

# How to do a good research: Some key points

Yufei Yuan

Wayne C. Fox Chair in Business Innovation

Professor of Information Systems

Michael G. DeGroote School of Business

McMaster University, Canada

# Agenda

- **The problem of the problem: How to identify a good research problem?**
- **Where are you standing? The importance of literature review**
- **Do you have a theory? Theory and model building**
- **Methodology: Do it in a rigid scientific way**
- **Writing is a critical thinking: How to make your research papers published in top journals**

# What is a Research Study

A research study must:

- Ask a research question
- Identify a research population or group
- Describe a research method
- Test or measure something
- Summarize the results

Source:

<http://www.lib.ecu.edu/Reference/howdoi/research.html>

# Three Basic Research Activities

- Describing some phenomena that we perceive in the world,
- Articulating a theory to account for the phenomena, and
- Testing how well the theory accounts for the phenomena.

Ref: Ron Weber, The Problem of the Problem, MIS Quarterly , Vol. 27, No. 1, 2003

# The problem of the problem: How to identify a good research problem?

# Always keep original curiosity



Curiosity, persistence and an open mind are some of the traits UBC researchers tell us make a good investigator.

## References:

<http://www.cs.wpi.edu/~chenst/gr.htm>

<http://www.publicaffairs.ubc.ca/ubcreports/2002/02oct10/goodresearch.html>

# Why is problem articulation the most important activity?

- **Albert Einstein:** Great scholars do not *solve* problems. Instead, they *create* them.
- Often we achieve high levels of rigor we now publish in the information systems discipline. The problems we address, however, are relatively uninteresting and unimportant.

Ref: Ron Weber, The Problem of the Problem, MIS Quarterly , Vol. 27, No. 1

# The problem of identifying a good research problem

- The objective of a research is to find out an answer to an interesting, valuable, but unanswered question
- To make people interested in your research, you must ask them a question that they have not thought of but anxious to know the answer
- In academic, too much emphasis is put on the rigorous of research methodology rather than the importance of the research question

# How to select a good research problem?

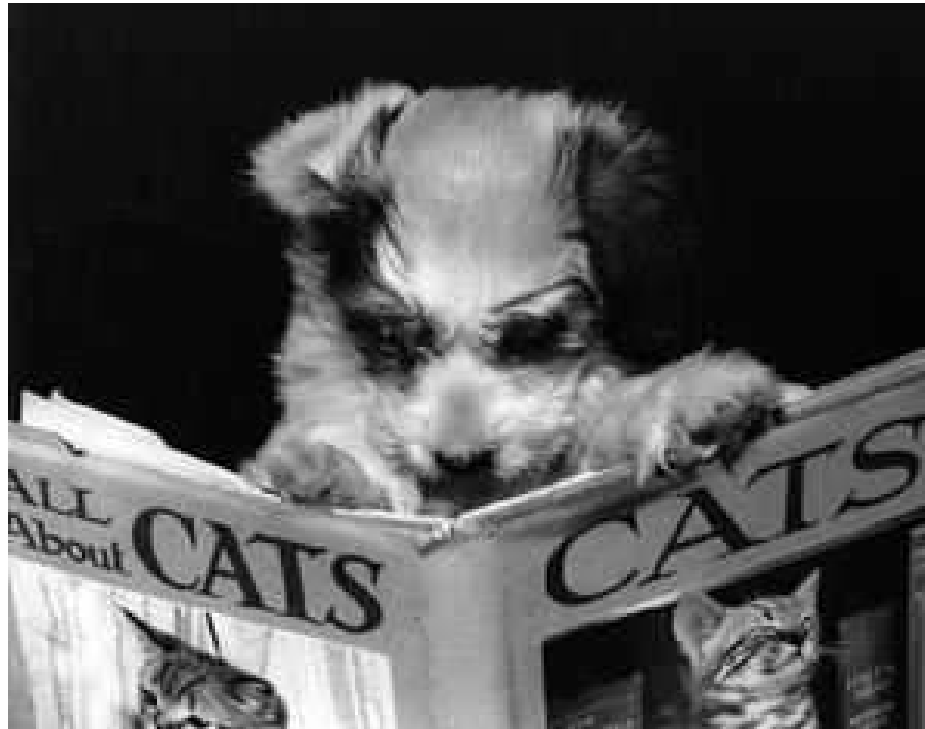
- **Be sensitive to the new trends: to be at the frontier**
- **Do not limit yourself to traditional way of thinking: e.g. Simon's bounded rationality**
- **Do not repeat what people have already done: the importance of literature review**
- **Do not provide a solution without identifying a problem: first is why then is how**

# How to select a good research problem?

- To be original. Discover a research problem from the real world rather than mimic other people in an academic world
- Work with people in different discipline. Do not limit your research in your discipline only
- Broaden your view (knowing the context) first, narrow down to be focused, then broaden again for future research
- “To wrestle with the unexpected and arrive at new understanding that challenges old ways of thinking is the crux of good research.”

# The importance of literature review

# Learn what you want to pursue carefully



"As a researcher, we're seeking the truth about everything that's around us,"

# The importance of literature review

- Do not reinvent the wheels
- To be knowledgeable in the research field
- To be accepted by the research community
- Reviewers want to know where the paper fits with others on the same topic as well as how it differs from them.

# How to do a literature review

## Reference:

Jane Webster and Richard T. Watson,  
Analyzing the past to prepare for the  
future: writing a literature review, *MIS  
Quarterly*, Vol. 26, No. 2, 2002

# Literature review

- **An effective review creates a firm foundation for advanced knowledge**
- **A review should identify critical knowledge gaps and thus identify research directions**
- **Avoid grocery list of papers without comments**
- **Do not limit your thinking to existing literature**

# How to identify relevant literature

- Search leading journals first
- Search based on topics or authors
- Go backward and forward through citation
- Take advantage of electronic resources and searching tools
  - ProQuest ABI/Inform
  - ISI Web of Science
  - Scholar.google.com

Databases - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://proquest.umi.com/login> Go Links

**ProQuest®** [McMaster University Library](#) | [Help](#)

## Databases

[What's new](#)

Select the database(s) you would like to search, then click [Continue](#).

Search a single database by clicking on its name. Databases with checkboxes can be cross-searched.

[Select all databases](#) / [Clear all databases](#)

- [ABI/INFORM Global](#)  
**Business, Finance, Economics: journals, company profiles, Wall Street Journal**  
 Most scholarly and comprehensive way to explore and understand business research topics. Search nearly 1800 worldwide business periodicals for in-depth coverage of business and economic conditions, management techniques, theory, and practice of business, advertising, marketing, economics, human resources, finance, taxation, computers, and more. Expanded international coverage. Fast access to information on 60,000 + companies with business and executive profiles. Now includes The Wall Street Journal. [more info...](#)  
 Coverage: 1971 - current | [View titles](#)
- [ABI/INFORM Trade & Industry](#)  
**Business, Economics: trade and industry periodicals and newsletters**  
 Search more than 750 business periodicals and newsletters with a trade or industry focus. Provides users with the latest industry news, product and competitive information, marketing trends, and a wide variety of other topics. Contains publications on every major industry, including finance, insurance, transportation, construction, and many more.  
 Coverage: 1971 - current | [View titles](#)
- [AMA Titles: Abstracts & Indexing](#)  
 Journals published by the American Medical Association  
 Coverage: varies | [View titles](#)
- [CBCA Current Events](#)  
**News: Newspapers, newswires, transcripts, magazines**  
 This collection includes Canadian titles focusing on current events. Current events is interpreted broadly to include politics, business, the arts, sports, and any other kind of news, whether happening in Canada or abroad. Newspapers, newswires, newsmagazines, as well as television and radio transcripts constitute the titles in the subset.  
 Coverage: varies | [View titles](#)
- [CBCA Reference](#)

Internet

start <https://univ...> [research m...](#) [McMaster E...](#) [Databases -...](#) EN 3:37 PM

ISI Web of Knowledge [v3.0] - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address <http://isi6.isiknowledge.com/portal.cgi> Go Links

ISI Web of Knowledge<sup>SM</sup> — Products & Features — GO HOME LOG OUT

Welcome to *ISI Web of Knowledge*... transforming research  
**ISI Web of Knowledge** is a dynamic, fully integrated environment that provides one source for high quality content and tools to access, analyze, and manage research information. Comments or ideas? [Please click here to send feedback to the development staff.](#)

[More information](#) | [Notices](#) | [Help](#) | [Tutorial](#)

**CrossSearch** Example: quark\* and spin  
   
[More search options and External Collections](#)

**Analytical Tools**

**Journal Citation Reports** GO  
Journal performance metrics, including Impact Factor

**Other Resources**

**ISI HighlyCited.com** GO  
Author biographies and bibliographies

**www.thomsonisi.com** GO  
Thomson ISI's Web site

**Searchable Database Products**

**Web of Science** GO  
Science Citation Index Expanded  
Social Sciences Citation Index  
Arts & Humanities Citation Index

**BIOSIS Previews** GO  
Biomedical and life sciences journals, patents, and meetings

**More information for new users**  
[click here](#)

**Please register for more features**

**Sign In:**  
E-mail Address:   
Password:   
[Forgot your password](#)

**Citation Alerts**  
[View My Cited Articles List](#)

[Acceptable Use Policy](#)  
Copyright © 2005 [The Thomson Corporation](#)

start <https://univ...> research m... Microsoft P... ISI Web of ... EN Internet 2:02 PM

Google Scholar: Yuan Yufei - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Stop Print Mail New Tab

Address <http://scholar.google.com/scholar?hl=en&lr=&q=Yuan+Yufei&btnG=Search> Go Links

**Google Scholar** BETA

Yuan Yufei Search [Advanced Scholar Search](#) [Scholar Preferences](#) [Scholar Help](#)

**Scholar** Results 1 - 10 of about 118 for [Yuan Yufei](#). (0.01 seconds)

[Induction of fuzzy decision trees](#)  
 Y [Yuan](#), MJ Shaw - [Cited by 78](#) - [Web Search](#)  
 ... Authors, **Yufei Yuan**, Michael J. Shaw, ... Andrew B. Whinston. **Yufei Yuan. Yufei Yuan:** Norm Archer. Amiram Gafni. Milena Head. Abraham Mehrez. Michael J. Shaw. Jen-Her ...  
 Fuzzy Sets and Systems, Elsevier North-Holland, Inc. Amsterdam, The Netherlands, The ..., 1995 - [portal.acm.org](#) - [portal.acm.org](#)

[A genetic algorithm for generating fuzzy classification rules](#)  
 Y [Yuan](#), H Zhuang - [Cited by 32](#) - [Web Search](#)  
 ... Authors, **Yufei Yuan**, Huijun Zhuang, ... Collaborative Colleagues: **Yufei Yuan:** Norm Archer. Amiram Gafni. Milena Head. Abraham Mehrez. Michael J. Shaw. Jen-Her Wu. ...  
 Fuzzy Sets and Systems, Elsevier North-Holland, Inc. Amsterdam, The Netherlands, The ..., 1996 - [portal.acm.org](#)

[Criteria for evaluating fuzzy ranking methods](#)  
 Y [Yuan](#) - [Cited by 18](#) - [Web Search](#)  
 ... Pages: 139 - 157. Year of Publication: 1991. ISSN:0165-0114. Author, **Yufei Yuan**, Publisher, Elsevier North-Holland, Inc. Amsterdam, The Netherlands, The Netherlands ...  
 Fuzzy Sets and Systems, Elsevier North-Holland, Inc. Amsterdam, The Netherlands, The ..., 1991 - [portal.acm.org](#) - [portal.acm.org](#)

[World Wide Web navigation aid](#)  
 M Head, N Archer, Y [Yuan](#) - [Cited by 17](#) - [Web Search](#)  
 ... World Wide Web navigation aid. Authors: HEAD M.; ARCHER N.; **YUAN Y.** Source: International Journal of Human-Computer Studies, August 2000, vol. 53, no. 2, pp. ...  
 International Journal of Human Computer Studies, 2000 - [ingentaconnect.com](#) - [ingenta.com](#) - [portal.acm.org](#) - [all 5 versions >](#)

[CITATION] A Web-Based Negotiation Support System  
 Y [Yuan](#), JB Rose, N Archer, H Suarga - [Cited by 17](#) - [Web Search](#)  
 Electronic Markets, 1998

start Inbo... McM... ISI ... Taxi ... ISI ... Goo... EN Internet 12:39 PM

# Theory and model building

# Good imagination distinguishes great researchers



哈哈网 <http://www.51haha.com>

# Do you have a theory?

- **What is theory? An explanation of a class of phenomena**
  - theories are more general
  - theories explain why things are related, whereas hypotheses just say they are related
  - theories generate hypotheses; hypotheses are implicit in theories
- **The number 1 reason papers are rejected from journal is for lack of theory**
- **Use others' work to support your theory, not as your theory**

**Methodology matters:  
Conduct research in a rigid  
scientific way**

# Select proper tools



"Keep you mind open and keep yourself up with the new information and techniques,"

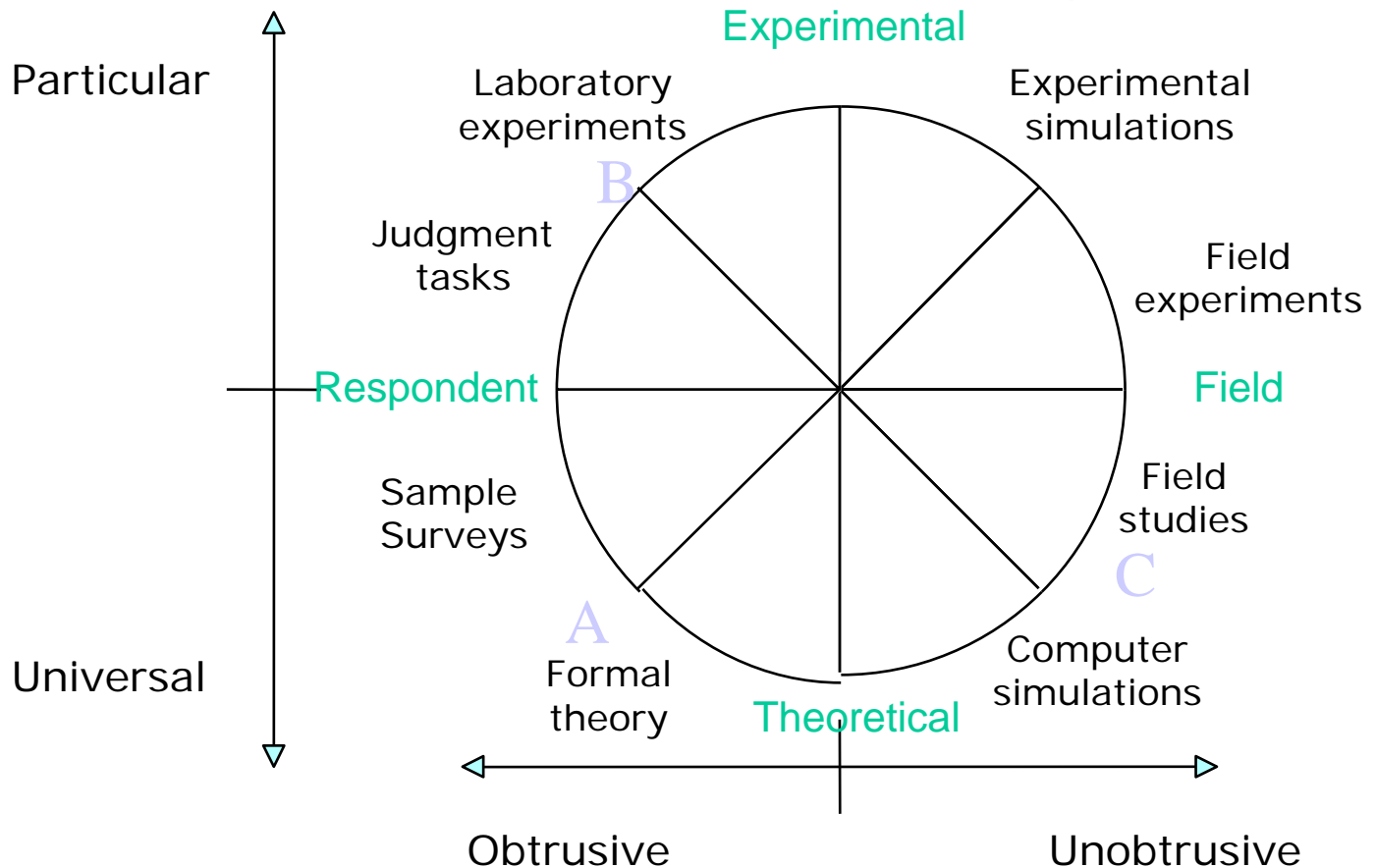
# Methods

- **Methods are the tools – the instruments, techniques and procedures- by which a science gathers and analyzes information**
- **All research methods should be regarded as bounded opportunities to gain knowledge and limitations to that knowledge**
- **Multiple methods may be used to reduce individual method's weakness**

# Desirable features for evidence gathering

- A: Generalizability of the evidence over the population of actors**
- B: Precision of the measurement of behaviors that are being studied (and control those not being studied)**
- C: Realism of the situation or context within which the evidence is gathered**

# McGrath's circumplex



Joseph E. McGrath, Methodology matters: doing research in the behavioral and social sciences, Human-computer interaction: toward the year 2000. 1995

# Research methods

- **Select an appropriate method and do it well**
- **Never try to prove your hypothesis, just try to test your hypothesis. Let your data show you the way**
- **Make good analysis and explanations**
- **Admit the limitation and weaknesses of your study**

# How to make your research published in top journals

# The decision on journal selection

- **Study the profile of the target journal: Will my paper fit into the community of the journal readers?**
- **Cost/benefit analysis: the value of top journals is high but what is the chance of success and how long can I afford to wait?**
- **Aim high with high quality of work**

**Ref: John Mingers, The long and winding road: getting papers published in top journals, Communications of the AIS, Vol. 8, 2002, 330-339**

# The quality of paper form editors' view

- Source:

**Behind the Scenes: Publishing Tips from the Eyes of an Editor,**

**Dr. K. Michele (Micki) Kacmar**

**Editor of the *Journal of Management* and**

**Charles A. Rovetta Professor of Management**

**Florida State University**

# Selling your paper to the editors

- Read the guidelines for the authors
- Make sure your paper follows the journal's formatting guidelines.

# Key points of writing

- **Introduction: Why should I read your paper? Grab the reviewer's attention from the very beginning.**
- **Literature review: Positioning your paper in the big picture**
- **Model: Originality - Do not replicate what others have done, extend it. Clarity - Define concepts clearly before using them. Use tables and figures to highlight key points**
- **Methodology: provide sufficient detail**

# Key points of writing

- **Analysis:** Offer theoretical explanations for expected and unexpected findings
- **Conclusion:** Emphasize your contributions but also admit your limitations
- **Revision:** Accepts that criticism improves quality. Acknowledges that reviewers have a point

# Finally, believe that possibility is always ready to come true.



"You need to persist when you believe in your ideas, and when others - such as funding agencies and journal editors - don't."

"Be positive and do not be afraid of failure."

# References

**Ron Weber, The Problem of the Problem, MIS Quarterly , Vol. 27, No. 1, 2003**

**Jane Webster and Richard T. Watson, Analyzing the past to prepare for the future: writing a literature review, MIS Quarterly, Vol. 26, No. 2, 2002**

**Joseph E. McGrath, Methodology matters: doing research in the behavioral and social sciences, Human-computer interaction: toward the year 2000. 1995**

# References

**John Mingers, The long and winding road: getting papers published in top journals, Communications of the AIS, Vol. 8, 2002, 330-339**

**K. Michele (Micki) Kacmar, Behind the Scenes: Publishing Tips from the Eyes of an Editor.**

**Richard T. Watson, The Seven Habits of Highly Effective Researchers**

# References

**How Do I Identify a Research Study?**

<http://www.lib.ecu.edu/Reference/howdoi/research.html>

**Brian Lin, What makes a good researcher?**

<http://www.publicaffairs.ubc.ca/ubcreports/2002/02oct10/goodresearch.html>

**Pictures downloaded from:**

<http://www.cs.wpi.edu/~chenst/gr.htm>

# Questions and Answers

Thanks

Yufei Yuan

[yuanyuf@mcmaster.ca](mailto:yuanyuf@mcmaster.ca)

