

CSE 291: Usability of Programming Languages ("Programmers Are People Too")

GenderMag

Case Study Research

after Robert Yin, "Case Study Research and Applications: Design and Methods"

When To Use a Case Study (Source: Yin)

Method	Question form	Requires intervention?
Experiment	how, why?	yes
Survey	who, what, where, how many, how much?	no
Case Study	how, why?	no

Case Studies:

- Investigate contemporary phenomena in depth in a real-world context
- Especially when boundaries between phenomena and context are unclear
- Can you really separate SE tools from SE teams, which operate in organizations?

Case Study Components

- Research questions
- Propositions (hypotheses), if any
- The case: an entity or entities
 - Bounds for the case: outside the bounds is the *context*
- Logic linking data to propositions
- Criteria for interpreting findings

Cases Can Be Hard To Find

- The Cuban Missile Crisis
 - Can't do an experiment
 - Can't do a survey (of all the *other* similar crises?)

Data Collection

- Documentation
- Interviews
- Direct observations
- Physical artifacts

Analysis

- Grounded theory
- Thematic analysis
- Leverage your propositions to focus your analysis

Contrast: Ethnography

- Ethnography is *immersive* and *long-term*
- Case study: apply tool T to software S yourself; interview developers
- Ethnography: embed yourself within T's team for six months

GenderMag: Five Facets

- Motivation: goal-oriented vs. technology-oriented
- Information processing style: gather complete information first vs. follow first promising information, and backtrack as needed
- Computer self-efficacy: confidence in success
- Risk aversion
- Tinkering

GenderMag Evaluation (Case Study)

- What aspects did you find convincing?
 - Unconvincing?
- To what situations might this generalize?
- What changes would you have made to the evaluation methodology?

Proposed Mags

- Let's talk about your ideas.

Implications on PL/SE

- What languages/tools might be gender-biased?

Case Study Methodology

- What research questions might be addressable via case studies?
 - Questions? Cases?