



Antibiotics, Organics and Food Safety: A Ball of Confusion

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Opening Thoughts

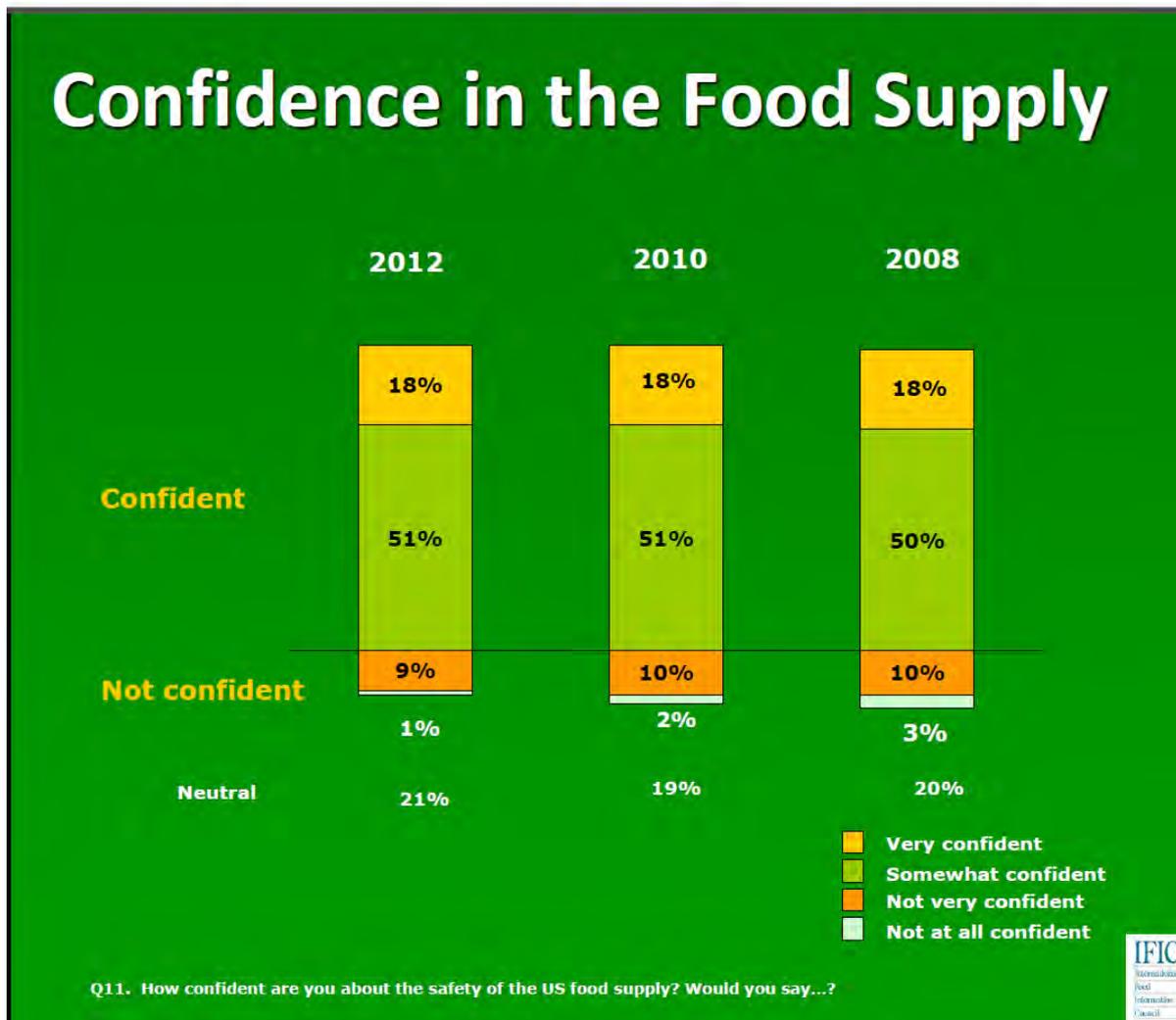
- Meat case full of choices
- Proud of the options we offer
- Able to satisfy taste, nutrition, convenience, price, values

My Hypothesis

- Consumers take the big idea over details
- Media coverage 1) overemphasizes antibiotics, organics, hormones 2) underemphasizes food handling 3) and conveys facts inaccurately
- They fear the issues that get more coverage
- Issues tangled together in consumers' minds,
- Emotion will always be part of the calculus
- Simple information that leverages science and emotion needed

Set the Stage

Confidence Has Remained Strong



Concern About Contamination, Handling Is Stable

Concern About Preservatives and Chemicals Growing

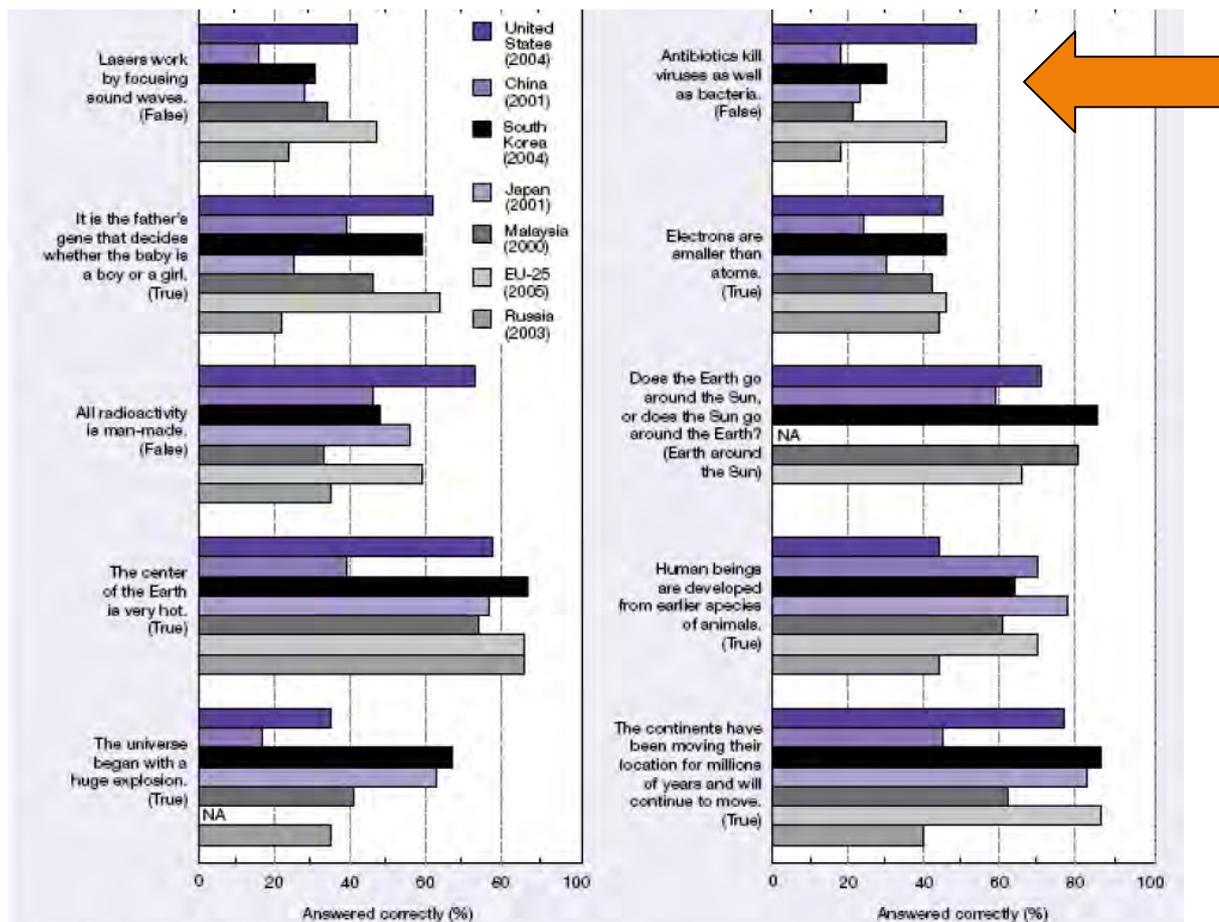


Q12. What, if anything, are you concerned about when it comes to food safety? [OPEN END]

General Social Trend

- Big idea over the details
 - Can you say *Twitter...*
- ...but *science* is about the details

Scientific Literacy



EU = European Union; NA = not available

SOURCES: University of Michigan, Survey of Consumer Attitudes (2004); Chinese Ministry of Science and Technology, Public scientific literacy and attitudes towards S&T, *China Science and Technology Indicators 2002* (2002); Korea Science Foundation, Survey on Public Attitude of Science & Technology 2004 (2004); National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, The 2001 Survey of Public Attitudes Toward and Understanding of Science & Technology in Japan (2002); Malaysian Science and Technology Information Centre, Ministry of Science, Technology and the Environment, *The Public Awareness of Science and Technology Malaysia 2000* (2001); L. Goldberg and O. Shulalova, *Russian Public Opinion of the Knowledge Economy: Science, Innovation, Information Technology and Education as Drivers of Economic Growth and Quality of Life*, British Council, Russia (2004); and European Commission, Research Directorate-General, Eurobarometer 224/Wave 63.1: *Europeans, Science and Technology* (2005).

DHMO KILLS

Dangers:

- Death by inhalation
- Corrodes metals
- Bloating & nausea
- Electrical short-circuit
- Tissue damage & burns
- Soil erosion
- Brake failure
- Disaster & destruction

Uses:

- Animal research
- Abortion clinics
- Nuclear plants
- Chemical warfare
- Performance enhancers
- Torture
- Cult rituals
- Fire suppression

Places:

- Cancerous tumors
- Cleaning solvents
- Prisons & hospitals
- Acid rain
- Pharmaceuticals
- Lakes & streams
- Industrial waste
- Baby food & beer

Ban Dihydrogen Monoxide

©DHMO.org

Chemophobia

“You’ll find that most chemophobic claims are aimed at our health, and this really shouldn’t come as a surprise. We’re an easy target for fraudulent health claims because our health is important to us. Nobody wants illness and death in their family, so we’re easily frightened by a claim that common chemicals can hurt or even kill us. This gives an unfair advantage to ‘team chemophobia’ – the general public is very impressionable when it comes to health claims. This means that ‘team chemistry’ has to be extra vigilant of fraudulent health claims.”

–Chad Jones, *Scientific American*
May 10, 2013

Pressures on Primary Shoppers

Removed
from
Ag/farming

Pressed
for time,
connecting
via social
media

Less scientific
knowledge

Less
food/cooking
knowledge

Wants best
for her child:
no Mulligans
allowed!

Hit with
alarming media
coverage,
study of week



Antibiotics: Attitudes and Knowledge

Midan Marketing

Antibiotic Study 2012

- 72% of respondents said they were interested in purchasing antibiotic- and hormone-free meat.
- 55% of shoppers didn't know if their store had meat that was raised with hormones or antibiotics.
- After hearing about antibiotics and growth hormones used in livestock, 44% of consumers surveyed didn't change their behavior and 20% reported switching to a natural or organic pork or beef brand.

Midan Antibiotic Study, Cont'd.

- In the Midan study, 72% of respondents said they were interested in purchasing antibiotic- and hormone-free meat.
- 79% of respondents had heard of antibiotics' use in meat production
- 85% had heard about growth hormones.
- 41% concerned about negative effects of antibiotics and 42% about the effects of growth hormones.

Perhaps Most Important Finding

- According to Midan, 44% of customers couldn't accurately define antibiotics or growth hormones!
- *They fear what they do not understand...*
- *But it's an emotional issue, so pure science won't solve it.*

Center for Food Integrity: Lead With Shared Values, Advance Facts

Educational Information

Antibiotics are used in meat-producing animals for the same reasons they are used in humans: to treat illness and protect health. The result of responsible antibiotic use in farm animals is safe, wholesome meat.

- Antibiotics used to keep animals healthy have been evaluated through a rigorous Food and Drug Administration (FDA) approval process and have been shown to be safe.
- In December 2011, the Food and Drug Administration reported that after 34 years of hearings on the issue, there is no direct link between antibiotics in animals and drug-resistant human diseases. Most scientists and public health professionals agree that antibiotic resistance in humans is related to human antibiotic use.
- When antibiotics are used in livestock and poultry production, strict withdrawal periods must be followed before the animals are permitted into the food chain. The U.S. Department of Agriculture (USDA) monitors meat and poultry to ensure strict compliance.
- Pig and poultry producers in Denmark voluntarily decided to stop using antibiotics for disease prevention in 2000 in an effort to reduce total antibiotic use in livestock. However, the Danish government reported antibiotic use actually increased 110% from 1998-2008 because removing preventative antibiotics resulted in an overall increase in disease in pigs (which then required antibiotics for treatment).

CFI Research

1 in 3 Consumers Expressed Positive Attitudes Toward Antibiotic Use in Animals After Educational Info

**Top Box Agreement
BEFORE Educational Info**

**Top Box Agreement
AFTER Educational Info**

27%	Antibiotics are beneficial for treating illness in meat-producing animals	37% +10%
21%	Antibiotics are beneficial for protecting the health of meat-producing animals	35% +14%
21%	Meat from animals treated properly with antibiotics is safe to eat	32% +11%
15%	Fruits and vegetables treated with crop protection products such as herbicides and insecticides are safe to eat	26% +11%

Resistance vs. Residues

- Confusion that when we talk about antibiotics, we mean residues
- Myth of “tetracyclines on your bun”

Organics

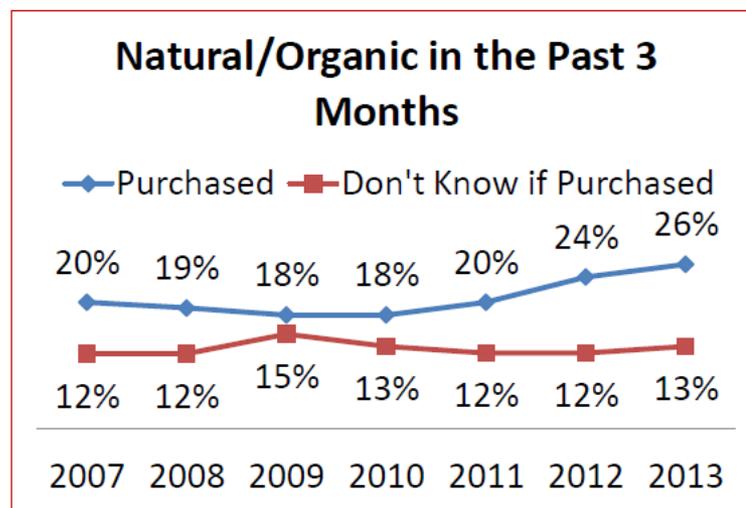
Organic Purchasing Is Price Sensitive

- While a minority are totally committed to organic food, many more buy it when they can afford it
- Gap between positive attitudes and purchasing

AMI/FMI Research

Uptick in natural/organic continues

- ▶ Natural and organic meat/poultry are making a post-recession comeback
 - Survey high of 26% have purchased natural or organic meat/poultry in the past 3 months
 - Pound sales have risen accordingly:
 - 2012 vs. 2011: +0.7% (vs. -1.3% of the total market)
 - Past 4 months: +9.5% (vs. +2.4% for the total market)



Source: Freshlook VMMEAT
52-weeks ending December 16

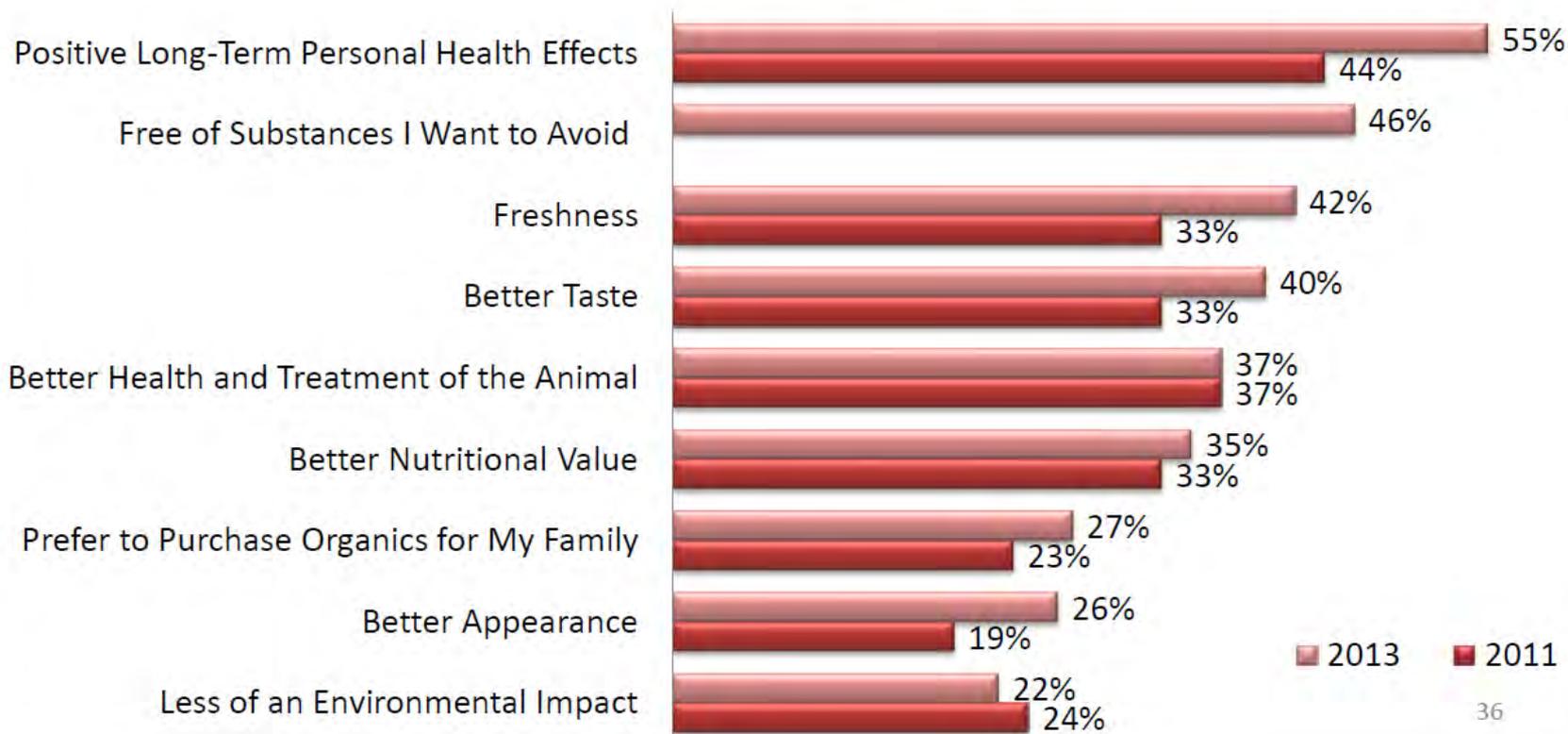
Package callouts influence purchasing

- USDA beef grading system and callouts on “What’s not in it” resonate most with customers

	Total No/Not Too Much Influence	Total Somewhat and Major Influence
USDA Beef Grading	33%	67%
Steroid free	41%	58%
Hormone free	44%	56%
Natural	46%	54%
Angus beef	46%	53%
Grain fed	51%	49%
Grass fed	52%	48%
Free range	55%	46%
Organic	59%	41%
Gluten free	68%	32%

Drivers behind natural/organic

Reasons for Purchasing Natural or Organic Meat in 2011 and 2013



Price remains barrier to entry

- D While future purchases look promising among current buyers, price is a huge barrier among non-purchasers
 - 69% of shoppers say price prohibits them from buying natural/organic (The Hartman Group)

Future organic purchases	Overall	Earning < \$50K	Earning >\$100K	Shoppers ages 25-39	Shoppers ages 65+
More	24%	14%	44%	26%	7%
Less	10%	7%	0%	12%	4%
About the same	66%	79%	56%	62%	89%

Penn And Teller BullSh#@!

- Same banana, tomato, apple cut in half; one labeled organic and one non-organic
- “Organic bananaa is much creamier, much smoother, tastes more like a banana, like essence of banana”
- 71% of organic shoppers preferred non organic tomatoes
- 80% guessed wrong about organic apple
- 9 out of 10 outwitted on the banana gag

Consumer Handling: The Good, The Bad and The Ugly

Consumer Food Safety Practices

- Increasing food safety profile of meat and poultry means consumers may perceive that the problem is solved
- Translates to less motivation among consumers
- Basic practices like thermometer use have not changed much over time despite educational campaigns

AMI Polling Question May 2013

- What is the proper temperature for grilling hamburgers and turkey burgers?
- Almost a third (31%) confess they don't know the ideal internal cooking temperatures for grilling hamburgers, and fewer than four in ten (39%) correctly named these temperatures.
- Unfortunately, far more women than men (39% vs. 22%) say they don't know the correct answer to this question.

Bruhn Research 2010

- Videotaped 200 volunteers in their homes while they prepared burgers and salad, observing their methods of defrosting the meat, their refrigerators' temperature, whether they put themselves at risk for cross-contamination and how they determined whether the meat was done.
- .

Bruhn Research, Cont.

- 90% washed their hands prior to preparation
- 31% dried their hands with a clean towel.
- Potential cross-contamination occurred in 74% of the households.
- Majority of burgers were cooked at or near the recommended 160 degrees F, 22 percent declared burger done when it was below 155 degrees F.
- Volunteers checked burger doneness with a thermometer in only 4 percent of homes
- Only 13% knew proper temperature for ground beef.

A Social Experiment...

On organic: do you buy organic meat and poultry and if so, why?

- Steven I try to buy locally and humanely raised meat and poultry whenever possible. Whole Foods has made this a fairly easy thing to do. It does not have to be organic, but I do prefer the production thereof to have been antibiotic-free. I also think humanely raised food tastes better, especially pork and chicken.
- Lisa Organic. And I typically purchase sulfate-free bacon and hot dogs, though it's hard to find those in organic. I prefer that the animals we eat to have been fed a natural diet.
- Patrice Organic meat and dairy after seeing Food Inc
- Cori Yes, to me organic means the animals eat a healthier diet, have better living conditions, and are minimally processed.

Facebook Experiment: Meat Thermometer

- Steven I cook intuitively (without a thermometer) and have never under- or overcooked anything or gotten sick from the food I prepared.
- Evan I do own one, and I never use it for burgers. I always use it for whole chicken, turkey, and beef/lamb roasts.

Risk Perception

- Ana yes. I buy almost exclusively organic.. especially meat and poultry. I do not want hormones or fillers or antibiotics in my food.
- Regarding thermometers for burgers, Ana says “never.”

Snopes.com Reveals On Line Food Rumors

- [Semen](#) from several diseased men is found in restaurant food.*
- "Mayonnaise" in fast food chicken sandwich is [pus](#) from a tumor.*
- Customer at fast food chicken outlet is served a batter-fried [rat](#).*
- Girl's salivary glands become infected from [roach eggs](#) ingested with taco.*
- A human [finger](#) was found in a can of menudo.*
- Customer becomes sick after eating a steak at a chain restaurant; analysis of her meal reveals the presence of [urine](#) in the meat.*
- A human [penis](#) was found in a jar of fruit punch.*
- Brewery employees discover body of worker in [vat](#) of beer.*
- Restaurant after-dinner [mints](#) contain urine from customers who fail to wash their hands.
- [Dropped](#) food remains germ-free if picked up within five seconds.
- The FDA has issued a warning about a possible connection between [Hepatitis A](#) and green onions.
- HIV+ blood has been slipped into [ketchup](#) dispensers in fast food restaurants.*
- An Atlanta restaurant was caught accepting a shipment of [rats](#) and mice.
- Patron dining at a Wendy's fast food outlet found a human [finger](#) in her bowl of chili.*
- A girl required surgery after swallowing a [wire](#) that had come loose from a barbeque grill cleaning brush and was cooked into a hamburger.
- Baby [carrots](#) are made from deformed full-sized carrots that have been permeated with chlorine.
- Bacteria formed on [cut onions](#) and potatoes is responsible for more food poisoning than is spoiled mayonnaise.
- Growth hormones injected into [chicken wings](#) cause ovarian cysts in women.
- Pesticide used on [mandarin oranges](#) imported from China causes severe allergic reactions.
- A worker at [Pepsi](#) has contaminated the product by injecting HIV-infected blood into it.
- Monsanto-developed [corn](#) contains toxins that protect against insects and are harmful to humans.
- [Kivi](#) fruit from China contains dangerous growth hormones.
- A cook attempted to poison George Washington with [tomatoes](#).
- Did KFC stop using the word '[chicken](#)' because it serves meat from mutant animals?

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Swap Meat

Claim: Fast food restaurants, prisons, and school cafeterias use 'Grade D but edible' meat.

FALSE

Examples:

[Collected on the Internet, 1996]

Here at Indiana University there is a story that has been going around for a long time, that certainly qualifies as a FOAF story.

It typically involves someone who was a student worker in the cafeteria system, who says that they saw a recently delivered crate of beef labelled: "Grade D Beef: Fit for human consumption."

[Collected on the Internet, 1999]

Supposedly found on a box of sausages that my university was using..."Grade D, but edible".

[Collected on the Internet, 2003]

I've heard from several people that Taco Bell uses Grade D Edible meat in their foods (i.e. the skins, testicles, penises, et cetera ground up).

[Collected on the Internet, 2003]

I heard from a friend that Taco Bell meat is grade F, while most dog foods are grade D (a better grade).

Origins: It's hard to say how long this legend has been with us, but folks of our acquaintance report hearing it as far back as 1980. Besides its two most common expressions (college cafeterias and fast food providers), this legend has also been told of food served in grade school lunchrooms, children's summer camps, and prisons. In every instance, someone swears to have seen the telltale boxes of meat being unloaded from trucks which have arrived to provision the kitchens, or to have spied these packages in the kitchens themselves. Usually the crates are said to have been labeled "Grade D But Edible," but we've also heard



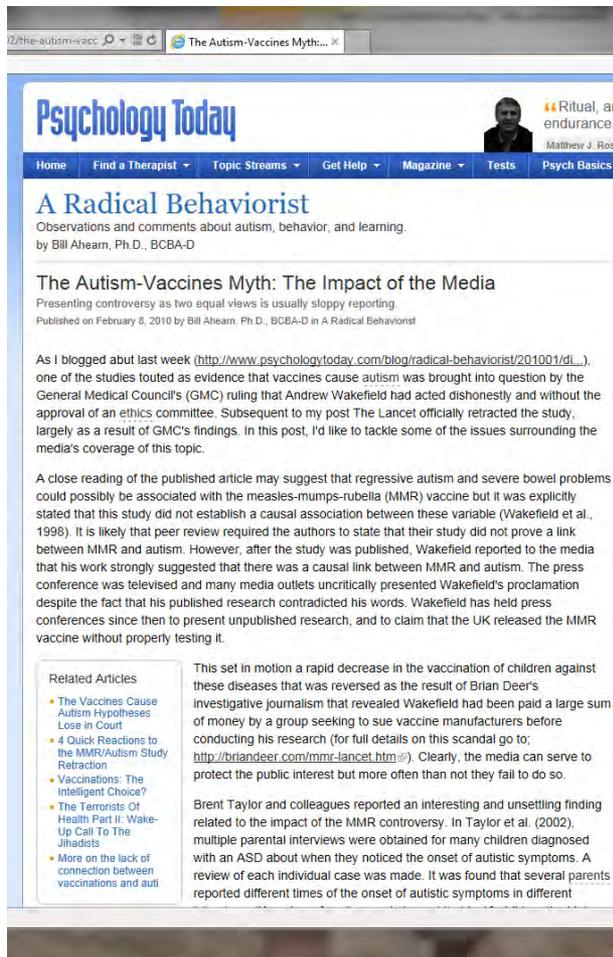
David Ropeik on Risk

- Risks that are human-made are scarier than those which are natural.
- Risks we can't detect with our own senses, or that we can't understand, are scarier.
- Risks that lead to particular painful results - cancer - are scarier.
- Risks imposed on us - by industrial chemicals in our air and water and food – are scarier than risks we take voluntarily.
- Risks created by industries whose behaviors have taught us not to trust them, are scarier.

Role of Media

- Media and social media can turn volume up or down on issue at will
- Volume impacts actions, perceive risk

Case Study: Media Impact



Psychology Today
 Home Find a Therapist Topic Streams Get Help Magazine Tests Psych Basics

A Radical Behaviorist
 Observations and comments about autism, behavior, and learning.
 by Bill Ahearn, Ph.D., BCBA-D

The Autism-Vaccines Myth: The Impact of the Media
 Presenting controversy as two equal views is usually sloppy reporting.
 Published on February 8, 2010 by Bill Ahearn, Ph.D., BCBA-D in A Radical Behaviorist

As I blogged about last week (<http://www.psychologytoday.com/blog/radical-behaviorist/201001/di...>), one of the studies touted as evidence that vaccines cause autism was brought into question by the General Medical Council's (GMC) ruling that Andrew Wakefield had acted dishonestly and without the approval of an ethics committee. Subsequent to my post The Lancet officially retracted the study, largely as a result of GMC's findings. In this post, I'd like to tackle some of the issues surrounding the media's coverage of this topic.

A close reading of the published article may suggest that regressive autism and severe bowel problems could possibly be associated with the measles-mumps-rubella (MMR) vaccine but it was explicitly stated that this study did not establish a causal association between these variables (Wakefield et al., 1998). It is likely that peer review required the authors to state that their study did not prove a link between MMR and autism. However, after the study was published, Wakefield reported to the media that his work strongly suggested that there was a causal link between MMR and autism. The press conference was televised and many media outlets uncritically presented Wakefield's proclamation despite the fact that his published research contradicted his words. Wakefield has held press conferences since then to present unpublished research, and to claim that the UK released the MMR vaccine without properly testing it.

Related Articles

- The Vaccines Cause Autism Hypotheses Lose in Court
- 4 Quick Reactions to the MMR/Autism Study Retraction
- Vaccinations: The Intelligent Choice?
- The Terrorists Of Health Part II: Wake-Up Call To The Jihadists
- More on the lack of connection between vaccinations and auti

This set in motion a rapid decrease in the vaccination of children against these diseases that was reversed as the result of Brian Deer's investigative journalism that revealed Wakefield had been paid a large sum of money by a group seeking to sue vaccine manufacturers before conducting his research (for full details on this scandal go to: <http://briandeer.com/mmr-lancet.htm>). Clearly, the media can serve to protect the public interest but more often than not they fail to do so.

Brent Taylor and colleagues reported an interesting and unsettling finding related to the impact of the MMR controversy. In Taylor et al. (2002), multiple parental interviews were obtained for many children diagnosed with an ASD about when they noticed the onset of autistic symptoms. A review of each individual case was made. It was found that several parents reported different times of the onset of autistic symptoms in different

- “Unfortunately, highly improbable events, extraordinary claims implying a conspiracy, and steadfast beliefs with little support beyond anecdote tend to given more coverage than sound information based upon empirically valid and peer reviewed research.”
- “Another typical tactic of the media is to present controversial topics as if there are two, equally relevant sides to the story.”
- Said another way: CDC vs. Hollywood celeb do not equal a balanced story just because they have opposing views...but that’s what we often get.

Journal of Food Protection 2010

Sara Fein, et. al.

- “Periods when in-home food handling practices improved (1993-1998 and 2006 through 2010) coincide with a high average increase in levels of food safety coverage by the media.
- Periods when food safety coverage was flat or declining coincide with flat or declining in-home food handling practices.”

According to Authors...

- Media coverage of a hazard may increase its perceived risk:
 - agenda setting (telling people what to think about)
 - providing salient information that increases top-of-mind awareness of the hazard

Conclusions

- Consumer concerns increasing around “added” substances
- Strong preferences exist for simple products perceived to be “free” of added substances
- Knowledge and attitudes about antibiotics and organics are intertwined
- Emotion plays major role in attitudes
- Lack of coverage of basic food safety has lessened motivation toward optimal handling

Thank you!

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