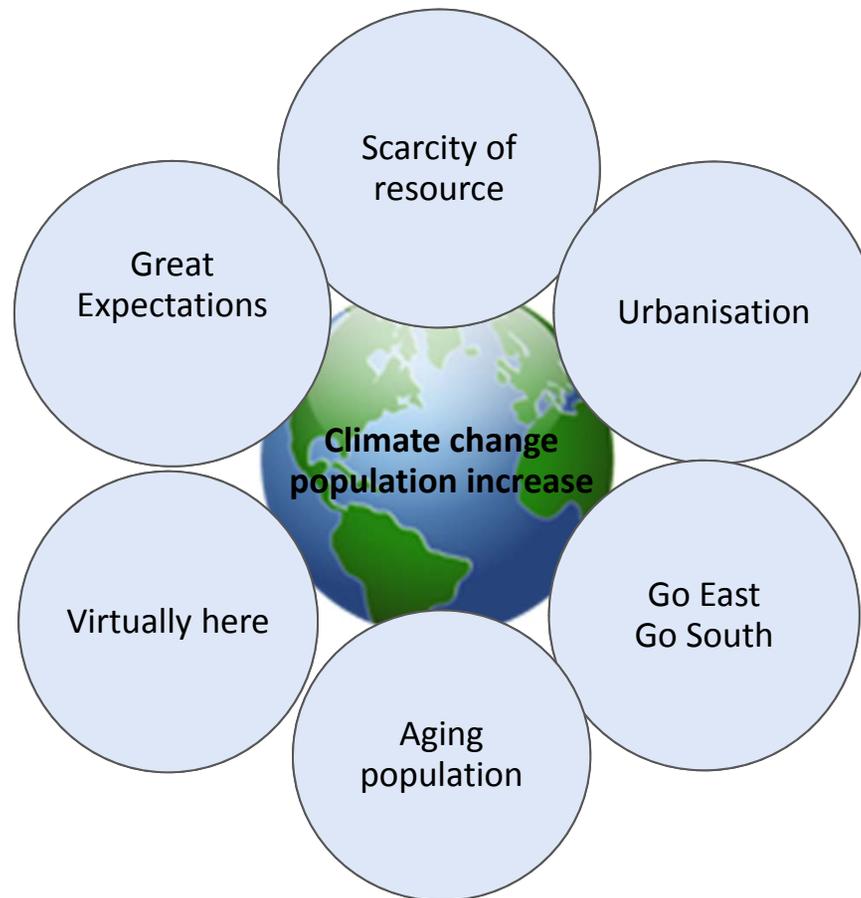




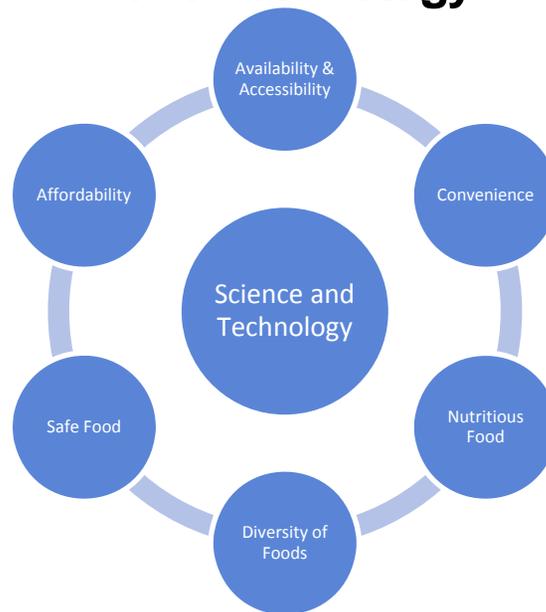
# SCIENCE, FOOD AND SOCIETY

Colin Dennis, CBE, DL, PhD, CFS, CSci  
 IFT President  
 January 2016

# MEGATRENDS



## Essential Role of Science and Technology



**...but not everyone understands the role that science and technology played and must play in the future.**



**We face a growing challenge to feed nearly 7 billion people today...**

**The expected population growth to 9 to 10 billion people by 2050...**

**...food science and technology will have to provide critical solutions.**



# SCIENCE OF FOOD

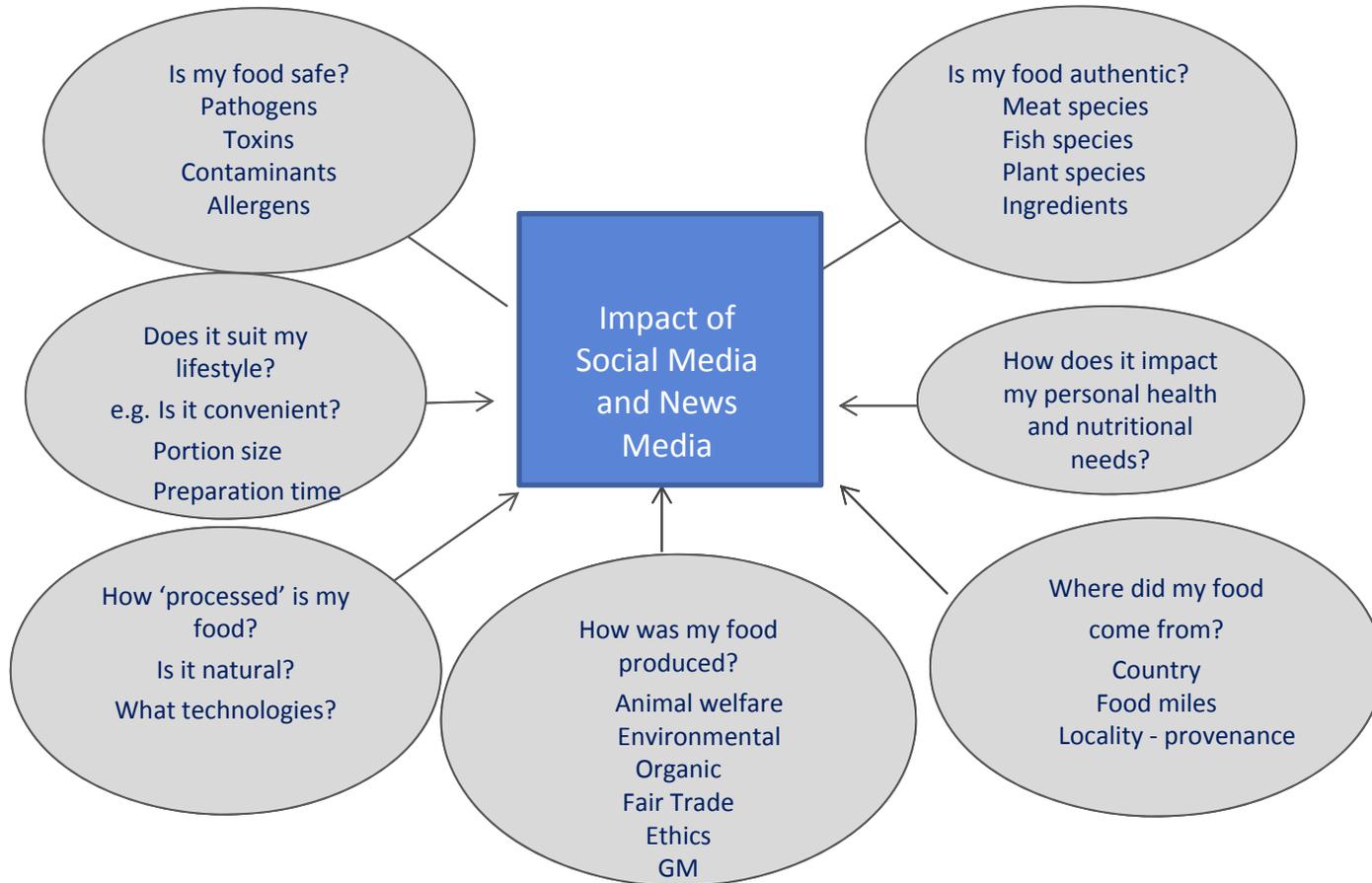
Biochemistry  
Chemistry  
Microbiology  
Physics  
Mathematics  
Engineering  
Sensory Science  
Nutrition

Molecular Biology  
Genetics  
Omics  
Nanoscience  
Materials Science

Data Science  
Informatics  
Human Physiology  
Endocrinology  
Human Genetics  
Behavioral Science  
Psychology  
Neuroscience  
Social Science  
Sociology of  
Scientific Knowledge



# Food and the Consumer



# Would you eat this?

## AN ALL-NATURAL BANANA



ING  
FRI  
(5%  
(19  
LYS  
(4%  
(3%  
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LIN  
(8%  
(2%  
(<1  
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151

**INGREDIENTS:** WATER (75%), **SUGARS (12%)** (GLUCOSE (48%), FRUCTOSE (40%), SUCROSE (2%), MALTOSE (<1%)), STARCH (5%), FIBRE E460 (3%), **AMINO ACIDS (<1%)** (GLUTAMIC ACID (19%), ASPARTIC ACID (16%), HISTIDINE (11%), LEUCINE (7%), LYSINE (5%), PHENYLALANINE (4%), ARGININE (4%), VALINE (4%), ALANINE (4%), SERINE (4%), GLYCINE (3%), THREONINE (3%), ISOLEUCINE (3%), PROLINE (3%), TRYPTOPHAN (1%), CYSTINE (1%), TYROSINE (1%), METHIONINE (1%)), **FATTY ACIDS (1%)** (PALMITIC ACID (30%), OMEGA-6 FATTY ACID: LINOLEIC ACID (14%), OMEGA-3 FATTY ACID: LINOLENIC ACID (8%), OLEIC ACID (7%), PALMITOLEIC ACID (3%), STEARIC ACID (2%), LAURIC ACID (1%), MYRISTIC ACID (1%), CAPRIC ACID (<1%)), ASH (<1%), PHYTOSTEROLS, E515, OXALIC ACID, E300, E306 (TOCOPHEROL), PHYLLQUINONE, THIAMIN, **COLOURS** (YELLOW-ORANGE E101 (RIBOFLAVIN), YELLOW-BROWN E160a), **FLAVOURS** (3-METHYLBUT-1-YL ETHANOATE, 2-METHYLBUTYL ETHANOATE, 2-METHYLPROPAN-1-OL, 3-METHYLBUTYL-1-OL, 2-HYDROXY-3-METHYLETHYL BUTANOATE, 3-METHYLBUTANAL, ETHYL HEXANOATE, ETHYL BUTANOATE, PENTYL ACETATE), 1510, NATURAL RIPENING AGENT (ETHENE GAS).

SE (48%),  
STARCH  
MIC ACID  
INE (7%),  
, VALINE  
REONINE  
AN (1%),  
, **FATTY**  
Y ACID:  
NIC ACID  
RIC ACID  
RIC ACID  
ID, E300,  
**COLOURS**  
N E160a),  
YLBUTYL  
L-1-OL, 2-  
BUTANAL,  
CETATE),

Source: J. Kennedy, VCE Chemistry Teacher,  
Haileybury, Australia

# Food News is Hot!



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## Skipping breakfast to lose weight makes you fatter - and far more likely to raid the vending machine

- Skipping meals changes the way brain reacts to food
- Makes calorie-laden treats such as chocolate much more tempting

By FIONA MACRAE SCIENCE CORRESPONDENT IN NEW YORK  
PUBLISHED: 13:39 EST, 16 October 2012 | UPDATED: 19:12 EST, 16 October 2012

If you think skipping your morning tea and toast will help you lose a few pounds, you could be mistaken.

Researchers claim people who miss breakfast not only gain weight but also crave fatty and sugary foods, putting them at risk of obesity rather than losing weight.

Scientists at Imperial College London scanned the brains of 21 volunteers while they looked at pictures of different foods, such as salads and chocolate.

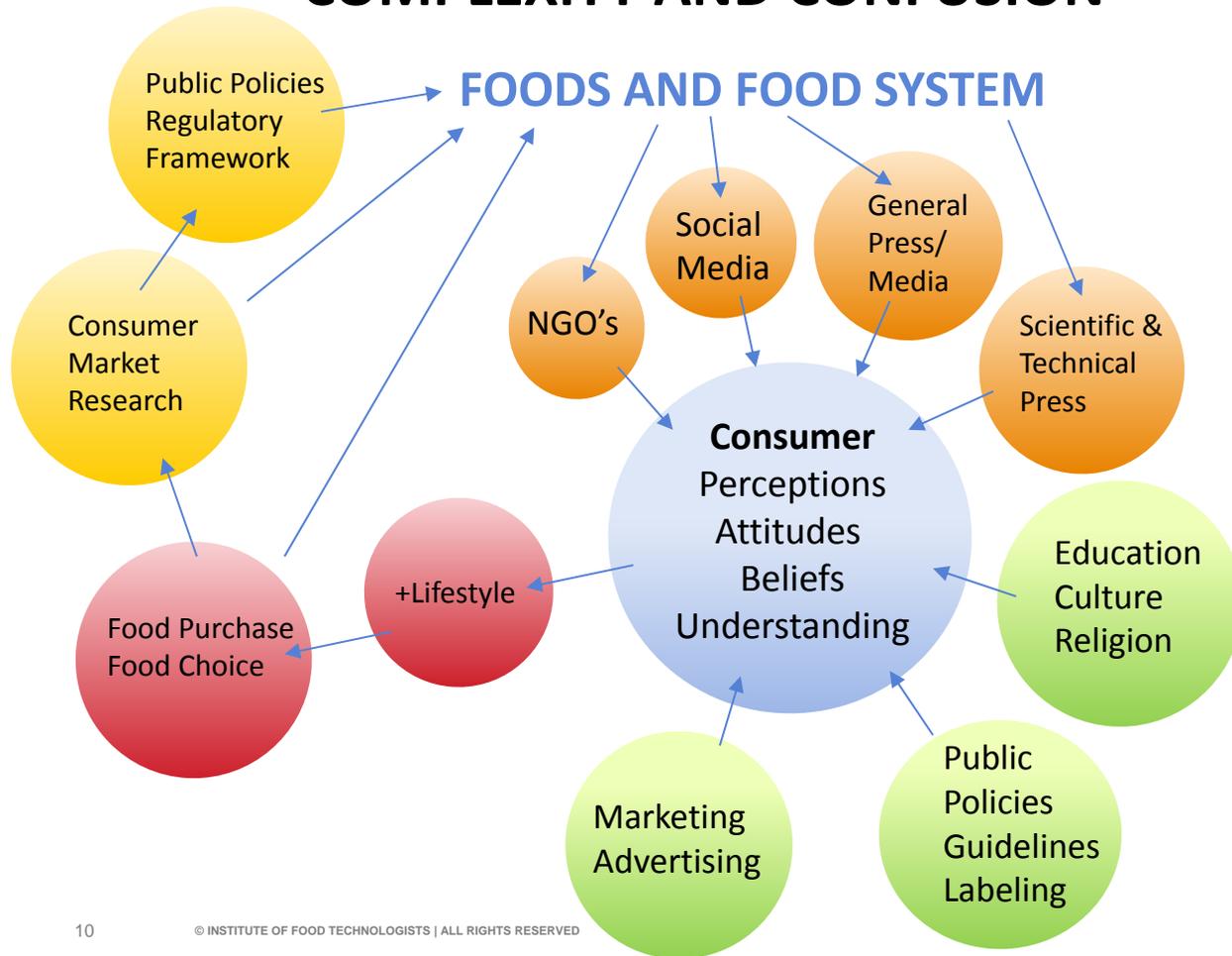


**Media Outlet:** UK Daily Mail  
**Source:** Research presented at the Society for Neuroscience Annual Conference

**The Scientific Facts:** Study did not look at vending machines or obesity

9 *Source: D. Allison, University of Alabama-Birmingham, ObesityandEnergetics.org*

# COMPLEXITY AND CONFUSION



## OUR CHALLENGE

COMMUNICATE THE  
**ESSENTIAL ROLE**  
WHICH **SCIENCE, TECHNOLOGY**  
**AND INNOVATION**  
PLAYS IN MEETING SOCIETAL NEEDS  
**NOW AND IN THE FUTURE**



## The Documentary: Scott Hamilton Kennedy



## Our Vision



*A world where science and innovation are universally accepted as essential to a safe, nutritious, and sustainable food supply for everyone*





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