

Controversies in Science

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Overview

- Consequences of controversies (in science):
 - ✘ Positive: mostly in scientific theory/ research
 - ✘ 'Negative': mostly in scientific practice and general public responses
 - ✘ 'Negative' can be overcome: decision making and framing in health messages

Consequences of controversies



Positive:

- Philosophy/ history of scientific progress
- E.g. Descartes' dualism
- Without controversy/ critical scientific community → no progress
- Without controversy → pseudoscience (no disagreement possible)



'Negative':

- Scientific theory/ data translated into public health message
- If message based on controversy, general public response is conservative (i.e. 'risk-avoiding')
- Response based on decision-making process individual
- What influences decision making?

Controversies and decision making in health messages

- Goal health care worker = guide client to healthy decision (e.g. diet, medicine) via health message
- Individual's decision based on internal representation of decision outcomes as gains and losses from 'neutral' reference point
- Reference point: influenced by expectations of outcomes and formulation of prospects, i.e. the health message

Controversies and decision making in health messages

- Reference point: expectations and message formulation
- Tversky and Kahneman (1981): ‘The Asian Disease problem’:

Imagine that the US is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows:

Controversies and decision making in health messages

- (1) If program A is adopted, 200 people will be saved. (72%)
- (2) If program B is adopted, there is a one-third probability that 600 people will be saved and two-thirds probability that no people will be saved. (28%)

- (A) If program A is adopted, 400 people will die. (22%)
- (B) If program B is adopted, there is a one-third probability that nobody will die and two-thirds probability that 600 people will die. (78%)

- 1 and 2 → reference point leads to outcomes modeled as gains, A and B → reference point leads to outcomes modeled as losses
- Gains → risk avoiding, losses → risk seeking

Controversies and decision making in health messages

- Translating framing effect to health messages: How to frame 'safe' vs. 'risky' choice?
- Keep in mind:
 - Individuals focus more on short-term than long-term consequences (Meyer & Hutchinson, 2001), e.g. absence of BSe is risky, however individuals see its implementation as riskier
 - Individuals respond differently to messages depending on prior intentions, e.g. smoking (Wong & McMurray 2002)
 - Health behaviors: health prevention behavior (HPB, e.g. car seatbelt or healthy diet) and health detection behavior (HDB, e.g. BSe or cancer screening)
 - Individuals view HPB as risk-free (immediate outcomes maintain current health status and reduces risk of future disease) and HDB as risky
 - 'Accepted' health messages: negative framing is more efficient, however with 'controversial' health messages: individual is less likely to respond with 'risky' decision

Controversies and decision making in health messages

- Conclusion: controversial health messages seem to have negative consequences (i.e. people are less likely to choose 'risky' change), however these can be overcome by:
 - Framing in terms of gain (e.g. "If you go on a diet, you will live longer", in stead of "If you do not diet, you will die sooner")
 - More focus on short-term consequences (e.g. "This medicine will relieve the pressure on your heart")
 - Assess intentions of individual and frame health message according to intentions (e.g. if there is no intention to loose weight in client, again frame in terms of gain: "If you lose weight you will become more healthy", in stead of "If you do not lose weight, you are high risk of developing diabetes")
 - Focus on prevention in stead of detection

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- Questions?