Evaluating Information
Communication Studies 211
Josh Pasek, Ph.D.
Winter, 2012

Course Meetings:
MW – 10:00-11:30AM
1400 Chemistry
Sections:
1245 North Quad (* in 1110 North Quad)

Office Hours:
Weds – 3:00-4:00PM
5413 North Quad
and by appointment
jpasek@umich.edu

Graduate Student Instructors

Rebecca Yu	**Valenta Kabo**	**Erin McGraw**	**Rachel Petrak**	**Grace Yang**
Thursday	Thursday	Thursday	Friday	Friday
8-10 & 10-12	12-2 & 2-4	8-10 & 4-6	8-10 & 10-12	12-2 & 2-4
002 & 003	004 & 005	010* & 011	006 & 007	008 & 009

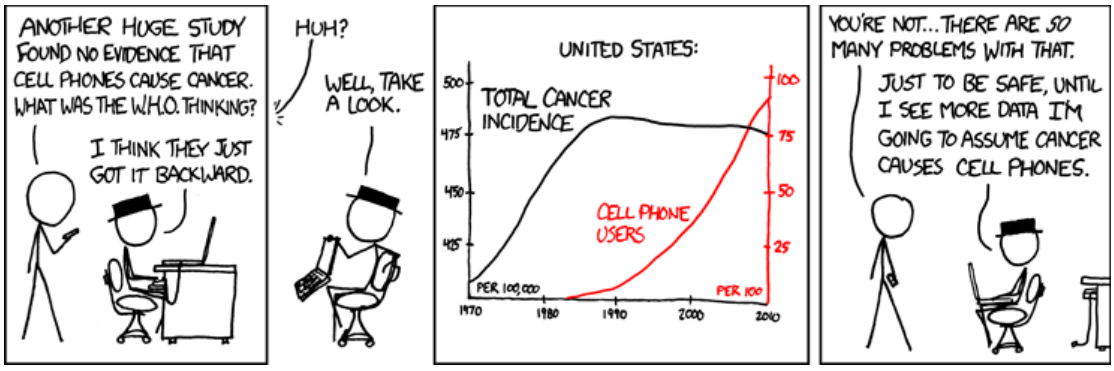
Is Your Mobile Phone Giving You Cancer?

Readers of the *New York Times* could point to seven headlines published during 2011 reporting, "Cellphone Use Tied to Brain Changes" (Feb 22), "No Cellphone-Cancer Link in Large Study" (Oct 20), and, "Cellphone Radiation May Cause Cancer" (May 31) among other related claims.

Does this seem somewhat contradictory? It should. Depending on whom you ask and when, the answer to the cellphone-cancer link might be existent, nonexistent, or a subject for continuing research.

In life, we are constantly exposed to claims about what is true and how the world works. Some of these claims come from trusted acquaintances, others stem from news reports, and additional assertions reach us through Facebook, casual conversations, and email listservs. We find ourselves in this constant stimulation environment without a single easy way to determine which of the things we hear are actually true, which may be misleading, and which are completely false.

Clearly, cellphone use cannot simultaneously cause cancer, not cause cancer, and possibly cause cancer. But how should we evaluate which of the studies reported by the *New York Times* was actually accurate? Sadly most of the time we simply aren't given enough information to weigh the evidence without looking at the studies themselves. Problematically, many people lack the training to read and understand original scientific research.



As the quantitative reasoning course in the Communication Studies curriculum, this course focuses on the core skills necessary to think through and critically evaluate scientific arguments and evidence. The course is particularly tuned toward understanding results from the scientific study of human behavior, though the way in which we think through our questions and the problems they pose is true of the natural sciences as well. By the end of the semester, you will have the tools to read and understand social science as it appears in the news and in scientific journals.

Although science is often treated as the bastion of truth in society, it is important to note that scientists don't "prove" things. Instead, science is a process of making educated guesses about the world and testing those guesses against the best available evidence. Though the scientific method is robust, scientists must make assumptions and often make mistakes. For this reason, scientists build knowledge by constantly challenging their own assumptions and replicating their findings.

In this course, you will be expected to understand some of the basic principles of scientific research. You will learn some of the different ways that scientific studies can be designed, that data can be collected, and that data can be analyzed when studying a phenomenon like mass communication. For each of these areas, we will explore a variety of techniques and will assess the assumptions that researchers make in using each of those techniques. From this, you will be able to recognize what we can and cannot conclude in our examinations. These skills will also help you when you encounter scientific information in real world settings.

Requirements

Class and Workshop Meetings

The class meets on Mondays and Wednesdays from 10:00AM to 11:30AM in Chemistry, room 1400. Students are expected to attend all classes and to have the reading assignments and paper assignments completed in advance of the assigned class. Students are also expected to participate in class and use clickers at designated times during lectures. Because laptops can be distracting, some areas of the classroom may be designated as laptop-free zones.

Workshops for this class meet on Thursdays and Fridays (at varying times depending on the section) in 1245 North Quad (section 010 will meet in 1110 North Quad). Workshops are led by Graduate Student Instructors (GSIs) and meet every week of the semester. Students are expected to complete workshop homework in advance of the assigned week's workshop.

Lecture Participation

Each lecture contains clicker questions. The professor will present the question, you will submit answers with your clicker, and then the correct answers will be revealed and discussed. The reason we use clickers is to give you more examples and applications of the concepts we are learning about, engage you right away in using what you've learned, and provide you with feedback about how well you understand the course material. Please note: most students find exams are harder than the clicker questions, so be sure to use the practice exams even if you're getting all the clicker questions correct.

If you answer 75% of the clicker questions in a given day (correctly or incorrectly), you will earn credit for participating in lecture that day. Failure to answer 75% of the questions for any reason—absence, forgotten clicker, *et cetera*—will be excused three times. After the third time, failure to participate in lecture will adversely affect your grade.

In previous semesters, most students earned 100% in this category and those with higher lecture participation scores were far more likely to do well on exams and papers than those with lower participation scores (i.e., attending and participating in lecture are powerful learning tools).

Papers

There are three (3) papers due in this class. In these papers, you will be required to write clearly about social science research. You will be graded on your writing as well as the extent to which you identify important class ideas. All papers for this class should use APA style (American Psychological Association, 2009) and you will need to be familiar with the rules for writing and citation in this style (a good overview is available at http://owl.english.purdue.edu/owl/section/2/10/).

The first paper requires you to identify key elements out of a short piece of published research. The second paper requires that you critique the way a journalist reported on a particular piece of research. And for the third paper, you will need to write up the results of your own analysis of some survey data. All papers need to be turned in on CTools in advance of the class for which they are due. Late papers will be docked 3% for each day they are late and will NOT be accepted more than one week late. The first paper is due on **February 6**th, the second paper is due on **March 26**th, and the third paper is due on **April 16**th.

Exams

There are three (3) exams in this class. The exams require you to apply the concepts you have learned in class. Exams from past courses will be posted on CTools. Exams will ONLY be offered on the designated day and time, there will be no alternate times for exams in this course. The first exam will be on **February 20th**, the second exam will be on **April 2nd**, and the final will be on **April 23rd**.

Grading

Your class grade is composed of the following parts:

Participation and Section	
Lecture Participation (Clicker)	5%
Section Participation	5%
Section Homework	5%
Section Quizzes	5%
Total	*20%*
Papers	
Paper 1 (due February 6 at 10:10AM via CTools)	5%
Paper 2 (due March 26 at 10:10AM via CTools)	15%
Paper 3 (due April 16 at 10:10AM via CTools)	20%
Total	*40%*
Exams	
Exam 1 (February 20)	10%
Exam 2 (April 2)	15%
Exam 3 (April 23)	15%
Total	*40%*

Final grades for the class are determined using the following scale:

A+	(>99%)	A	(>93-99)	A-	(>90-93)
B+	(>87-90)	B	(>83-87)	B-	(>80-83)
C+	(>77-80)	C	(>73-77)	C-	(>70-73)
D+	(>67-70)	D	(>63-67)	D-	(>60-63)
E	(<60)				

Required Text

Babbie, E. (2010) *The Basics of Social Research.* 5th ed. Wadsworth: USA.

The 4th and digital editions are also acceptable, though pages may not correspond perfectly with the syllabus. Some additional readings will be posted online.

Some Recommendations and Resources

How to Succeed

In this class, we provide a number of tools to help you learn how to understand, evaluate, and produce good social science. We will test you on your ability to do just that. Your success in the class will be highly dependent on how well you utilize the tools we offer. It is hypothetically possible to pass the class without attending all the lectures, but attendance in lecture has proven an incredibly accurate indicator of overall class performance. Similarly, because we test how well you can apply the concepts in the readings and in class, you will not need to memorize any of the specific examples used in the textbook. Nonetheless, if you understand how concepts are applied in those examples, you will be much more likely to be able to apply them in the papers and during the exams.

Peer Mentors

In addition to the GSIs and your professor, three students who performed well in previous years will be available as peer mentors. Peer mentors took 211 recently, did well, and were recommended by their GSIs for the job. Their schedules, once available, will be posted on CTools.

Course Policies

Accommodations for Students with Disabilities

If you think you need an accommodation for a disability, please let the professor or your GSI know as soon as is feasible. Some aspects of this course, the assignments, the in-class activities, and the way we teach can be modified to facilitate your participation and progress. As soon as you make us aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate accommodations. SSD (734-763-3000; http://www.umich.edu/sswd) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. The teaching team will treat any information you provide as private and confidential. Please note that we will not make any retroactive accommodations.

Absences

Sickness. If you are sick, please go to http://lsa.umich.edu/students/. Click on the button that reads "What to do if You're Sick" and complete the subsequent form. This will report your illness to all of your instructors. You must complete LSA's form if you want to have an illness-related absence excused.

If you are sick for an extended period of time, your absences will only be excused if you provide a doctor's note in addition to filling out the LSA form.

Religious holidays. Within the first two weeks of the semester, please notify your GSIs of any religious holidays for which you will be absent. If a holiday is sufficiently important that you will miss class, you should know the dates in advance.

Athletic and other university-related absences. If you are travelling to represent the University of Michigan, someone on your team will provide you with the appropriate paperwork to distribute to your instructors.

Other excusable absences. For family emergencies, funerals, and other such absences, you will need to notify the office of the Assistant Dean of Student Affairs, who will be able to inform all of your instructors. In Fall 2011, the assistant to Assistant Dean is Debbie Walls; you can email her at dwalls@umich.edu. When you return to campus, bring documentation in support of your absence.

Academic Honesty

A good student-teacher relationship operates on the basis of trust. From that basis, your professor and GSIs trust that you will do your utmost to complete coursework and to be honest with us if for any reason you are unable to fully meet a commitment to the class. We also trust your judgment that any advice you solicit from or offer to your peers will stay well outside the bounds of the University of Michigan's policies on plagiarism and cheating (see examples at http://www.lsa.umich.edu/academicintegrity/). That said, if any of us encounter evidence that you have in any way, shape, or form copied material without attribution or collaborated to the point that the work you present is not entirely your own, I will immediately refer the incident to Esrold Nurse, the Assistant Dean for Undergraduate Education. Because plagiarism and academic dishonestly hurt *everyone* in the class, I have no compunction about failing students who are found to have been dishonest; an F for cheating will be for the entire course, not just the assignment in question. Put simply, this class has a zero-tolerance policy. There will be no second chances for cheating.

Course Outline:

Week of January 2, 2012 (Week 1)
Introduction to Evaluating Information

This week we will briefly discuss the purpose of the course, the syllabus, and the expectations for the class. In the GSI-led workshops, we will be providing a basic introduction to SPSS, a relatively simple program that is used to analyze data.

January 2nd – NO CLASS

January 4th – Introduction to the Course / Syllabus Review

January 5th/6th – Workshop: Introducing SPSS

Part 1 – Thinking About Social Science and Measurement

Week of January 9, 2012 (Week 2)
Science, Social Science, and Defining Terms

What is science? How is social science science? And how do we know things? These core questions are the focus for Monday's lecture. We consider scientific theories, hypotheses, and the value of the scientific method. On Wednesday, we think about data as an important waypoint in moving from theory to evidence. What is data? How should we understand it? And how does data relate to what we want to study? These questions drive our consideration.

January 9th – Putting the Science in Social Science

Babbie – pp. 10-14

January 11th – Data = Concepts + Variables

Babbie – pp. 14-20; 128-134

January 15th/16th – Workshop: Data in the News

Week of January 16, 2012 (Week 3)
Getting From Idea to Concept

If we want to test a scientific theory, we first have to figure out what that theory implies. This week, we focus on conceptualization, where an idea or theory is translated into clear enough language that we can directly test it. As a critical first step in research, conceptualization allows us to both recognize and clearly communicate assumptions we are making when stating our ideas (scientific or otherwise) and helps us think about how they can be better explored. This theme dominates both Wednesday's lecture and the week's workshop.

January 16th – NO CLASS
[Happy Martin Luther King Day. Find a service project at http://mlkday.gov/]

January 18th – Turning a Question into a Scientific Question: Conceptualization

Babbie – pp. 134-146

January 19th/20th – Workshop: Conceptualization [First Homework Due]

Week of January 23, 2012 (Week 4)
From Concept to Question

Knowing *what* we want to study is only half of the battle. We also need to figure out *how* we are going to study it. In social sciences, one of the primary ways of gathering data is by asking questions of people. To do this, we need to take two steps. First, have to figure out the discrete parts of our questions that will help us to best reach an answer. Second we need to figure out how to directly ask about those key ideas. On Monday, we discuss operationalization, the process of turning a concept into a variable that can be measured. On Wednesday, we examine the specific ways that questions can be asked. In the process, we reveal how misleading questions can lead to confusing answers.

January 23rd – A Strategy for Measuring Success: Operationalization

Babbie – pp. 146-156

January 25th – Not All Questions Are Good Questions: Question Wording

Babbie – pp. 271-278

Pasek, J., and Krosnick, J. A. (2010) Optimizing Survey Questionnaire Design in Political Science: Insights from Psychology. In Leighly, J. (Ed.) *Oxford Handbook of American Elections and Political Behavior.* (pp. 27-50). Oxford: Oxford University Press. [On CTools]

January 26th/27th – Workshop: Question Wording

Week of January 30, 2012 (Week 5)
Finding a Better Ruler

Measurement, especially in the social sciences, is frequently imperfect. This is true in part because of challenges in the question-and-answer process, but also because the questions we ask rarely map perfectly onto the concepts we wish to study. When we want to understand how well our measures relate to the concepts of interest, we focus on two overarching dimensions of survey measurement: reliability and validity. On Monday we explore these tools, what they tell us about our data, and work toward understanding them. On Wednesday, we will talk about ways of getting around some problems of imperfect measurement by measuring the same things in multiple different ways.

January 30th – Good Enough for Government Work: Measurement Quality

Babbie – pp. 156-163

February 1st – With Your Powers Combined: Composite Measures, Indexes, and Typologies

Babbie – pp. 168-189; 196-198

February 2nd/3rd – Workshop: Reliability [Second Homework Due]

Week of February 6, 2012 (Week 6)
Some Notes on the Intersection of Measurement and Design

Not all scientists answer questions with exactly the same tools. Sometimes, a particular set of tools is poorly suited for certain problems. Monday's lecture focuses on some of the overarching methodological choices that scientists make. Specifically, we will explore the strategic choices scientists have in learning about the world. On Wednesday, we discuss the ethical limits of what scientists can do. Social science studies often examine controversial or psychologically difficult areas of inquiry. Determining how to learn about these sometimes-problematic human responses without causing psychological harm is critically important and can sometimes be quite challenging.

February 6th – Diverging Roads: Scientific Choices and Processes
[PAPER ONE DUE ON FEBRUARY 6th, 10:10AM]

Babbie – pp. 20-27; 44-61; 116-122

February 8th – You Can Study Evil, But Don't Be Evil: Ethics

Babbie – pp. 64-89

February 9th/10th – Workshop: Validity [Third Homework Due]

Part 2 – Designing and Executing a Study

Week of February 13, 2012 (Week 7)
How Do Variables Relate?

As we discussed in week 2, most interesting questions involve thinking about how multiple variables relate to one another. This week, we delve further into considering the nature of those relationships. On Monday, we discuss different ways that variables can relate to one another, focusing specifically on notions of mediation, moderation, and spuriousness. On Wednesday, we open up the challenge of using time to identify causes and effects.

February 13th – It Takes Two (or More): Relations Between Concepts and Variables

Babbie – pp. 101-109
[Much of today will be lecture only]

February 15th – It's About Time: Causes and Effects

Babbie – pp. 95-101; 109-122

February 16th/17th – Workshop: Review

Week of February 20, 2012 (Week 8)
Thinking About Results

In addition to the first exam this week, we will discuss how science is communicated and the important role that has. We will be working through the ways scientists communicate their findings and the challenge of translating scientific language and concepts into news stories. In Wednesday's class we will also go over tricks for how to read scientific articles quickly and effectively.

February 20th – **EXAM ONE**
[Note: some sections will not meet in regular lecture room]

February 22nd - Blaming the Media: When and Why Science Gets Distorted

Babbie – pp. 476-479; 483-491

February 23rd/24th – Workshop: Data Entry [Fourth Homework Due]

[HAVE A GREAT SPRING BREAK!]

Week of March 5, 2012 (Week 9)
Sampling

Figuring out whom to study is one of the central challenges in the study of human behavior. This week we are going to discuss different ways of finding participants for study, whether the study is a survey or experiment. On Monday, we will be discussing the difference between the conclusions you can make from different types of samples. On Wednesday, we will go over the different types of errors that are possible when constructing samples and what those errors mean for the data you collect.

March 5th – That Was Random: Types of Samples

Babbie – pp. 201-228

March 7th – What's in a Sample? Sampling and Inference

Babbie – pp. 228-241

March 8th/9th – Workshop: Sampling

Week of March 12, 2012 (Week 10)
Surveys and Experiments

This week we will be exploring the two primary methods for collecting data in the social sciences: surveys and experiments. On Monday we discuss different methods of collecting survey data and how the quality of survey results can be assessed. Wednesday's class explores the true experimental design, which is one of the best ways to identify causal relationships. We discuss the importance of random assignment and show how different research methods highlight different types of validity.

March 12th – How To Be A Pollster: Types of Survey Research

Babbie – pp. 269-271; 286-309

March 14th – Psychology's Holy Grail: The Experimental Method

Babbie – pp. 246-254

March 15th/16th – Workshop: Cleaning and Recoding Data
[Fifth Homework Due]

Week of March 19, 2012 (Week 11)
Experiments and Observations

Our exploration of methods for collecting social science data continues this week as we delve further into the world of experimentation and also take a look at observational data. Specifically, we focus on some of the practical limits on experimental designs, looking closely at the assumptions of experimentation and conditions under which experiments can mislead on Monday. For Wednesday, we move to ways of gathering data that already exist in the world. We explore tools like content analysis and web scraping as methods for producing data that can be analyzed.

March 19th – A Step Too Far? The Values and Limits of Experimentation

Babbie – pp. 254-260; 264-265

March 21st – Quantifying the World: Content Analysis and Other Observational Data

Babbie – pp. 355-368

March 22nd/23rd – Workshop: Correlations

Week of March 26, 2012 (Week 12)
Some More Complex Designs

Research design is not always as simple as a straightforward experiment, survey, or set of observations. Sometimes we need to use multiple methods to learn something about the world. Sometimes the questions we are asking cannot even be directly answered through experimentation. This week explores alternative strategies for tackling these problems with mixed methods and qualitative research. On Monday we discuss some of the measurement strategies that involve multiple or modified quantitative methods. On Wednesday we delve deeply into the way qualitative data can be collected and used to generate knowledge.

March 26th – When Measurement Gets Tricky: Mixed-Methods
[PAPER TWO DUE ON MARCH 26th, 10:10AM]

Babbie – pp. 260-264; 388-401

March 28th – When the Goal is Description: Qualitative Research

Babbie – pp. 314-336

March 29th/30th – Workshop: Validity, Reliability, and Indexes

Part 3 – Learning From The Data

Week of April 2, 2012 (Week 13)
Univariate Data Analysis

Following this week's exam, we begin to discuss how to analyze and understand data. Wednesday's class takes on the challenge of describing variables from the data that were collected. We discuss the notion of distributions, how the level of measurement changes the way we discuss variables, and how we can present meaningful results from the data we have collected.

April 2nd - **EXAM TWO**
[Note: some sections will not meet in regular lecture room]

April 4th – Understanding Distributions: Describing Quantitative Data

Babbie – pp. 447-463

April 5th/6th – Workshop: Crosstabs

Week of April 9, 2012 (Week 14)
Comparisons Across Variables

Hypotheses require that we know more than just how variables are distributed; we also need to know how they compare to one another. This week we focus on the relations between variables, the ways in which they map onto our hypotheses, and how to tell if a result is "statistically significant." Monday's lecture discusses things like correlations and crosstabs. Wednesday focuses on how to more closely map findings onto hypotheses about how concepts relate.

April 9th – Asking Questions with Data: Relations Between Variables

Babbie – pp. 463-467

April 11th – Telling the Full Story: Multivariate Data Analysis

Babbie – pp. 467-471

April 12th/13th – Workshop: Open Lab, Optional Attendance

Week of April 16, 2012 (Week 15)
A Cautionary Note

For our last week, we will discuss how statistics can be used for evil. We will talk about ways that results can prove misleading if poorly presented. This class will

provide the tools to identify problematic conclusions and dangerous assumptions that often appear when statistics are presented to the public.

April 16th – Lies, Damn Lies, and Statistics
[PAPER THREE DUE ON APRIL 16th, 10:10AM]

Gould, S. J. (1994, November 28) Curveball. *The New Yorker*. Available from: http://www.dartmouth.edu/~chance/course/topics/curveball.html

April 18th – [NO CLASS]

April 19th/20th – Workshop: [NO WORKSHOP]

Final Exam is on Monday, April 23rd, 2012 from 4:00PM to 6:00PM
[Note: some sections will not meet in regular lecture room]