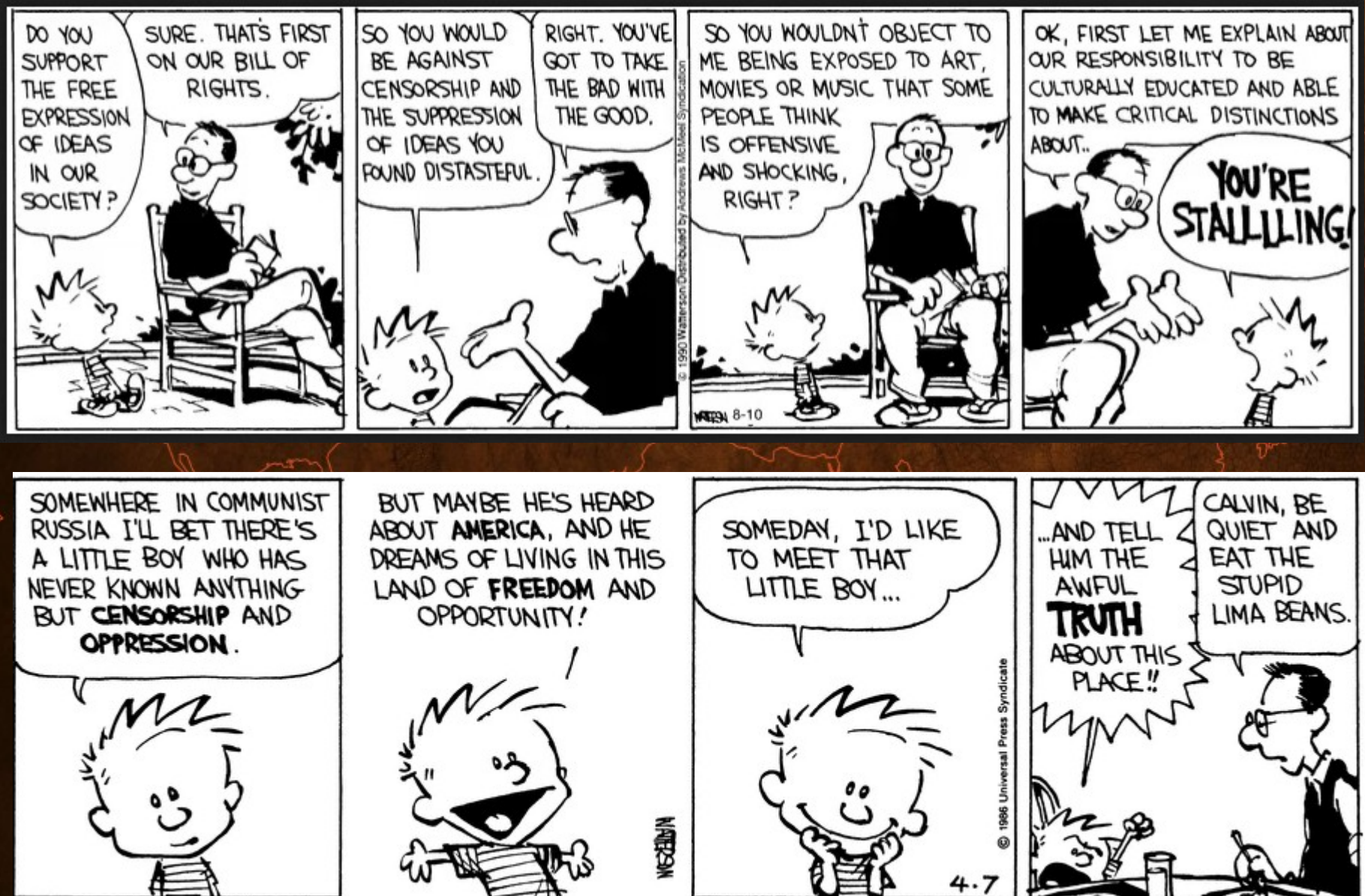




Lecture 5.2 – Networked Communications Part 2



Announcements

- Syllabus 1.4 posted
- Office Hours – Mon/Wed 13:00 – 14:00 via Zoom
- Participation Point = Anonymous Course Survey by Saturday @ midnight
- LA-3: Graded by tonight, quiz retakes open
- LA-4: due October 1 at midnight
 - Quiz: 20 multiple choice
 - ~~Short Answer~~
 - Video Post
 - Personal experience with IT
 - Fun experiment (not graded)

Video Post Experiment

- RAM = FlipGrid
- Data structure = Stack
- Code (below)
- CPU = 69-core bioware

```
while isLocked():  
    sleep(5)  
lock()  
  
(idx, hrs) = view()  
  
idx += 1  
hrs += myHrs  
post(idx, hrs)
```

```
def isLocked:  
    return !hasPostWithoutComment()  
  
def lock():  
    postComment()  
  
def view():  
    idx = 0, hrs = 0  
    watchVideo(idx, hrs)  
    return (idx, hrs)
```


Announcements

- LA-4: Challenges
 - A: eMail harvester
 - B: online/onscreen usage log

E-Mail Server Architecture

- AWS VM running Ubuntu 18.04
 - EC2 t3.small
 - EBS storage
- Docker-compose container mgmt
- Main container
 - Python Twisted : <https://pypi.org/project/Twisted/>
 - Full SMTP, IMAP, POP3 stack
 - Custom interface to MongoDB
 - AWS permission required
 - Certificates managed by CertBot/Let's Encrypt

Last Time

- Internet and cellular networks have revolutionized communication
- More people than ever can interact to socialize, conduct business, organize political movements, and more
- New opportunities for exploitation as well
- Web is enormous, reflecting best and worst of humanity

This Time

- Censorship
 - Direct
 - Self
 - Government
- Freedom of Speech/Expression
 - 1st Amendment to US Constitution
 - Restrictions
 - Broadcast Media
 - Web Filtering
- Network Threats
 - Identity Theft
 - Instant Messaging Predators
 - False Information
 - Cyberbullying
 - Revenge Porn
- Internet Addictions

Censorship

- Definition: Attempt to suppress or regulate public access to material considered harmful or offensive
- Traditionally exercised by governments and religious institutions
- Printing press a game changer because it broke monopoly on distributing information held by governments and churches

Direct Censorship

- Government monopolization: government controls all media outlets (e.g., former Soviet Union)
- Prepublication review: everything reviewed and approved before being disseminated
- Licensing and registration: used to control media with limited bandwidth, such as radio and television

Self-Censorship

- Most common form of censorship
- Group decides for itself not to publish
- Reasons
 - Avoid subsequent persecution
 - Maintain good relations with government officials (sources of information)
- Ratings systems created to advise potential audience
 - Movies, TVs, CDs, video games
 - Not the Web

Challenges Posed by the Internet

- Many-to-many communications
- Dynamic connections
- Huge number of Web sites
- Global: extends beyond national borders, laws
- Hard to distinguish between minors and adults

Government Filtering and Surveillance

- North Korea: Internet virtually inaccessible
- Saudi Arabia: All Internet traffic flows through two government-controlled gateways, which can block sites
- China
 - Blocks Internet access at times of social unrest
 - Has one of world's most sophisticated filtering systems
- Germany: Forbids access to neo-Nazi sites
- United States: Repeated efforts to limit access of minors to pornography

Ethical Perspectives

- Kant opposed censorship
 - Enlightenment thinker
 - “Have courage to use your own reason”
- Mill opposed censorship
 - No one is infallible
 - Any opinion may contain a kernel of truth
- Truth revealed in clash of ideas
- Ideas resulting from free and open discourse are more likely to influence “character and conduct”

Mill's Principle of Harm

- “The only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant.”

John Stuart Mill

Freedom of Expression

- Court of Star Chamber (England)
 - Administered broad anti-sedition law called De Scandalis Magnatum (1275)
 - Reported directly to King
 - Did not have to obey traditional rules of evidence
 - Convictions arose from verbal insults or private writings
- 18th century
 - No prior restraints on publication
 - People could be punished for sedition or libel
- American states adopted bills of rights including freedom of expression
- Freedom of expression in 1st amendment to U.S. Constitution

1st Amendment

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof;

or abridging the freedom of speech, or of the press;

or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

Freedom of Expression Not an Absolute Right

- 1st Amendment covers political and nonpolitical speech
- Right to freedom of expression must be balanced against the public good
- Various restrictions on freedom of expression exist
 - Justified when results in greater public good
 - Example: forbidding cigarette advertising on television and radio

F C C v. Pacifica Foundation et al.

- George Carlin records “Filthy Words”
- W B A I in New York airs “Filthy Words” (1973)
- F C C issues declaratory order to Pacifica
- Pacifica sues the F C C
- U.S. Supreme Court ruled F C C did not violate 1st Amendment (5-4 decision)
 - Broadcast media “uniquely pervasive”
 - Broadcasting uniquely accessible to children

Case Study: Kate's Blog

- Kate: Maintains a popular “life on campus” blog
- Jerry: Another student; active in Whig Party
- At private birthday party, someone gives Jerry a Tory Party T-shirt as a gag, and Jerry puts it on
- Kate uses cell phone to take picture of Jerry when he isn't looking, posts it on her blog
- Story read by many people on and off campus
- Jerry confronts Kate and demands she remove photo; she complies, and they remain friends
- Kate's blog and Jerry both become more popular

Kantian Analysis

- Kate uploaded Jerry's photo to her blog without asking his permission
- She treated him as a means to her end of increasing the readership of her Web site
- Her action was wrong

Social Contract Theory Analysis

- Birthday party held in apartment of one of Jerry's friends
- Jerry had a reasonable expectation of privacy
- Kate violated Jerry's right to privacy
- Kate's action was wrong

Act Utilitarian Analysis

- Benefits
 - Popularity of Kate's blog increased (definitely)
 - Jerry become more popular on campus (definitely)
- Harms
 - Jerry's anger at Kate (only temporary)
 - Photo could discredit Jerry at some point in future (unlikely)
- Benefits greater than harms, so Kate did a good thing

Rule Utilitarian Analysis

- What if everyone were constantly taking photos of people they encountered and posting them?
- Positive consequences
 - People would have more opportunities to keep up with what their friends are doing
 - People might be more reluctant to engage in illegal activities
- Negative consequences
 - People would become more self-conscious
 - Some relationships would be harmed
- Negative consequences more weighty than positive consequences, so Kate's action was bad

Virtue Ethics Analysis

- True friends trust each other and seek each other's good
- Reciprocity and equality are fundamental elements of friendship
- Lack of reciprocity: Kate took something from Jerry without giving him anything in return
- Lack of equality: She put her own interest above that of Jerry
- Kate's actions did not seem to be characteristic of a good friend

Summary

- Four out of five analyses: Wrong for Kate to post the photo without asking Jerry's permission
- Kate figured it would be better to beg for forgiveness than ask for permission, but she cut Jerry out of a decision that affected both of them, and that's no way to treat a friend
- Kate should have tried to get Jerry's consent

Web Filters

- Web filter: Software that prevents display of certain Web pages
 - May be installed on an individual PC
 - ISP may provide service for customers
- Methodologies
 - Maintain “black list” of objectionable sites
 - Examine content for objectionable words/phrases

Child Internet Protection Act

- Libraries receiving federal networking funds must filter pages containing obscenity or child pornography
- U.S. Supreme Court ruled CIPA did not violate 1st Amendment guarantees
 - (6-3 decision in June 2003)

Ethical Analysis of CIPA

- Kantian evaluation: CIPA is wrong
- Act utilitarian evaluation: depends on how benefits and harms are weighed
- Social contract theory: freedom of conscience should be given precedence

Identity Theft

- Definition: When a person misuses another person's identity
- Leading form of identity theft is fraudulent use of an existing credit card or bank account
- In 2017 about 7% of adults in U.S. reported being victims
- Consumer's liability for credit card losses limited to \$50
- Most banks and credit card companies offer zero-liability fraud protection

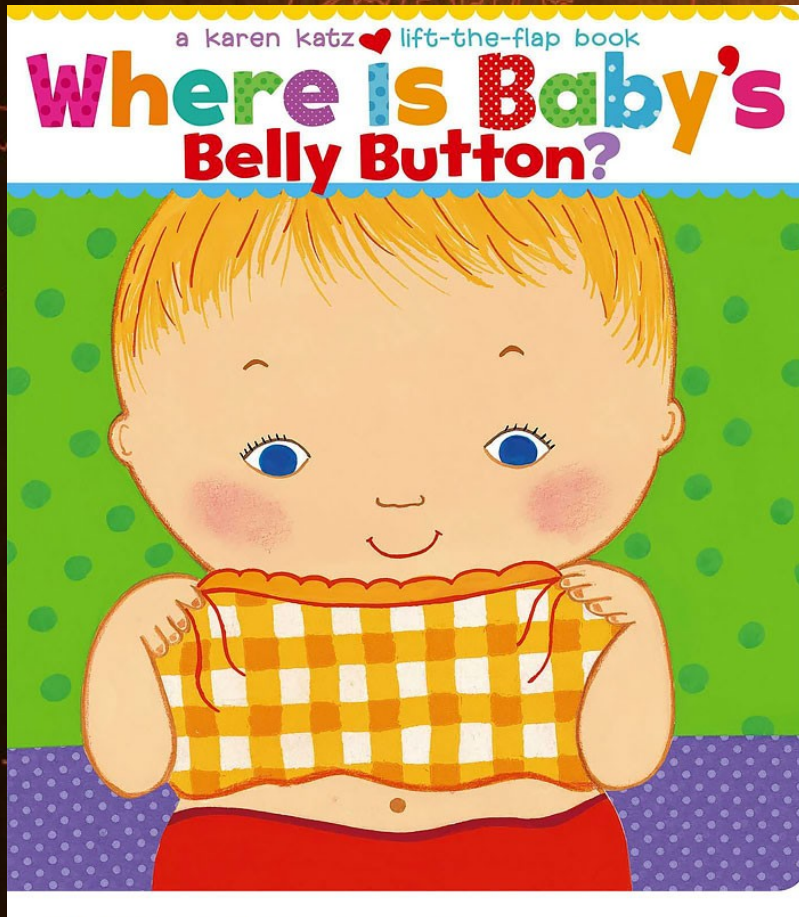
Identity Theft

- Point-of-sale fraud has declined rapidly with adoption of EMV (embedded chip) credit cards and terminals
- Fraud increasingly happening online
- Nearly half of cases from lost credit card, checkbook, etc.
- How identity thieves gain access
 - Dumpster diving
 - Shoulder surfing
 - Phishing
- College students 5 times more likely to be victims
 - Live in close quarters with others
 - Some do not take care to secure sensitive information

Online Reviews

- Survey of North Americans in 2014
- 88% used online reviews in past year
- 39% read reviews regularly
- Restaurants, hotels, doctors and dentists, beauty salons
- Significant percentage of reviews are fraudulent
- Yelp spends millions of dollars annually to identify and remove fake reviews

Online Reviews



☆☆☆☆☆ **DO NOT buy this book, you can SEE the ending right on the cover!**, April 19, 2012

By [PacMan](#)

This review is from: Where Is Baby's Belly Button? A Lift-the-Flap Book (Board book)

This book is completely misleading. The entire plot revolves around finding Baby's belly button; the title makes this much clear from the beginning. However, there is no mystery. There is no twist. Baby's belly button is right where it's suppose to be, on Baby's stomach. Right where it clearly SHOWS you it is on the COVER OF THE BOOK.

This plot is a complete mess as a result of it's reliance on the mystery of where the belly button is; everything falls apart the second you realize that the belly button was in plain sight all along. There is no conflict, there is no character development, and there is scarcely any plot. Whoever wrote this book must have a serious error in judgement, because you would have to be an infant to not immediately understand where Baby's belly button is. This is one of the worst pieces of literature I have ever read.

Online Reviews



Online Reviews



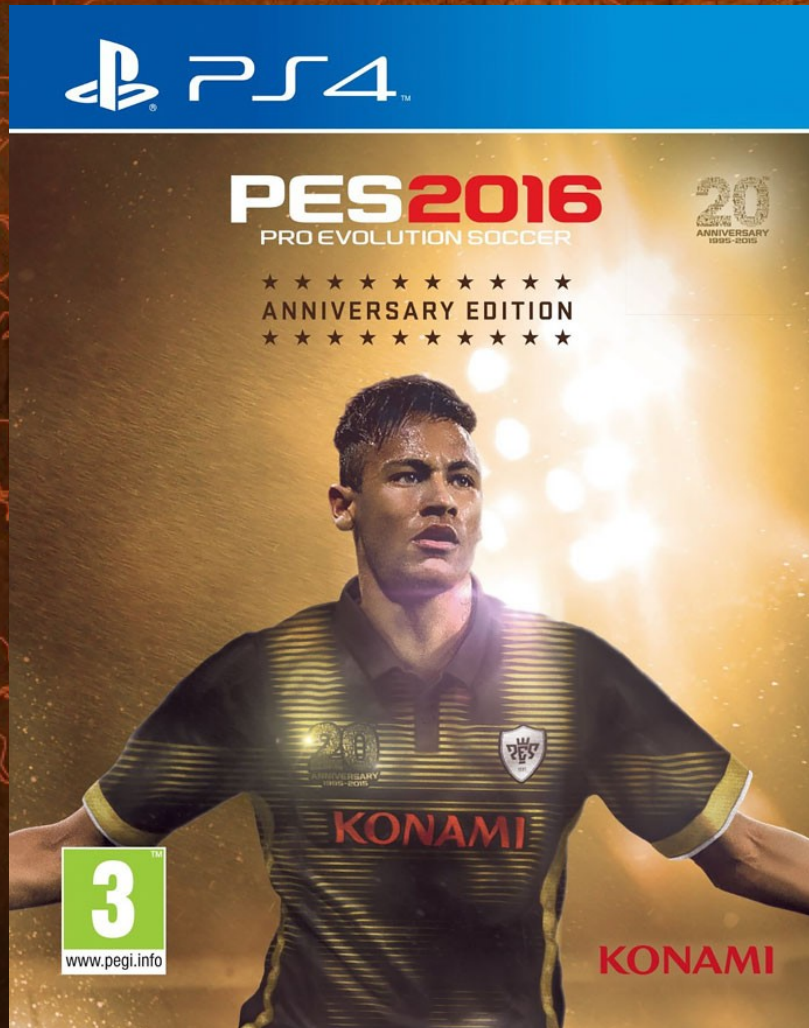
★★★★☆ **Great Product, Poor Packaging**, May 14, 2009

By [Patrick J. McGovern](#)

This review is from: Uranium Ore

I purchased this product 4.47 Billion Years ago and when I opened it today, it was half empty.

Online Reviews



★☆☆☆☆ **It's not though,** 30 Nov. 2015

By [Amazon Customer](#)

This review is from: Pro Evolution Soccer 2016 20th Anniversary Edition (PS4) (Video Game)

Would of been five stars but it's not Fifa

Instant Messaging

- Instant messaging: software supporting real-time “chat” over the Internet
- Popular apps: Kik Messenger, Whisper
- Child predators use apps to find victims
- Police run sting operations
- Sometimes result in dozens of arrests
- Allegation: Extreme methods to maintain arrest rates

Ethical Analysis

- Goal of police is laudable
 - Identify and arrest pedophiles
 - Protect children
- Means are controversial
 - Police relying on deception: posing as children
 - Revealing conversations thought to be private
- Are they encouraging criminal behavior?
- More likely to be viewed as morally acceptable by a consequentialist, who focuses on results more than methods

False Information

- Quality of Web-based information varies widely
- Other media also have information of varying quality
 - The New York Times v. The National Enquirer
 - 60 Minutes v. Conspiracy Theory
- Google attempts to reward quality
 - Ranking uses “voting” algorithm
 - If many links point to a page, Google search engine ranks that page higher

Cyberbullying

- Definition: Use of the Internet or phone system to inflict psychological harm
- In a 2009 survey, 10% admitted to cyberbullying, and 19% said they had been cyberbullied
- Case of Ghyslain Raza
- Case of Megan Meier
- Megan Meier Cyberbullying Prevention Act

Revenge Porn

- Special case of cyberbullying
- Posting pornographic image with malicious intent without consent of participant(s)
- Case of Hunter Moore, creator of web site Is Anyone Up?
- Criminalized in Germany, Israel, U K, and about half of U.S. states
- Reddit, Twitter, Google have taken action to protect victims

Internet Addiction

- Digital device users get immediate positive feedback through dopamine “hits” that make it difficult to break away from devices
- Psychiatrist Jerald Block: Three variants of Internet addiction
 - Excessive gaming
 - Sexual preoccupations
 - Messaging
- Block: Four characteristics of Internet addiction
 - Excessive use
 - Withdrawal symptoms
 - Tolerance
 - Negative social consequences

Internet Addiction

- American Psychiatric Association: insufficient data to list as a mental disorder
- South Korea
 - Average high school student spends 23 hours/week gaming
 - Law prohibits children from gaming between midnight and 6 a.m.
- China
 - Software discourages children under 18 from playing more than 3 hours/day

Online Games



- Many South Koreans play online games in centers called **PC bangs**. In 2005 a 28-year-old South Korean man died after playing one game practically nonstop for 50 hours. (Kim-Jae-Hawn/A F P/Getty Images)

Contributing Factors to Addiction

- Social factors
 - Peer groups
- Situational factors
 - Stress
 - Lack of social support and intimacy
 - Limited opportunities for productive activity
- Individual factors
 - Tendency to pursue activities to excess
 - Lack of achievement
 - Fear of failure

Ethical Evaluation

- Enlightenment view (Kantianism, utilitarianism, social contract theory)
 - Individuals can and should govern their lives
 - People are responsible for their choices
- Jeffrey Reiman's view
 - Addict's behavior makes sense if addict has no hope for a better future
 - Society bears responsibility for putting people in hopeless situations

Summary

- Internet and cellular networks have revolutionized communication
- More people than ever can interact to socialize, conduct business, organize political movements, and more
- New opportunities for exploitation as well
- Web is enormous, reflecting best and worst of humanity
- Social media
 - Increasingly important way for people to get news
 - May be increasing political polarization
- Governments must determine how to intervene, if at all
 - Controlling the kind of information that is available
 - Responding to Internet addiction

Next Time

- Intellectual Property
 - Read Sections 4.1 – 4.4
- Anonymous Course Eval Survey
 - Saturday @ midnight = Participation Point