I. Medical Decision-Making in Situations that Offer Multiple Alternatives

Research in cognitive and consumer psychology has shown that people evaluate alternatives differently when choosing from a number of similar options than when just choosing from a single alternative.

Schelling anecdote about buying an encyclopedia.

Experiment: College students presented with following scenarios

1. **One Alternative Condition:** You plan on working in the library. When walking across campus, you notice that author you like is giving public lecture.

   Do you proceed to library anyway or go to talk?

2. **Two Alternative Condition:** You plan on working in the library. When walking across campus, you notice that author you like is giving public lecture – and that in another hall, they are screening foreign film you’ve been wanting to see.

   Do you proceed to library anyway or go to talk or film?

**Results:**
One Alternative: 21% go to library
Two Alternative: 40% go to library

Library chose more when more alternatives were available.

(Note: consequences for living in big city vs. small?)

**Tendency to delay or avoid making a choice when faced with multiple attractive alternatives is a Cognitive Bias.**

In medical situations, there is a presumption that doctors, for example, are not influenced by factors such as number of alternatives in prescribing medication.
Questions:
1. In Medical situations, are doctors more likely to forgo an option and retain the status quo when a clinical problem has many, rather than one treatment options?
2. Are policy makers likely to dismiss an option and retain the status quo when a health policy problem has many, rather than one proposed solutions?

Hypothesis: Physicians and Legislators are likely to show the same cognitive bias.

Methods:

2 Groups of Physicians:
- Family Physicians
- Neurologists participating in study of patients with carotid artery disease

One group of Legislators-
elected in Ontario Provincial Parliament

Questionnaires
-with scenarios relevant to hypothetical situation that provided no obviously superior management alternative

Two Versions:

1. basic with 2 options
2. expanded with 3 options- third was similar, not exact , to one of three options in basic version.

Subjects Received surveys by mail, responded and sent them back

Family Physician:

choice of whether to start new medication
1. Basic: Refer to orthopedics & start ibuprofen; or refer but don’t start any ibuprofen
2. Expanded: Refer to orthopedics, start ibuprofen; refer and start piroxicam; do not start any new medication
Neurologist:

choice of whether to start new medication
    3. Basic: choose which of 2 patients to operate on first
    4. Expanded: choose which of 3 patients to operate on first

Legisators:

Decision as to close individual hospital
    5. Basic: described one hospital (hospital A)
    6. Expanded: described hospitals A and B

Results:

Family Physician:

Basic: 53% chose no medication
Expanded: 72% chose no medication

Results:

Neurologist:

Basic: 38% chose to operate on patient 2
Expanded: 58% chose to operate on patient 2

Results:

Legislators:

Basic: 26% chose “refuse to provide a judgement”
Expanded: 64% chose “refuse to provide a judgement”

Comment: adding new options can increase the chances of maintaining the status quo

Implications: medical acre presents large numbers of treatmet options.
-13 medications for Parkinson’s, 91 for hypertension, tests, diagnostics, etc.
-patients need to buy health insurance must choose between several similar alternatives
Why is it so difficult to chose with many options:

1. decisional conflict
2. technological imperative: makes prospect of doing nothing appealing
3. anticipation of regret

II. Disjunction Effect: On The ursuit and Misuse of Useless information

- Have you ever delayed making a decision as you waited for more information?
- Then, when it comes along you find that the new information is irrelevant to your decision

Disjunction Effect: Phenomenon in which people desperately seek information they do not actually need.

- people will accept enormous financial and emotional costs in the pursuit of information that has no bearing on final decision.

Kahneman & Sharif Experiment:

Stanford University students divided into 3 groups:
1. All told they just took difficult exam & passed exam
2. All told they just took difficult exam & failed exam
3. Told they just took difficult exam & results not known yet

All asked whether they wanted to buy tickets to go on vacation>

1& 2- most said yes

3: less than 30% said yes, even if delay meant increase in price and ultimately made no difference_ equal numbers who knew whether they passed r failed chose to go on vacation

Why is process different if we don’t know outcome?
Sharif: People need a script and narrative of why they are doing something. People wait for information when they shouldn’t, and once they wait, they infer from waiting that the information matters.

Info that once didn’t now overrules information that did.

Example:
You are buying a car and are concerned about price and efficiency. Once you get to negotiating price over model you like, salesman says’ I don’t know if this model has the high-tech sound system on the floor model. Shall I check?’

Now you wait for new info before making decision and suddenly care about new info. When he comes back with “good news”- the previously irrelevant information makes it more likely you will buy the car at his price.

Impact on very serious decisions- donating a kidney, acceptance to college, etc.

**Methods:** Two versions of a hypothetical choice scenario presented to 2 separate groups.

**Simple version:** brief scenario, required subjects to choose between 2 alternatives. All information presented at once

**Uncertain Version:** same scenario presented but some piece of information left out initially. Patients had the option to wait for the missing info before making their choice. Then provided with information that made the scenario identical to simple version.

**Everyday Decisions:**

1. Registering for a Course
**Simple Version:**
Decide to register:
Decide not to register:

**Uncertain version:**

Decide to register:
Decide not to register:
2. Evaluating Applicants

Simple Version:
Reject Applicant:

Uncertain version:
Reject Applicant:

III. The Beguiling Pursuit of More Information

Presumption that more information is always a better thing. Tend to want to wait for more information. Research shows this alters our decisions.

Methods:
Clinicians asked to consider hypothetical situations, formulated in simple or search versions.

Simple: information immediately available
Search: presented same medical situation but left a piece of information missing and available through waiting or conducting a test.

Results:

1. Dialysis Nurses
Simple: Relative needs kidney; would you donate kidney to relative

Search: relative needs kidney; not know if you are a match; would you choose to be tested?
-if found to be a match, would you donate?

2. Urologists:
Simple: would you recommend surgery or radiation

Search: recommend surgery, radiation, or consultation before deciding?

3. Academic Physicians
Simple: would you recommend pilot land or continue flight

Search: would you recommend pilot land, continue flight, or as for blood pressure cuff before making decision?