

Human-Computer Interaction

Choosing Methods + Ethics & IRB

M2 • Professor Bilge Mutlu

Today's Agenda

- **Part 1 – Choosing methods:** methodological fit
- McGrath's three-horned dilemma
- Edmondson & McManus: match method to question maturity
- **Part 2 – Research ethics & IRB:** Belmont, consent, review
- Activity: *"Fit, then protect"*

Reading behind today

- **Required:** McGrath (1995), *"Methodology Matters"* · *The Belmont Report* (1979)
- **Recommended:** Edmondson & McManus (2007) · Lazar et al. (2017), **Ch. 15** (*working with human subjects*)
- **Optional:** Bruckman (2014), *"Research Ethics and HCI"* · Lazar et al., **Ch. 16**

Part 1 – Choosing Methods

What is research?

Research involves the systematic use of theoretical and empirical tools to try to increase our understanding of phenomena or events.

– McGrath, 1995¹

¹ McGrath, J. E. (1995). Methodology matters: Doing research in the behavioral and social sciences. In *Readings in Human-Computer Interaction* (pp. 152-169). Morgan Kaufmann. (Companion: McGrath, "Dilemmatics," *Am. Behavioral Scientist* 25, 179-210, 1981.)

Every study brings together three things

*(1) Content
actors & context*

*(2) Ideas
behavior & relations*

*(3) Techniques
modes &
procedures*

Choosing a setting: the three-horned dilemma¹

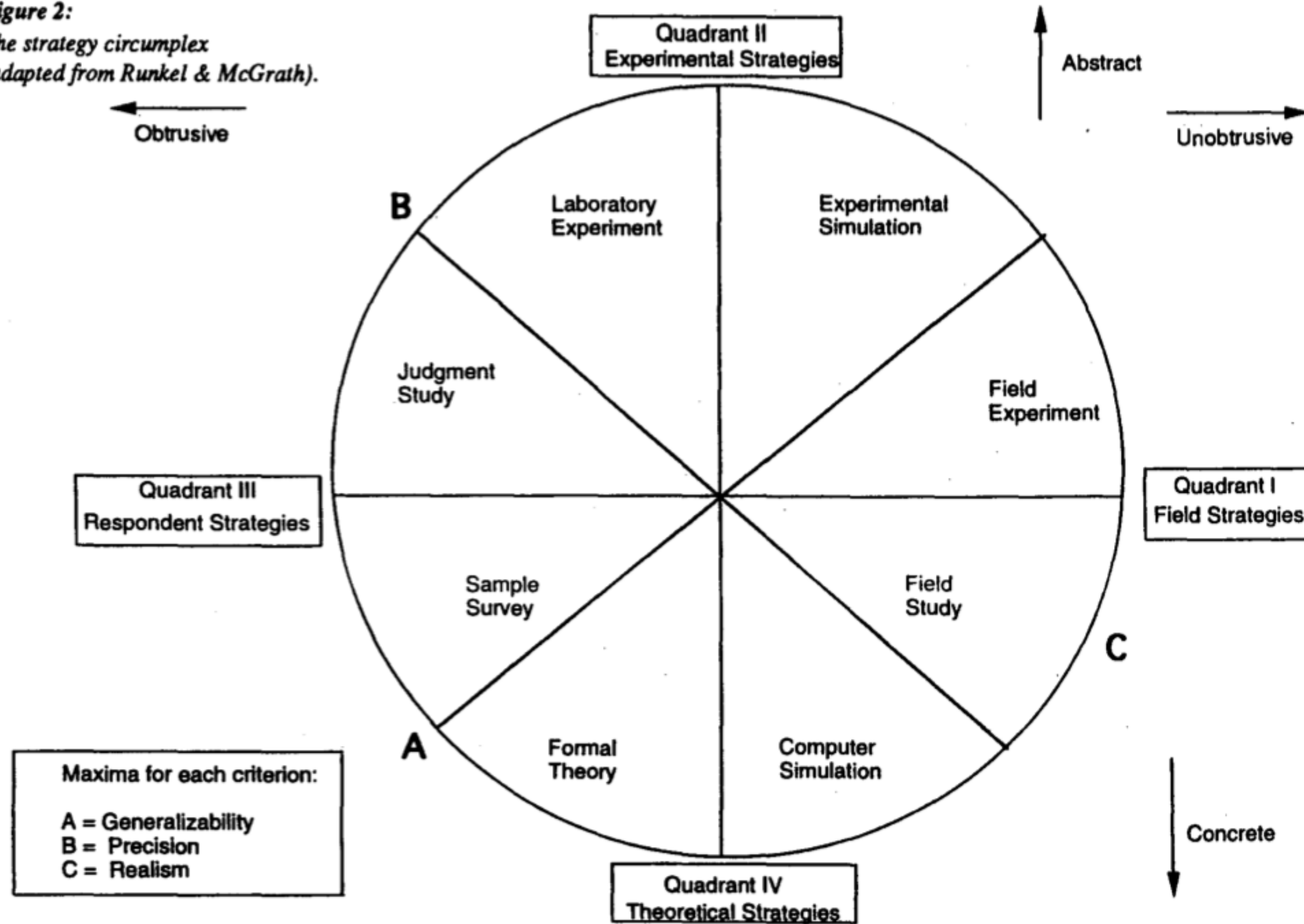
No single design maximizes all three:

1. **Generalizability** – does it hold across people & settings?
2. **Precision** – how controlled is the measurement?
3. **Realism** – how true to the lived situation?

We seek all three. We never get all three. You choose what to sacrifice.

¹ McGrath, J. E. (1995). Methodology matters: Doing research in the behavioral and social sciences. In *Readings in Human-Computer Interaction* (pp. 152-169). Morgan Kaufmann. (Companion: McGrath, "Dilemmatics," *Am. Behavioral Scientist* 25, 179-210, 1981.)

Figure 2:
The strategy circumplex
 (adapted from Runkel & McGrath).



And if it's design-led inquiry?

Research **through** Design trades a different triad:

Empirical emphasizes

- precision
- generalizability
- realism

RtD emphasizes

- generativity
- situated validity
- conceptual provocation

The right question, not the right method²

The key to good research lies not in choosing the right method, but rather in asking the right question and picking the most powerful method for answering that particular question.

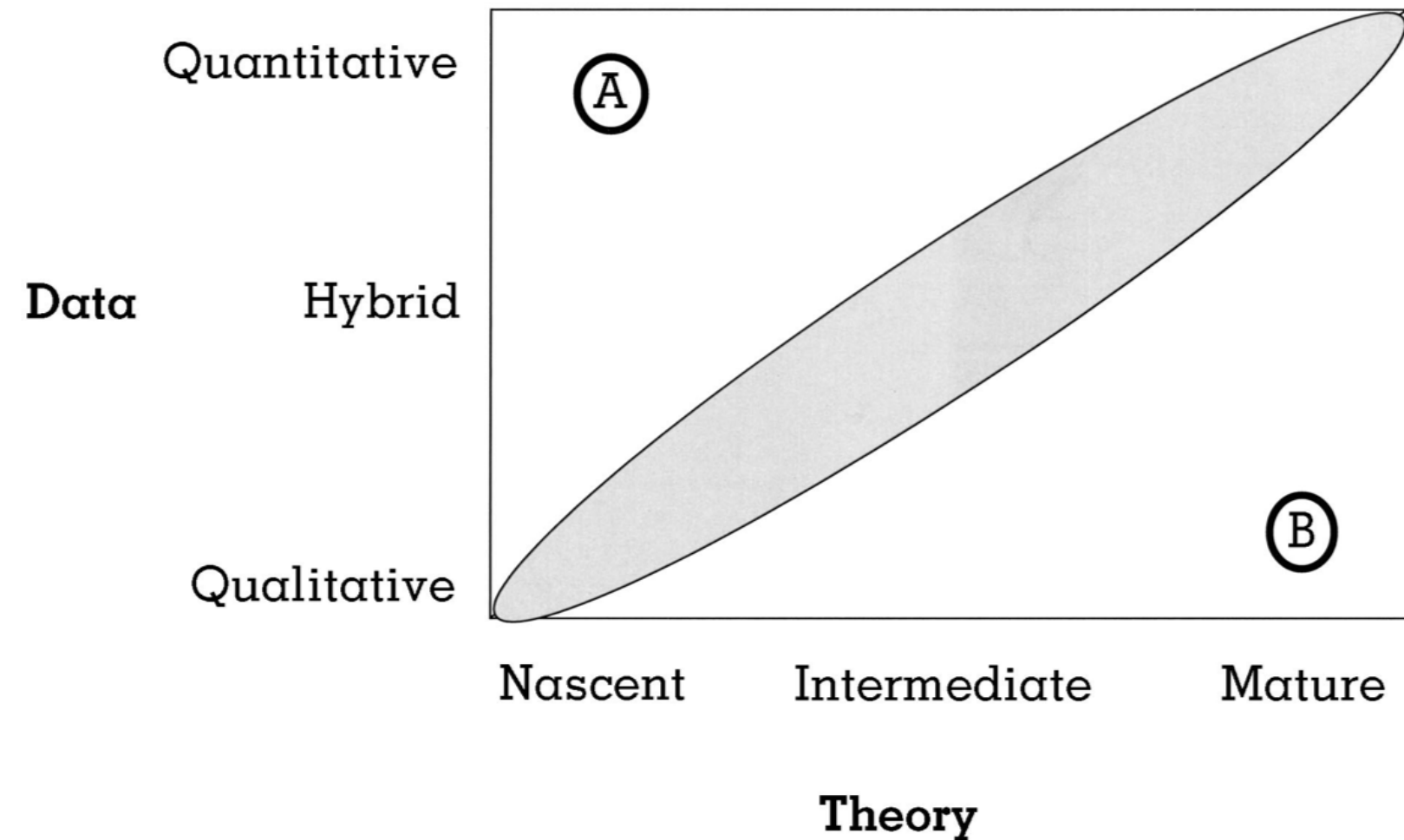
– Bouchard, 1976

²Bouchard, T. J. (1976). Field research methods. *Handbook of Industrial and Organizational Psychology*, 1, 363.

Methodological fit³

Choose your method based on **the state of current theory** – the one thing you *don't* control.

FIGURE 1
Methodological Fit As a Mean Tendency



³Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, 32(4), 1155-1179.

Fit runs down the diagonal

State of theory	Question	Data	Analysis
Nascent	open-ended	qualitative	pattern-finding
Intermediate	new↔old constructs	hybrid	exploratory tests
Mature	focused / hypotheses	quantitative	formal inference

Where RtD sits in the fit frame

- **Nascent** – RtD explores new framings, envisions futures
- **Intermediate** – RtD embodies constructs in artifacts
- **Mature** – RtD critiques and reframes blind spots

Part 2 – Research Ethics & IRB

Why ethics comes *with* method choice

The moment you choose to study **people**, method and ethics become one decision.

- Your method sets the **risks** participants face
- Ethics sets the **limits** on what a method may do
- You can't finalize one without the other

The Belmont Report (1979)⁴

Three principles behind all human-subjects research:

- **Respect for persons** → informed consent; protect those with reduced autonomy
- **Beneficence** → maximize benefit, minimize harm; favorable risk/benefit
- **Justice** → fair distribution of the burdens and benefits of research

⁴ *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, 1979. <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/read-the-belmont-report/index.html>

Ethics in HCI's own settings⁵

The biomedical template bends when the "site" is a community or a public dataset.

- **Online communities** – is a public post "human-subjects" data? consent at scale?
- **Public / trace data** – legally accessible ≠ ethically fair game
- **Emergent harms** – deception, dark patterns, re-identification

⁵Bruckman, A. (2014). Research ethics and HCI. In Olson & Kellogg (eds.), *Ways of Knowing in HCI* (pp. 449–468). Springer.

From principle to practice: the IRB

The **Institutional Review Board** reviews research with human subjects *before* it begins.

- It **operationalizes** Belmont into a required approval step
- At UW–Madison, studies like ours would go to the **Minimal Risk Research IRB (MRR IRB)**

The formal determination is not yours to make
– but you must reason your way to a good guess.

Where **your** 770 project sits

Your class project is a **training activity**. It does **not** require IRB approval.

- That is what lets you collect data in a 14-week term at all
- The ethics still apply in full – consent, risk, data handling. *No review ≠ no obligation*

But training data is not publishable data.

If you want to publish it

IRB approval is **not retroactive** – training data generally **can't** be published later.

Route 1 – file first

Get IRB approval **yourself** before collecting the data you'd publish. *I can't file it for you.*

Route 2 – pilot, then redo

Treat the class project as a **pilot**; recollect under an approved protocol after the course. *Usually the cleaner path.*

Three review tiers

Tier	When	Who decides
Exempt	minimal risk and an exempt category – surveys, interviews (<i>even recorded</i>), benign tasks with adults	still an IRB <i>determination</i>
Expedited	minimal risk, but no exemption fits – e.g., interviews with minors	IRB chair or designated reviewers
Full board	more than minimal risk	convened committee

Informed consent – the moment itself

What a participant must understand *before* agreeing:

- **Purpose** & what participation involves
- **Risks & benefits** – honestly, proportionate to the study
- **Voluntary** – they may stop anytime, no penalty
- **Data handling** – what's collected, stored, shared; how it's protected
- **Contact** – who to reach with questions or concerns

Vulnerable populations

Extra protection where autonomy or power is limited:

- **Children & minors** – parental permission + child assent
- **Students / employees** – coercion risk when the researcher holds power
- **Cognitively or medically impaired**, incarcerated, economically precarious

*If your sample touches any of these, assume **higher review** and design consent accordingly.*

Guardrails coda

Ethics is not a form you clear once – it's oversight you carry.

- **Oversight** – who is accountable if a participant is harmed?
- **Appropriate reliance** – don't let "the IRB approved it" replace judgment
- **Accountability** – you own the data and the people behind it

Activity: *Fit, then protect*

Grab the worksheet

- **One copy per team** – File → Make a copy
- Fill it in together; **nothing to submit today**
- Afterward, each of you copies it into your **own** Method Choice + Ethics Plan

tinyurl.com/25jvzv5



In your pod – Fit (12 min)

- Place your RQ on McGrath's circumplex
- What wins – **generalizability, precision, or realism**? What's given up?
- How **mature** is the question? → the method family it implies

In your pod – Protect (18 min)

Start a **consent + protocol outline**:

- **Who** participates – any **vulnerable groups**?
- **Risks vs. benefits**
- What the **consent** says
- How **data** is handled

Assignment – Method Choice + Ethics Plan

Individual · $\approx$ 1–2 pp · due **Fri Sep 25, 9:45 am**

1. Research question(s)
2. Method + fit rationale
3. Study type
4. Ethics, consent + best-guess IRB tier
5. Consent-script outline

Details and rubric on Canvas.

What's Next?

- **Mon Sep 21 – Human-AI Interaction**
 - Read Dell'Acqua (2026) · Buçinca (2021)
 - Provocation slide due 9:30 am
- **Fri Sep 25 – Research through Design + Wizard-of-Oz**
 - Read Zimmerman & Forlizzi (2014) · Kelley (1984)
 - Method Choice + Ethics Plan due 9:45 am