

# **CPSC156: The Internet Co-Evolution of Technology and Society**

**Lecture 7: February 6, 2007**

**More about browsers (ack.: L. Cranor);  
Introduction to Digital Copyright and  
Online Content Distribution**

# Cookies, web bugs, *etc.*

See beginning of November 6, 2001  
lecture of CPSC155:

<http://zoo.cs.yale.edu/classes/cs155/fall01/cranor.ppt>

# Basis of US Copyright Law

## U.S. Constitution:

### [Article I, Section 8]

"The Congress shall have Power...

[Clause 8] To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries..."

Note: The founding fathers did not feel the need to empower Congress to create physical property rights.

# Examples of Exclusive Rights

- to reproduce the copyrighted work
- to prepare derivative works
- to distribute copies through sales, rental, lease, or lending
- to perform the copyrighted work publicly (applies, *e.g.*, to plays)
- to display the copyrighted work publicly (applies, *e.g.*, to sculpture)
- digital audio transmission

[These are paraphrases.]

# Exception: "4-factors" test for "Fair Use"

- The purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes
- The nature of the copyright work
- The amount and substantiality of the portion used in relation to the copyright work as a whole
- The effect of the use upon the potential market for or value of the copyrighted work

# Exception: First-Sale Rule

- When a copyright owner sells a copy of a work, he relinquishes control over that copy but not over the work.
- The work cannot be reproduced by the purchaser, but the copy can be loaned, resold, or given to someone else.
- "Promotes progress" by enabling, *e.g.*
  - libraries
  - used book stores

# General Structure of Copyright Law

- Copyright owners' rights stated explicitly.
- General public has no explicitly stated rights, just exceptions to owners' rights.
- Fair use is a *defense* against a charge of infringement.

This structure works fairly well for traditional media, particularly books.

# Structure is Challenged by Digital Works

- Digital documents are fundamentally different:
  - Copies are perfect.
  - Copies can be made at zero cost.
  - Copying is not necessarily a good proxy for infringement.
- TPSs are imperfect:
  - A perfect TPS could moot fair use: no infringement, no charge, no defense.
  - But no TPS can be perfect in today's computers. General purpose PCs are programmable, and hence TPSs are circumventable (at least by experts).



# Three Major "Enforcers" Support a Content-Distribution Business

- Copyright law
- Technical Protection System (TPS)
- \* Business Model

# Dual Doomsday Scenarios

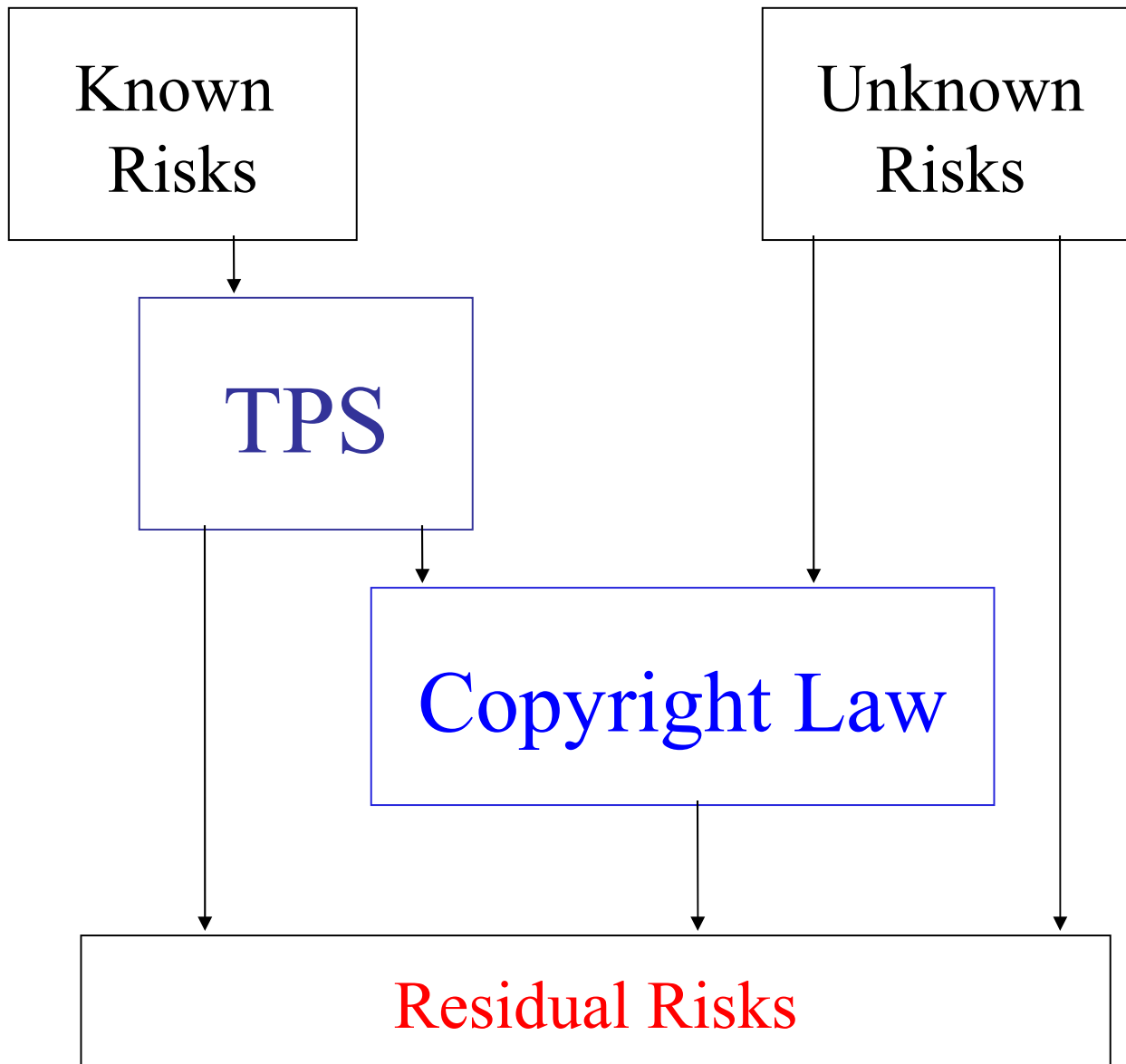
## Rights Holders and Distributors:

TPSs don't suffice. Digital copying, modification, and distribution are uncontrollable. We need more legal and social sanctions.

## Fair-Use Advocates and (Some)

Consumers: TPSs work too well. Some rights holders now have *more* control than they do in the analog world.

*Normal* use can often be monitored and controlled in the digital world.



# Best TPS is a Great Business Model

"The first line of defense against pirates is a sensible business model that combines pricing, ease of use, and legal prohibition in a way that minimizes the incentives for consumers to deal with pirates."

*Lacy et al., IEEE Symposium on Industrial Electronics, 1997.*

# Holy Grail: A Great Business Model for Internet Music Distribution

Hal Varian (quoted in C. Mann's 2000 "Heavenly Jukebox" article): "Maybe Coke will find a way integrate itself directly into the shows. Or they'll release the music free on the Internet, except that it will be wrapped in a commercial." What's the difference if the Spice Girls are marketed by Coca-Cola or by Virgin Records, soon to be a subdivision of AOL-Time Warner?

2000 Sales by RIAA members: \$15B

2000 Coca-Cola Net Operating Income: \$20.5B

# Discussion Point

To what extent is *iTunes* this Holy Grail?

# Assignments

HW2 was posted on the website last weekend. Due Feb. 13, 2007.

**Reading:** From the National Research Council's **Digital Dilemma** report on copyright challenges in the Internet age:

- Overview of digital-copyright issues:  
[http://books.nap.edu/html/digital\\_dilemma/ch1.html](http://books.nap.edu/html/digital_dilemma/ch1.html)
- Basics of copyright law, fair use, and private-use copying:  
[http://books.nap.edu/html/digital\\_dilemma/ch4.html](http://books.nap.edu/html/digital_dilemma/ch4.html)
- Discussion of the Digital Millennium Copyright Act of 1998:  
[http://books.nap.edu/html/digital\\_dilemma/appG.html](http://books.nap.edu/html/digital_dilemma/appG.html)