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# Understanding Consumers' Perception of Emerging Food Safety Risks: a Crucial Challenge for a Better Food System

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# Outline

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- Intro: Understanding Food Choices
- Food Choices and Safety
- Public Perception of Risk
- Three Case Studies of Emerging Food Issues
- Take-aways and Discussion



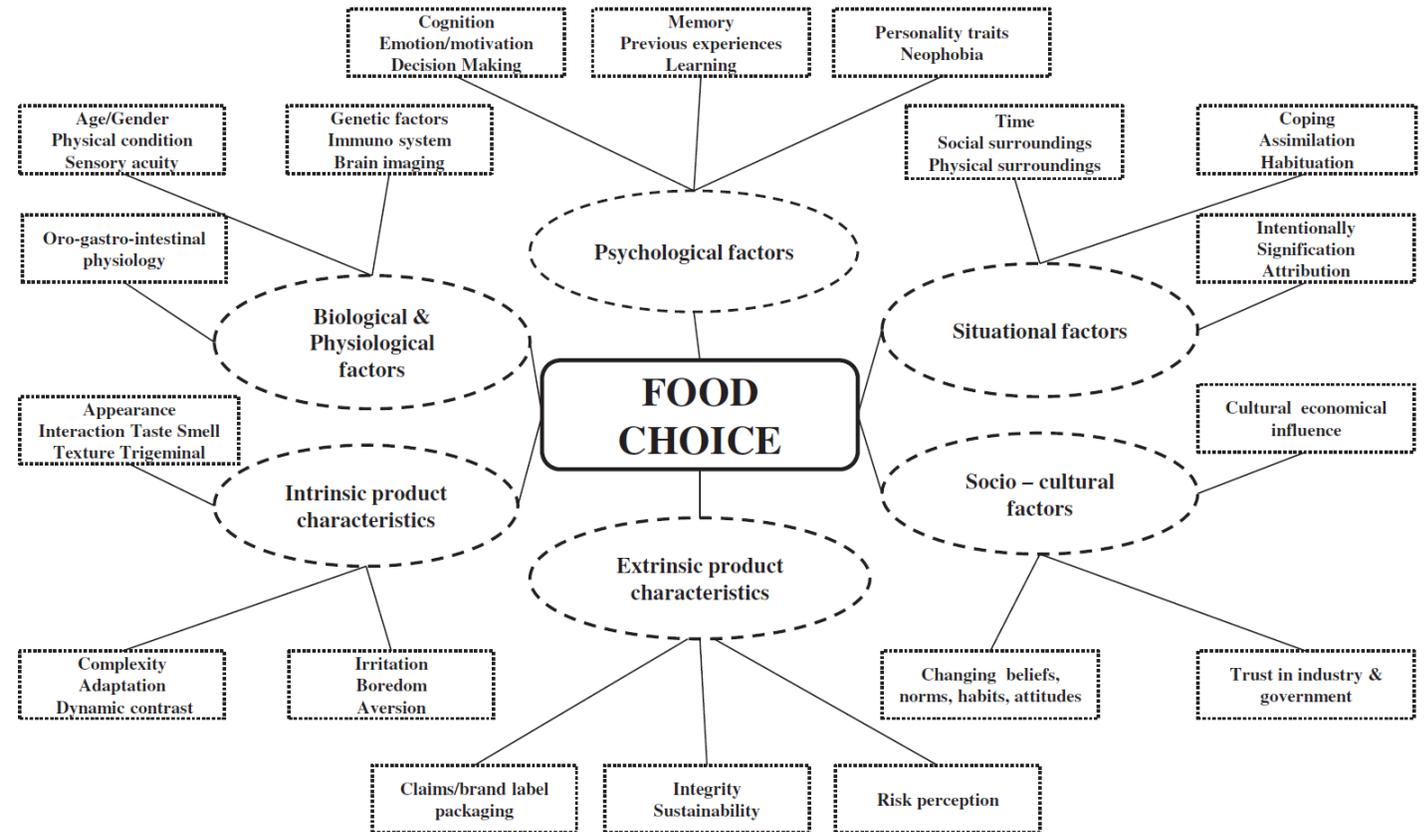
# Intro: Understanding Food Choices

- Always New Food Products on the Market...
- ... with New Technologies and Consumption Trends
- Crucial Role of Consumer Science...
- ... in Understanding the Decision Making Process



# Food Choices...

- ... are highly complex, personal, unconscious...
- ... based on variable socio-cultural factors ...
- ... shaped by knowledge, trust, involvement ...
- ... mostly influenced by psychological interpretations (e.g. organic, traditional, ...)



Source: adapted from Köster, E. P. (2009). Diversity in the determinants of food choice: A psychological perspective. *Food Quality and Preference*, 20(2), 70–82.

# Food Choices and Safety

- Today' food is safer and more accessible than before ...
- ... however, large gap between general public and experts' opinion ...
- ... with Under/Over estimation of potential threats to human health ...
- ... and a crucial role of prior attitude, biased media coverage, information seeking ...



# Intro to Emerging Food Risks

Classification according to risk origin and dimension

Case studies	Technological vs. Natural	Acute vs. Chronic
<i>E.coli</i> outbreak linked to fenugreek sprouts (Germany, 2011)	Natural	Acute
The accident at the Fukushima Dai-ichi nuclear power plant (Japan, March 2011)	Technological	Acute and Chronic
GM salmon destined for the human food chain	Technological	Chronic



Source: Gülbanu Kaptan, Arnout R.H. Fischer & Lynn J. Frewer (2017): Extrapolating understanding of food risk perceptions to emerging food safety cases, *Journal of Risk Research*,

# Public' Perception of Risk

- Technical definition of risk vs “risk perception”
- More Knowledge = More Understanding ?!?
- *Uncertainty (Unknown) & Ambiguity*
  - *Dread (Catastrophic)*
  - *Extent*

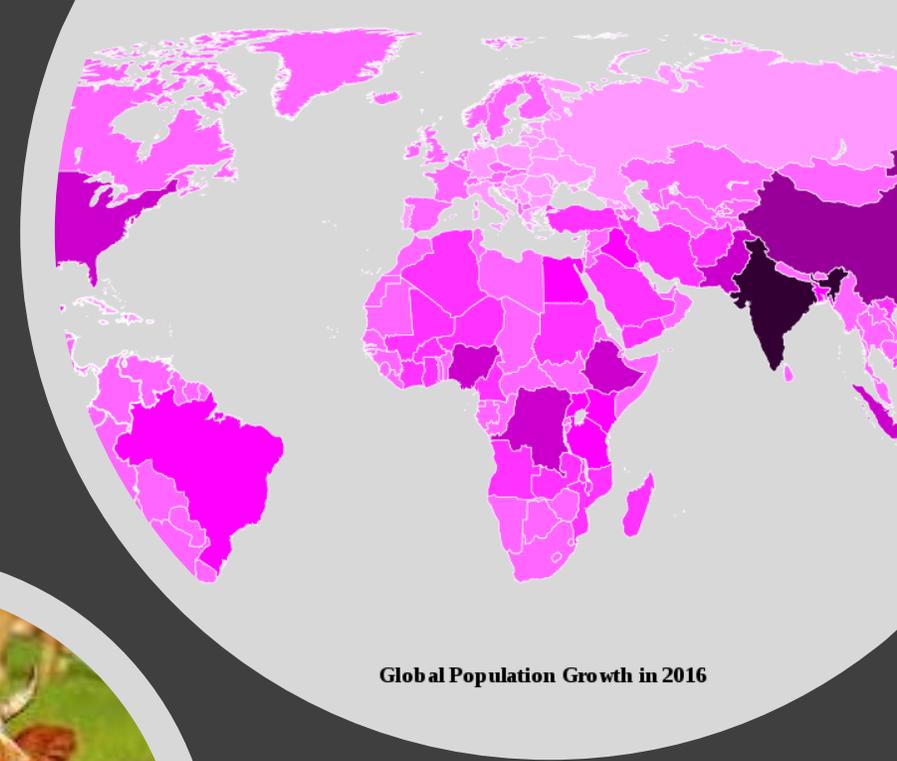


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Tversky, A; Kahneman D. (1992). "Advances in prospect theory: Cumulative representation of uncertainty". Journal of Risk and Uncertainty. 5 (4): 297–323

# Potential Drivers leading to Emerging Food Risks

- Demographic change (e.g. ageing)
- Environmental driving forces (climate change response)
- Technological advances (e.g. synthetic biology)
- Societal values (e.g. Human and animal health)
- Food risk representation in the media



Source: Kendall, H, Kaptan, G, Stewart, G et al. (2018). Drivers of existing and emerging food safety risks: Expert opinion regarding multiple impacts. Food Control, 90. pp. 440-45



## EFSA's Activities on Emerging Risks

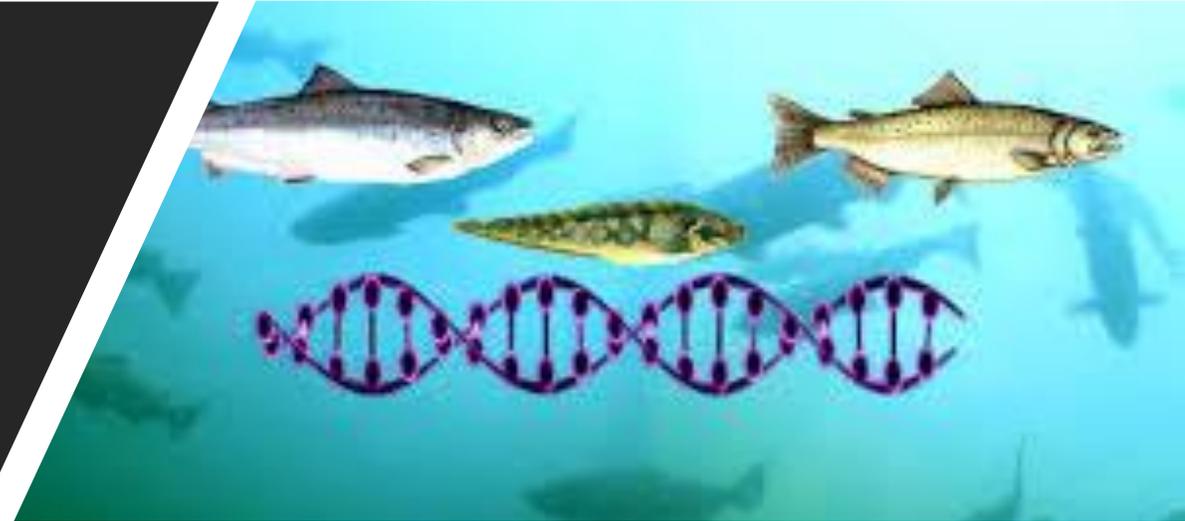
Source: EFSA (2017). Ana Afonso, Raquel García Matas, Angelo Maggiore, Caroline Merten, Tobin Robinson. EFSA's Activities on Emerging Risks in 2016.

## Potential Emerging Issues

- ✓ Microbiological hazard,
- ✓ Chemical hazard,
- ✓ Other (e.g. antimicrobial resistance and allergies) and/or the driver underlying the emerging issues identified,
- ✓ Unlawful activity,
- ✓ **New consumer trends,**
- ✓ **New process or technology.**

# Three Case Studies of Emerging Food Issues

- 1) New Advances in Food Production (GM Animals, potentially controversial technology)
- 2) New Trends in Novel Food Consumption (Insects)
- 3) New Trends in “Healthy” Food Consumption (food associated with both benefits and risks)





# 1) New Advances in Food Production

- PEGASUS EU PROJECT (Public Perception of Genetically modified Animals).
- GM technology applied for food and feed
- Advances in research into GM farm animals (food and pharma)
- Balanced risk and benefit communication
- Moral and ethical concerns

## Issues raised by the Transgenic Salmon

### Public/citizen perceptions

- Transgenic fish more acceptable than transgenic terrestrial animals applied to food production
- Consumer benefits need to be concrete and visible (i.e. reduced cost)
- Non-medical applications are less acceptable
- Effective labelling, traceability and animal welfare policies essential for consumer acceptance

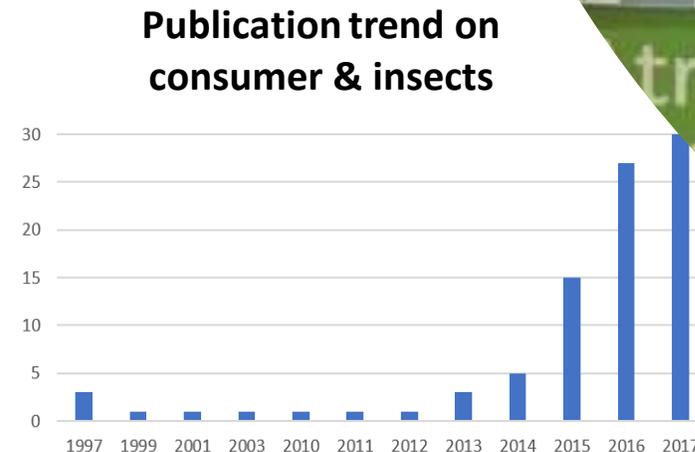
### Ethical aspects

- Welfare issues not well defined
- Alternative technologies need to be considered
- Effective labelling and traceability policies essential for consumer choice
- Socio-economic impacts (e.g. negative impacts on small producers) need to be considered
- Benefits for developing countries not well defined
- Labelling and traceability required to preserve consumer autonomy
- Does the application delivery increased global food security or only reduce price for developed countries?



## 2) New Trends in Novel Food Consumption

- EFSA Scientific Opinion on Risk Profile of Insects As Food And Feed
- New Novel Food Regulation (January 2018)
- Potential Hazards of Insects
- Neophobia & Disgust Factor
- The Future of the Food ?!?



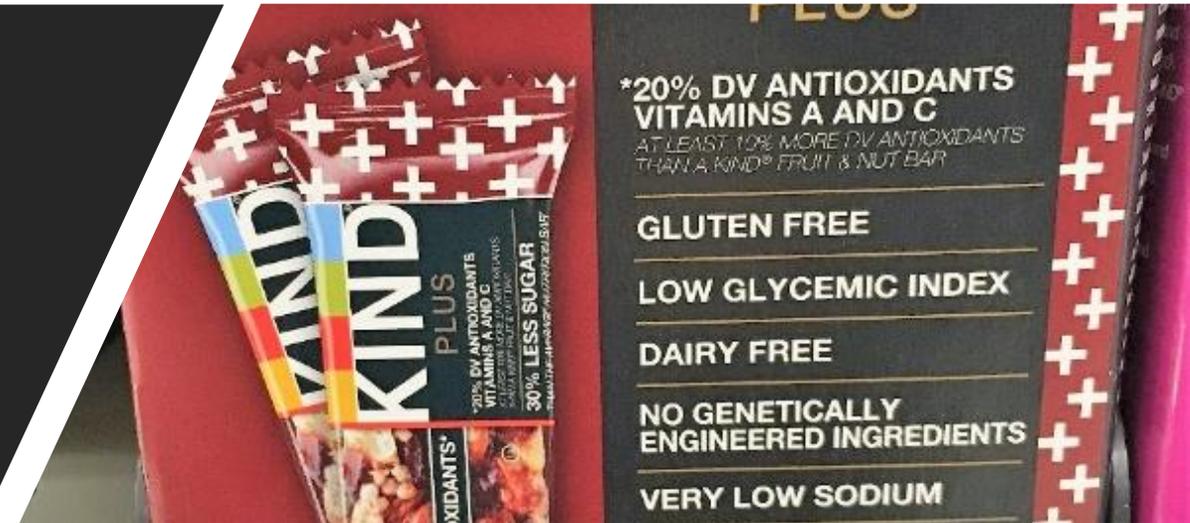
Source: Carrefour in Spain, 2018

# 3) New Trends in “Healthy” Food Consumption



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- Marie Curie Project, 2017-2020  
*Using consumer science to improve healthy eating habits*
- ‘Triple burden’ of malnutrition
- Proliferation of products marketed as healthy
- Health is (not) important for everyone
- Trust in nutritional & health claims (credence vs search attribute)



# Emerging Trend of Clean Label

- Products positioned as 'natural', 'organic' and/or 'free from additives/preservatives'
- Most-used claims in Food Marketing
- Mis(perception) of consumer's quality of food (tastier, healthier or more environment-friendly ?!?)
- Halo & Magic Bullet Effect (inappropriate benefits to a claim/overall product)

## Experts warn 'clean' label has hidden risks

With the health food media fast on the rise and certain chemicals falling fast into popular disrepute, two food scientists have spoken about the dangers of following trends blindly.



Source:  
newfoodmagazine.com



Source: Ingredion (2014). The clean label guide in Europe. Retrieved from [www.alimentatec.com/wp-content/uploads/2014/10/The-Clean-Label-Guide-To-Europe.pdf](http://www.alimentatec.com/wp-content/uploads/2014/10/The-Clean-Label-Guide-To-Europe.pdf).

# Take-aways and Discussion

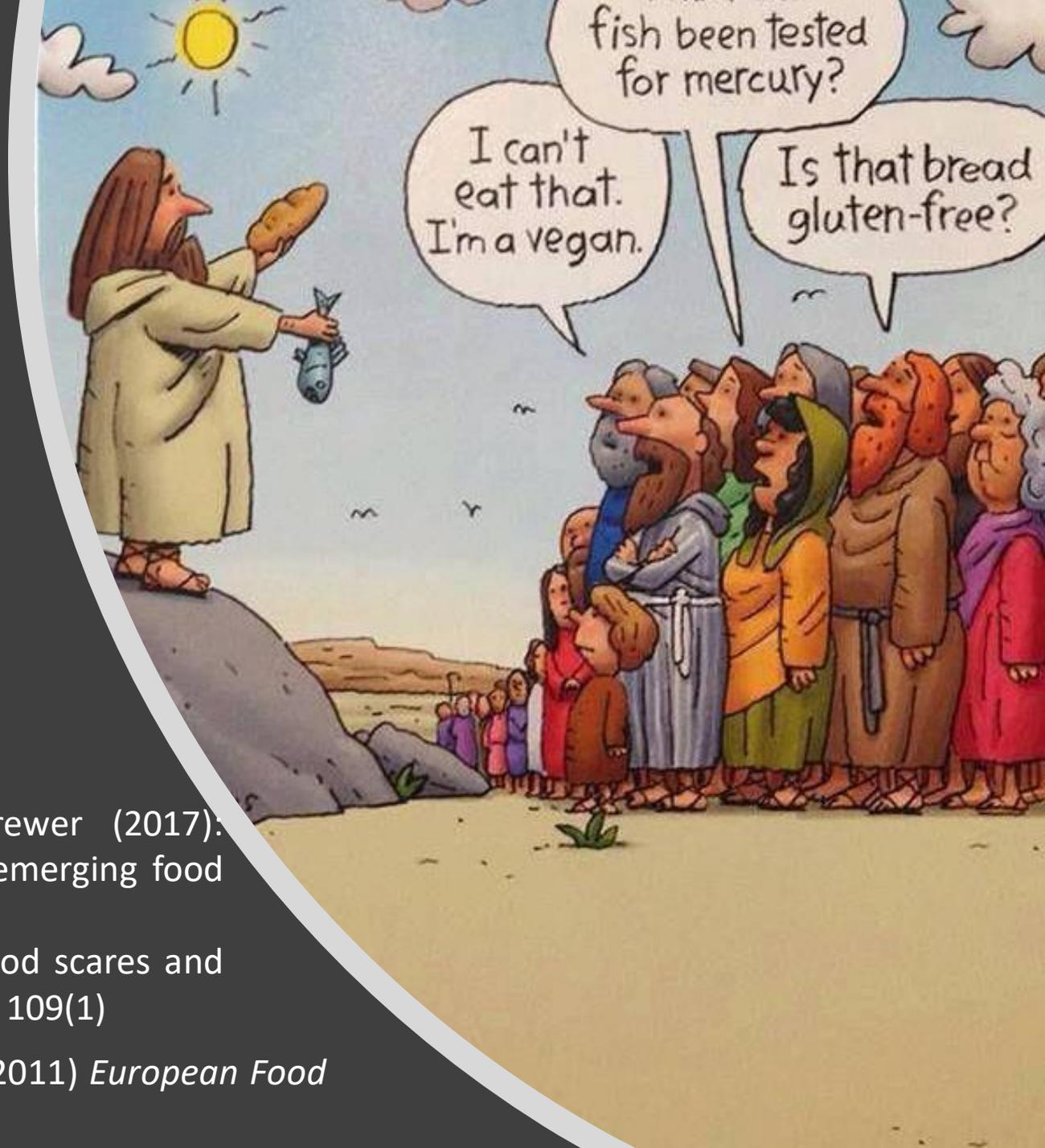
*A Better Understanding in Consumers' Perception of Emerging Food Risks*

1. Addressing both Risk and Benefits from the beginning
2. Considering Moral Concerns for New Food Issues
3. Focusing on information needs (the manner and the content)
4. Based on specific consumer' preferences for food consumption (country and region effect)



# Essential References

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