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 first research methods course in the Communication Studies curriculum, this course focuses on the core skills necessary to think through and critically evaluate scientific and analytic arguments and evidence. It offers tools for understanding results from the scientific study of human behavior as well as the norms of humanistic media analysis. 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 and to differentiate between casual opinion and carefully argued, analytical criticism.

Over two sequential semesters, Evaluating Information and Analyzing Media explores first the basic fundamentals of the development of knowledge, theories and evidence and the collection of data in both social science and analytic media research. The first half of the course culminates in units exploring the tools offered by both traditions for studying media messages and texts. The second half of the course then begins with explanations of how to conceptualize research that studies people’s use of media through methods including experiments, surveys, naturalistic observation, and interviews.

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.

**Course Learning Goals**

By the end of 121 and 122, you will have a much deeper understanding of how knowledge is generated in academic settings. This knowledge should enable you to critically read and evaluate research in the social sciences and research using the analytic tradition. You should be able to pick up and read the vast majority of research articles in the social sciences and humanities, understanding what the key concepts are, how they were assessed in the research, and the basic analytical tools that were used. You should also be able to render an independent judgment on the quality of academic work you encounter. These skills are seminal both in the rest of your academic career and beyond, as journalists
and other popular press writers often fail to convey relevant information about the scope and implications of research.

More specifically, by the end of 121, you should be able to:

- Understand types of evidence and the sorts of knowledge they engender.
- Identify differences between the social scientific and analytic traditions.
- Know the steps of the scientific method and how they are applied in social scientific research.
- Recognize critical theories and understand their purpose in scholarship.
- Understand the process of meaning making in media texts presumed by the analytic tradition.
- Use the tools of critical analysis to identify how dominant ideologies are incorporated into media.
- Recognize how theories relate to hypotheses in the scientific tradition.
- Understand conceptualization and operationalization of key concepts in hypotheses.
- Know the types of sampling and what they imply about the generalizability of research results.
- Assess the reliability and validity of an operationalization.
- Design a codebook for a content analysis.

**Course Materials**

**Required Texts:**

Additional readings will be posted on the course CTools account.

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Participation and section grades are composed of the following parts:
- Lecture Participation (Clicker) 5%
- Section Participation 5%
- Section Quizzes and other section assignments 10%

**Class and Workshop Meetings**
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, Fridays, and Mondays (at varying times depending on the section) in 1110 North Quad (section 12 and 13 meet in 1245 North Quad). Workshops are led by Graduate Student Instructors (GSIs) and meet every week of the semester.

**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).

This class will use Piazza as a way to facilitate student questions during lectures. Please create an account in the first week of class. Piazza is also valuable for answering troublesome or confusing points outside of class. This forum will predominantly be “crowdsourced” information source, but the teaching team will monitor it and use this communication channel as a way to gauge topics needing greater review.

**Assignment 1**
This first assignment requires you to read a piece of research from both the social science and analytic tradition and to answer a series of questions.

**Papers**
Course papers require you to analyze and write clearly about analyses you have conducted. You will be graded on your writing, your use of the specified analytic technique, 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/](http://owl.english.purdue.edu/owl/section/2/10/)).

The Critical Analysis paper requires that you closely read an assigned piece of media. The Content Analysis paper requires you to complete a content analysis and compute reliability data on your results. Both papers will be approximately 5 pages in length. 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.

Exams
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 or makeup exams in this course.

Because these learning goals are entirely based on skills and are focused on your ability to digest research, testing in the class is focused on how well you can apply the concepts we are learning. Most test questions are short answer questions that ask you to analyze or identify the central concepts in research reports. Be aware that memorizing the definitions of key terms will NOT be sufficient preparation for these examinations.

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.

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 prior to class time if you want to have an illness-related absence excused without a note from a doctor.
If you are sick for more than one class day, 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 Winter 2014, 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.

**Grade Questions and Disputes**

When any major assignment (paper or exam) is returned to you, you must wait at least 24 hours before contacting your GSI with any questions you have. This ensures that you have time to read over the feedback given you and understand the issues your assignment faced. We have found that students who take the time to wait approach their GSIs with more useful questions and receive more helpful answers. We also recommend you bring questions to your GSI first, as they are more directly involved in the grading process and are permitted to resolve any grading errors. If your GSI is not able to answer your questions or if you still believe your grade deserves to be changed, you should then contact the professors.

Assignments can only proceed to re-grading after you have spoken to your GSI and tried to understand the grade you received and the reasons behind it. If that proves insufficient, you should write an email, including your GSI and both course professors, requesting an assignment re-grade. Re-grade requests must be accompanied by a short paragraph – approximately ½ to 1 page in length – detailing the specific parts of the assignment that you believe were unfairly marked. Be sure that these points are substantive and reference the original assignment and rubric, making clear why you believe you completed the requested work in a way that was not reflected in your grade. Also include an unmarked copy of the assignment you originally turned in. (For an exam, please ask your GSI photocopy your exam for this process). Re-grades will be completed independently by a different individual on the teaching team. *The re-graded version of any assignment will replace the original grade regardless of whether the new grade is higher or lower than the original.*

**Academic Honesty**

A good student-teacher relationship operates on the basis of trust. From that basis, your professors 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 encounters 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, we will immediately refer the incident to Esrold Nurse, the Assistant Dean for Undergraduate Education. Because plagiarism and academic dishonesty hurt everyone in the class, we have no compunction about failing students who are found to have been dishonest. Put simply, this class has a zero-tolerance policy. There will be no second chances for cheating.
Course Outline:

PART 1 – Knowledge, Theories, and Evidence

Week of January 6th, 2013 (Week 1)
Introduction to Evaluating Information and Analyzing Media
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 previewing our main topic for next Monday’s lecture, and explore some of the ways in which we know things (or think we know things).

1-January 8 – Course Introduction

January 9th/10th/13th – LAB 1: Workshop: Introduction to Workshops and the Lab

Week of January 13, 2014 (Week 2)
Ways of Knowing and Intro to Social Science
How do we know things? Can we be sure something is true? What role does the media play in our knowledge of the world? These core questions are the focus on Monday’s lecture. On Wednesday, we begin our exploration of social science, one of the two main methodologies through which we can explore media.

2-January 13th – Ways of Knowing (SS+A)

3-January 15th – Putting the Science in Social Science: Why Social Studies is More Than History (SS)
Reading: Wrench et al. Ch. 2 “Empirical Research”

January 16th/17th – LAB 2: Workshop: Scientific Evidence
[Lab for Jan 20th Section Will Be Take-Home]

Week of January 20th, 2014 (Week 3)
Intro to the Analytic Tradition
This week’s lecture parallels the introduction to social science methods introducing the general process of research in the analytic tradition and its major components by talking through an example of analytic research.

January 20th – NO CLASS: Martin Luther King Day

4-January 22nd – Learning in the Analytic Tradition

PART 2 – Asking and Answering Questions in the Analytic Tradition

Week of January 27th, 2014 (Week 4)

Foundations of the Analytic Tradition
The analytic tradition focuses on deep, critical explorations of media. This week we begin to explore the foundation of this approach such as the assumption of a socially constructed world and how analytic researchers use critical theory.

5-January 27th – Theories, Methods and “Data” in the Analytic Tradition

6-January 29th – The Analytic Tradition: Assumptions and Purpose (A)

*Assignment 1 Due
January 30th/31st/February 3rd – LAB 4: Using Critical Theories

Week of February 3rd, 2014 (Week 5)

The Analytical Approach to Texts
This week we introduce semiotics, or the study of signs and their meanings, and discuss their importance to the deep critical exploration of a text. We will also connect critical theories to this process and explore how these affect interpretations of signs and meanings, talking through concepts of ideology and power. On Wednesday, we explore the tools of semiotics more deeply, one of our tools for deconstructing mediated images.

7-February 3rd – Textual Analysis: Connecting Media, Critical Theory & Ideology
Reading: Stuart Hall: Representation and the Media Transcript pp. 5-8; 14-22.

8-February 5th – Textual Analysis: Semiotics and Critical Tools
“Reading”—Web activity/Reading: http://www.uvm.edu/~tstreete/semiotics_and_ads/; http://www.uvm.edu/~tstreete/semiotics_and_ads/ideology_intro.html

February 6th/7th/10th – LAB 5: Workshop: Meaning is Constitutive and Critical Theory in Practice

Week of February 10th, 2014 (Week 6)

A Detailed Look at Analytical Tools
We continue acquiring tools for analytic research, adding formal, narrative, and discourse analysis. Formal analysis looks at the influence of power on stories and representations through various critical lenses, while narrative analysis examines a text’s entire story to get at its broader meaning, and discourse analysis deconstructs word selection.

9-February 10th – Other Types of Analysis: Formal and Narrative Analysis

10-February 12th – Other Types of Analysis: Discourse Analysis
Reading: TBA
February 13th/14th/17th – LAB 6: Workshop: Doing Critical Analysis

Week of February 17th, 2014 (Week 7)

Looking at Texts from Different Perspectives
This week sums up the previous lectures on analytic methods by applying them to a text in a deep critical analysis during Monday’s lecture.

11-February 17th – Critical Analysis

12-February 19th – MIDTERM EXAM (EVENING) Time and location TBA

February 20th/21st/24th – LAB 7: Workshop: Data—Working with SPSS

PART 3 – Asking and Answering Questions in the Social Science Tradition

Week of February 24th, 2014 (Week 8)

Ideas to Concepts to Questions
This week we return to the social science tradition. If we want to test a scientific theory, we first have to figure out what that theory implies and how to address it specifically in our research. To do this, we discuss the importance of measurement in the social scientific tradition and focus on conceptualization, where an idea or theory is translated into clear enough language that we can directly test it.

13-February 24th – Turning Social and Media Processes into Quantitative Data
Reading: Wrench et al. Ch. 6 “Variables”

14-February 26th – Conceptualization

*Critical Analysis Paper Due

February 27th/28th/March 10th – LAB 8: Workshop: Conceptualization

Week of March 3 SPRING BREAK

Week of March 10th, 2014 (Week 9)

Seeking Good Measures
This week, we turn to the second, larger, step of producing measures for social scientific concepts: operationalization. We become familiar with the process of operationalization, and explore how operationalizations of different types can help us transition from hypotheses to data we can test. As we will see, not all operationalizations are equally good at addressing the variables we really want to measure.

15-March 10th – Operationalization
Reading: Wrench et al. Ch. 8 “Measurement” pp. 189-193; 197-203; 206-208

16-March 12th – From Hypotheses to Measures
Reading: Wrench et al. Ch. 8 “Measurement” pp. 193-197; 203-210
March 13th/14th/17th – LAB 9 Workshop: Operationalization and Measures

Week of March 17th, 2014 (Week 10)
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 our operationalizations 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. This week, we explore these tools and what they tell us about our data. We also learn about a strategy for addressing them – combining measures.

17-March 17th – Measurement Quality – Reliability and Validity
Reading: Wrench et al. Ch. 9 “Reliability and Validity” pp. 213-219; 228-241

18-March 19th – Combining Measures – Indexes and Typologies
**Note: Babbie defines “scales” much more specifically than the majority of researchers. Should you run into a section where he is discussing them, ignore it**

March 20th/21st/24th – LAB 10: Workshop: Reliability

Week of March 24th, 2014 (Week 11)
Overcoming Imperfections Through Combined Measures and Quality Samples
We start this week by working through one article that uses many of the social scientific concepts we have learned so far. Looking at suspects in television news, Gilliam and Iyengar use a variety of different operationalization strategies for understanding how race and crime interrelate. Then on Wednesday, we introduce a key component in the design of any quantitative study—choosing a sample from which to collect data. Samples allow us to collect the data we need without having to talk to every single person or look at every single media source, saving both money and time while collecting data of equal quality.

19-March 24th – Identifying Social Science Concepts in Research Articles

20-March 26th – The Notion of Sampling
Reading: Wrench et al. Ch. 13 “Sampling Methods and Replication” (pp. 313-316, skim 316-327)

March 27th/28th/31st – LAB 11: Workshop: Reliability, Validity, and Indexes

Week of March 31st, 2014 (Week 12)
Types of Samples
Figuring out what to study is one of the central challenges researchers encounter. This week we are going to discuss different ways of finding cases to study and explore the pros and cons of each approach. On Monday, we will be discussing probability samples, or samples based on randomness. On Wednesday, we will go over the non-probability
samples, which are not random or generalizable, and discuss the kinds of conclusions you can draw from each type of sample and the errors you might expect to run into.

21-March 31st – Probability Samples
Reading: Wrench et al. Ch. 13 “Sampling Methods and Replication” (pp. 316-320)

22-April 2nd – Non-Probability Samples
Reading: Wrench et al. Ch. 13 “Sampling Methods and Replication” (pp. 320-327)

April 3rd/4th/7th – LAB 12: Workshop: Sampling

Week of April 7th, 2014 (Week 13)

Content Analysis
Following up on last Wednesday’s lecture, this week explores the specifics of content analysis. Before content analysis can occur, research teams need to develop a detailed schematic for their coders to follow when analyzing the media itself. This coding scheme consists of a codebook and a coding form, both of which will be explained and investigated in detail this week.

23-April 7th – Content Analysis/ Putting Together a Coding Scheme
Wrench et al. Ch, 11 “Content Analysis” (especially pp. 279-285)

24-April 9th – Assessing Reliability and Validity of Coded Data
Wrench et al. Ch, 11 “Content Analysis (pp. 282-284, 286), Review Ch. 9

April 10th/11th/14th – LAB 13: Content Analysis/SPSS

Week of April 14th, 2014 (Week 14)

Assessing and Analyzing Collected Data
As with all forms of quantitative research, content analyses likely contain some imperfections; therefore, Monday’s lectures addresses the specific ways to measure and address these imperfections in order to ensure data quality. Wednesday then discusses how this collected, evaluated data can actually be explored and described by the researcher, as a necessary step towards drawing conclusions.”

25-April 14th – Describing Quantitative Data
Wrench et al. Ch, 7 “Descriptive Statistics” (pp. 159-166; 173-174; 177-181)

26-April 16th – A Return to “Knowledge”

April 17th/18th/21st – LAB 14: Workshop: Open Lab for Content Analysis

Week of April 21, 2014 (Week 15)

Pulling it All Together
In this final week of class, we explore the limitations of our different analyses and discuss situations where these methods may not work effectively. We also set the stage for COMM 122, the follow-up course in which you move from the study of texts to the study of people and media, an essential component in Communications research.
27-April 21st – Applying What We’ve Learned to Research: A Comprehensive Review

*Content Analysis Due*

April 29 10:30-12:30 **Final Exam**
[Note: some sections will not meet in regular lecture room]