**Biases in Human Prediction**

- Data Acquisition
  - availability
  - selective perception
  - base rate insensitive
  - frequency
  - illusory correlation
  - data representation

- Process
  - inconsistent
  - heuristics
  - non-linear
  - conservative
  - environment
  - sources

- Output
  - wishful thinking
  - illusion of control
  - response

Feedback
- recall, overconfident, hindsight bias, chance

adapted from Hogarth, 1988

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**Comparative Effectiveness**

<table>
<thead>
<tr>
<th>Treatment options</th>
<th>T1</th>
<th>T2</th>
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<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
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<tr>
<td>B1</td>
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<td>B2</td>
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<tr>
<td><strong>Harms</strong></td>
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<tr>
<td>H1</td>
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<tr>
<td>H2</td>
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</tbody>
</table>

Must tailor the probabilities to the individual patient.

Conclusions

<table>
<thead>
<tr>
<th>More accurate predictions can be helpful for a lot of things!</th>
<th>The most accurate predictions presently available should be used, and these are likely from statistical prediction models.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalized predictions are key to effective informed consent and are the backbone of medical decision making.</td>
<td>Clinician judgment, risk groups, risk factor counting, and overall treatment effects from RCTs, are all less helpful.</td>
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</tbody>
</table>
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