS highest 24.8 out of 28, No label 20.2 out of 28
- No significant differences between label type
- 2nd task daily food consumption – for all nutrient labels above daily recommend levels
- Participants ok single product – struggle constructing a basket of goods

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Country Specific Results

- Grunert et al (2010) UK and EU studies
- In-store observation – 27% look at FOP (high) in UK, 9% in France
- High understanding UK - (70-90%) – motivation – healthy eating
- UK best across all EU countries
- Grunert et al observe, *“the length and intensity of public debate on issues of nutrition and labelling leaves traces in the population.”*
- Consumer use – Sachs et al. (2009) major UK retailer 4wks before/after TLS introduced – no difference in sales
- Some retailers reported to have substituted (reformulated) away from Red
- Virtually no research examines price/information relationship
- Lots of research does note that price can and frequently does “eclipse” other aspects of product

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TLS Choice Experiment

- “Basket” of goods – used TLS to label nutrients - Why?
- TLS – need to consider whole diet – not just the single product
- Evidence – select a healthy option, over compensate with some sort of indulgence
- Very simple CE – 3 choices and a Don’t Know
- In general consumers appear to understand TLS
- WTP Reduce - Salt>Saturates>Sugar>Fat (These results are plausible given general attitudes expressed about nutrients)
- WTP Females > Males
- WTP Household with children > Without children

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CHOICE CARD 1				
Food Basket	Option 1	Option2	Option3	
Salt	Amber	Red	Green	Don't Know
Sugar	Amber	Green	Amber	
Fat	Red	Amber	Red	
Saturates	Amber	Amber	Red	
Price of basket	£20	£25	£30	
Tick ONE and only one box				

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But.....

- WTP estimates – very high (not really credible)
- Various reasons are advanced in the literature:
 1. Choice set complexity
 2. Attribute non-attendance
- So what do WTP estimates reported actually mean?
- If non-attendance – an attribute is ignored (exclude in model estimation)
- Can be viewed as a strategy to cope (choice heuristic)
- How serious is this problem?
 - Scarpa et al (2009) – use all attributes (10%)
 - Ignore the monetary attribute 80-90% participants
- Various econometric/data manipulation methods available to deal with limitation
- But have been dependent on **ex-post de-briefing** – considered suspect.

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CE/TLS and Eye-Tracking

- New research – use eye-tracking to examine how respondents under the CE task
- Check what they are looking at, and when ex-post we ask them, can check if consistent with actual behaviour
- Provides a robust approach to assess attribute non-attendance as well as other aspects of behaviour when completing the CE survey
- Have run a pilot exercise at University of Reading (n=30) with the TLS CE survey instrument

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Eye-Tracking Research

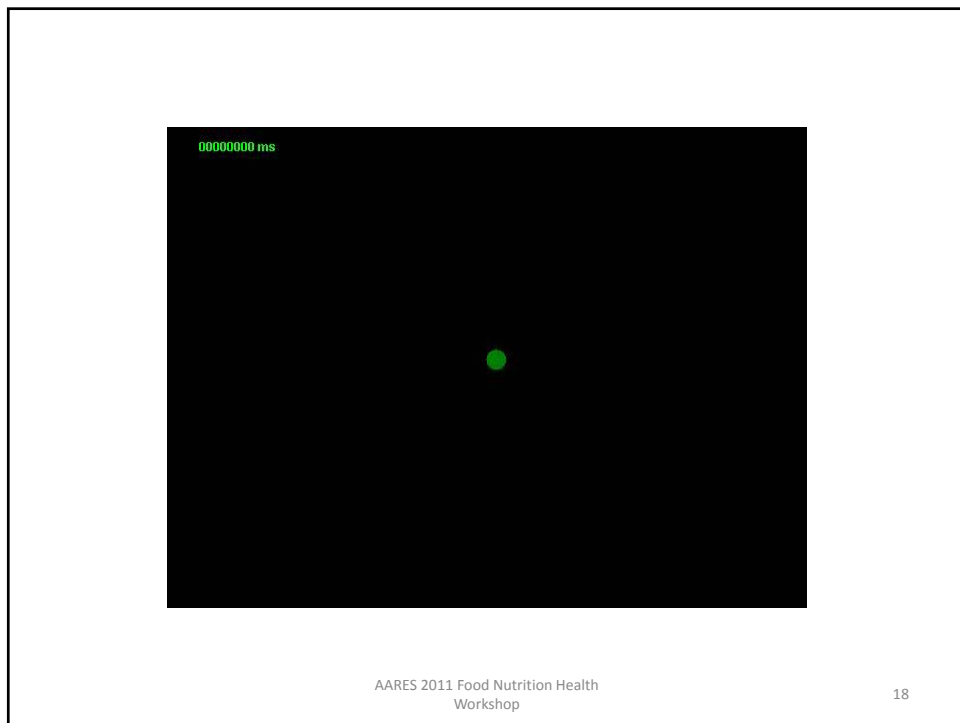
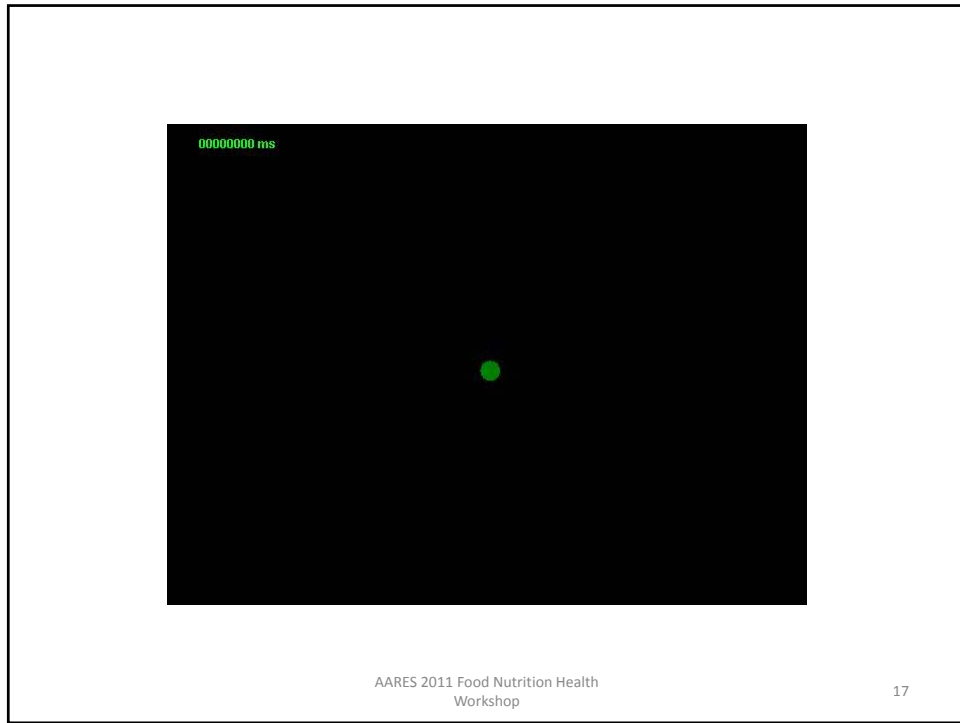
- ET is already being used in FOP label research:
 - Goldberg et al (1999)
 - Jones and Richardson (2007)
 - Visschers et al (2010)
 - FSA has commissioned research on ET and labels
- Eye movements – provide potentially important understanding of information acquisition – visual attention is a coordinating mechanism helping with information processing (ie search)
- Two types:
 - Fixations (“relatively” still)
 - Saccades (rapid)
- Research into what stimulates visual attention:
 - Top-down (traits and states of the individual)
 - Bottom-up (visual marketing stimulus) – more known

Preliminary Results

- Have just completed the lab work – all completed the CE survey instrument
- Basic data generated:
 - Video showing movement around the Choice card
 - Graphics showing fixation spots (circles) – with diameter and the numbers showing how many milliseconds the participant stayed there (e.g., 694 ms). The lines joining each circle shows the saccadic eye movement.
 - Heat maps – show fixation distributions. Hotter colours indicate more time spent at these locations.
- Also ask debriefing questions – which attributes did you use/not use
- Can combine with data on choices – better model actual attribute use
- Also potentially employ pilot CE design, randomly during CE to check attribute use

CHOICE CARD 15			
Food Basket	Option 1	Option 2	Option 3
Salt	Amber	Amber	Red
Sugar	Amber	Red	Green
Fat	Red	Green	Amber
Saturates	Amber	Green	Amber
Price of basket	£20	£15	£18
Click ONE and only one box			

CHOICE CARD 1			
Food Basket	Option 1	Option 2	Option 3
Salt	Amber	Red	Green
Sugar	Amber	Green	Amber
Fat	Red	Amber	Red
Saturates	Amber	Amber	Red
Price of basket	£20	£25	£30
Click ONE and only one box			



So What?

- After completing the CE we ask a series of debriefing questions:
- Only eg1 indicated considered price
- Both eg2 and eg3 did not check price
- As a result we can cross check use of attributes ex-post with actual use.
- Modify data and estimate choice model consistently
- Avoid reliance on ex-post de-briefing
- Highly likely, inflated WTP will be significantly diminished

Closing Observations

- TLS (GDA) has been the subject much research
- TLS (GDA) has been the subject of intensive industry debate
- FOP in UK – generally high level of understanding
- FOP in UK – some evidence that consumers moderate consumption - substitution effect
- Labels can increase welfare even if they do not lead to any health benefits
- CE research – number of limitations
- But limitations induced a change in how we might conduct CE research in the future.