Hazard and promise in food science communication

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Two studies on information processing by the public

Information dilution-weight loss

Oregon CIR-GMO labeling
Information Dilution effect

- True Claims
- False Claims
Information Dilution effect

- True Claims
- False Claims
Information Dilution effect

True Claims

False Claims
Information Dilution effect

True Claims

False Claims
Evaluation of information dilution and weight loss beliefs

1. Survey of 277 demographically representative Americans

2. Exposed to two strongly validated weight loss behaviors and a number of spurious/ineffective behaviors.

3. Asked to assign an importance score to each item based on its direct contribution to weight loss, totaling 100.
Item Examples

• Substantially decrease saturated fat consumption
• Consume a different color of fruits and vegetables each day
• Maintain a physically healthy social network
Additional information dilutes the power of valid weight loss information.
Cultural Cognition

Hierarchical

Individualist

Collectivist

Egalitarian
Cultural cognition, literacy/numeracy and polarization

Cultural Cognition has no impact on weight loss information dilution.
The 2014 Oregon Citizens’ Initiative Review shows one way of addressing a poor information ecosystem.

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The CIR began in Oregon but may soon spread to other states.
The CIR process aims to deliver reliable information to voters.

1. A stratified random sample of 20 voters served as citizen panelists.

2. The citizen panel had **four days to deliberate** and hear from pro/con advocates.

3. Panelists wrote a **Citizens’ Statement**, which goes into the official state **Voters’ Pamphlet** mailed to every household.

4. Voters can use the Citizens’ Statement to study ballot measures and reach more informed judgments.
Oregon Initiative 92 was favored most by egalitarians ("liberals").
EXAMPLE: First two Key Findings

Labeling genetically engineered foods would provide information to let Oregonians make more informed buying decisions and this would offer them more control and transparency over their food purchasing decisions.

The labeling requirements do not apply to alcoholic beverages, or prepared restaurant food because they are currently outside the food labeling system laws.
Experimental Test of CIR Impact

1. Online panel of 488 Oregonians who had not yet voted in election (but intended to do so)

2. Randomly assigned to either:
   • read a pdf of the CIR Citizens’ Statements
   • placed in a control group (no exposure)

3. After:
   • asked how they would vote on GMO Labeling Measure
   • asked to identify a set of eight factual claims about the measure as probably/definitely true/false
Reading the CIR corrects (much) bias.

In control group, equal credence given to facts and falsehoods.

CIR raises confidence in veracity of true statements.

CIR leads to uncertainty about falsehoods (but not rejection).

Control Group

Read CIR Statement
The nation is at war with conflicting information.

**False information is the enemy**

**The public can be our allies**
Conclusions

• More information is often not better- and the public cannot easily discriminate.
• Providing accurate information either doesn’t help (dilution) or, when the issue is politicized, causes harm (cultural cognition).
• Public deliberative models can help by identifying and constructing salient, evidence-based interventions.