



HAL
open science

When using nutritional labels, less is better

Marie Prevost, Pascal Hot, Monica Baciu, Bernard Ruffieux, David Meary, Paolo Crosetto, Laurent Muller

► **To cite this version:**

Marie Prevost, Pascal Hot, Monica Baciu, Bernard Ruffieux, David Meary, et al.. When using nutritional labels, less is better. ICPS 2015 - International Convention of Psychological Science, Mar 2015, Amsterdam, Netherlands. pp.1, 2015. <hal-01190188>

HAL Id: hal-01190188

<https://hal.science/hal-01190188v1>

Submitted on 1 Sep 2015

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

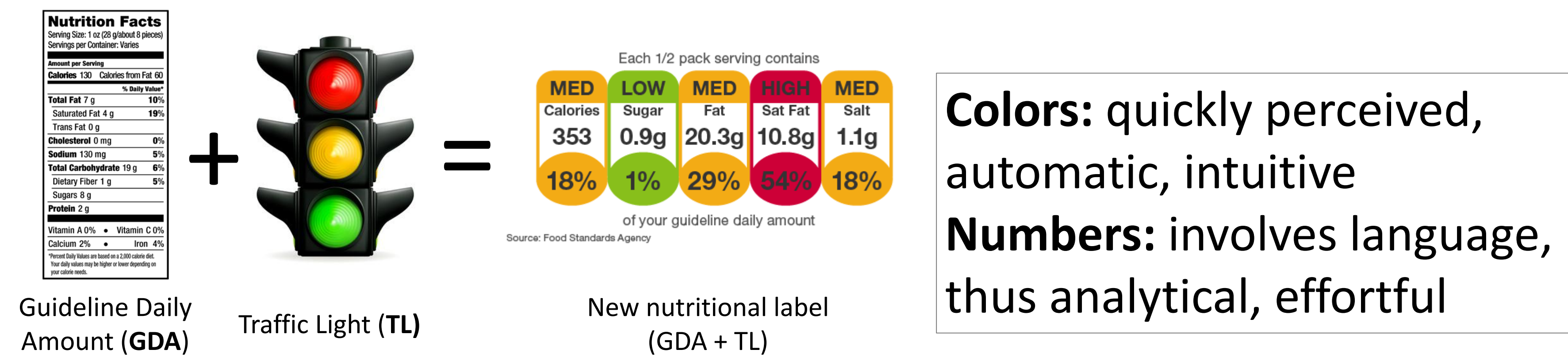
L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

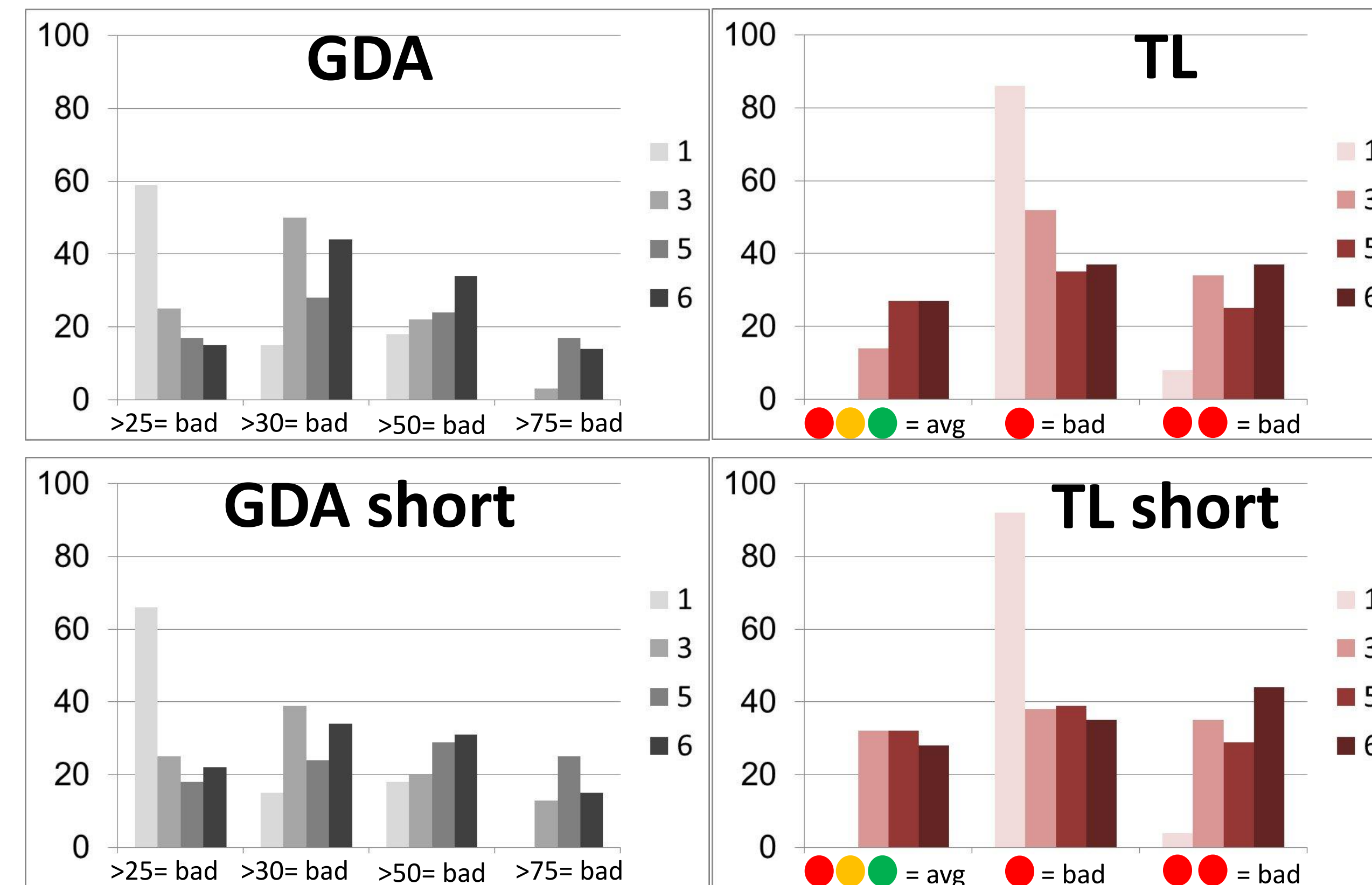
M. Prevost, P. Hot, M. Baciú, B. Ruffieux, D. Meary, P. Crosetto, L. Muller – Grenoble, France
Grenoble Applied Economic Laboratory (GAEL) – Laboratory of Psychology and NeuroCognition (LPNC)

BACKGROUND

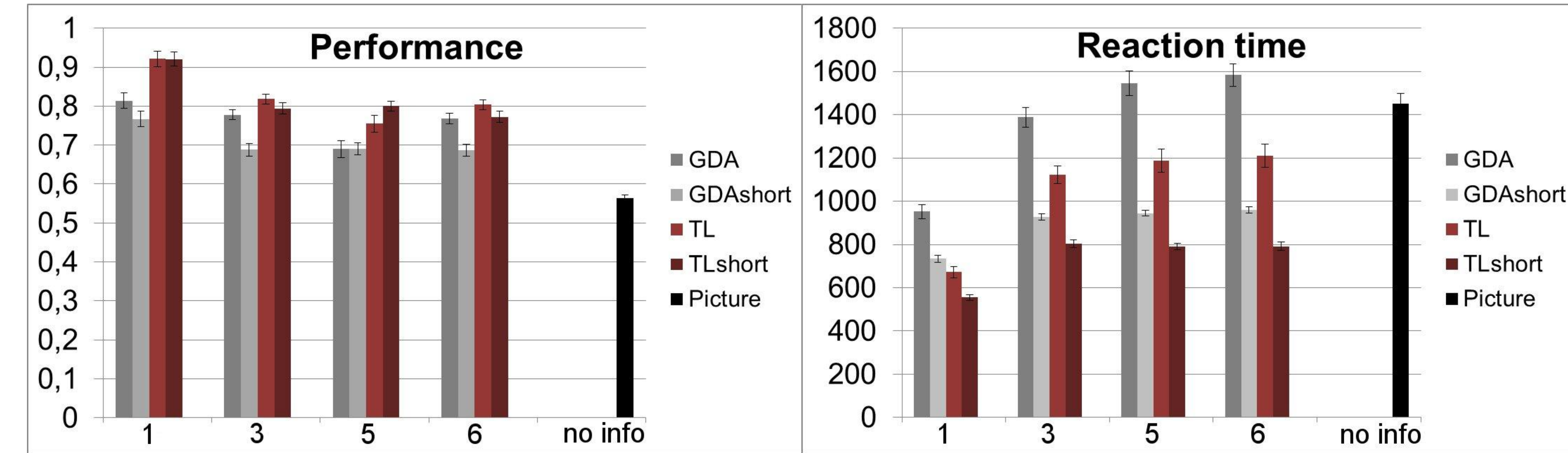


New colorful nutritional labels are now used in some countries to help people better evaluate how healthy are food products. But little is known about how we understand and manipulate colored information to evaluate food products. We are testing how people evaluate anonymous food products from nutritional information displayed as numbers (% of daily amount) or as colors (red, amber, green). We anticipate that people will categorize food as bad for their health as soon as the color red is present, and that performance and reaction time will reflect that colors are easier to use (possible use of heuristics) compared to numbers (very analytical).^{1, 2, 3}

Which strategies are used?



RESULTS



Is the performance better with TL?

GDA vs TL ($t < -2.9$, $p < 0.01$)

Is the performance better with less info?

1 vs 3, 5 and 6 info ($t > 2.1$, $p < 0.05$)

Is the performance worse when pressured?

GDA vs short for 1, 3, 6 info ($t > 3.6$, $p < 0.01$)

TL vs short for 6 info ($t = 2.7$, $p < 0.01$)

Is the evaluation faster for TL than GDA?

GDA vs TL ($t > 7.7$, $p < 0.001$)

Is the evaluation fastest with less info?

1 vs 3, 5 and 6 info ($t < -3.8$, $p < 0.001$)

Is the evaluation faster when pressured?

GDA, TL vs short ($t > 5.1$, $p < 0.001$)

METHODS

TASK AND PROCEDURE

3 types of stimuli (n=60 per condition)

1/ food pictures without nutritional information

2/ nutritional information from 1 to 6 using GDA system

3/ nutritional information from 1 to 6 using TL system

(6 info: kilocalories, cholesterol, salt, total fat, saturated fatty acids, added sugar)

Eyetracking (n = 17) using Eyelink, 250Hz sampling rate

PARTICIPANTS

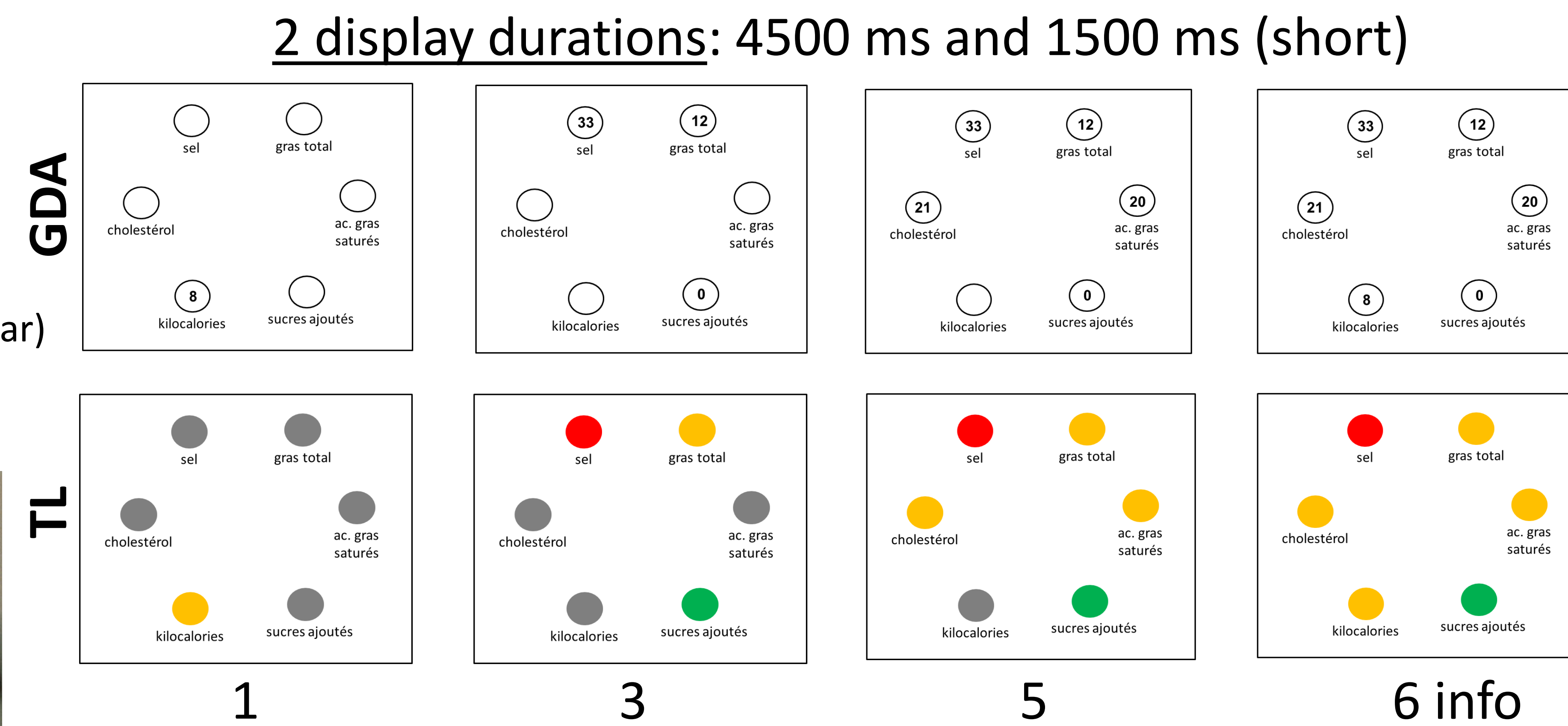
71 participants (F = 36)

Age = 22,4 (SD = 5,4)

BMI = 21,3 (SD = 2,9)

Min education level = Secondary school

Task duration = 1h30, Compensated 10 euros



Instructions: «Is that food bad, average, or good for your health?»

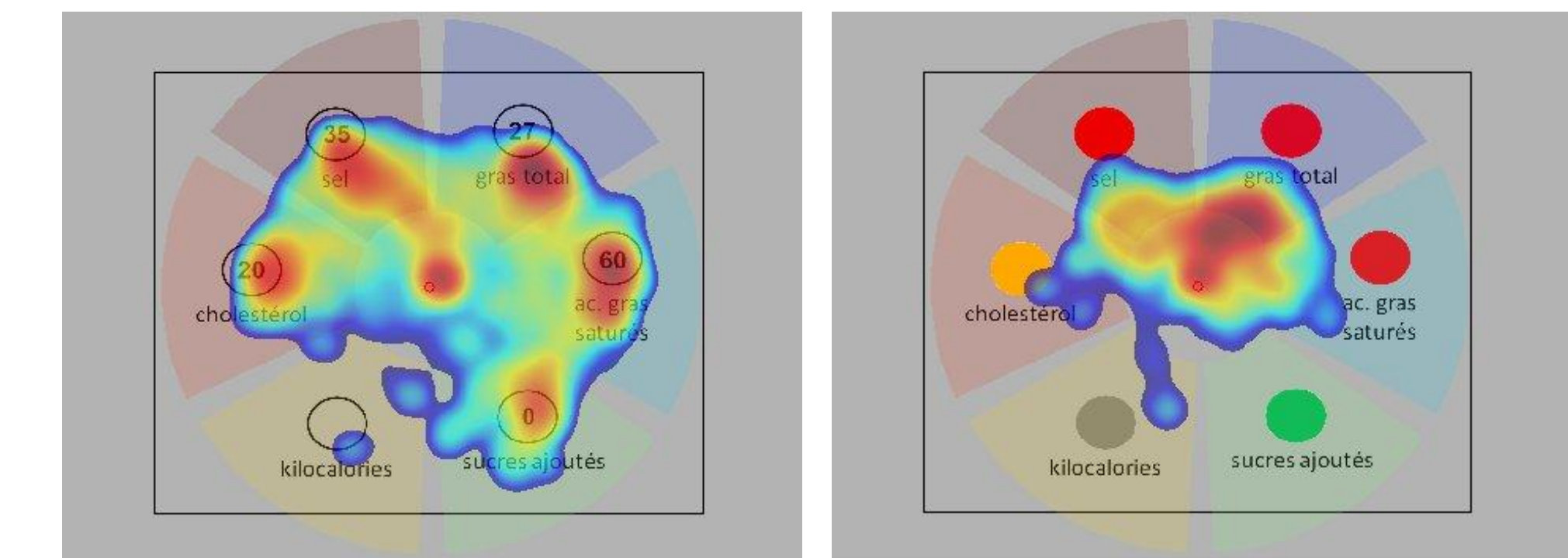
ANALYSES

Strategies: Answers compared against 3 models for TL and 4 models for GDA

Performance: the best performance from each model was kept for each participant

Repeated measure ANOVAs with label (GDA vs TL), display (1500ms vs 4500ms), and conditions (1, 3, 5 and 6 info) were run. Posthoc analyses with **paired t-tests**.

More time looking at GDA than TL
(n = 17; $t = -6.8$, $p < 0.001$)



DISCUSSION

Large inter-individual differences were observed in the way people evaluated how healthy food products are, likely due to different personal beliefs about what is a good or bad food product. The best performance was observed for TL with one piece of information in less than 600ms. Reaction times increased with the quantity of information and from TL to GDA, likely due to the fastest perception of colors compared to numbers, whereas performance seemed to plateau from 3 to 6 pieces of information.

As suggested previously,^{2,3} the TL system appears as a more efficient system than GDA alone to help people evaluate nutritional aspects of food products.

REFERENCES

1. Kahneman D, Frederick S. 2005. **A model of heuristic judgment**. The Cambridge handbook of thinking and reasoning, 267-293.
2. Aschemann-Witzel J, Grunert KG, van Trijp HC, Bialkova S, Raats MM, Hodgkins C, Wasowicz-Kirylo G, Koenigstorfer J. 2013. **Effects of nutrition label format and product assortment on the healthfulness of food choice**. Appetite, 71:63-74.
3. Borgmeier I, Westenhoefer J. 2009. **Impact of different food label formats on healthiness evaluation and food choice of consumers: a randomized-controlled study**. BMC Public Health, 9:184