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Understanding How People Think: Strategies to Maximize Message Effectiveness

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Changing People's Behavior is Hard

- Translating scientific information into public health action is not easy.
- It's hard to convince people that things they like to do aren't good for their health
- If you do convince them they won't necessarily try to change
- Even if they try often they're not successful
- Barriers to understanding include: Innumeracy, cognitive processing limits, perceptions, and heuristics

Behavioral Economics: Understanding the Logic behind the Illogical Way People Think and Behave

- Traditional economics assumes that individuals are consistent rational actors with stable preferences who act in ways that maximize their long term best interest
 - Applying this to health we try to help We provide information on risks to their health, tax substances we feel are harmful such as alcohol and tobacco, and subsidize preventive health care such as vaccinations
 - But – that hasn't kept people from risky behaviors and habits.
- Behavioral economics challenges the idea that we are solely rational actors, focuses on the ways rationality may be influenced by a number of factors of which we are mostly unconscious.

Heuristics

- Basics of behavioral economics: mental shortcuts than can lead to bias.
- Today we'll talk mostly about modes of thought that are fast, instinctive and emotional – not the slower, more deliberative way of thinking.
- It's the system you use when someone sketchy enters the train and you instinctively turn towards the door and one that makes you eat the whole bag of chips when you just wanted a small bowl.
- It's hardwired – and it's as important to us as it was centuries ago – because life's too complicated, there are too many decisions to make and instinctive, intuitive thinking is easy – it just happens.
- But it's not always right, we're mostly not aware of it, and it can lead to errors.

Heuristics

- My definition of Heuristics = the logic behind the illogical ways people think
- Simple, efficient rules that generally work well but can cause systematic deviations from logic, probability or rational choice,
- Errors based on heuristics are called “cognitive biases”
- Many of heuristics we’ll talk about today identified through the research of Nobel Prize (in economics) winners *Tversky and Kahneman*.
- Understanding them is important for understanding ourselves and those we try to help and we can also use them as guides for changing behavior.

Heuristics

- Framing effects
 - Loss/Gain Framing
- Status quo bias
- Availability bias
- Representativeness Heuristic
- Anchoring Bias
- Loss aversion
- Confirmation Bias
- Information Processing Shortcuts
- Others

Information Framing Effects

- Framing and its effects - People react to a choice in different ways depending on whether it is presented as a loss or as a gain.
- Research that asked people whether they'd accept a treatment for a serious disease described its results with a loss or gain frame – saying either that of the 600 people receiving the treatment it “saved 200 lives” or that with the treatment “400 will die”
- Results: 72% agreed to the treatment when presented with positive framing (“saves 200 lives”); only 22% chose it when presented with negative framing (“400 people will die“)

Examples of Using Loss/Gain Framing

- Gain frame best for primary PX – present positive results of preventive behavior - emphasizing reward of losing weight and looking fit over the difficulty of dieting
 - “67 of 100 people doing moderate exercise reported feeling better”
- Loss frame to encourage health screenings - emphasize risk from condition over discomfort or other barrier to behavior
 - “4 out of 10 people who did not get a colonoscopy diagnosed with colon cancer at 5-year followup”. (risk of dying over the discomfort of a colonoscopy)
 - emphasizing the risk of cancer if you don’t get HPV vaccinations (ala recent HPV vaccine TV commercial)

Loss Framed HPV Vaccination TV Video

- Female version of ad begins with young woman saying “I have cervical cancer from an infection — human papillomavirus.”
- Photos of her as a young adult and a preteen flash by.
- “Who knew HPV could lead to certain cancers?” she continues. “Who knew that there was something that could have helped protect me from HPV when I was 11 or 12, way before I would even be exposed to it?”
- “Did you know — Mom, Dad?”

Status quo Bias and Health Behaviors

- Status quo bias - People are creatures of habit; tend not to deviate from the default option or reverse their earlier decisions.
- Implication: Change the default to something more inline with public health goals. Example: organ donation lists grew when using opt out rather than opt in options. More ways to use this:
 - Use opt out (rather than opt in) for office retirement plans to encourage saving for future needs.
 - Make sliced apples not French fries the default as a side in children's meals.
 - Limit default serving size, serve smaller portions.

Availability bias and Health Behaviors

- Judging frequency by the ease with which instances come to mind. True for things that occur frequently but also for things that are vivid, frightening, somehow personal for us, in the media
- Implications – people may overestimate the likelihood of a vivid event that received a lot of media coverage (e.g., plane crash) and so fear it more than of a more common event with little coverage (e.g., car crashes)

Availability bias and Health Behaviors

- Causes discounting of some conditions – Tornadoes seen as more frequent killers than asthma, accidents as more frequently deadly than strokes.
- May result in exaggerated fear and protective behaviors against unlikely events while one ignores or not address more likely ones.
- Implications: Increase the salience of more common occurrences not frequently in the media

Optimistic Bias and Health Behavior

- Optimistic bias - mistaken belief that one's chances of experiencing a negative event are lower (or a positive event higher) than that of one's peers
- People base risk perceptions not on unbiased appraisal of information, but “rather on the most comforting view of our vulnerability that fits within the bounds of evidence”
- Do people understand the risks of smoking? In one study:
 - 71% of smokers believed their personal risk of heart attack was average or below average compared to others their age/sex
 - 60% believed their personal risk of cancer was average or below average

Shows that smokers maintain a constellation of comforting, risk-minimizing beliefs

Representativeness Bias and Health Behaviors

- Representativeness –
 - Using existing knowledge and stereotypes about an object's category to make judgments about the object
 - Inferring population characteristics from a small set of salient but misrepresentative observations.
 - Resulting Misperceptions:
 - People perceive cancer to be a death sentence when in fact new treatments have reduced mortality in many types of cancer.
 - People refuse to go to the hospital when they're ill because there's where people they knew have died and they're afraid they will too.
 - Racial, gender, and ethnic negative stereotyping

Anchoring Bias

- People do not seem to have a feel for absolute frequency of events, estimates can be influenced by implicit cues – even those not related to the subject
- Anchoring - tendency to be influenced by irrelevant numbers. Rely too heavily on the first piece of info (the "anchor") when making decisions; make judgments by adjusting away from that anchor
- Example: people asked to estimate the number of deaths (for a specific cause) in average year
 - Those told 50,000 die from auto accidents gave estimates two to five times higher than those told 1000 die from electrocution

Loss Aversion

- People are loss-averse; more likely to act to avert a loss than to achieve a gain (will accept a guaranteed offer of \$100 vs. a 50% chance of \$200)
- Elevated sensitivity to potential loss as opposed to potential gain
- It's not just money- Hard to get people to change habits because they might experience loss of something they like doing (e.g., exercise vs. watching TV)

Using Loss Aversion for Good

- Get people to precommit when starting a behavior change attempt
- Research shows people are more successful in quitting smoking and losing weight when at the outset they put up money that will be forfeited in the future if they fail.
- Easier to ask people to add certain foods to their diet than to tell them to stop eating certain foods
- Benefits of making a change need to be large enough to overcome any feelings of loss associated with making that change –

Audience Biases/

Heuristic Processing Shortcuts *wrongly* linking vaccines and autism, and

- Correlation equals causation –if two types of data co-occur that one causes the other.
 - Belief that MMR vaccinations cause autism - or that other vaccinations and specific ingredients like thimerosal are causative factors leading to disease.
- Failure to consider randomness - as explanations for sequences, events, occurrences.
 - When clusters of disease occur public may attribute these to a single cause (i.e., environmental factors) when there are other explanations

Other biases – and there are over 100

- Preference of certainty over chance
- Tendency to discount very small probabilities entirely
- Confirmation bias – searching for and interpreting messages so they conform to what we already think or feel
 - Related to Selectivity bias – selecting too narrowly the information they use for their decisions.
- Present bias – weighing immediate moment more heavily than the future.
 - Preference for more immediate gratification even at the expense of longer-run well-being.

NUDGES

- Use behavioral economics insights to adjust the context or environment so people are more likely to make voluntary decisions in their own interest
- Altering any aspect of the choice architecture that alters people's behavior in a predictable way, without forbidding any options or significantly changing their economic incentives.
- Putting the fruit at eye counts as a nudge. Banning junk food does not.
- Nudge-like practices have been used by commercial marketers for users – including putting candy and magazines in the check-out area to encourage impulse purchase. But we can use them too..

- Small changes can lead to behavior modification. Studies have found that simply prompting (nudging) individuals to make a plan increases the probability of the subject eventually engaging in the prompted behavior.
- Other nudges
 - Email patients appointment time and locations for their next vaccination
 - Prompt people to write down day/time they planned to get flu vaccine. (study showed that increased vaccination rate).
 - Text messages to remind individuals to take their messages
 - Automatic refill of prescriptions to increase medication adherence

Smarter School Lunchrooms Movement/Use of Nudges

- Uses aspects of prospect theory which holds that humans are influenced by the way problems are presented to them
- Based on studies showing changes in the lunchroom environment encourage students to select, eat and enjoy healthier foods in school, without eliminating choice, can primarily increase consumption of healthy foods, and decrease food waste in school district
- Other Strategies:
 - Controlling portion size - larger portions lead to increased intake, use smaller ones (known as portion size effect)
 - Improving convenience - availability and accessibility of fruit and vegetables, as well as taste preferences, affected consumption
 - Positioning white milk in front of chocolate milk prompted a 2% increase in students choosing white milk instead of chocolate milk, which reduces their intake of sugar-sweetened beverages – even bigger change (18%) if only white milk is displayed and chocolate must be requested.

More Lunchroom Nudge Strategies

- Improving visibility of healthy food
- Enhancing food expectations - making food look and sound delicious improves selection and consumption of healthy foods
- Suggestive selling - training staff to be pleasant and to prompt students to pick healthy choices (using “do you want fries with that” strategy for good)
- Put salads/healthy food near the front of cafeteria offerings
- Bundle healthy food together or make it more convenient to purchase, unhealthy food more inconvenient.

Other Nudges

- Switching the placement of junk food in a store, so that fruit and other healthy options are located next to the cash register, while junk food is relocated to another part of the store
- Combat impulsive decision making by taking specific actions (changing the choice architecture) to prevent unwanted behaviors
 - get rid of junk food or ashtrays in the house
 - don't go to the grocery store hungry

A point that interests me

- The value we assign to our possessions is usually much more than someone would pay for them (favorite toys from childhood, favorite jeans, even things like pencils, coffee mugs, and CANDY)

LOOKING AT PERCEPTUAL PROBLEMS ANOTHER WAY – ENVIRONMENTAL RISK

Risk Perception

- Risk is multidimensional - hazards that are similar in many ways may receive different responses. (e.g., both one tablespoon of peanut butter and 50 years of living at the boundary of a nuclear power plant create a one-in-a-million risk of premature death)
- One explanation for different responses is the extent to which a hazardous risk is acceptable to the public – referred to as “outrage factors”
- Knowing about can help explain public reactions and concerns about various hazards.

Qualities of a Hazard Influencing Public Perception of Risk* ("Outrage Factors")

- Acceptable Risks:
 - Voluntary
 - Under your control
 - Clearly beneficial
 - Fairly distributed
 - Natural
 - Statistical
 - From a trusted source
 - Familiar
 - Affect adults
- Unacceptable Risks:
 - Involuntary
 - Controlled by others
 - Of little/no benefit
 - Unfairly distributed
 - Man made
 - Catastrophic
 - From untrusted source
 - Exotic
 - Affect children

* (Fischhoff, et al, 1981)