Background and Research Questions

- There is a tension between the "ought" and the "is" of decision making. While rational choice theory prescribes weighing the pros and cons and updating beliefs according to Bayes’ rule, empirical evidence suggests that people tend to rely on heuristics instead. Do economists follow their own theory in important decisions concerning health?

- We chose PSA (prostate specific antigen) since its benefits are not proven. Health organisations recommend to weigh pros and cons, because harm can result from treatment after positive tests. We investigated two questions:
  1. Do economists decide whether to take PSA tests by weighing pros and cons? Or rather by relying on social heuristics such as following the advice of their doctor?
  2. Does consistency of beliefs correlate with accuracy of beliefs?

- The second questions tests an implicit assumption in rational choice theory that higher consistency is not an end in itself but leads to higher accuracy.

Study

- 133 attendees of the 2007 annual meeting of the American Economic Association (AEA) were asked whether they take PSA tests, how they decided, and about their estimates of the characteristics of the test that allowed us to measure the consistency and accuracy of their beliefs (see questionnaire).

Results

How do economists decide?

- Two thirds of economists said that they did not weigh any pros and cons. Only 20% said they had read any test-related information; only 5% said they had consulted a medical an authoritative source.

- 60% of economists said that their decision was influenced by their doctor or wife.

Does consistency imply accuracy?

- Accuracy was measured by the deviation between estimated and published incidence and mortality rates. To measure consistency, we asked for two conditional probabilities and checked whether these are consistent with the two probabilities provided, using Bayes’ rule.

- There was no correlation between consistency and accuracy.

Consistency-test:

- a) give incidence of prostate cancer [P(C)]
- b) give proportion of positive PSA tests [P(+PSA)]
- c) ask positive PSA test given prostate cancer [P(PSA+C)]
- d) ask prostate cancer given positive PSA test [P(C|PSA+)]

- Inconsistency: \(\log(\frac{P(+PSA|C)}{P(C|PSA+)} - \log(\frac{P(C)}{P(C|PSA+)})\)

- (because \(P(C|PSA+C) = P(PSA|C) \times P(C) / P(C+PSA)\))

- Screening participation

- Most economists said that they did not weight pros and cons. They seemed to follow a social heuristic: “If you see a white coat, trust it.” This heuristic is ecologialy rational in a world where doctors are well-informed and have no conflicts of interest. In the present US health care system, this heuristic can lead to overtreatment and unnecessary imotence and incompotence.

- Consistency in beliefs is no guarantee for accuracy.