Picking problems

Picking Problems

There is no recipe for doing research
- Can't get it from a book, even Turabian
- Can't cover it in a few days
- Topic of the whole PhD program (plus some)

Picking Good Problems (in any field)

You will spend your career picking problems and analyzing them

How do you pick problems that lead to good/interesting/etc. results?

Balance
- (Potential for) impact
  – E.g., do "people" care about it when you are done
- Can you get it done
  – Tools (methods) you have to bring to bear
  – Difficulties, obstacles, and risks
  – (Resources available)

Picking Good Problems (in any field)

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How do you pick problems that lead to good/interesting/etc. results?

> This will be assessed differently in different areas/disciplines

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Research Goals

Research generates new knowledge:

true of invention, discovery, and research through Design

Within that there are pioneers and settlers

but **ALL** research needs to answer "So What?"

What first?

State your problem and approach

State your reasons for doing this, this way

What type of evidence will you need? Write down some ideas

For introduction: *rephrase* your problem as a gap in understanding

Then tell us *SO WHAT?*

… rinse, lather, repeat …

So What?

(Potential) Impact

What's this going to change and
why is it important?

- Who cares?

A typical related question:
Generalizability / applicability

Is this reusable for lots of things or
likely just one specific thing?

Will others be able to build on this?

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By When?

Can you get it done?

One key is *scope*
- Specific audience
  – People your problem affects
  – People who will appreciate your results
- Specific problem/area of inquiry
- Specific approach to
  solving problem/answering question

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Really?

Another variation on scope is *Feasibility*

You might have a great problem idea,
but it won't fly unless you have
- Clear problem statement
  – AKA: you know what you are trying to do
  – Sometimes: "thesis statement"
- Plan of Attack (scoped to resources, incl. time)
- Well-scoped specifics
  (audience, area, approach, validation)
- Some (preferably convincing) evidence that problem
  exists, and approach hasn't been done before

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Audience participation

You should have brought to class four copies of a
problem statement
- Divide into groups of 3. One person goes first.
- Each partner gets 5 minutes to question you
  – One friendly partner
  – One unfriendly partner
- Example things to discuss
  – Does all this fit together?
  – What's irrelevant?
  – What's missing?
  – Might this idea help?

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In today's society, life experiences are often processed in an online world.
However, online resources are often incomplete, may include a diversity of
opinions, and may be inaccurate. How do individuals decide what to trust
given the uncertain information they encounter online?

We propose to design a technological intervention that can improve people's
ability to understand and decide among online resources: We will create a
tool to classify online resources in terms of viewpoint. Although tools cannot
judge how accurate online information is, we can build tools that highlight
different viewpoints for patients. Following the paradigm advanced by sites
like ManyEyes (Viégas et al., 2007), we will allow users to save and label
visualizations that they create. Public versions of visualizations may be
created, in which case other users can add new evidence to them.

Our results will help to add to existing knowledge about how the Internet can
support individuals with chronic conditions.

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