Alternative health practices

• Billion dollar "alternative" health industry is a good example, because it is seldom clear-cut which practices are effective and which aren't.

• Thus, the considerations Gilovich presents do not guarantee that the "right" belief will be arrived at, but they do help us choose the most justified belief.

• Controversial practices: psychic diagnosis, psychic/faith healing, palmistry, colonic irrigation, iridology
Alternative health practices

- Examples of bad/expensive/self-destructive beliefs:
  1. Laetrile clinics in Mexico
  3. faith healers in the US
  4. AIDS treatments including: pounding the chest, sunlight for genitals, ozone gas rectally, hydrogen peroxide injections
  5. Hoxsey cancer treatment (Mexico)

- 10 billion per year spent on quack remedies in the US alone
Alternative health – Desire to believe

• What is there about disease and about the way people think that makes them hold demonstrably false beliefs?

• Offered:
  • control what seems uncontrollable ('I have to try something', 'Why not?')
  • hope when 'conventional' medicine is unable to help

• Result:
  • critical faculties are suspended
  • 'kinder' to information that supports our hopes
  • 'pretending' to believe becomes real belief
Post hoc ergo propter hoc

• The main fallacy in such causal reasoning.

• Literally this means "after this therefore because of this". Warns against concluding that just because something comes after a possible cause it is an effect of that cause.

• Because the body is so good at healing itself, it can provide an 'other cause' for this fallacy.

• Many who get medical help will get better even if the ‘doctor’ is decreasing the chances of getting better.
Post hoc ergo propter hoc

- The base-rate of success is so high even terrible treatments will seem successful.

- The experience of one individual seldom has a contrast class; as a result there is missing data.

- Another source of error is regression:
  1. followed by improvement, the regression fallacy kicks in;
  2. followed by no improvement, the treatment stabilized the condition; and
  3. followed by deterioration, it was too late.
Techniques to seem right

• There are a number of 'techniques' for providing rationalizations.

• Simply discount the failure (e.g. ‘lack of spiritual purity’, ‘right state of mind’)

• Faith healer JJ Rogers: “If I can’t heal them, there’s something wrong with their souls”

• Discount failure by reference to the practitioner (it was not applied correctly)

• Notably, these are relevant for any kind of medical practice, so what’s the difference?
• No surprise: people tend to take positive evidence at face value, and reject contrary evidence (recall gamblers).

• This 'biasing' trap is even easier to fall into when failures are ambiguous:
  • unspecified improvements in a broad symptomology will likely appear.
  • many alternative health practices do not offer precise remedies for specific problems ('more energy', 'better memory', 'higher functioning')
  • such claims are hard to refute but have little content
Plausibility

- Plausibility makes things more memorable and more likely to be repeated (e.g. magnet therapy).
- One problem with assessing plausibility are the effects of representativeness. We expect effects to resemble their causes.
- These problems most conspicuously arise for homeopathy.
Plausibility (cont.)

- Samuel Hahneman, founder of homeopathy, believed the:
- ‘law of similia’: diseases can be cured by administering whatever produced the symptoms; and
- ‘law of infinitesimals’: the less concentrated the remedies were, the more they would help (since they produce less symptomology)

- Both of these are demonstrably false in general
- although think about vaccination, so what’s the difference?
Many dietary remedies are also influenced by representativeness (you are what you eat).

E.g., Dr. Dan Dale Alexander: oil should be ingested to help arthritis ('grease the joints'), but not with water (oil and water don't mix).

E.g. Dr. DeForest Jarvis: mild acid should be ingested (vinegar) because acid is used to destroy calcium (by plumbers).

Such suggestions ignore the fact that the body transforms most food before it is used. Vinegar is turned into an alkaline residue, for instance.

Chiro: your body needs a tune-up
Plausibility (cont.)

- All of these examples are by way of a warning:
  - determine if beliefs stem from a sense of surface plausibility, if so,...
An analysis of holistic medicine

• Difficulties in assessing the merit of holistic medicine:
  • Some holistic ideas are supported by some in the scientific communities (Chiro for short-term back problems; St. John’s Wort; mind/body interaction)
  • What counts as 'holistic' health practices is ambiguous

• We'll take holistic medicine to be:
  • a rejection or deemphasizing of the (perceived) reductionist bias of 'Western' medicine
  • mostly 'whole person' treatments
  • mostly a balance between 'mind, body and spirit'
An analysis of holistic medicine

• Uncontroversial holistic claims:
  • preventative health practices are good (proper diet, good exercise, vaccination*)
  • taking responsibility for the direction of treatment (i.e. considering the doctor a wise consultant)
  • stress reduction helps decrease susceptibility to disease
  • Some practices (e.g., meditation, yoga, imagery, prayer, etc.) may do nothing for disease, but help patients to cope with the disease.
An analysis of holistic medicine

• The mind influences the body?

• to what degree?

• some positive evidence (but very general, almost any 'psychological' variable)

• 'traditional' medicine studies this as 'psychoimmunology': the nervous system clearly interacts with the immune system

• an immune system that is unaffected by our emotional states is better sometimes.

• The 'smart money' in evaluating such claims tends to be with the less extreme versions.
An analysis of holistic medicine

- A central problem stems from an interpretation of the patient 'taking responsibility' for their well-being.

- Taken to an extreme (as it seems to be by some practitioners), the patient can feel terribly downtrodden just because she/he is sick!

- That is, the disease is seen as a result of his/her own personal inadequacies.

- This, of course, is no way to help someone heal, or deal with their disease.
An analysis of holistic medicine

- Treatments have to be considered on a case by case basis
- Parts of a single ‘method’ can be useful while other parts aren’t.
- Often, less extreme claims are most plausible (consistency with well established theories)
- ‘On-the-face’ plausibility is usually reason for caution.
Question

• Describe two ethical barriers to performing controlled experiments.