Food Safety = Behavior

*Evolution* of food safety culture & behavior from slogan to science.
The gradual development of the concept of food safety culture from a simple understanding to an advanced, formalized, and effective subset of the field of food safety and profession.
2000s

Food Safety Culture
2010s

2010
- Exam questions on food safety culture in hygiene exams (UK)
- First peer reviewed papers on food safety culture (Griffith)

2011
- First global conference on food safety culture (GFSI)
- UK FSA commissions research study on food safety culture

2012
- UK FSA publishes food safety culture toolkit

2014
- First college course on food safety culture
- New Zealand Gov’t inquiry emphasizes food safety culture
- Second book on food safety culture published (Griffith)
2010s

2015

FDA emphasizes food safety culture as part of FSMA

Food Safety = Behavior published advancing food safety culture behavioral techniques (Yiannas)

New Zealand Government holds industry forum on food safety culture

2016

Government of Chile hosts session on food safety culture

GFSI Scheme Owner starts offering food safety culture module

First food safety scheme based on food safety culture
2017 & beyond

ADVANCING FOOD SAFETY
THROUGH BEHAVIOR CHANGE
January 25-27, 2017 • Washington DC

Evolution of FOOD SAFETY CULTURE
how did we get here?

&

where are we going?
Are we WINNING the battle against foodborne disease?
Foodborne Pathogens 1900 - 1939

- Amoebiasis
- Botulism
- Brucellosis
- Cholera
- Hepatitis
- Salmonellosis
- Scarlet fever (streptococcus)
- Staphylococcal food poisoning
- Tapeworms
- Trichinosis
- Tuberculosis, bovine
- Typhoid fever

Source: CDC, US
147 Cases
33 Deaths

3,930 Cases
53 Deaths
Improved Food Safety

2017

What Got Us HERE

2020

Won’t Get Us THERE
# The Nation’s Scorecard

## 2015 Food Safety Report

Measuring progress toward Healthy People 2020 goals

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Healthy People 2020 Target Rate</th>
<th>2015 Rate</th>
<th>Change Compared with 2006-2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>8.5</td>
<td>12.97</td>
<td>9%</td>
</tr>
<tr>
<td>E. coli O157*</td>
<td>0.6</td>
<td>0.95</td>
<td>30%</td>
</tr>
<tr>
<td>Listeria</td>
<td>0.2</td>
<td>0.24</td>
<td>No change</td>
</tr>
<tr>
<td>Salmonella</td>
<td>11.4</td>
<td>15.89</td>
<td>No change</td>
</tr>
<tr>
<td>Vibrio</td>
<td>0.2</td>
<td>0.39</td>
<td>34%</td>
</tr>
<tr>
<td>Yersinia</td>
<td>0.3</td>
<td>0.29</td>
<td>No change</td>
</tr>
</tbody>
</table>

*Per 100,000 population
*Cultured confirmed infections per 100,000 population
*2006–2008 were the baseline years used to establish Healthy People 2020 targets
*Shiga toxin-producing Escherichia coli O157
Retail Food Deli Departments
Percent Observations Out-of-Compliance
“If the only tool you have is a hammer, you tend to see every problem as a nail.”

- Abraham Maslow
Psychologist
1908 - 1970
Traditional Food Safety Strategies

• Training

• Inspections

• Micro Testing
Food Safety = Behavior
“Behavior change is complex.”

- B.F. Skinner
Behavior Change Theories & Models

- Behavioral Theory
- Social Cognitive Theory
- Health Belief Model
- Theory of Reasoned Action
- Transtheoretical Model
- Social Marketing
<table>
<thead>
<tr>
<th>Traditional Food Safety Management</th>
<th>Behavior-Based Food Safety Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Focuses on processes.</td>
<td>• Focuses on processes and people.</td>
</tr>
<tr>
<td>• Primarily based on Food Science.</td>
<td>• Based on Food Science, Behavioral Science, and Organizational Culture.</td>
</tr>
<tr>
<td>• Simplistic view of behavior change.</td>
<td>• Behavior change is complex.</td>
</tr>
<tr>
<td>• Linear cause and effect thinking.</td>
<td>• Systems thinking.</td>
</tr>
<tr>
<td>• Creates a food safety program.</td>
<td>• Creates a food safety culture.</td>
</tr>
</tbody>
</table>

Source: Yiannas, Food Safety Culture, 2009
Why the focus on culture & behavior?
Consistency & Commitment
Principle of Homophily
Making Food Safety the Social Norm
Influencing Values to Change Behaviors
Enclothed Food Safety
Enclothed Cognition

Cognitive Task + = 50% Reduction in Errors

Source: Adam & Galinsky (2012)
Which Group Performed Better?

Wore Doctor’s Coat

Wore Artist’s Coat

Saw Doctor’s Coat

enclothed cognition

‘symbolic meaning’ of clothing

Source: Adam & Galinsky (2012)
Other Professions
Disney Cast Members
What Does This Mean for Food Safety?

Consumer Food Safety Education Conference 2017
It’s more than an apron...
Learning from the Right Way or the Wrong Way
Trans-atlantic Flight
Miracle on the Hudson
What Firefighters Can Teach Us

Source: Joung, Hesketh, & Neal (2006)
What Does This Mean for Food Safety?

Consumer Food Safety Education Conference 2017
Learning from the Mistakes of Others

Hundreds sickened in U.S. from salmonella outbreak linked to raw chicken
Make Food Safety the Social Norm
Pointing & Gawking Experiment by Stanley Milgrim

40% 85%

Food Safety = Behavior

5 Simple Things You Can Do to Enhance Compliance
Solomon Asch 1958 Experiment on Conformity

Exhibit 1

Exhibit 2

A  B  C
Conformity in an Elevator

https://www.youtube.com/watch?v=BgRoiTWkBHU
What Does This Mean for Food Safety?

Consumer Food Safety Education Conference

2017
ASM Handwashing Survey

DAILY NEWS

Observational Study Finds One-third of Men Don’t Wash Hands in Public Restrooms
Making Hand Washing the Social Norm

86%

4 out of 5 Males Wash Their Hands

Source: Lapinski, Maloney, Braz, & Shulman (2013)
Keeping Food Safety In Mind
By Making it Rhyme
Rhyming Helps Us Remember & Believe

Rhyming Mnemonics

- A form of word association where you rhyme a word you want to learn with a word you already know.

- EX: Columbus sailed the ocean BLUE in fourteen hundred ninety-TWO

(This teaches the students the date that Christopher Columbus discovered America)

What Does This Mean for Food Safety?

Consumer Food Safety Education Conference 2017
Food Safety Rap

Food Safety High Five

1. Wash hands often. Clean with soap and warm water.
2. Keep it cold. Keep refrigerated at 41°F or below.
3. Cross-contaminate. Use separate equipment for raw and cooked.
5. Cook it to 160°F.

Neighborhood Market by Walmart
Enclothed Food Safety

The Right Way or Wrong Way

Making Food Safety the Social Norm

Keeping Food Safety in Mind by Making it Ryhme
Beyond Food Safety Management

Food Safety Culture

Frank Yiannas

Food Safety = Behavior
30 Proven Techniques to Enhance Employee Compliance

Frank Yiannas

Creating a Food Safety Culture Executive Education

May 24-26, 2017
Providing safe & affordable food, so people can live better.

Walmart