Scholarly Apparatus

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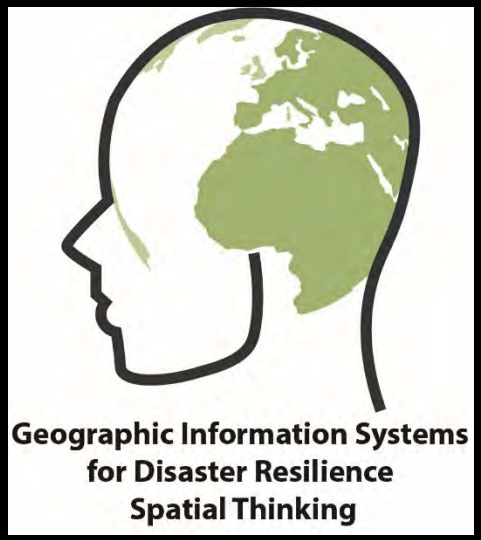
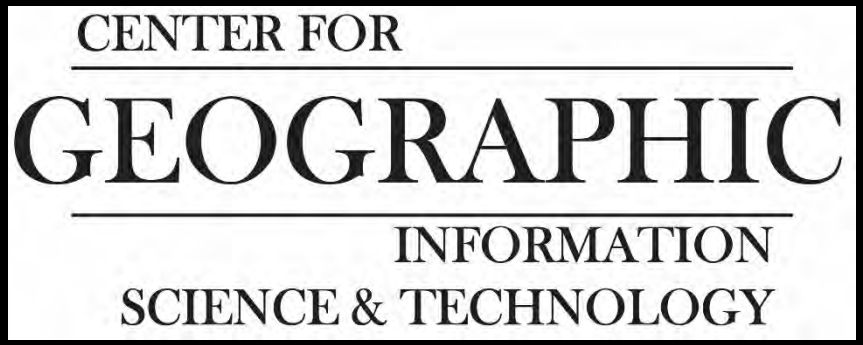




Topics

- The Practice of Conducting Research
- Topics to Questions to Problems
- From Question to Problems
- Problems to Sources
- Bibliographic Tools of the Trade
- Arguments and Claims
- Reasons and Evidence
  Acknowledgements
- Warrants
- Developing a Research Proposal

RESEARCH!

Thinking in Print

- How have you interacted with research?

Those who can not reliably do research or evaluate the research of others will find themselves on the sidelines in a world that increasingly depends on sound ideas based on good information produced by trustworthy inquiry – Booth. et.al

What is research?

- Gathering information to solve problems
- Everyday examples?
- Why is written/published research important?
- Learn to be skeptical!

join the oldest and most esteemed of human conversations - *Booth. et.al, p11*

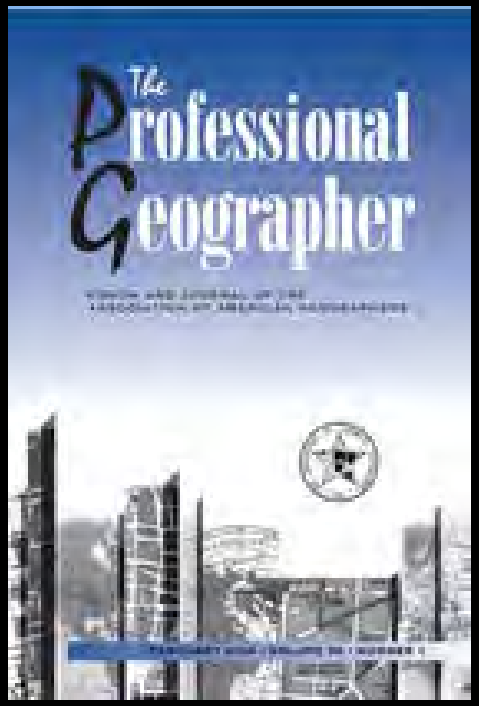
Why write it up?

- Write to remember
- Write to understand
- Write to gain perspective

Why be so formal?!

- What benefits are there from formal writing?
- Is it relevant?
- Do your claims add up?
- What ideas did you consider/rejected
- Account for predictable questions?

My first journal article rejection!



Editor:

14-May-2007

Thank you for submitting PG-2006-0120 ("Interactive Historical Geography: A Non-Linear Exploration Of Space, Time, And Context Through Geocaching") to The Professional Geographer.

I have received comments from three referees, which are appended to the end of this letter. I am sorry to say that the comments are not very positive. A major concern about the purpose of the paper and its geographical relevance is articulated by one of the referees as follows: "Ultimately, I was left uncertain of the rationale for the paper. Was it an argument for a new way of teaching about historical places? Was it an argument for a new research presentation tool? Was it a critique of 'older' forms of representation?"

Reviewer 1:

Instead of grounded scholarship, the paper posits what strikes me as amateurish platitudes such as the "anyplace perspective" which embraces diversity and is "universally applicable" (p 10). This seems to me inherently anti-geographical. Likewise, the non-linear notion of history seems anti-historical in this framing – there is no sense of historical geography as process – which a vibrant non-linear history would still require. The goal of "ownership" of history is also rather trite, and is left largely unexamined. To put it bluntly, historical geography seems only to provide a place for hiding geocaches.

Final Thoughts on Writing

- Write with others in mind – your ideas get critical attention

Think beyond doing..*enough to satisfy your teacher…. Find a topic <u>you</u> care about, ask a question <u>you</u> want to answer..solution rewards <u>your efforts</u> in finding it.*

Nothing contributes more to a successful research project than your commitment to it - *Booth. et.al.*

Why be so formal?!

Traditional forms embody the shared practices of a research community - Booth. et.al.

Connection with your Reader (C2)

- The “conversation” of research – what does this mean?
- What does a thoughtful writer do?
- What are the challenges?

Connection with your Reader

What are the challenges?

Your role (as the writter)

- **You** reverse the roles of teacher/student
- It is not a matter of digging up facts
- Offer more than a collection of facts

What do you offer your readers?

- I’ve found something really interesting
- I’ve found a solution to a practical problem important to you
- I’ve found an answer to a question important to you

The Readers Role

- Give readers a reason to read what you wrote
- Reader expect you to do what you intend to do
- Roles need to match

Topics to Questions to Problems

From an Interest to a Topic

- What is a research topic?
- *Start with what interests you most deeply – Booth et.al.*
- Search web (ok) or journals (better) for topics to get a general interest
- Make sure you have sources (other than Wikipedia!)

From a Broad Topic to a Focused One

- Topic is too broad if stated in four or five words:
  - *The History of Mobile Phones*
  - *The Evolution of Geographic Information Systems (GIS)*

From a Broad Topic to a Focused One

The History of Mobile Phones → The Crucial Contribution of the Android Operating Systems (OS) to Mobile Phone Sales in 2009

– *The Evolution of Geographic Information Systems (GIS) → The Development of Graphical User Interfaces (GUIs) in GIS for exploitation of Windows functionality*

Topics		Claims
The History of Mobile Phones	→	*Mobile Phones have a history*
The Evolution of Geographic Information Systems (GIS) →	→	*Geographic Information Systems (GIS) have evolved*

Topics		Claims
The Crucial Contribution of the Android Operating Systems (OS) to Mobile Phone Sales in 2009	→	*In 2009, the Android OS made a crucial contribution to Mobile Phone Sales*
The Development of Graphical User Interfaces (GUIs) in GIS for exploitation of Windows functionality	→	*The exploitation of Windows functionality was main driver of Graphical User Interfaces (GUIs) development in GIS*

More on specific topics

- Helps you see gaps, puzzles, inconsistencies when you create questions from your topic

- Can serve as a working title

Caution!

Too much data available

The History of Mobile Phones

Too few data available

The decision by Google to purchase Android in the 3rd quarter of 2005 vs the second quarter of 2004

From a Focused Topic to a Question

- *If the writer asks no question worth pondering, she can offer no focused answer worth reading – Booth et.al.*

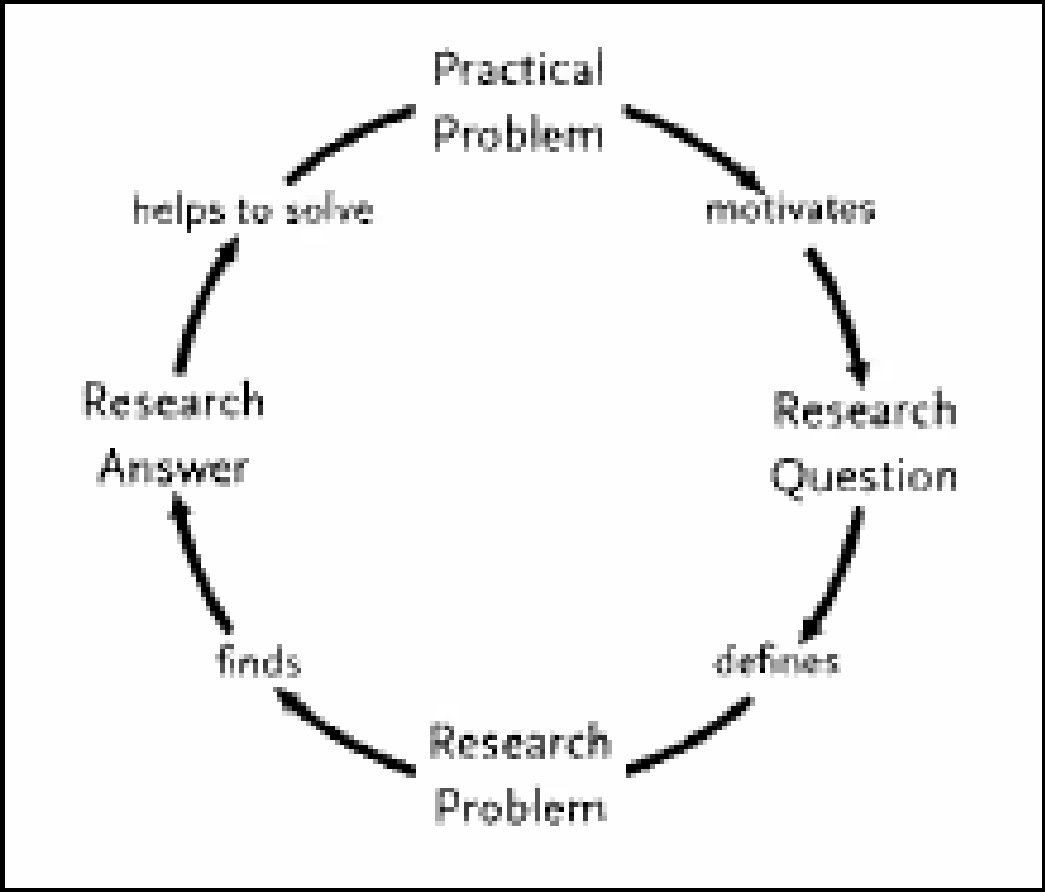
- Do not report data for its own sake – support the answer to a question(s) they had that the reader/writer thought was worth answering

From Question to Problems

The Problem with Problems

- You won’t always exactly know what your problem is
- You may not know what the significance is

Practical vs Research Problems



Booth et.al.

What is the difference?

Common Structure of Problems

1. Situation or Condition

2. Undesirable condition or consequences; costs you don't want to pay

Practical and Research Problems

Example of a practical problem?

Example of a research problem?

What do you need to consider?

Pure vs Applied Research

- Knowing or doing?
- Examples?

Connecting Research Problems to Practical Consequences

- Research problem costs are abstract
- *Cobble a practical cost onto a conceptual research question*

If my readers want to achieve the goal of ____

would they think that a good way to do that would be to find out _____?

Final Thoughts

- Finding a good research problem is hard!
- Get help – talk to people
- Look as you read – critical thinking, challenge assumptions, looks for ideas on future work

No skill is valued more highly than the ability to recognize a problem that others should take seriously, then to articulate that problem in a way that convinces them to care about and believe it can be solved by you – Booth et.al.

Problems to Sources

Bibliographic Tools of the Trade

Problems to Sources

- Need data to test answers to your questions
- Deadline – can't search aimlessly
- Non-linear process
- 3 types of sources?

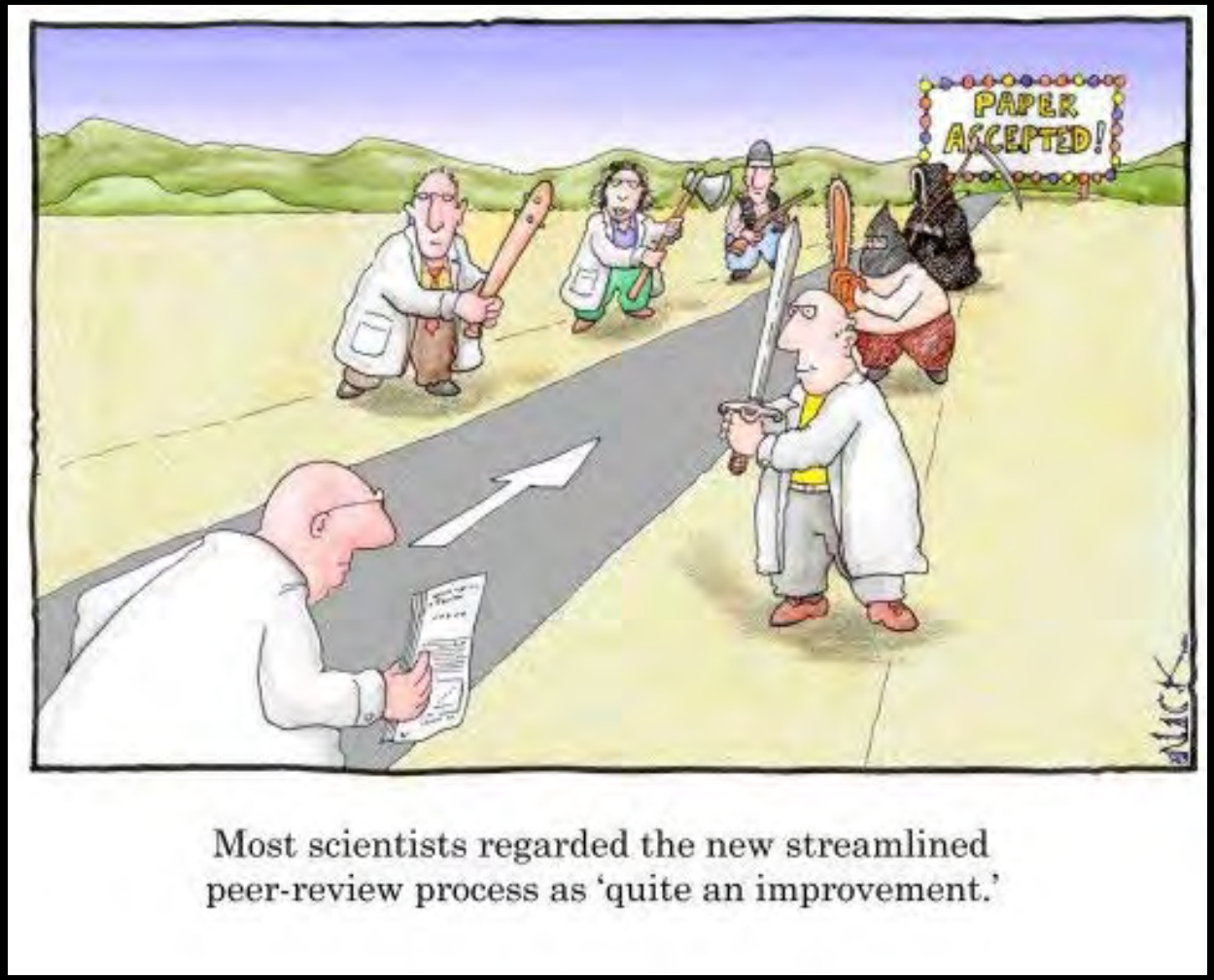
Screening Sources for Reliability

- Question/hypothesis – screen sources that are *relevant*

- Is the source *reliable..*
  - *Published by a reputable press*
  - *Peer-reviewed publishing*
  - *Author is a reputable scholar*
  - *Source is current*

Why don't these indicators guarantee reliability?

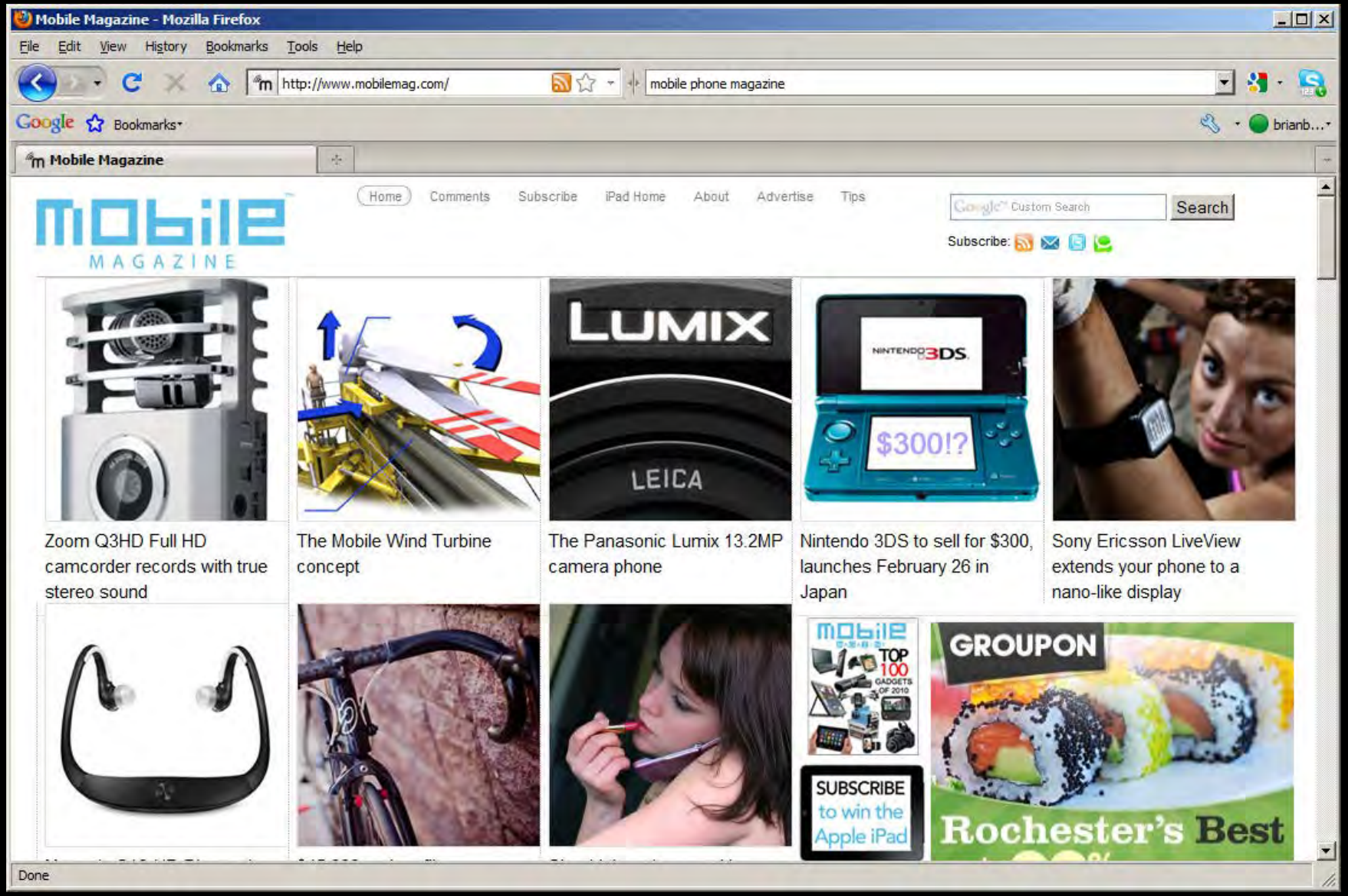
What is “peer review”?



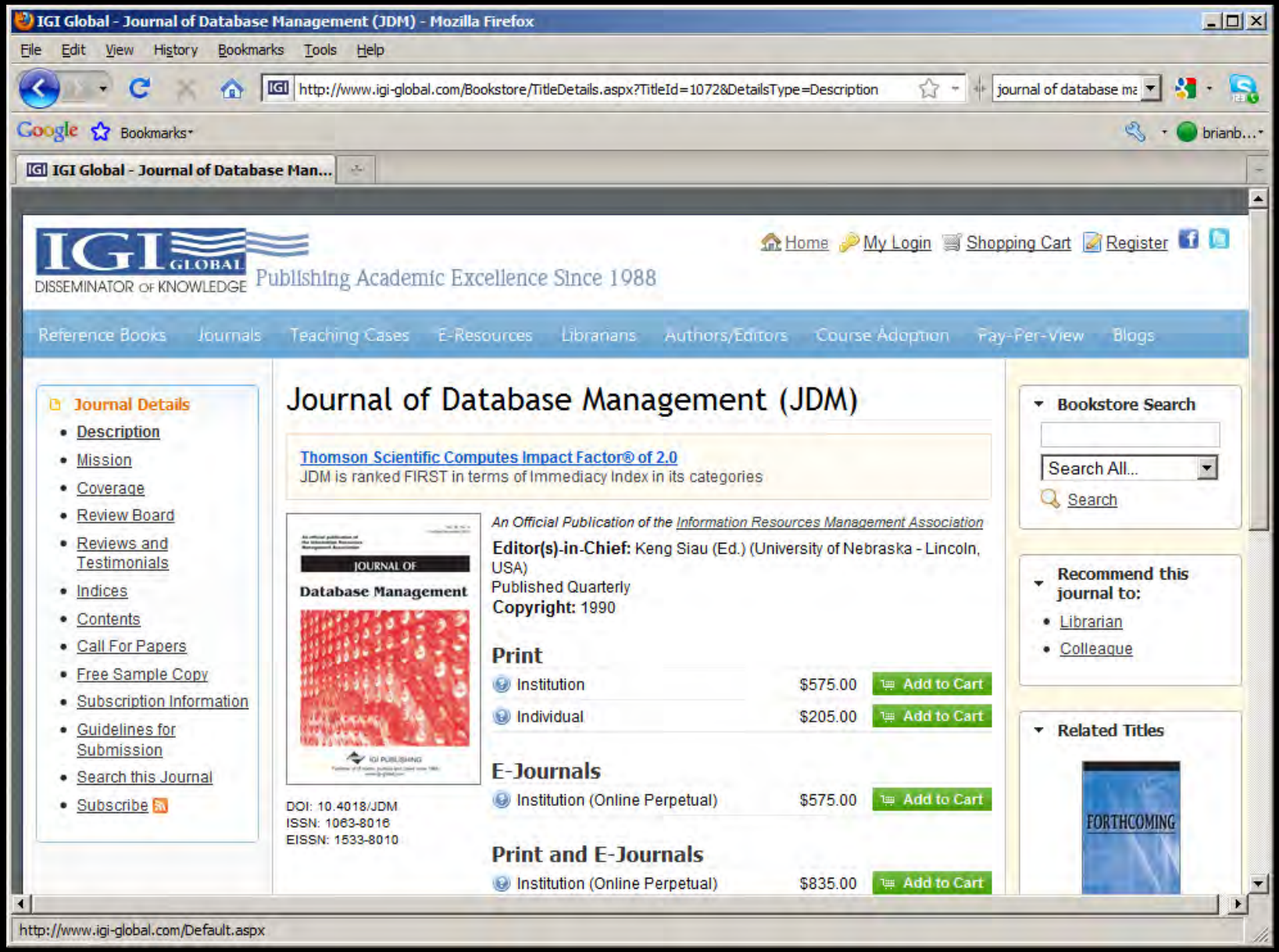
Most scientists regarded the new streamlined peer-review process as ‘quite an improvement.’

http://blogs.uit.tufts.edu/anthroandthemedia/PeerReview.jpg

Peer Reviewed Literature?



Peer Reviewed Literature?

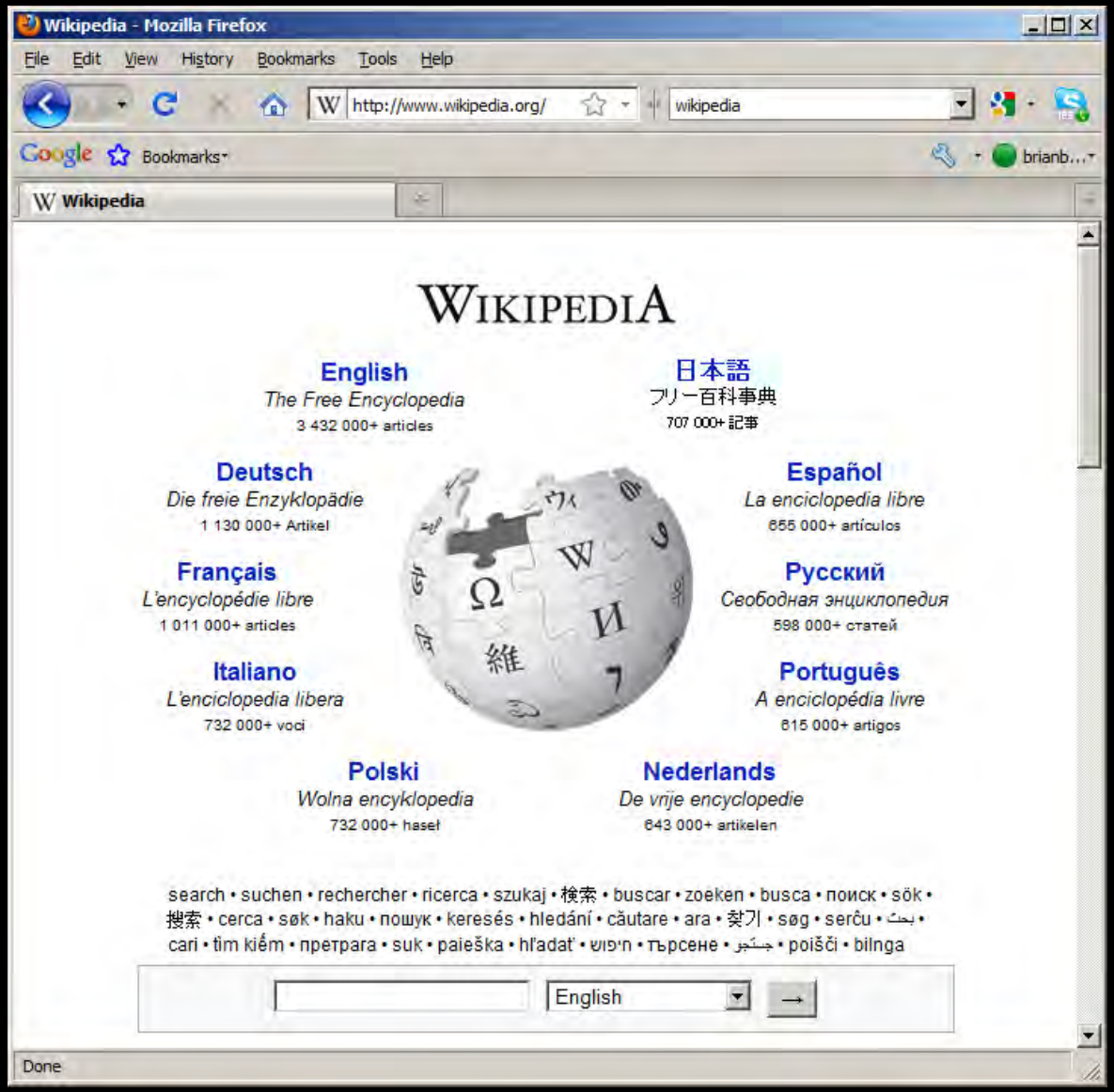


Locating Sources

- *Library offers more help than you suspect* – Booth et.al.

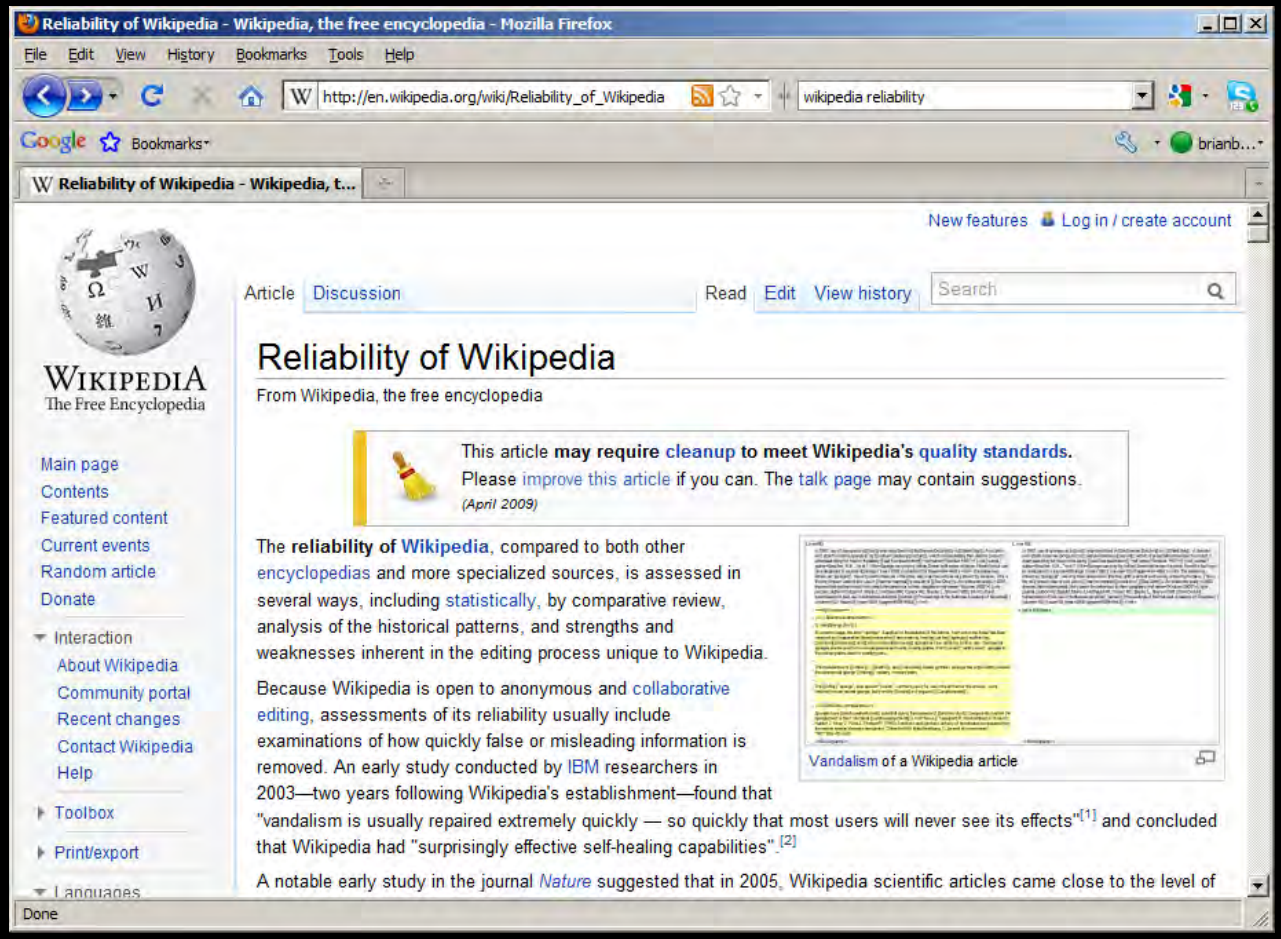
- Is “googling” a topic the best way to locate a source?

General Reference Works



Wikipedia

- Is it a reliable source?



http://en.wikipedia.org/wiki/Reliability_of_Wikipedia

A common view as of 2010 in fields from medicine to technology and a range of social-cultural topics, is that Wikipedia is a valuable research resource and starting point for information and major news events, and articles in many areas are routinely accurate and informative (Military History topics being assessed as "spot on"), but users should take care – as with all general reference works – to check their facts and be aware that mistakes and omissions do occur.

Android (operating system) - Wikipedia, the free encyclopedia - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://en.wikipedia.org/wiki/Android_(operating_system)#References
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Google Bookmarks
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Android (operating system) - Wikipe...

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96. ^ "ADC I Top 50 Gallery". *Android Developer Challenge*. Retrieved 2009-05-19.
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170. ^ Android and Java comparison in Java.net
171. ^ Google dubs Oracle suit 'attack on Java community'. The Register
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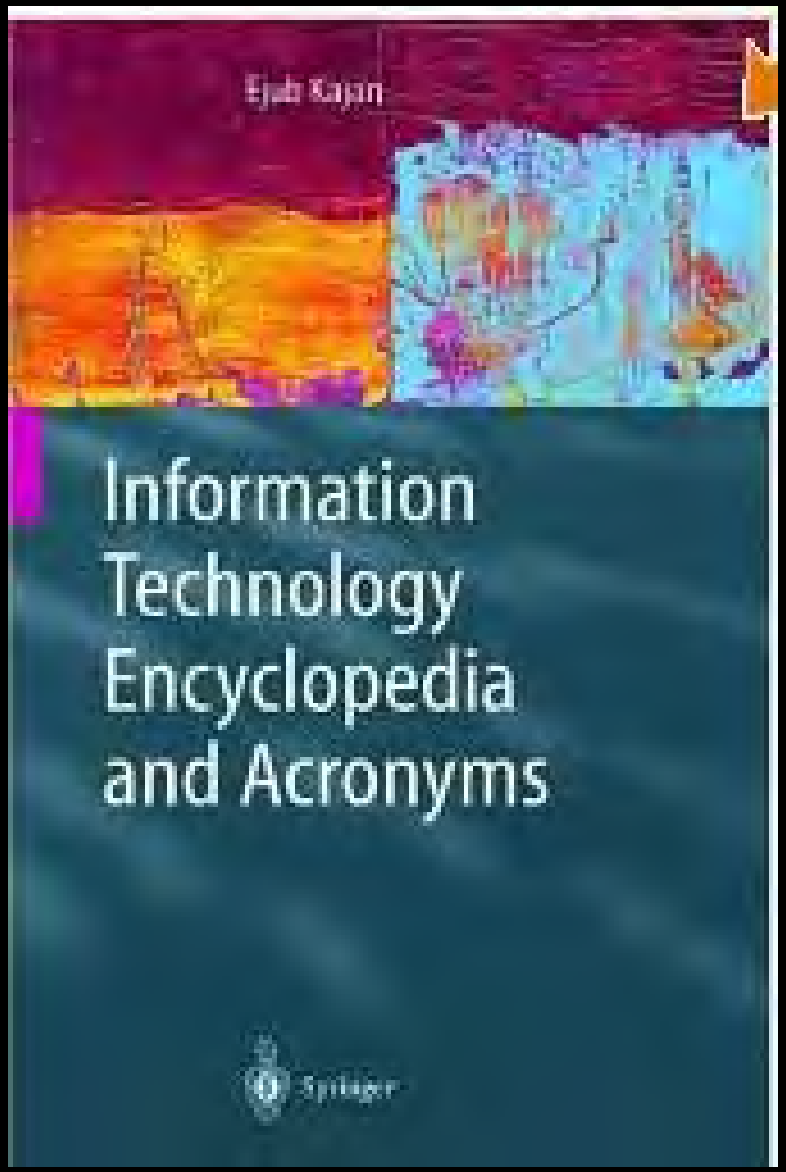
- Haseman, Chris (July 21, 2008). *Android Essentials* (1st ed.). Apress. ISBN 1430210648.

External links [edit]

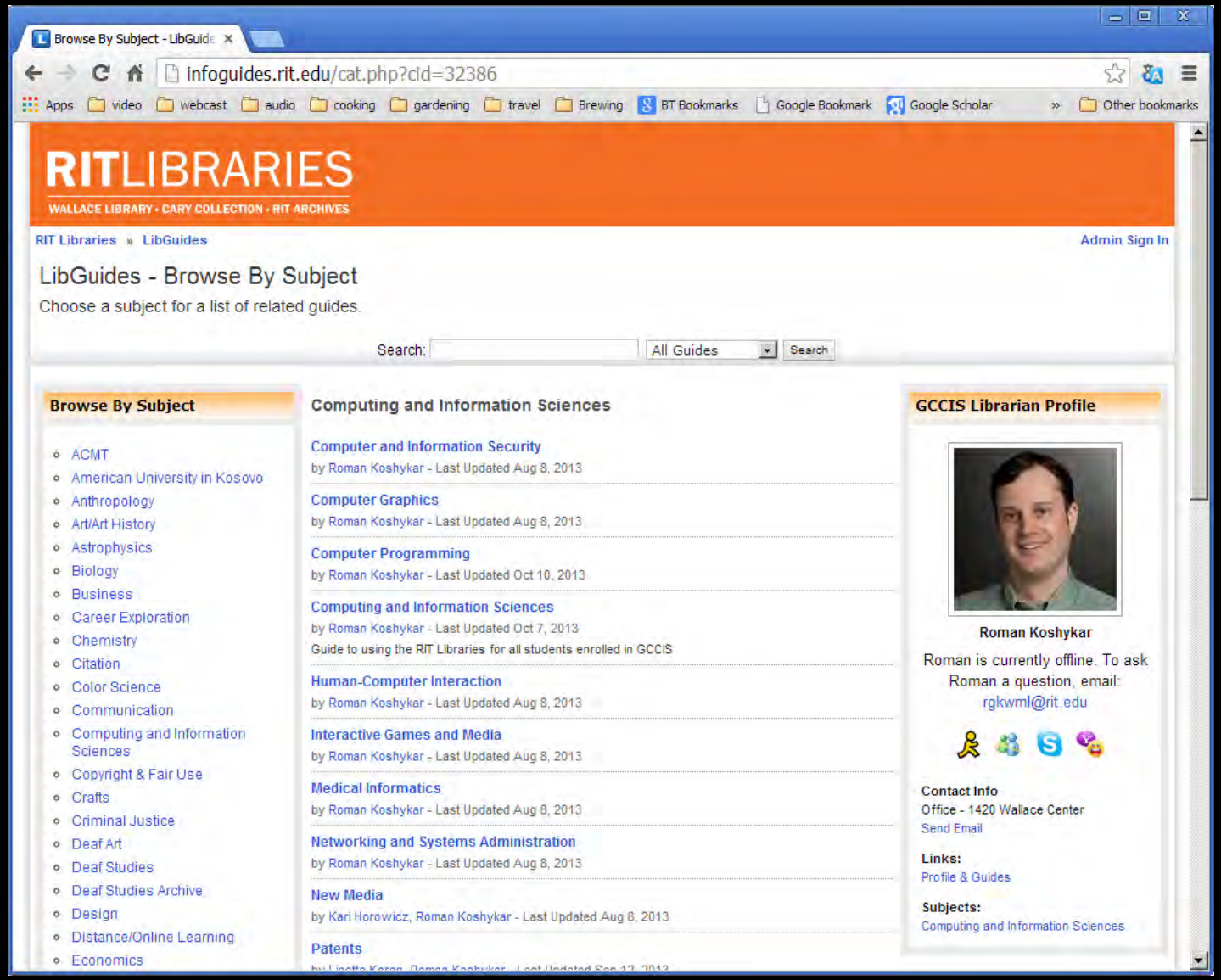
- Official Android page

Done

Specialized Reference Works



Research Guides



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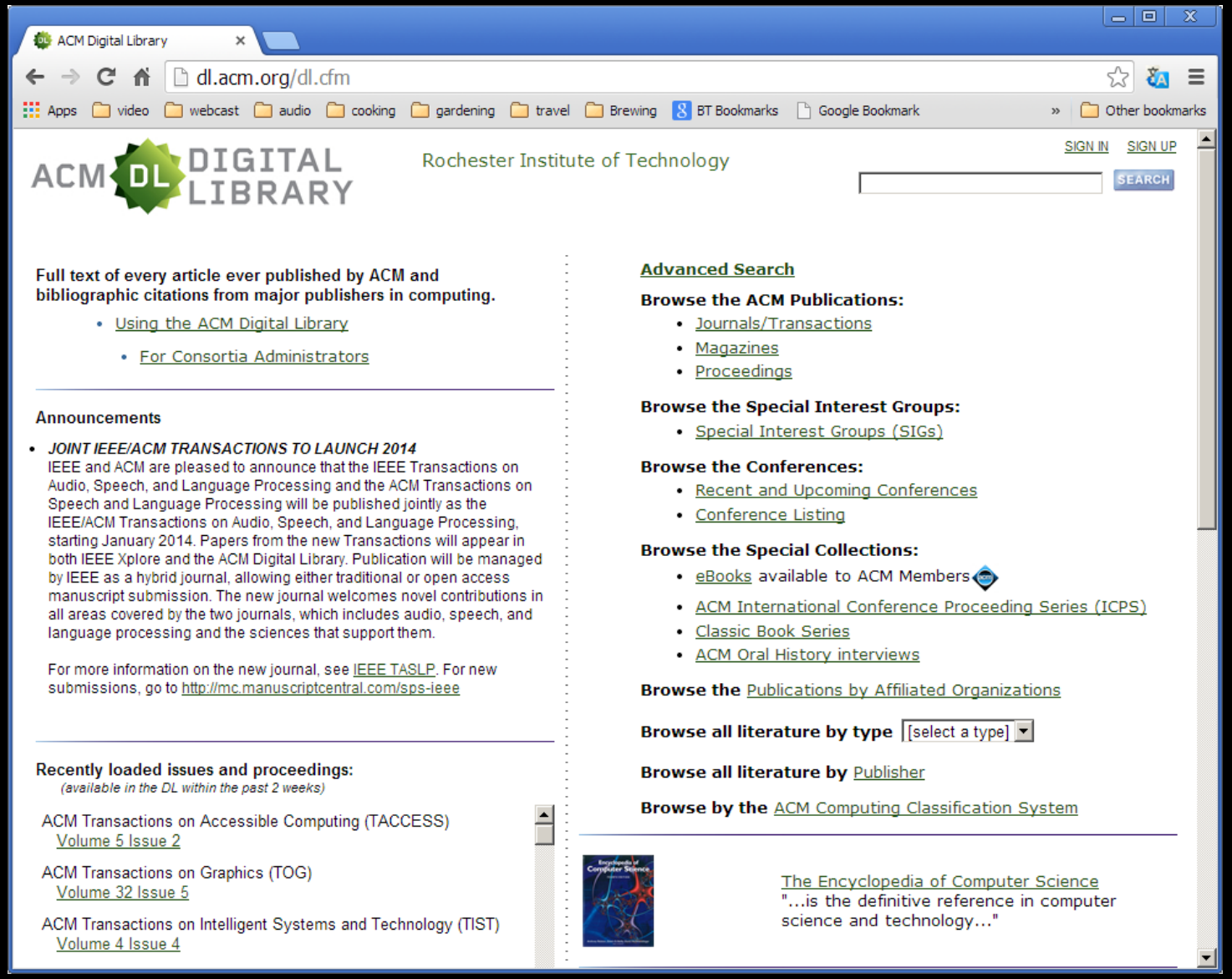
Online Databases



http://portal.acm.org/dl.cfm

Internet Sources

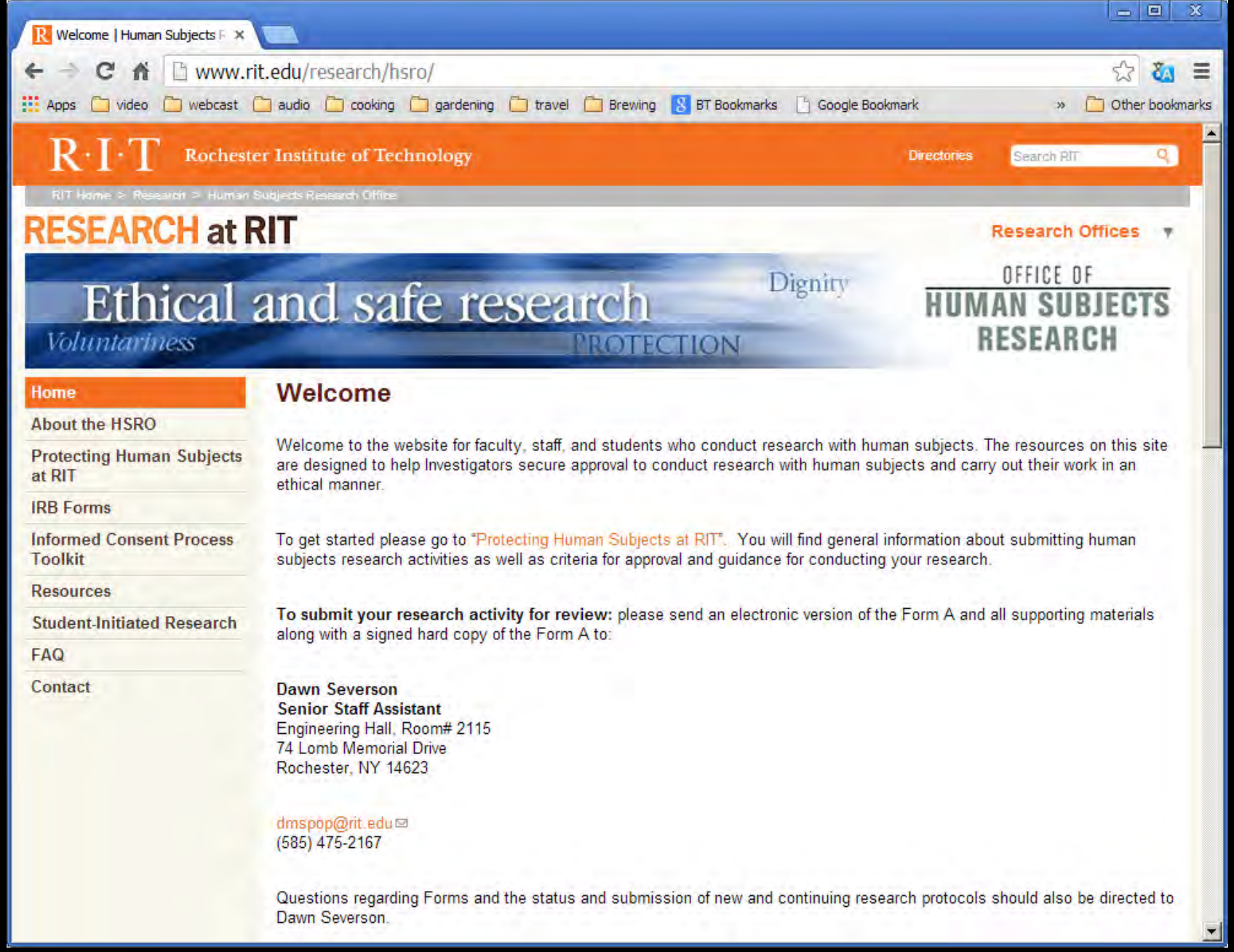
- Problems with?
- When can you use Internet sources?

Gathering Data from People

- Plan – modify your "elevator speech"
  - *I am working on topic X*
    - *so I can found out Y*
      - *because I want my readers to better understand Z*
        - ***What I am hoping to learn from you is……?***

People as primary sources

- Sort out what you know from what you *want* to know – Booth et.al.
- People have limited time, can't return
- Be ethical! Do no harm – physical, professional, emotional etc.
- Human Subjects Research



http://www.rit.edu/research/hsro/

Title of Project: Incorporating Geovisual Analytics into International Disaster Management: A Workflow Analysis

Principal Investigator: **Brian Tomaszewski, Ph.D.**
Assistant Professor
Center for Multidisciplinary Studies
Rochester Institute of Technology
31 Lomb Memorial Drive
Room 10-1184
Rochester, NY 14623, USA
phone: +1 585-475-2859
bmtski@rit.edu

1. **Purpose of the Study:**

   The purpose of this research study is to elicit knowledge from experts like you on the utility of a new web-based query and geographic visualization tools to support international disaster management workflows and to understand international disaster management workflows in general. I hope to identify conceptual and technological limitations and opportunities that geographic visualization tools have for support international disaster management workflows.

2. **Procedures to be followed:**

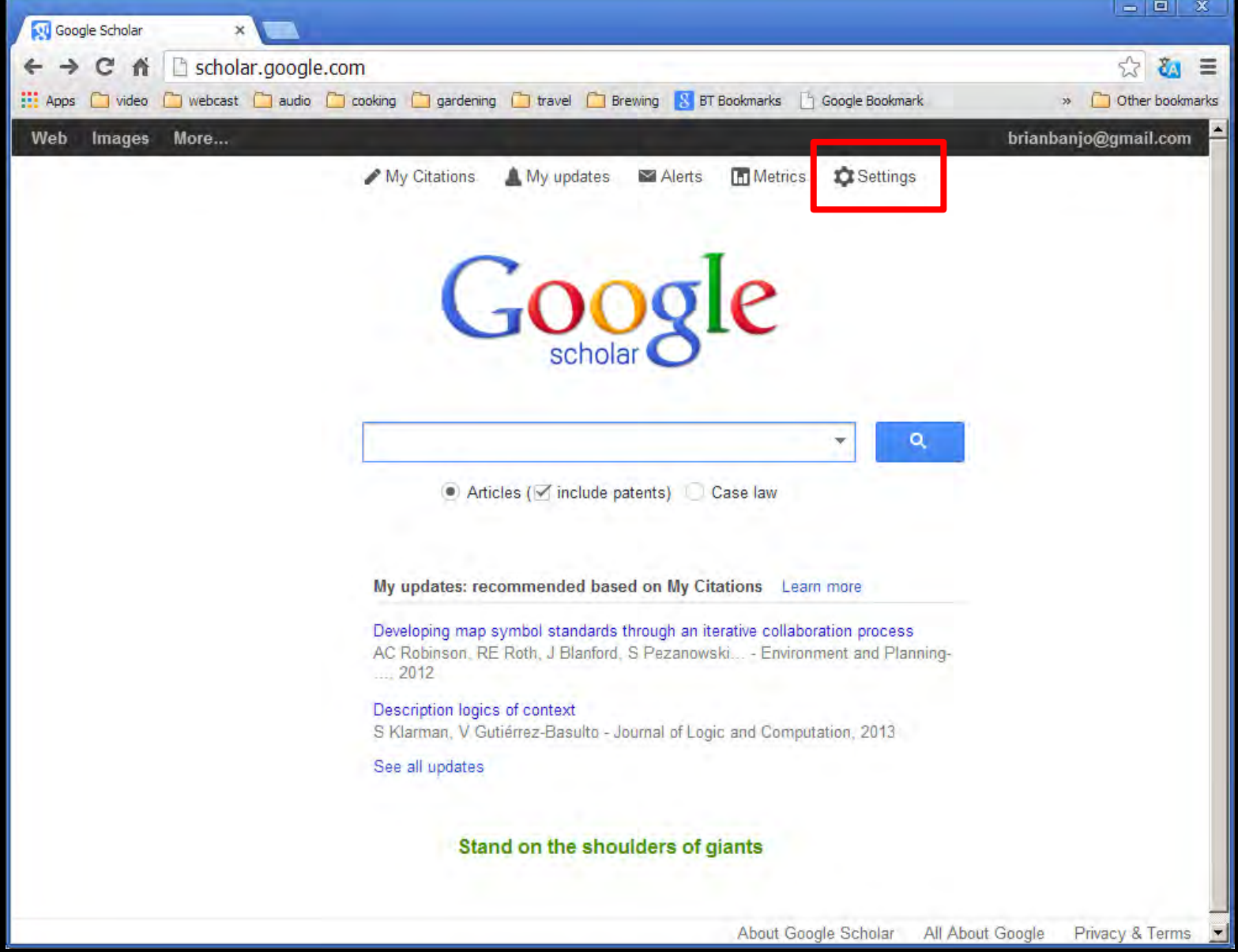
   You will first be asked to participate in and consent to being audio-taped for the interview. I will ask then you a series of questions about Geographic Information Science and Technology (GIS & T) needs and gaps in international disaster management workflows you encounter in your work.

3. **Discomforts and Risks:**

   This research involves minimal discomfort and risk. It is possible that because this research potentially focuses on aspects of your daily work habits, that you may mention specific situations that have

Bibliographic Tools of the Trade

- Bibliographic Citation Managers
- http://en.wikipedia.org/wiki/Comparison_of_reference_management_software
- Zotero, CiteULike etc.
- Endnote



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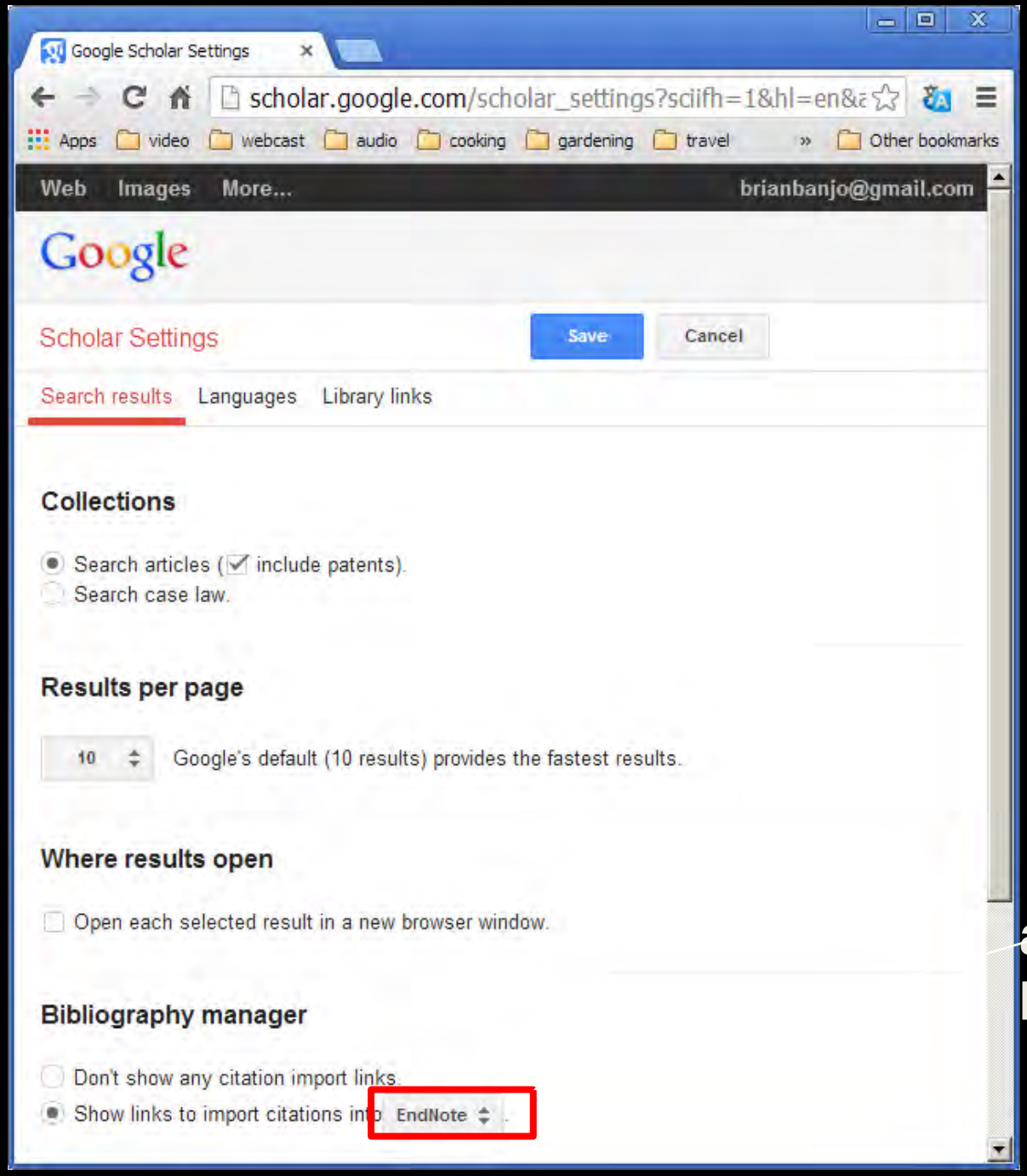

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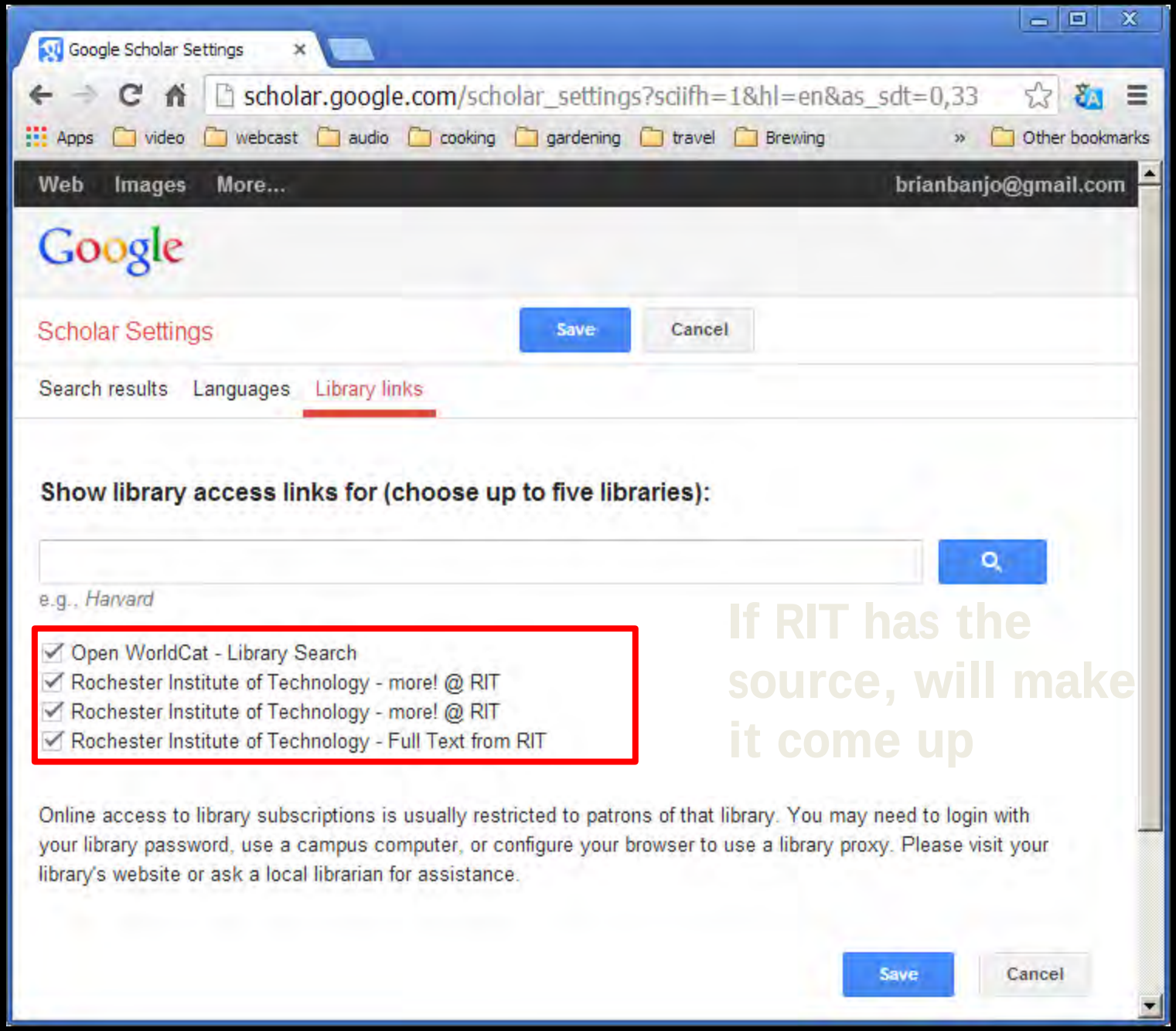
Google Scholar Settings
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Show library access links for (choose up to five libraries):
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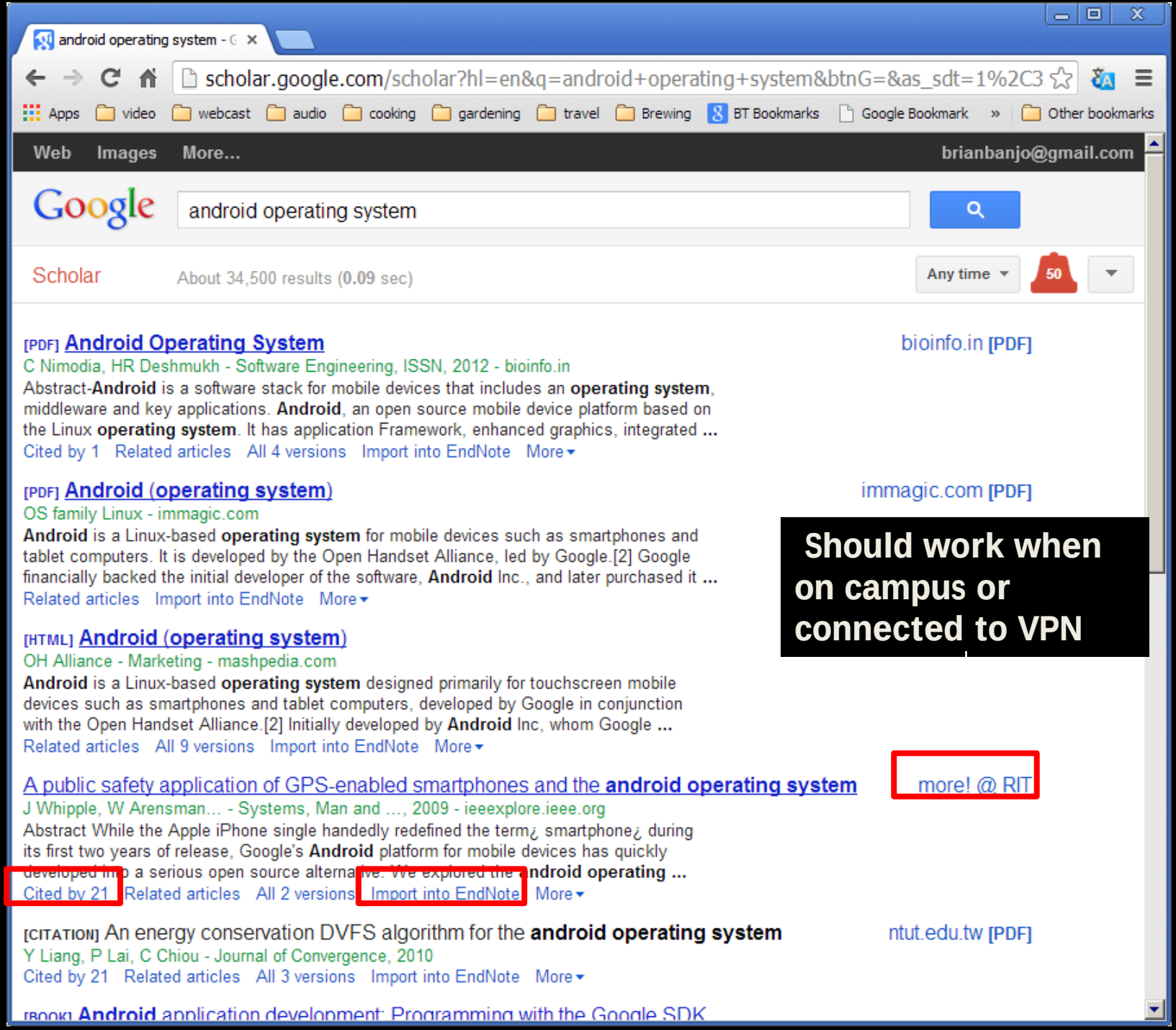
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About 34,500 results (0.09 sec)
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C Nimodia, HR Deshmukh - Software Engineering, ISSN, 2012 - bioinfo.in
Abstract-Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Android, an open source mobile device platform based on the Linux operating system. It has application Framework, enhanced graphics, integrated ...
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A public safety application of GPS-enabled smartphones and the android operating system
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J Whipple, W Arensman... - Systems, Man and ..., 2009 - ieeexplore.ieee.org
Abstract While the Apple iPhone single handedly redefined the term¿ smartphone¿ during its first two years of release, Google's Android platform for mobile devices has quickly developed into a serious open source alternative. We explored the android operating ...
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ntut.edu.tw [PDF]
Y Liang, P Lai, C Chiou - Journal of Convergence, 2010
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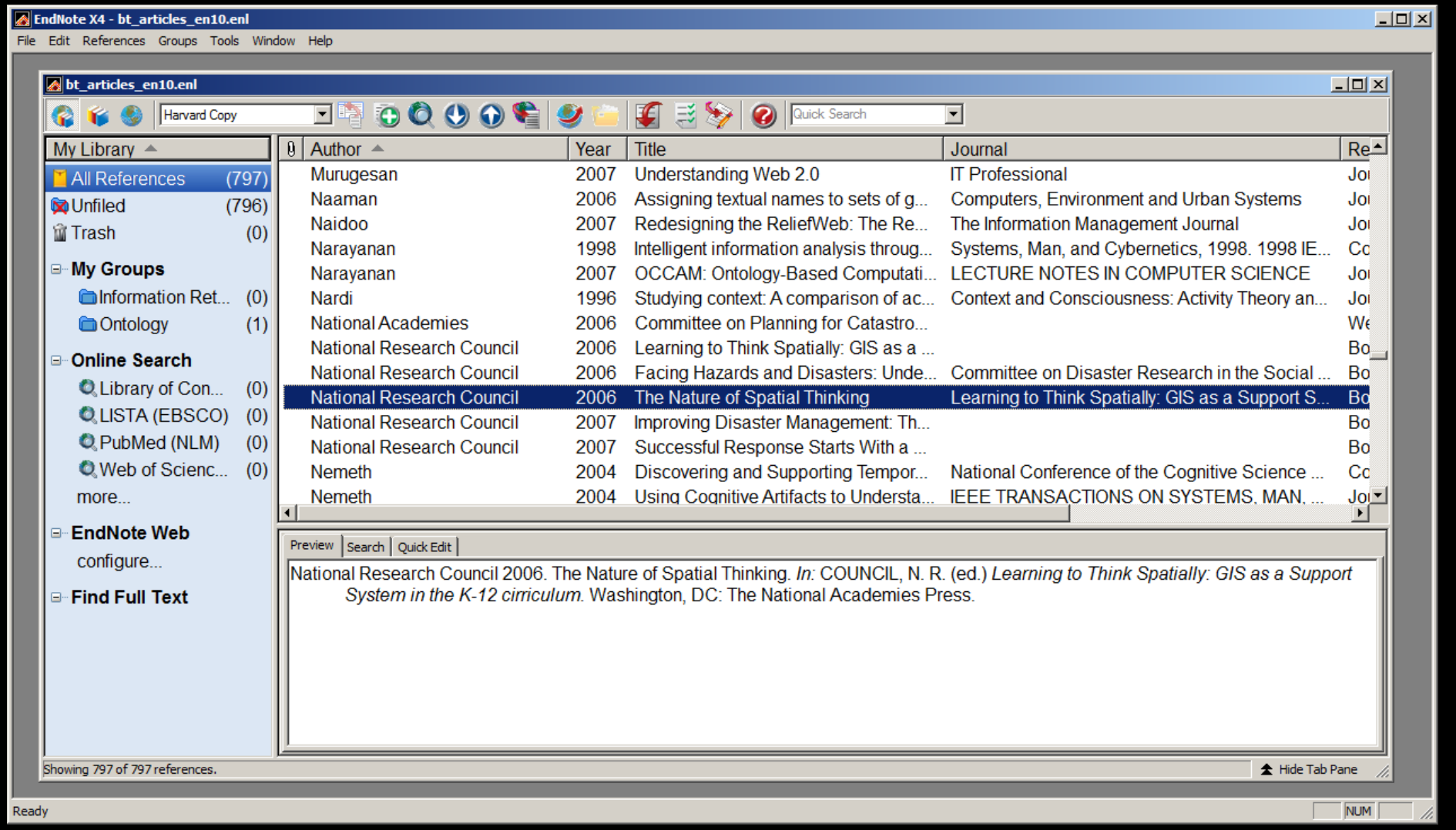
[BOOK] Android application development: Programming with the Google SDK

Remember..

- **Never pay for an article!**
- Being a student at RIT gives you access to library databases
- Use Inter-Library Loan (ILL) to get an article if you can't find it

Endnote and MS Word



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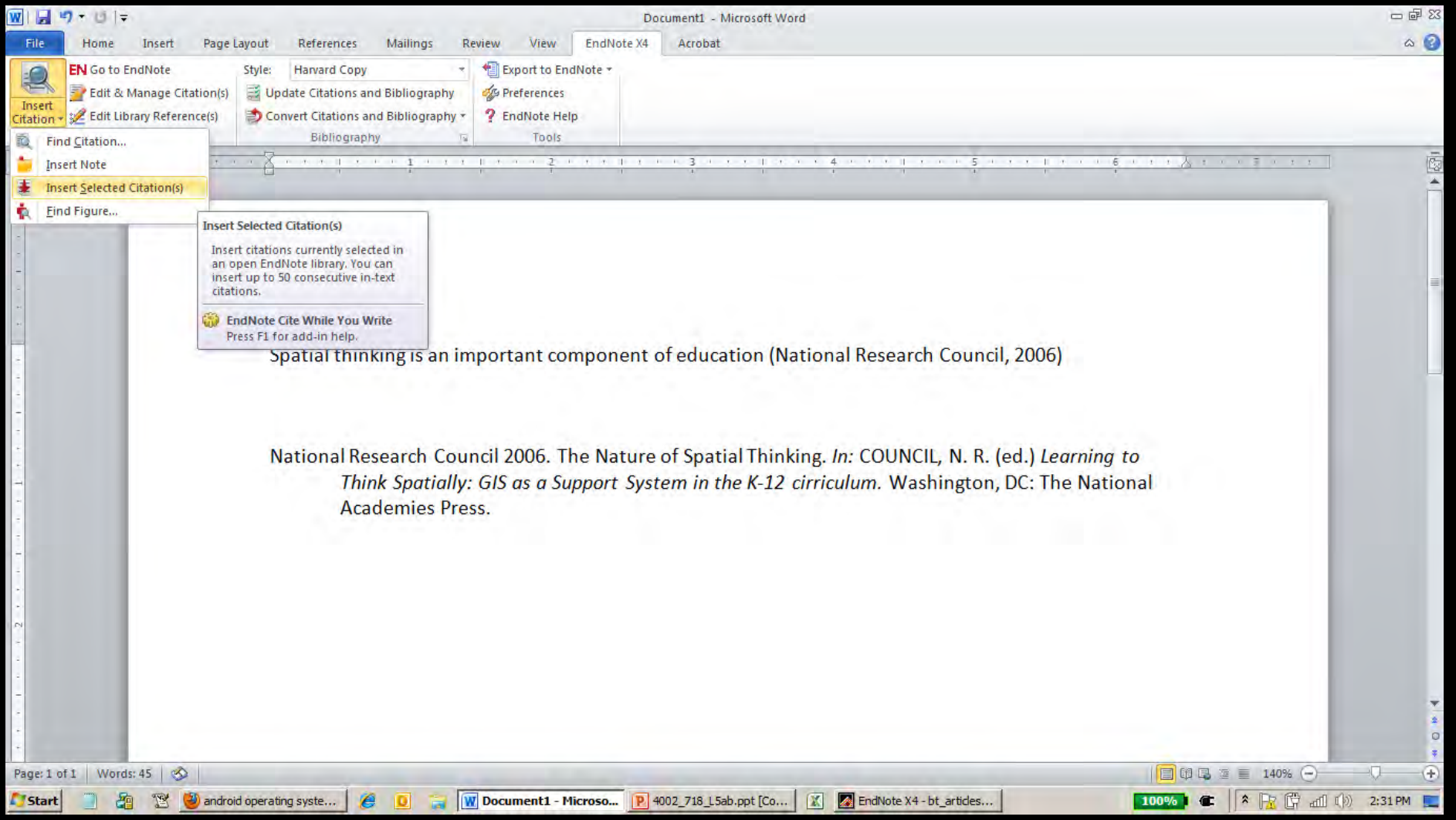
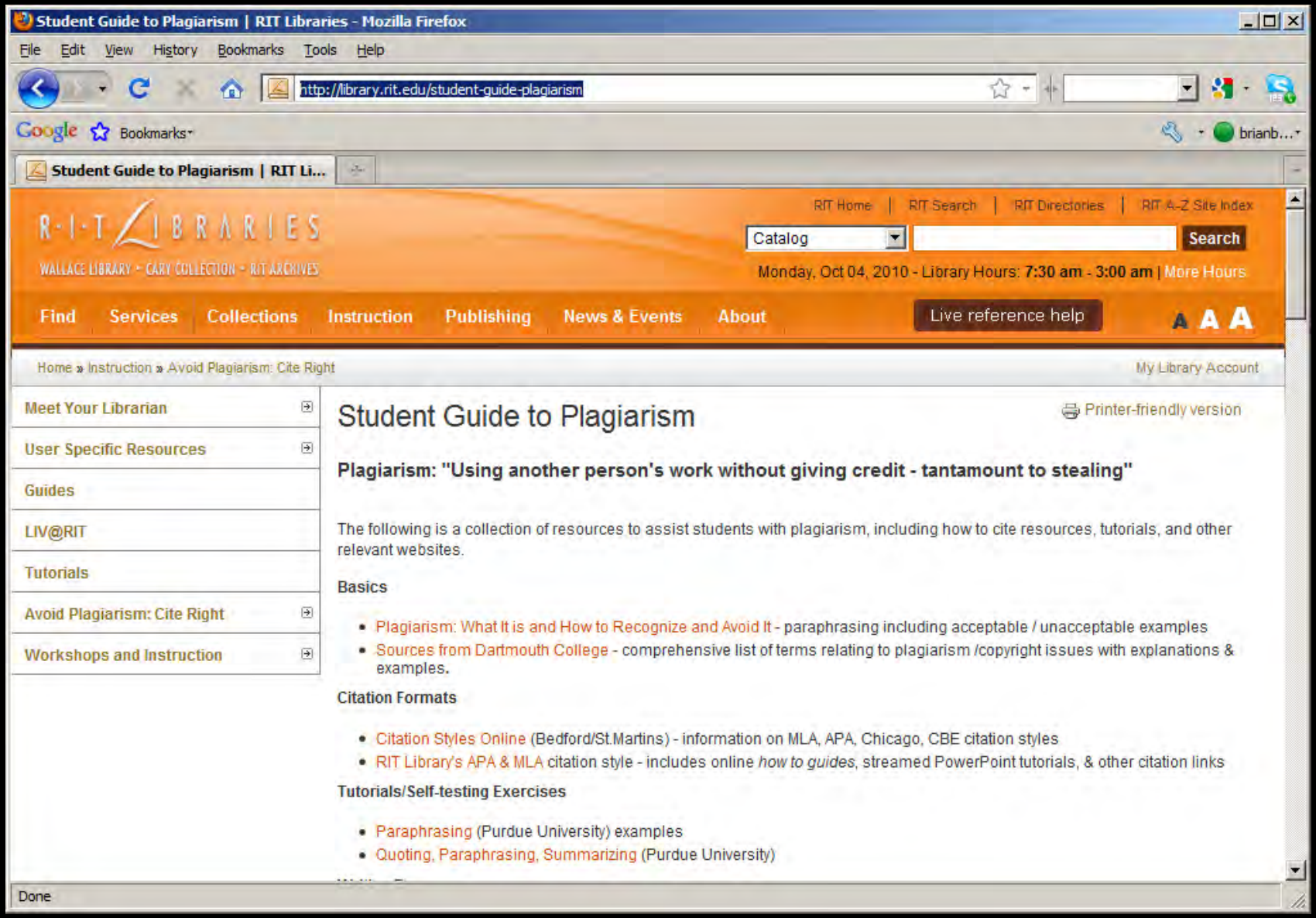


Plagiarism



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How to Recognize Unacceptable and Acceptable Paraphrases

Here's the ORIGINAL text, from page 1 of *Lizzie Borden: A Case Book of Family and Crime in the 1890s* by Joyce Williams et al.:

The rise of industry, the growth of cities, and the expansion of the population were the three great developments of late nineteenth century American history. As new, larger, steam-powered factories became a feature of the American landscape in the East, they transformed farm hands into industrial laborers, and provided jobs for a rising tide of immigrants. With industry came urbanization the growth of large cities (like Fall River, Massachusetts, where the Bordens lived) which became the centers of production as well as of commerce and trade.

Here's an UNACCEPTABLE paraphrase that is **plagiarism:**

The increase of industry, the growth of cities, and the explosion of the population were three large factors of nineteenth century America. As steam-driven companies became more visible in the eastern part of the country, they changed farm hands into factory workers and provided jobs for the large wave of immigrants. With industry came the growth of large cities like Fall River where the Bordens lived which turned into centers of commerce and trade as well as production.

What makes this passage plagiarism?

http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

Here's an ACCEPTABLE paraphrase:

Fall River, where the Borden family lived, was typical of northeastern industrial cities of the nineteenth century. Steam-powered production had shifted labor from agriculture to manufacturing, and as immigrants arrived in the US, they found work in these new factories. As a result, populations grew, and large urban areas arose. Fall River was one of these manufacturing and commercial centers (Williams 1).

Why is this passage acceptable?

Here's an example of quotation and paraphrase used together, which is also ACCEPTABLE:

Fall River, where the Borden family lived, was typical of northeastern industrial cities of the nineteenth century. As steam-powered production shifted labor from agriculture to manufacturing, the demand for workers "transformed farm hands into industrial laborers," and created jobs for immigrants. In turn, growing populations increased the size of urban areas. Fall River was one of these hubs "which became the centers of production as well as of commerce and trade" (Williams 1).

Why is this passage acceptable?

http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

Strategies for Avoiding Plagiarism

1. Put in **quotations** everything that comes directly from the text especially when taking notes.

2. **Paraphrase**, but be sure you are not just rearranging or replacing a few words.

> Instead, read over what you want to paraphrase carefully; cover up the text with your hand, or close the text so you can't see any of it (and so aren't tempted to use the text as a "guide"). Write out the idea in your own words without peeking.

3. **Check your paraphrase** against the original text to be sure you have not accidentally used the same phrases or words, and that the information is accurate.

Terms You Need to Know (or What is Common Knowledge?)

Common knowledge: facts that can be found in numerous places and are likely to be known by a lot of people.

> `Example`: John F. Kennedy was elected President of the United States in 1960.

This is generally known information. **You do not need to document this fact.**

However, you must document facts that are not generally known and ideas that interpret facts.

> `Example:` According the American Family Leave Coalition's new book, Family Issues and Congress, President Bush's relationship with Congress has hindered family leave legislation (6).

The idea that "Bush's relationship with Congress has hindered family leave legislation" is not a fact but an *interpretation*; **consequently, you need to cite your source.**

Quotation: using someone's words. When you quote, place the passage you are using in quotation marks, and document the source according to a standard documentation style.

The following example uses the Modern Language Association's style:

> `Example`: According to Peter S. Pritchard in USA Today, "Public schools need reform but they're irreplaceable in teaching all the nation's young" (14).

Paraphrase: using someone's ideas, but putting them in your own words. This is probably the skill you will use most when incorporating sources into your writing. Although you use your own words to paraphrase, you must still acknowledge the source of the information.

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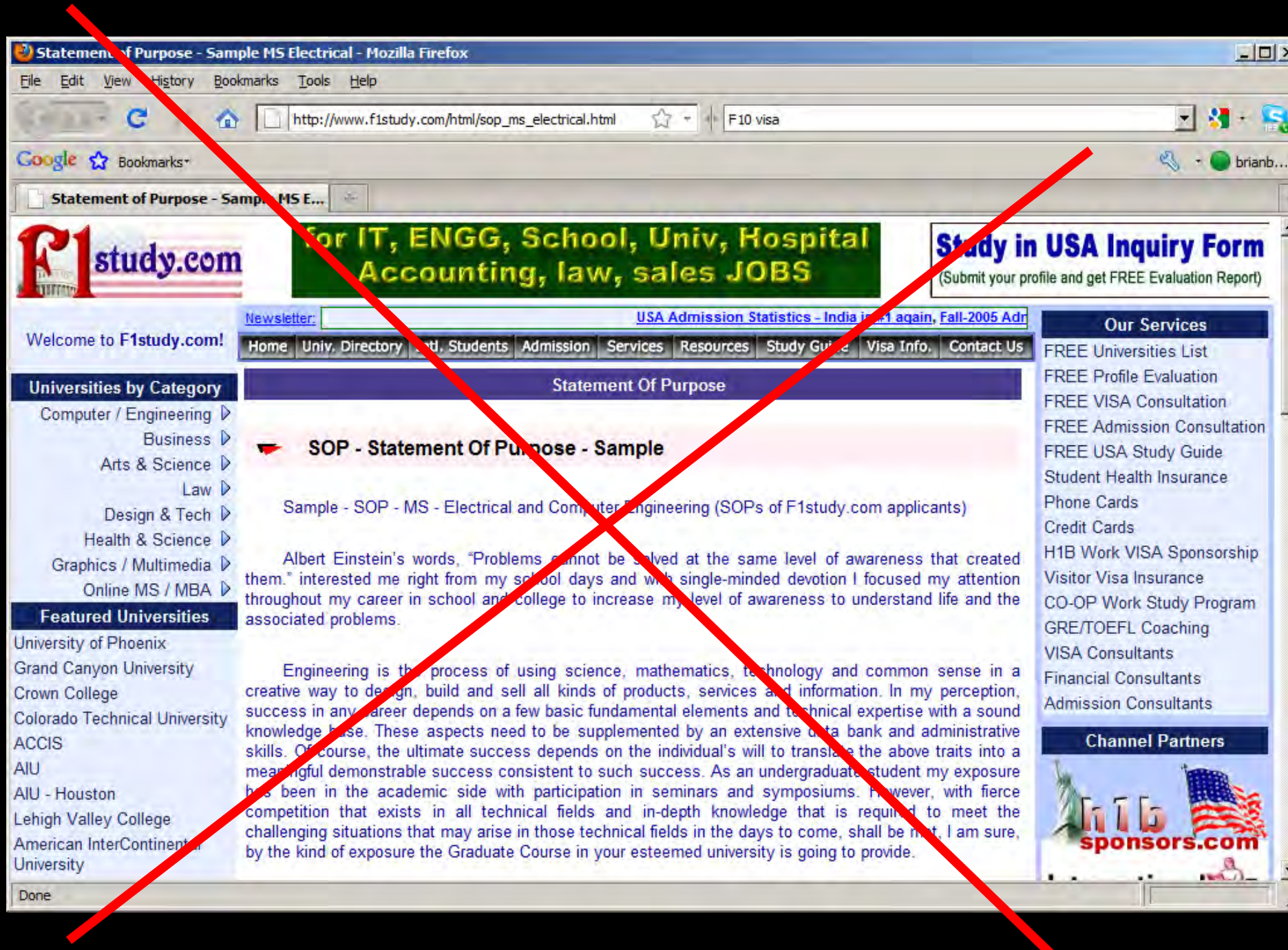
http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml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Statement Of Purpose
SOP - Statement Of Purpose - Sample
Sample - SOP - MS - Electrical and Computer Engineering (SOPs of F1study.com applicants)
Albert Einstein's words, "Problems cannot be solved at the same level of awareness that created them." interested me right from my school days and with single-minded devotion I focused my attention throughout my career in school and college to increase my level of awareness to understand life and the associated problems.
Engineering is the process of using science, mathematics, technology and common sense in a creative way to design, build and sell all kinds of products, services and information. In my perception, success in any career depends on a few basic fundamental elements and technical expertise with a sound knowledge base. These aspects need to be supplemented by an extensive data bank and administrative skills. Of course, the ultimate success depends on the individual's will to translate the above traits into a meaningful demonstrable success consistent to such success. As an undergraduate student my exposure has been in the academic side with participation in seminars and symposiums. However, with fierce competition that exists in all technical fields and in-depth knowledge that is required to meet the challenging situations that may arise in those technical fields in the days to come, shall be met, I am sure, by the kind of exposure the Graduate Course in your esteemed university is going to provide.
Our Services
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FREE USA Study Guide
Student Health Insurance
Phone Cards
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GRE/TOEFL Coaching
VISA Consultants
Financial Consultants
Admission Consultants
Channel Partners
h1b sponsors.com
Done

Arguments and Claims

Making Good Arguments

1. What do you **claim**?
2. What **reasons** support that claim?
3. What **evidence** supports those reasons?
4. Do you **acknowledge** alternative/complication/objection and how do you respond?
5. What **principle (warrant)** justifies connecting your reason to your claim?

Booth et.al.

Claims based on Reasons

- Claim – the answer to your research question with support:

  Reason

  Example?

  Claim, Main Claim, Reason – what is the difference?

  Can a sentence be a reason AND a claim?

Basing Reasons on Evidence

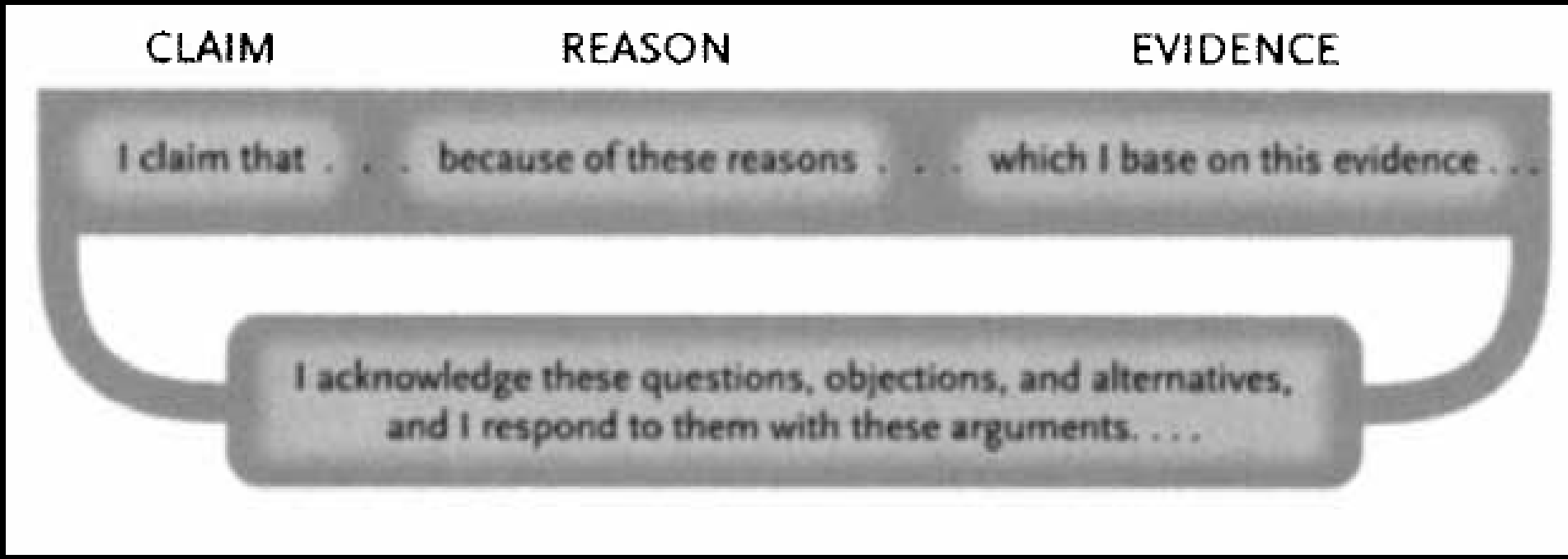
- Can’t accept reasons on face value
- Need data/facts/evidence that reasons are based on
- Example?

Claim *because of* **Reason** *based on* **Evidence**

Core of research argument

Acknowledging/Responding to Alternatives

- Readers will not accept evidence, relevance of reasons to claims etc.
- Readers can question any part of your argument
- Need to acknowledge questions and respond in your writing
- Example?


CLAIM
REASON
EVIDENCE
I claim that . . .
because of these reasons . . .
which I base on this evidence . . .
I acknowledge these questions, objections, and alternatives,
and I respond to them with these arguments. . . .

Booth et.al.

Warranting the Relevance of Reasons

- Readers will question while that the reason, even if it is true, is *relevant* to a claim

"Children who play violent video games tend to become adults who think violence is a legitimate component of life because as children, they adopt violent values from what they see."

Problem with relevance of this reasoning to the claim?

Warranting the Relevance of Reasons

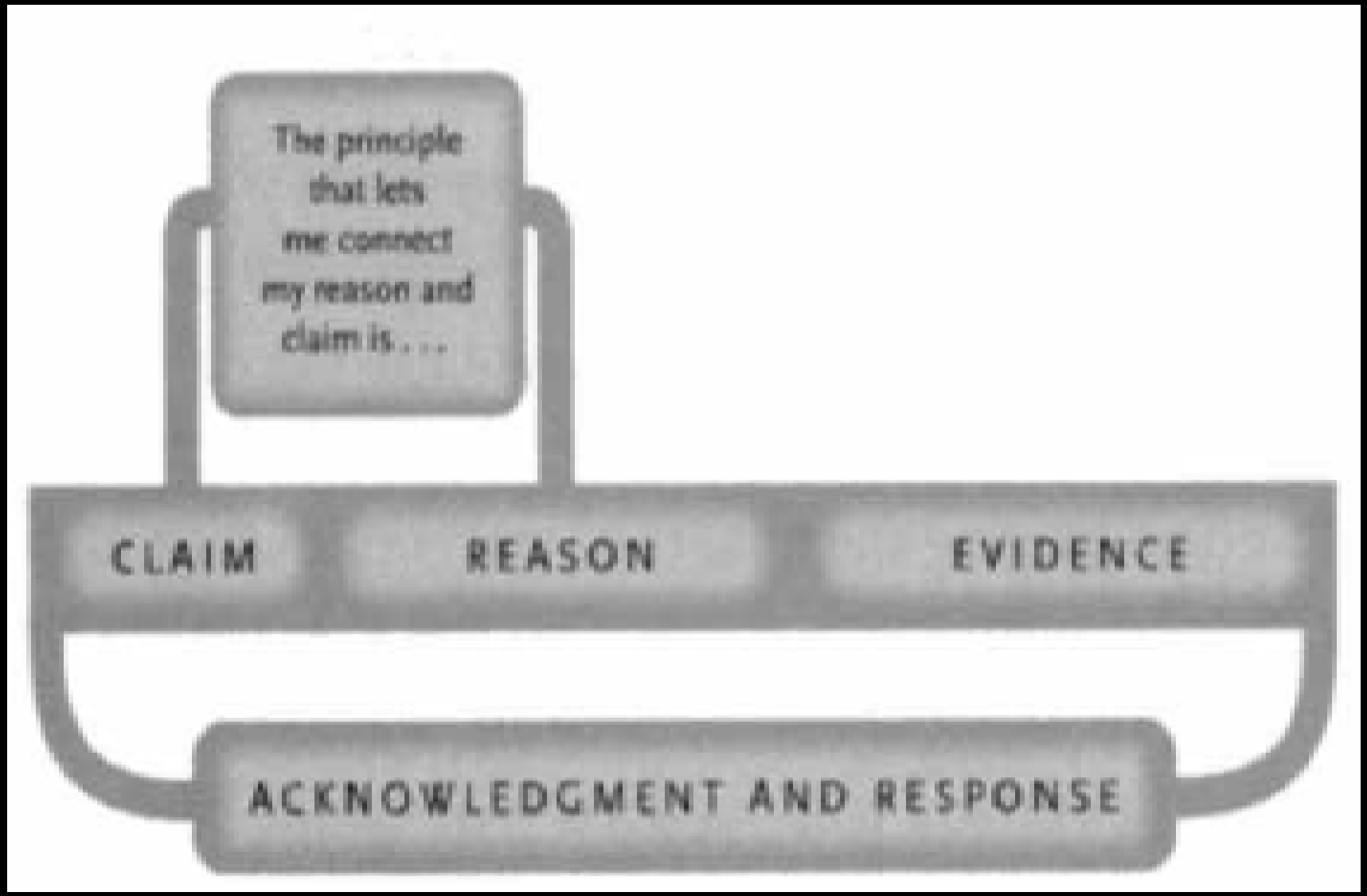
- Need to offer general principle why particular reason is relevant to particular claim
- Justify connecting the two
- A warrant
- Hard to say where to put warrant and if it is needed

“Watch out walking on the sidewalk, because it is icy out”

Warranting the Relevance of Reasons

- If readers won't see relevance of reason to a claim, justify connection with a warrant

" Violent video games have harmful psychological effects (main claim). ***Few question that when children are repeatedly exposed to particular values in visual forms, they use those values to understand the world*** *(warrant).* *In the same way, children who play violent video games tend to become adults who think violence is a legitimate component…"*


The principle that lets me connect my reason and claim is . . .
CLAIM
REASON
EVIDENCE
ACKNOWLEDGMENT AND RESPONSE

Booth et.al.

Argument and your Ethos

- How thoughtful you are in your arguments, acknowledgements, warrants
- Readers build trust in you

Claims

- Need a tentative answer to questions before exactly knowing the final answer

- Need a tentative claim – help assemble kind of argument you need to support claim

What kind of claim?

- Conceptual and practical claims need different arguments with different support.
- Practical problems – 2 conceptual claims
  - 1. claim explaining what caused the problem
  - 2. How doing something will fix it

  But…..

….in addition

1. It is feasible; it can be implemented in a reasonable time
2. It will cost less to implement than the cost of the problem it solves
3. It will not create a bigger problem than the one it solves
4. It is cheaper or faster than alternatives one – *difficult to support!*

Is your claim specific?

- Vague claims → Vague Arguments

Specific Language

Texting diminishes social interaction.

Vs.

The text-based social interaction aspect of "texting" versus traditional audio-based telephone conversation is leading to a major decrease in social interaction.

Specific Logic

- Elaborate the logic of your claim
- Introduce clause beginning with *although* or *even though*
- Conclude with reason-clause beginning with *because*

Texting while driving is causing increased numbers of car accidents.

Vs.

Although traffic accidents are actually decreasing, texting while driving is causing increased numbers of car accidents, **because** drivers are distracted when they text.

Is your claim significant?

- *If readers accept a claim, how many other beliefs must they change?* Booth et.al.

Claim to accept new information about well-studied subject

A beta version of Pac-man from the 1980s was recently discovered. This version helps understand the development of gaming graphics.

Claim offers new knowledge and uses that knowledge to settle uncertain/problematic issues

The querying performance of relational versus object-oriented databases has long been debated, but new benchmark testing clearly indicates that object-oriented databases are superior.

Claim offers new knowledge and upset long-help beliefs (paradigm shift)

Databases always query data through row or column structures, but an experimental approach querying data diagonally may offer a new approach.

Qualifying your Claim

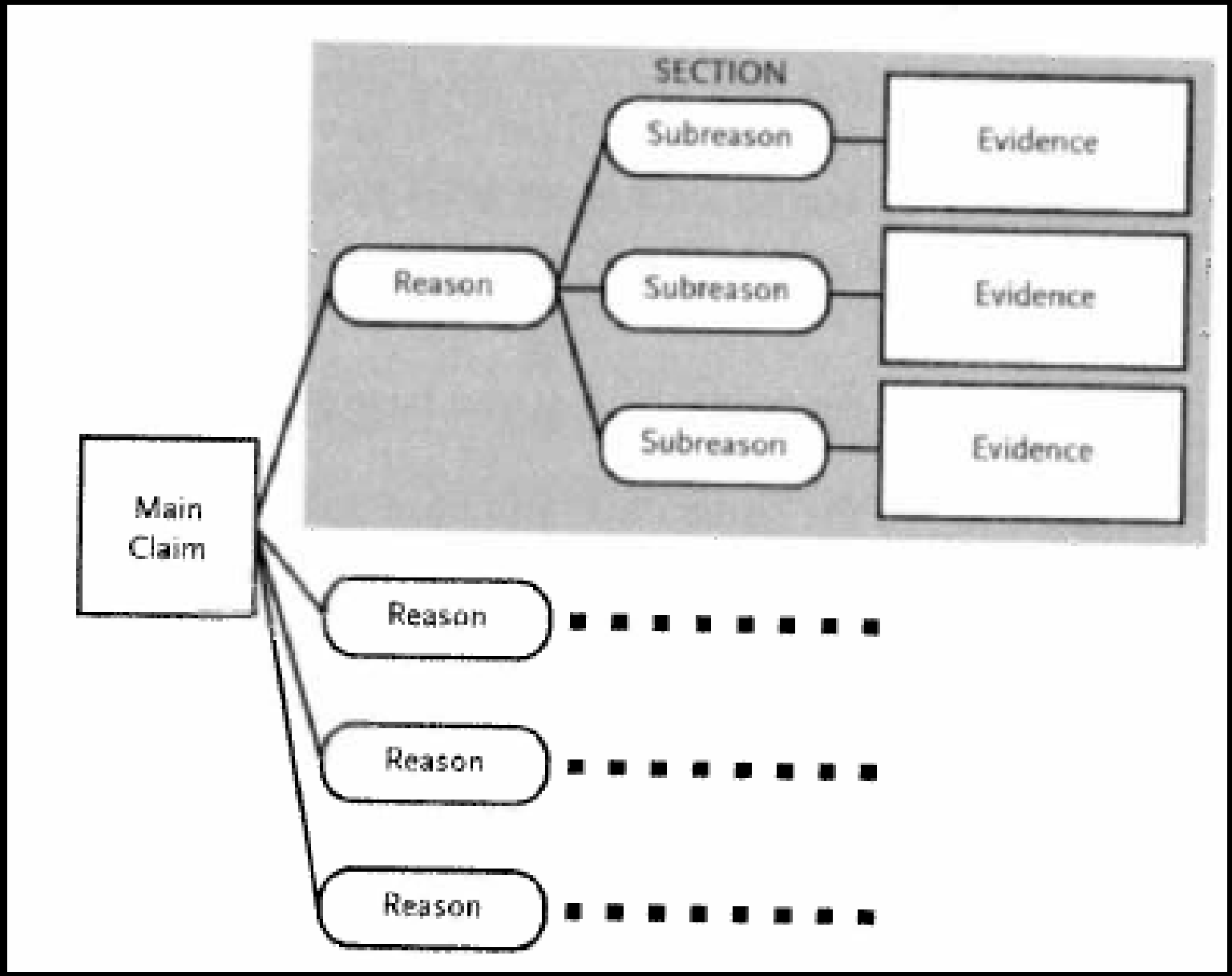
- Acknowledge limiting conditions
  We believe our new iPhone app is superior to all others, ***assuming that a high-speed internet connection is available.***

- Use Hedges to Limit Certainty
  We wish to suggest *our new iPhone app is a major improvement..*

Reasons and Evidence
Acknowledgements
Warrants

Reasons and Evidence

- Evidence – bedrock of your argument – facts readers see to accept your reasons
- If reader don't accept your evidence…
  they will reject your reasons…
  and then your claim



Booth et.al v2

Distinction between reason and evidence

- Reasons – why readers should accept a claim. You think up reasons.
- Evidence – what readers accept as fact, “hard” reality.

Texting while driving should be outlawed because it causes accidents. Car accident deaths have increased in frequency in the past five years

Reports of Evidence

- Your rarely include the evidence itself
- You *report* the evidence
- When you report the evidence, you shape/modify it for presentation
- You have to rely on others who have reported evidence and shaped it
  - Think about how evidence was collected, shaped, biased etc.

Right form of reporting evidence

- Direct quotes, images, charts, paraphrases etc.
- What is appropriate for your discipline?

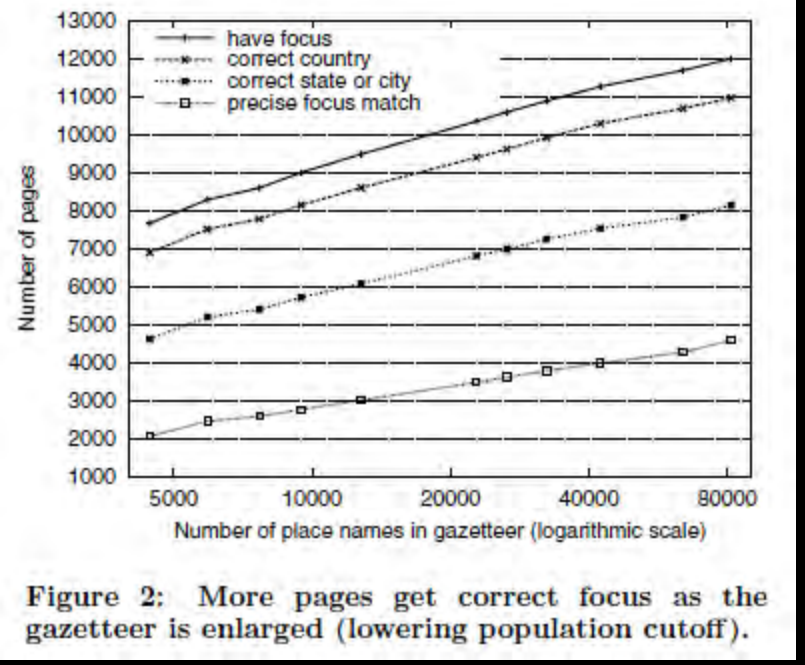


Figure 2: More pages get correct focus as the gazetteer is enlarged (lowering population cutoff).

Amitay, E., Har'el, N., Sivan, R. & Soffer, A. Year. Web-a-Where: geotagging web content. *In:* SIGIR'04, July 25–29, 2004 2004 Sheffield, South Yorkshire, UK.: ACM, 273-280.

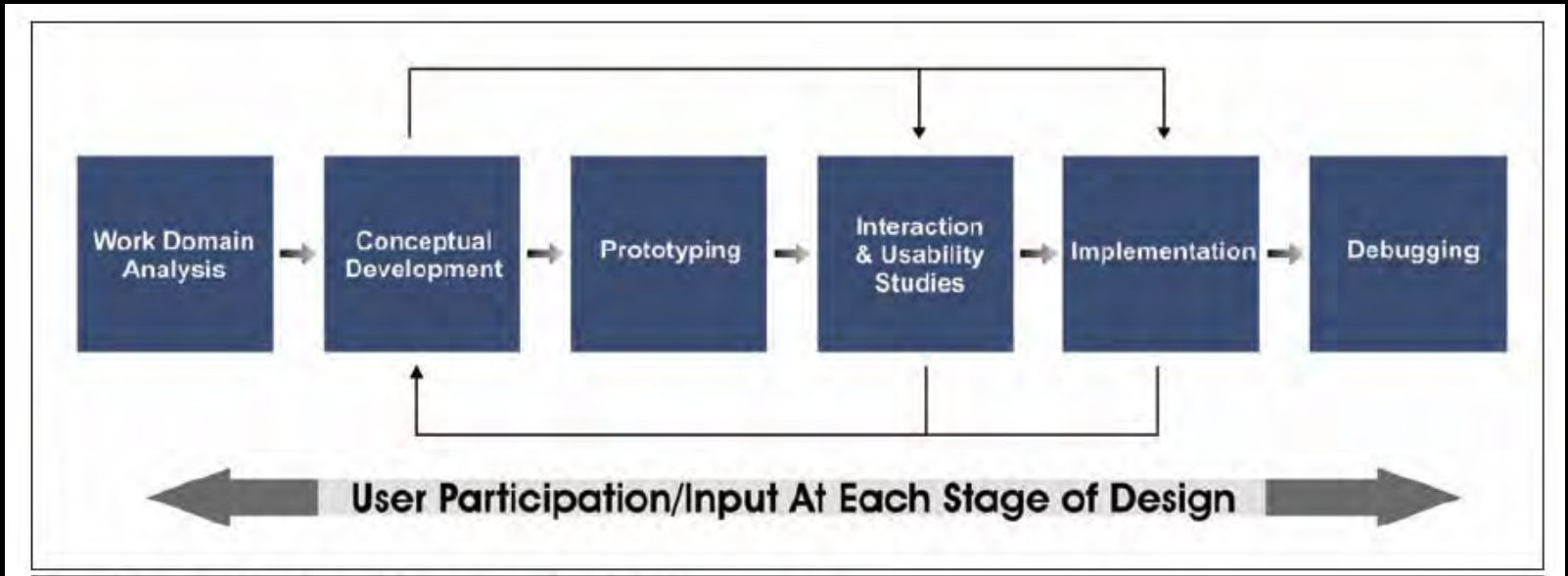


Figure 2. Our adaptation of the user-centered design process.

Robinson, A., Chen, J., Lengerich, E., Meyer, H. & Maceachren, A. 2005. Combining usability techniques to design geovisualization tools for epidemiology. *Cartography and Geographic Information Science,* 32, 243-255.

Reliable Evidence

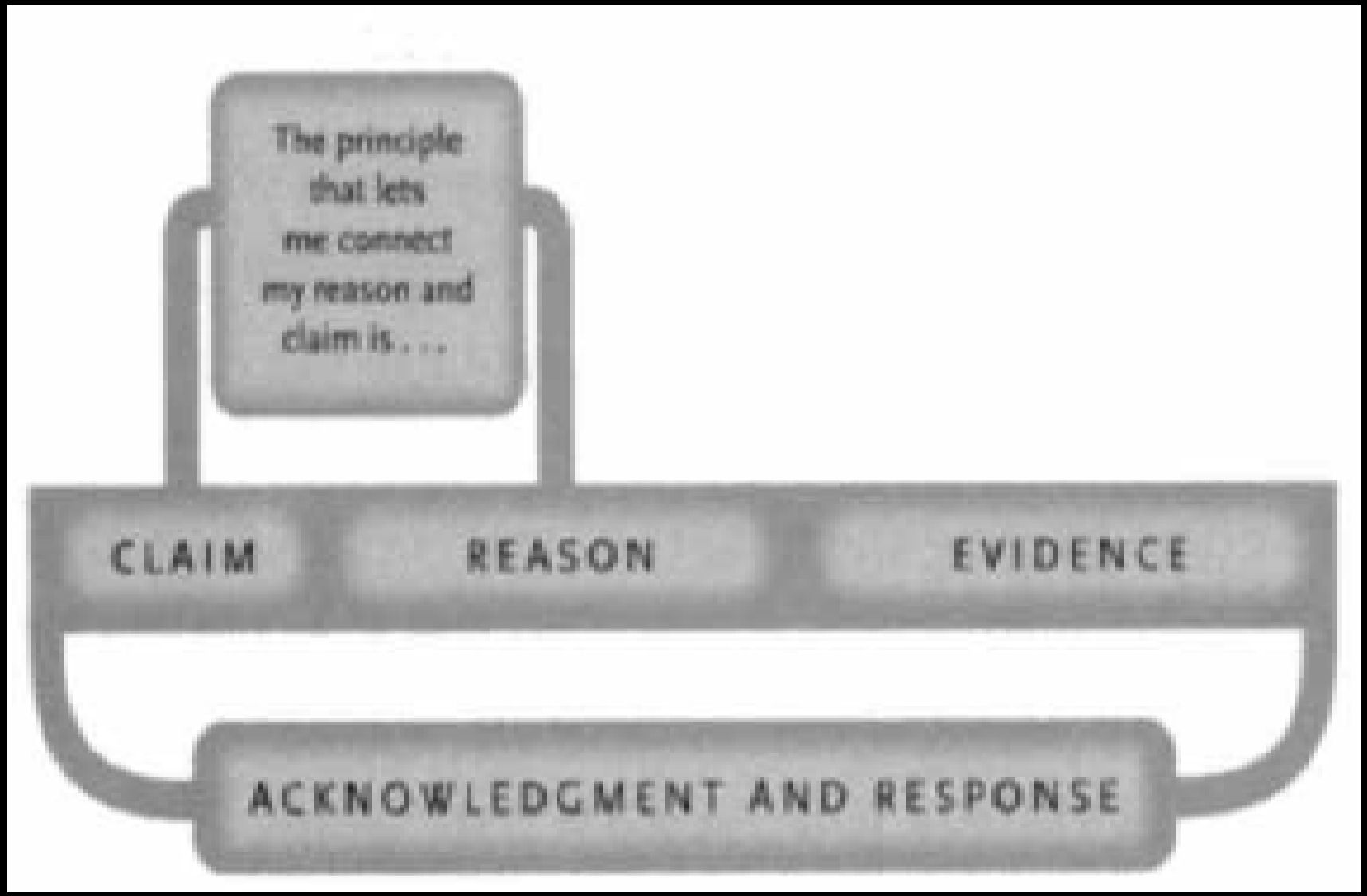
- Is evidence sufficient and representative?
- Reported accurately from an authoritative source?

Report Evidence Accurately, Sufficiently and Precisely

- Readers will look for flaws in data, quotes – mistakes will lose their trust in you
- Make sure to provide enough evidence
- Be precise

Cell phone use is increasing a great deal and numerous people will continue to buy cell phones.

Acknowledgements and Responses



Booth et.al pg.

Acknowledgements and Responses

- Imagine your readers asking questions about your arguments
- You can acknowledge/respond to imagined questions, suggest alternatives
- Establish effective working relationship with readers

Two questions readers may ask about your argument

1. Intrinsic soundness – clarity of your claim, relevance of reasons, quality of evidence

2. Ask you to consider alternatives – different ways of framing the problem, evidence you hadn't considered

Questioning your own argument

"Read your argument as someone who has a lot of sake in a *different* solution" – Booth et.al.

Be self-reflective, challenge your own assumptions

Question your problem

- Why define the problem in that way?
- Why do you think there is any problem here at all?
- Exactly what solution are you proposing?
- Have you stated your claim too strong?
- Why is your practical solution better than other?

More on practical..

1. It is feasible; it can be implemented in a reasonable time
2. It will cost less to implement than the cost of the problem it solves
3. It will not create a bigger problem than the one it solves
4. It is cheaper or faster than alternatives one – *difficult to support!*

Question your support

- Need to see different evidence
- It isn’t accurate
- It isn’t precise enough
- It isn’t current
- It isn’t representative
- It isn’t authoritative
- You need more evidence!

Summary

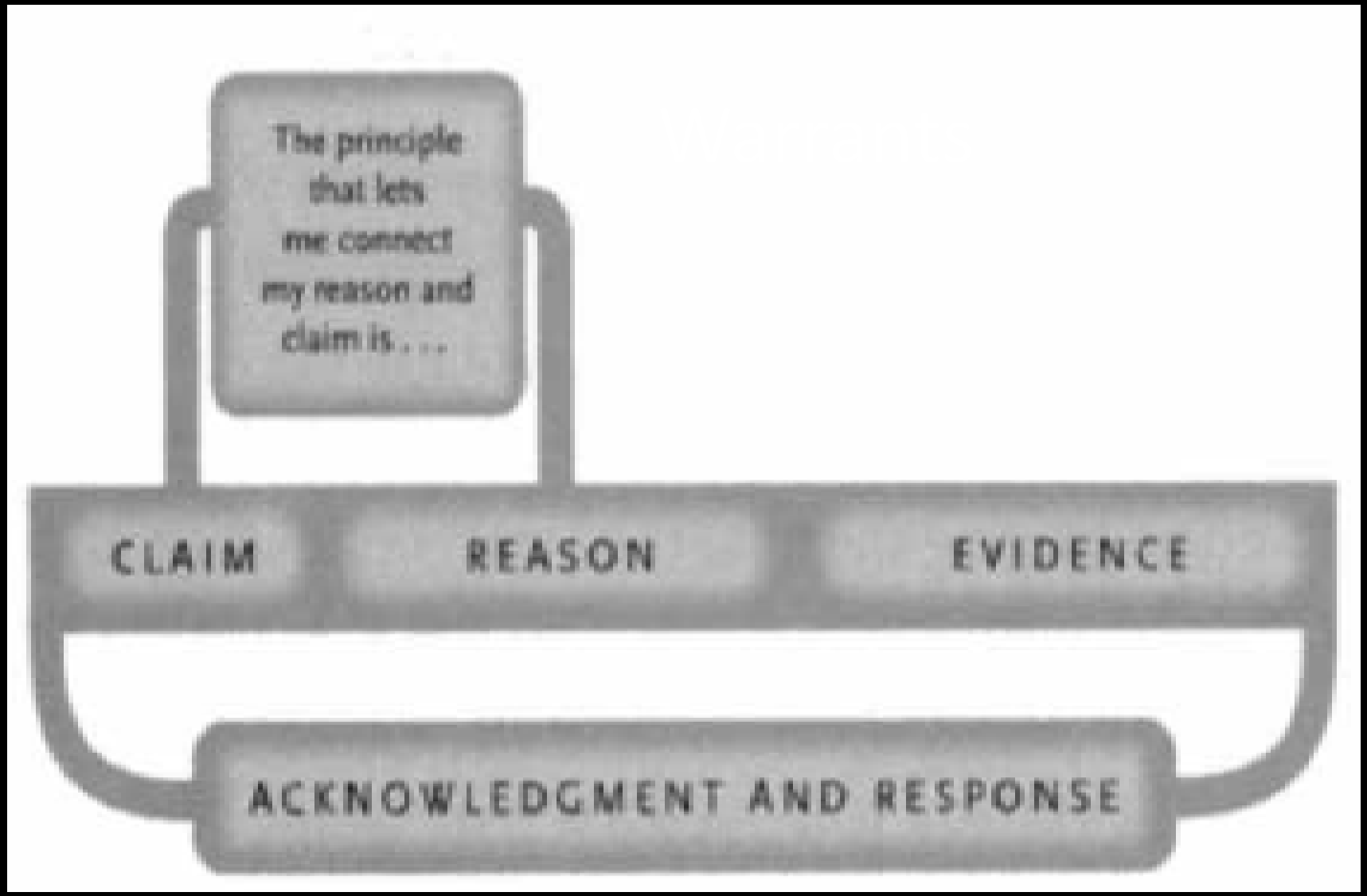
- Test your argument as your readers will
- Even in ways they might not
- Acknowledge and respond to important objections you imagine being raised
- If you don’t show you have put your argument through the wringer, readers will do it for you!

Argument Alternatives Readers Think Of

1. **“But there are causes in addition to the ones you claim.”**

2. **“But what about these counterexamples?”**

3. **“I don’t define X as you do, To me, X means…”**


The principle that lets me connect my reason and claim is . . .
CLAIM
REASON
EVIDENCE
ACKNOWLEDGMENT AND RESPONSE

Booth et.al.

Warrant

- A *commonplace* – something that is self evident

  Where there's smoke, there's fire

  A computer program that can execute quickly requires RAM and CPU power to do so

Despite increased RAM and CPU that have made new PC costs rise, the speed at which computer programs operate has not gotten faster. *(reason)* *Clearly, we are wasting our money.* *(claim)*

How warrants work

General circumstances predictably leads to **General consequence**

When more computing resources are provided but performance does not improve

Those resources have been wasted

Despite increased RAM and CPU that have made new PC costs rise, the speed at which computer programs operate has not gotten faster. *(reason)*

therefore

we are wasting our money *(claim)*

Specific circumstances let us infer **Specific consequence**

What Warrants Look Like

- Many forms

Spending money for nothing is a waste

General circumstance and general consequence

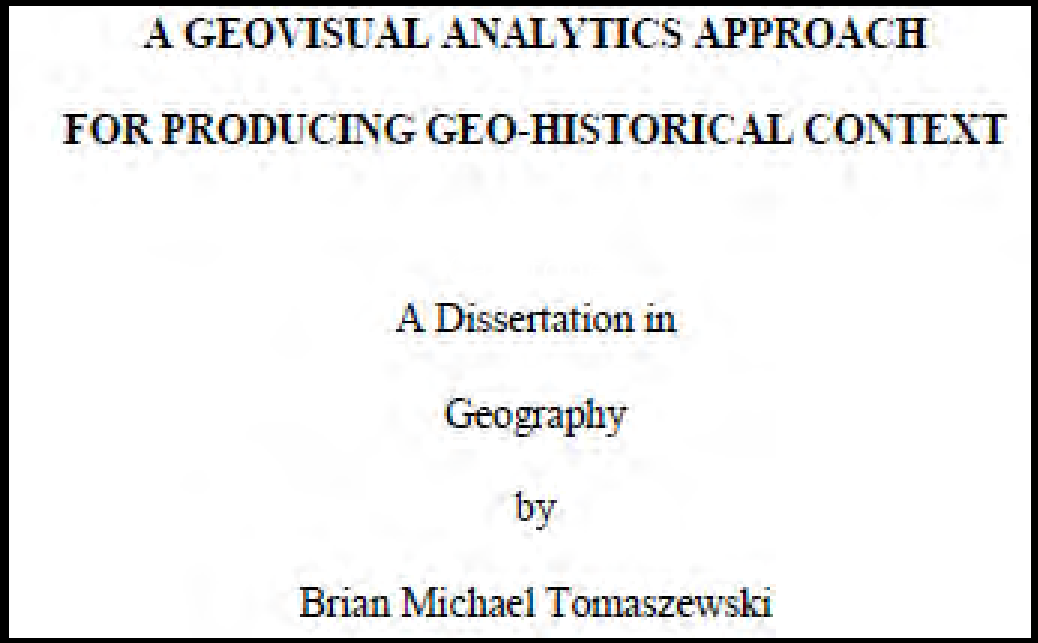
When(ever) X, then Y

Test the connection between a specific condition and specific consequence

Developing a Research Proposal

A Full Proposal Walkthrough..

Starring..



A GEOVISUAL ANALYTICS APPROACH

FOR PRODUCING GEO-HISTORICAL CONTEXT

A Dissertation in

Geography

by

Brian Michael Tomaszewski

Introduction

Reality check: does this section clearly and unambiguously identify and describe your research topic?

Context is a difficult concept to define, model, and represent. Geography and history offer unique perspectives on the notion of context, a context defined in this research as geo-historical context, or GHC.

Problem statement

Problem statement – what is the problem being investigated?

Although GHC is important for understanding the circumstances of situations, ***three main challenges exist to modeling and producing GHC****.* ***First,*** *no formal approach for modeling or reasoning with GHC exists.* ***Second,*** *in an application domain such as crisis management, GHC for a given situation does not exist in an isolated state.* ***Third,*** *information that can potentially contextualize situations from geographical and historical perspectives is vast and heterogeneous.*

Motivation

Discuss/explain the problem. Here you can provide details, add qualifications, and express your opinion(s) (if opinions are appropriate).

Lack of effective geo-historical context derived from sources such as news reports, geographic maps, group and team activity information, and time series records of activities and events is a recurring problem in crisis management (see Waterman (2005) and Committee On Homeland Security And Governmental Affairs (2006) for examples of how lack of context affected the response to hurricane Katrina in 2005).

Project Goals

Goals are strategic in nature. Often, answering the question: what are the best possible outcomes of this project?

The goals to advance this work were three-fold:

1) *Develop a model of GHC that accounts for geographical, historical, and conceptual dimensions of GHC.*

2) *Implement a proof-of-concept, online, geocollaborative, geovisual analytic environment that is designed to support the production of geographical and historical context.*

3) *Evaluate the proof-of-concept system developed under goal two with user studies and computational evaluations*

Project Objectives

Objectives are tactical-level actions that **<u>support achievement of goals</u>**

Goal 1 - Develop a model of GHC that accounts for geographical, historical, and conceptual dimensions of GHC.

<u>(Objective 1a)</u> The model must meet the objective of supporting automated and human reasoning in order to determine the contextual relevancy of information.

<u>(Objective 1b)</u> The model must support the use of geographical, historical, and conceptual information to support reasoning.

Goal 2 - Implement a proof-of-concept, online, geocollaborative, geovisual analytic environment designed to support the production of geographical and historical context.

<u>(Objective 2a)</u> Enable production of GHC to support answering strategic level questions.

<u>(Objective 2b)</u> Provide visual representation of the geographic-social context of asynchronous group work.

Significance and Potential benefits

Are your claims for significance and benefits reasonable?

Significance to Geocollaboration Research

Significance to Geovisual Analytics Research

Significance to GIScience Research

Significance to Humanitarian Information Management
Little research has been done on how Geovisual Analytic approaches can be applied to humanitarian information management. This dissertation presents new scientific and technological advances and innovations in the use of visual strategies and methods for acquiring, processing, analyzing and transforming non-spatio-temporal humanitarian information into spatio-temporal formats based on widely available, yet heterogeneous and unstructured data formats such as RSS feeds.

Prior Work

This section, sometimes referred to as a literature review, presents a summary and synthesis of existing work already reported that is related to your problem statement, project goals, and/or project objectives.

Chapter two presents background information on context and contextual reasoning to theoretically situate the model of Geo-historical Context that is also presented in that chapter. Chapter three presents a theoretical framework for visually supporting human analytical reasoning within asynchronous group work as means to produce GHC (as defined and modeled in Chapter two) that underlies the proof-of-concept system developed for this research. Chapter four discusses The Context Discovery Application (CDA) – the proof-of-concept geovisual analytic system that was developed for this research to graphically present GHC information, as modeled/discussed in chapter two, and produced based on theory presented in Chapter three.

Methodology

Describes how you intend to answer the questions/goals/objectives posed

Methods to achieve goal one start with the development of a general theory to explain the nature and conceptual structure of context in general, and GHC specifically.

Methods to achieve goal two center on the implementation of computational and visual interface components in a proof-of-concept geovisual analytic environment. The environment is implemented using open source and publicly available geospatial technologies.

Methods to achieve goal three were based on two major complementary evaluation components. The first component was evaluating the usability and utility of the proof-of-concept Geovisual Analytic system. The second major evaluation component was directed toward evaluating the computational methods.

Limitations

An important element in writing a proposal is to place boundaries on the project's scope.

The GHC model is a subjective view of how geographical, historical, and conceptual components can be combined to produce context for a problem domain.

The many usability issues of the CDA had a negative impact on the effort to assess utility of the CDA to produce context from heterogeneous information.

Computational evaluations were conducted on relatively small-sized datasets and in the case of the document ranking test, using only one query.

Deliverables

Precisely state and describe the outputs that you will deliver

Geo-historical Context Information Model

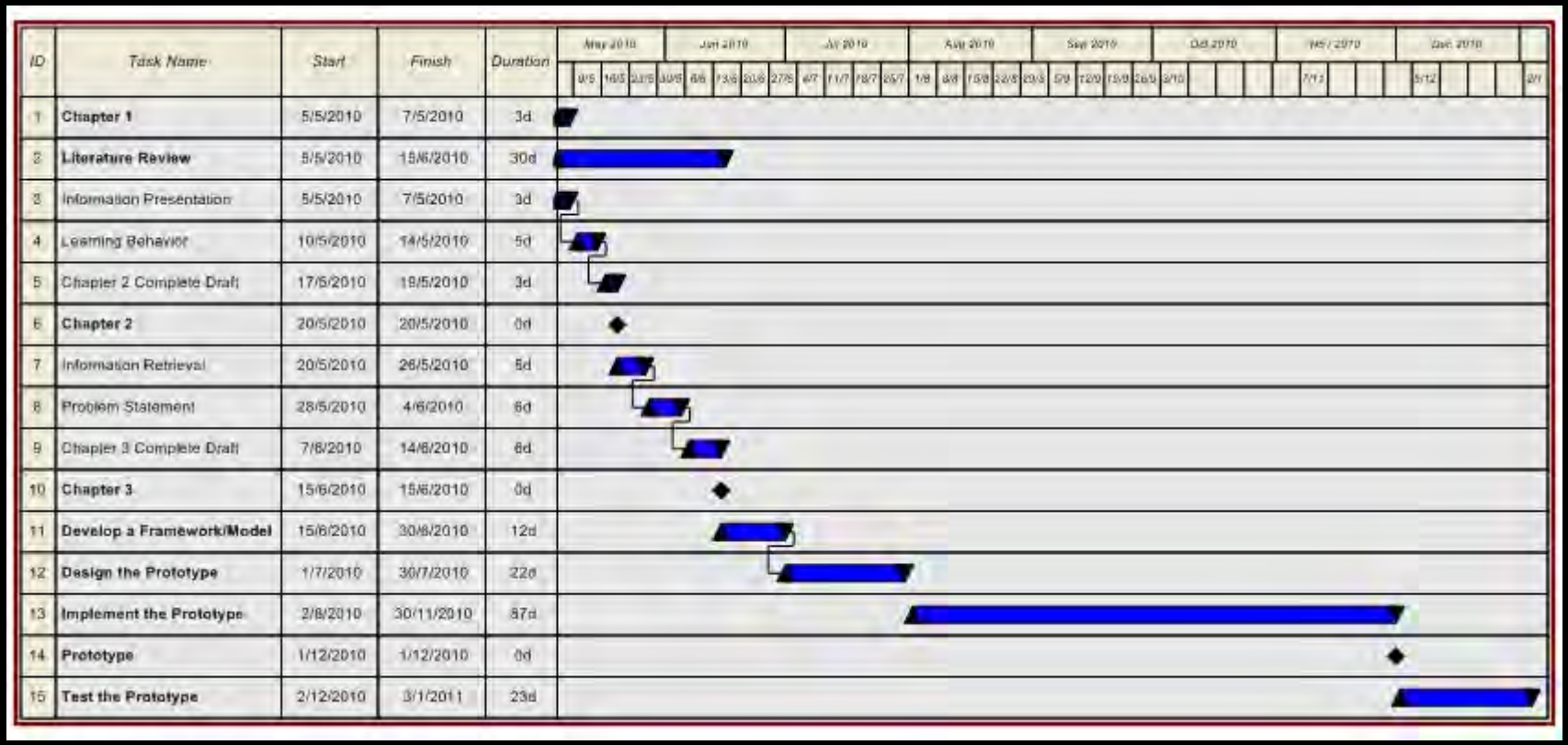
The GHC information model developed as a result of this research is a key outcome.

Software

A significant outcome of this dissertation is the development of new geovisual analytic tools that support geographic information retrieval and geocollaboration. As an open-source software approach is being used, technology developed as a result of this research will be broadly accessible to a wide range of interested parties.

Project Timeline

Present a project Gantt chart, optionally accompanied by notes.



ID	Task Name	Start	Finish	Duration
1	**Chapter 1**	5/5/2010	7/5/2010	3d
2	**Literature Review**	5/5/2010	15/6/2010	30d
3	Information Presentation	5/5/2010	7/5/2010	3d
4	Learning Behavior	10/5/2010	14/5/2010	5d
5	Chapter 2 Complete Draft	17/5/2010	19/5/2010	3d
6	**Chapter 2**	20/5/2010	20/5/2010	0d
7	Information Retrieval	20/5/2010	26/5/2010	5d
8	Problem Statement	28/5/2010	4/6/2010	6d
9	Chapter 3 Complete Draft	7/6/2010	14/6/2010	6d
10	**Chapter 3**	15/6/2010	15/6/2010	0d
11	**Develop a Framework/Model**	15/6/2010	30/6/2010	12d
12	**Design the Prototype**	1/7/2010	30/7/2010	22d
13	**Implement the Prototype**	2/8/2010	30/11/2010	87d
14	**Prototype**	1/12/2010	1/12/2010	0d
15	**Test the Prototype**	2/12/2010	3/1/2011	23d

http://4.bp.blogspot.com/_xzkN2qQgcdg/S-FRJYBX3aI/AAAAAAAADlo/0VjR1pSqarA/s1600/Gantt+Chart.jpg

For more information contact:

- Brian Tomaszewski, Ph.D.
- bmtski@rit.edu

References:

W. Booth, G. Colomb, and J. Williams, *The craft of research*, 3rd ed.: University of Chicago press, 2008.