ILLINOIS TECH | College of Computing

ITMM 485 / 585
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Legal and Ethical Issues in Information Technology

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Ch3: Critical Reasoning Skills for Evaluating Disputes in Cyberethics
P3: Identify common logical fallacies

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Learning Objectives:

Upon completion of this lesson the students should be able to:

- Describe the structure of a logical argument
  - Demonstrate how logical arguments can be used to resolve disputes affecting ethical aspects of cybertechnology
- Explain how to evaluate the strength of arguments by distinguishing between arguments that are valid & invalid, sound & unsound, inductive & fallacious
- Identify common logical fallacies
  - Demonstrate how they apply to arguments affecting cyberethics issues
- Explain the purpose of a legal argument
  - Recall how a legal argument is constructed
  - Describe the types of legal arguments often used and how these types are employed in the drafting of valid legal arguments

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Logical Fallacies in Everyday Reasoning

- **What do we mean by the term *fallacy*?**
- **Contrary to popular belief, "fallacy" does not mean false statement.**
- **Instead, it means *faulty reasoning*.**
- **We have already seen that it is possible for an argument to contain all true statements and still be (logically) fallacious.**

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The Names of Some Common Informal Logical Fallacies

- *Ad Hominem Argument*
- *Slippery Slope Argument*
- *Fallacy of Appeal to Authority*
- *False Cause Fallacy*
- *Fallacy of Composition/Fallacy of Division*
- *Fallacy of Ambiguity /Equivocation*
- *False Dichotomy/Either-Or/All-or-Nothing Fallacy*
- *The Virtuality Fallacy*

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Ad Hominem Argument

- ***Ad hominem* arguments attack the person rather than the substance of the person's argument.**
- **Consider the kind of attack that occurred in the Edward Snowden case of whistle-blowing, which involved the leaking of sensitive documents from the National Security Agency (NSA)in 2013:**

  Edward Snowden was not a whistle-blower, but rather a self-serving narcissist who was more interested in promoting himself than in exposing any wrongdoing. Also, he is reported to have lied both to his employer and his girlfriend. So, how could anyone possibly believe that Snowden's leaking of the sensitive NSA documents was morally justified?

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The Slippery Slope Fallacy

- **The *slippery slope fallacy* has the form:**

  X could possibly be abused; therefore, we should not allow X.
- **For example, one might argue:**

  We should not continue to allow computer manufacturers to build computer systems that include CD burners. If we allow them to do so, young users will burn copies of copyrighted music illegally. If the rate of unauthorized copying of music continues, recording artists will lose more money. If they lose more money, the entire music industry could be in jeopardy. If the music industry in America declines, the entire US economy will suffer. So, we must prohibit computer manufacturers from providing CD burners as part of the computer systems they build.

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The Fallacy of Appeal to Authority

- **The *Fallacy of Appeal to Popular Authority* has the form:**

  X is an authority in field Y; X said Z; therefore, Z.
- **The following argument commits this fallacy:**

  Tim Berners-Lee believes that Comcast is a highly reliable ISP for home use. And Berners-Lee is clearly an expert on matters involving the Web and the Internet. So Comcast must be a reliable ISP.

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The False Cause Fallacy

- **The *false cause fallacy* reasons from the fact that event X preceded event Y to the conclusion that event X is necessarily the cause of event Y.**
- **Consider the following argument about an alleged link involving the release of Microsoft's Windows 10 operating system and a decline in Microsoft's stock price:**

  Shortly after the release of Windows 10 in 2015, Microsoft's stock plummeted severely. Hence, there is no doubt that this was responsible for the decline in Microsoft's loss in the stock market.

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Fallacy of Composition

- **The *fallacy of composition* confuses the characteristics that apply to the parts of a whole, or to the individual members of a group, with the characteristics of the whole of the group itself.**
- **Consider the following argument:**

  The new XYZ Desktop Computer is the best system on the market. XYZ has the fastest processor currently available on any PC; it comes with twice the amount of RAM than any of its competitors; and it comes equipped with a suite of office applications that are superior to those on any currently available system. Also, its monitor offers the best resolution and graphic display currently available on any commercial desktop computer.

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The Fallacy of Division

- **The *fallacy of division* mistakenly infers that the same attributes or characteristics that apply to the whole or to the group must also apply to every part of the whole or to every member of the group.**
- **Consider the fallacy in the following argument:**

  Harvard University is the highest ranked U.S. college. Thus, Harvard must have best computer science department in the U.S.

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The Fallacy of Ambiguity/Equivocation

- The *fallacy of ambiguity occurs* whenever one or more terms in an argument are used *ambiguously* or *equivocally*.
- Ambiguous terms have more than one meaning.
- Equivocal terms are used in more than one sense.
- Consider the following fallacy:

  Computers have memory. Humans have memory. Having memory enables humans to recall some of their childhood experiences. Therefore, computers can recall experiences from their childhood.

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False Dichotomy/Either-Or/All-or-Nothing Fallacy

- This fallacy typically presents us with two options that might initially seem to be mutually exclusive.
- For example, one might assert: *If you are not with us, you are against us*, thus suggesting that no neutral ground is possible in a particular situation.
- However, many claims, especially one's involving controversial political issues, appeal to a strict either/or rhetorical strategy in cases where additional options are indeed available.
- For instance, some people claim that we must choose between privacy or security, while not showing why it is impossible to have both. (See Solove [2011] for some reasons why these two options do not necessarily have to be mutually exclusive choices).

The Virtuality Fallacy

- **The *virtuality fallacy* (Moor, 2001) has the following form:**

PREMISE 1. X exists in cyberspace.

PREMISE 2. Cyberspace is virtual.

CONCLUSION. X (or the effect of X) is not real.

Additional Fallacies

- **You can no doubt come up with additional labels for fallacious arguments that you encounter in your analysis of cyberethics issues.**
- **For the names of some other (standard) logical fallacies not covered in Chapter 3, see http://yourlogicalfallacyis.com/.**