

Chapter 4: Intellectual Property



**Ethics for the Information Age
Fifth Edition**

**by
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Chapter Overview

- Introduction
- Intellectual property rights
- Protecting intellectual property
- Fair use
- Protections for software
- Open-source software
- Legitimacy of intellectual property protection for software

4.1 Introduction

Information Technology Changing Intellectual Property Landscape

- Value of intellectual properties much greater than value of media
 - Creating first copy is costly
 - Duplicates cost almost nothing
- Illegal copying pervasive
 - Internet allows copies to spread quickly and widely
- In light of advances in information technology, how should we treat intellectual property?

Tired of being treated like a criminal for sharing music online?

You're in good company. Over 60 million other music fans use peer-to-peer programs like Kazaa and Morpheus to share their favorite tunes. Yet the record labels are bullying ISPs and hunting down college kids in an effort to shut down file sharing.

Isn't it time for a new approach? The Electronic Frontier Foundation thinks so. We believe the answer lies in a model that fairly compensates artists while supporting music lovers. Join EFF today so the music can play on.

File-Sharing: It's Music to our Ears



Stand up for your right to share the music you love!
Join EFF today at www.eff.org/share.

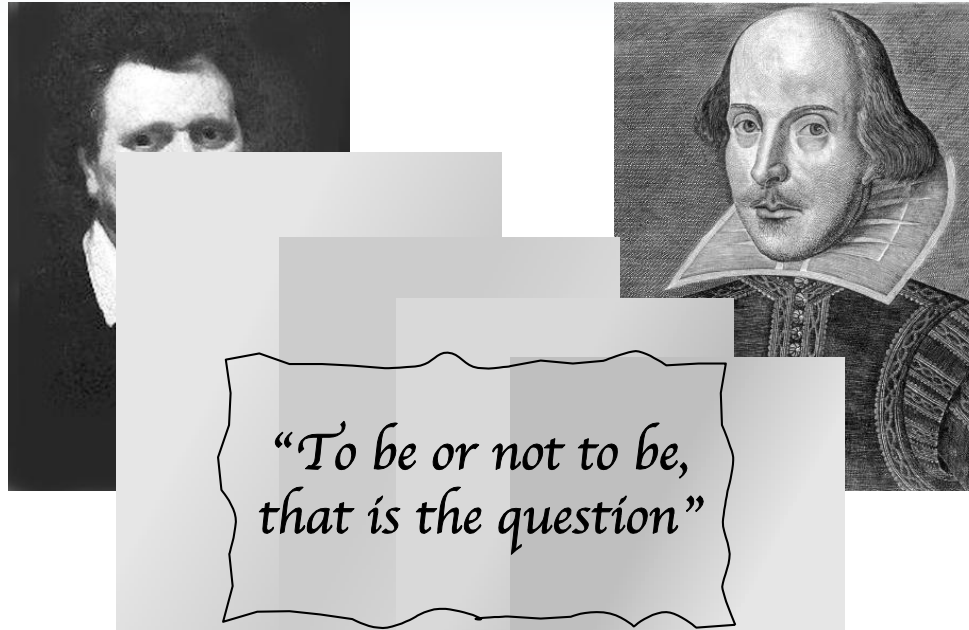
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4.2 Intellectual Property Rights

What Is Intellectual Property?

- Intellectual property: any unique product of the human intellect that has commercial value
 - Books, songs, movies
 - Paintings, drawings
 - Inventions, chemical formulas, computer programs
- Intellectual property ≠ physical manifestation

Analogy Is Imperfect



- If Ben Jonson and William Shakespeare simultaneously write down *Hamlet*, who owns it?
- If Ben “steals” the play from Will, both have it

Limits to Intellectual Property Protection

- Giving creators rights to their inventions stimulates creativity
- Society benefits most when inventions in public domain
- Congress has struck compromise by giving authors and inventors rights for a limited time

4.3 Protecting Intellectual Property

Trade Secret

- Confidential piece of intellectual property that gives company a competitive advantage
 - Never expires
 - Not appropriate for all intellectual properties
 - Reverse engineering allowed
 - May be compromised when employees leave firm

brand names

Trademark

- Identifies goods or products



Service mark

- Identifies services



Trademark, Service Mark

- Company can establish a “brand name”
 - Does not expire
 - If brand name becomes common noun, trademark may be lost
 - Companies advertise to protect their trademarks
 - Companies also protect trademarks by contacting those who misuse them

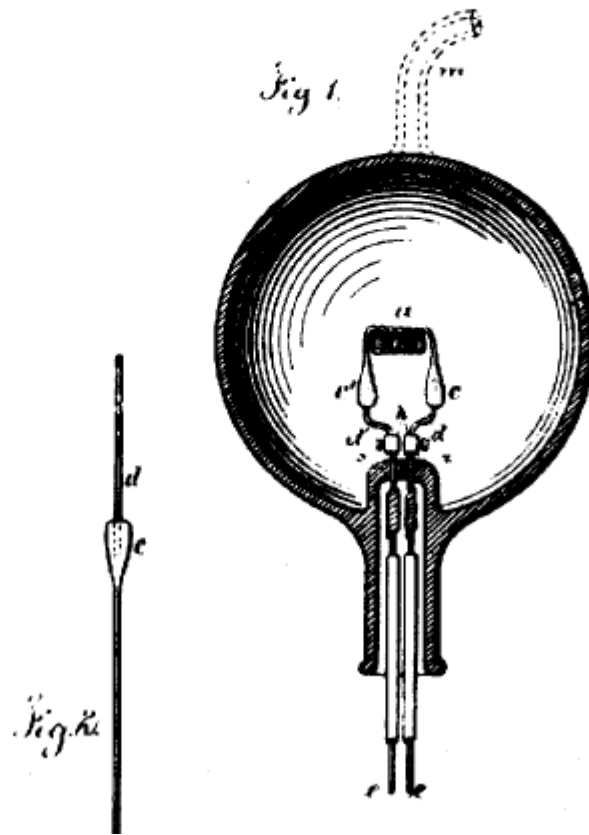
Patent

- A public document that provides detailed description of invention
- Provides owner with exclusive right to the invention
- Owner can prevent others from making, using, or selling invention for 20 years

T. A. EDISON.
Electric-Lamp.

No. 223,898.

Patented Jan. 27, 1880.



Nov. 20, 1923.

1,475,024

G. A. MORGAN

TRAFFIC SIGNAL

Filed Feb. 27. 1922

2 Sheets-Sheet 1

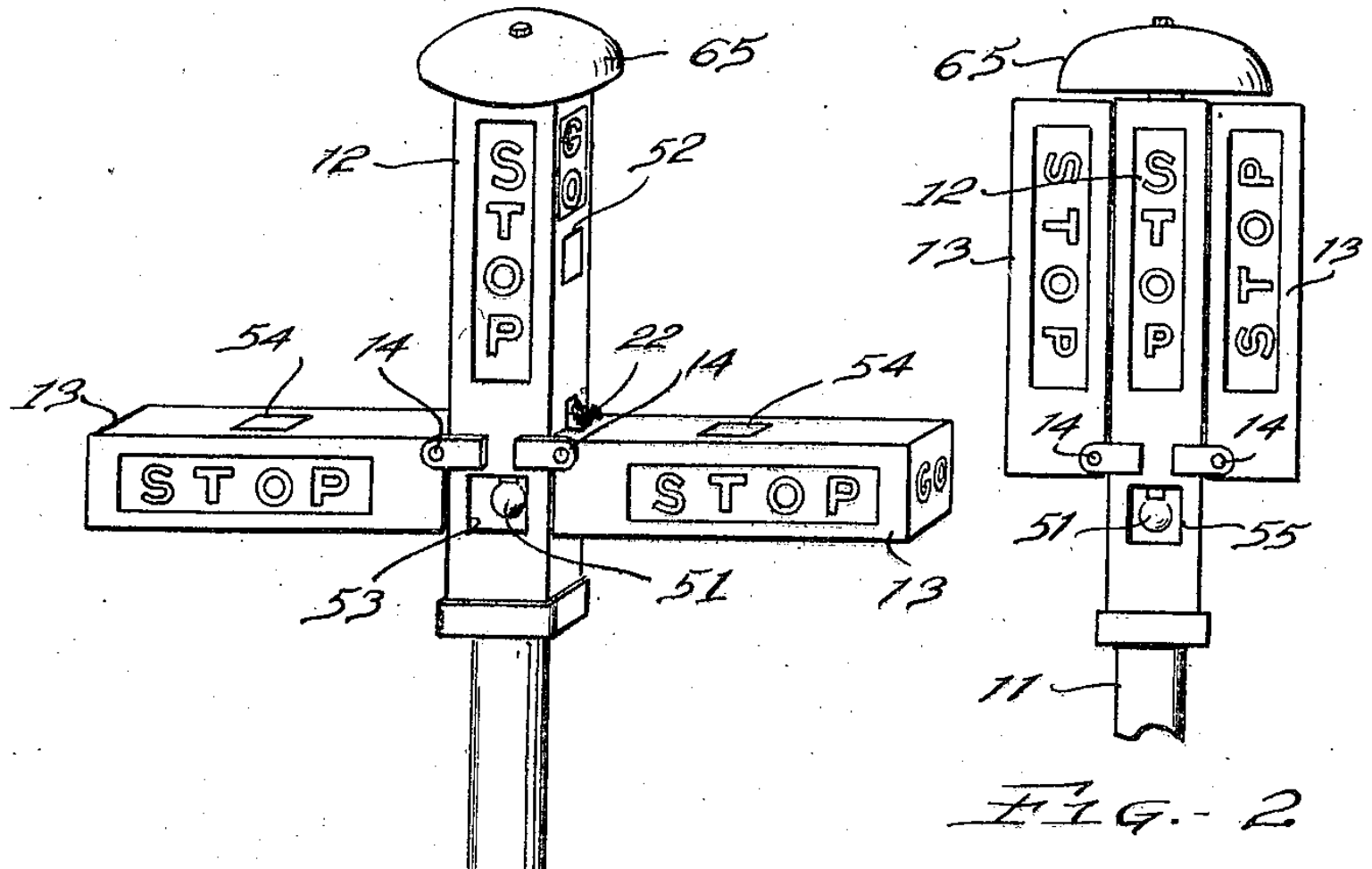
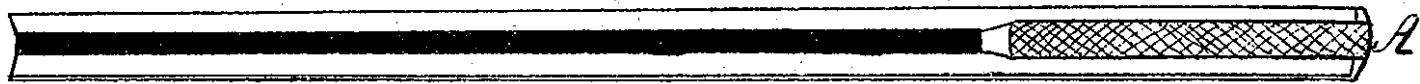


FIG. 2

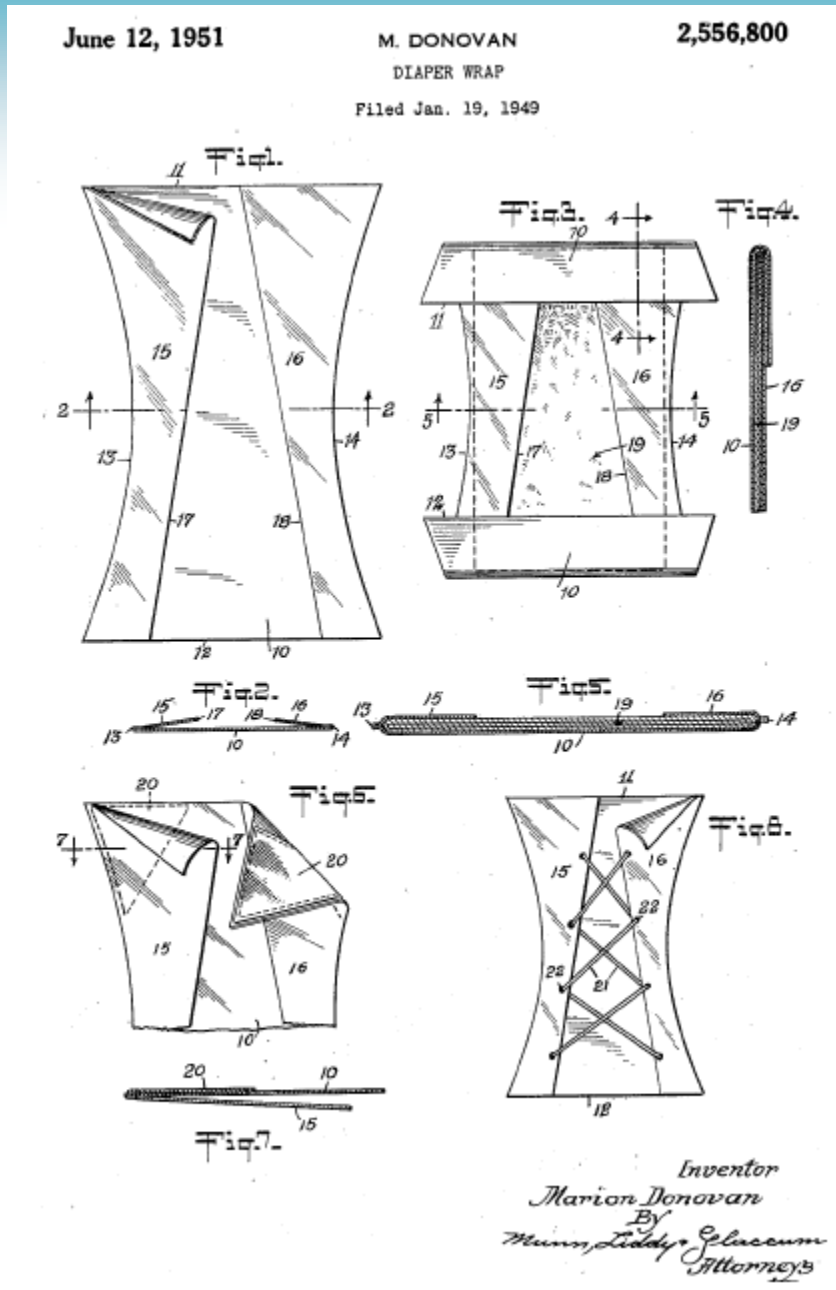
H. L. Linnman.

Pencil & Eraser.

N^o 19,783. Patented Mar. 30, 1858.



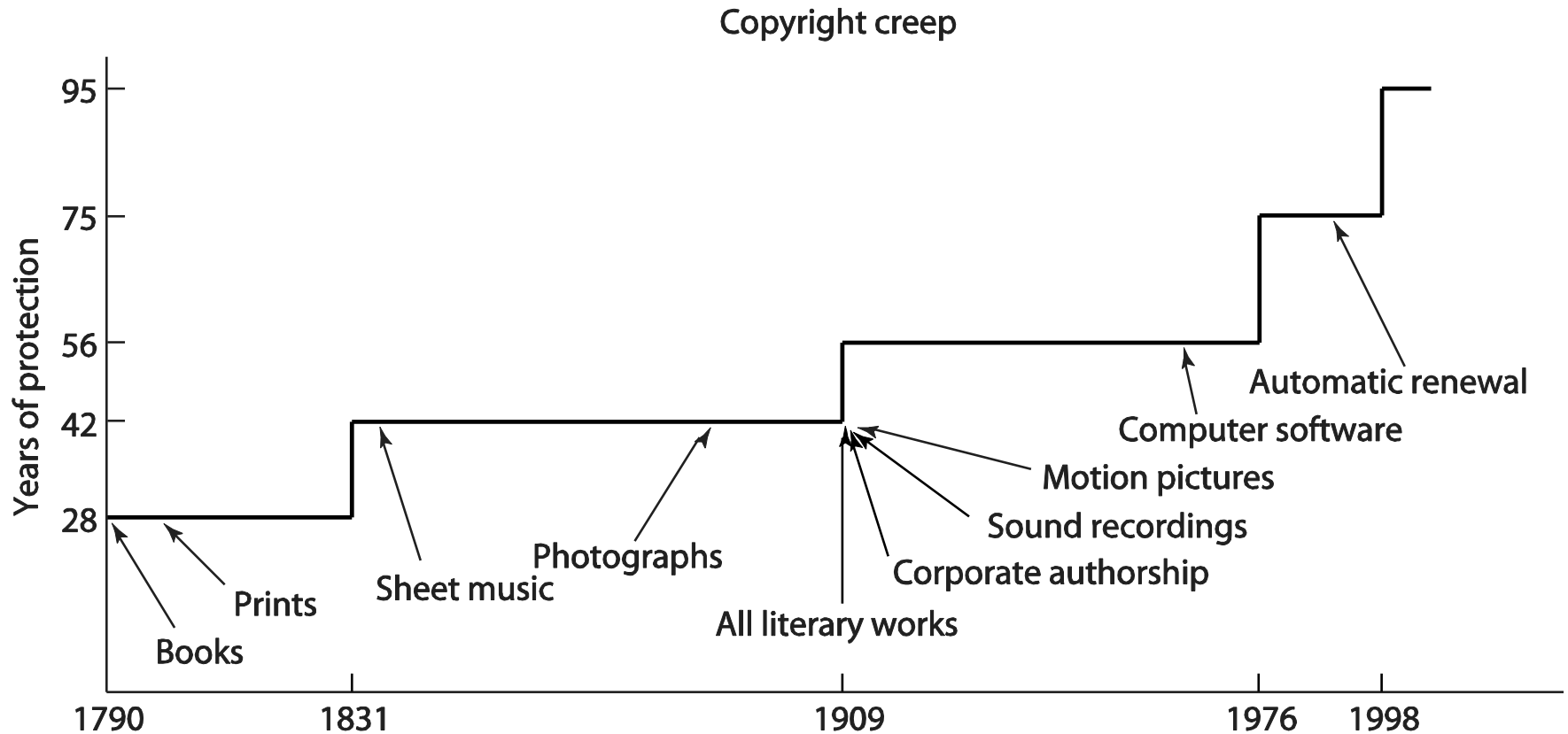
Funny patents!!



Copyright

- Provides owner of an original work five rights
 - Reproduction
 - Distribution
 - Public display
 - Public performance
 - Production of derivative works
- Copyright-related industries represent 5% of U.S. gross domestic product (> \$500 billion/yr)
- Copyright protection has expanded greatly since 1790

Copyright Creep



Copyright Creep

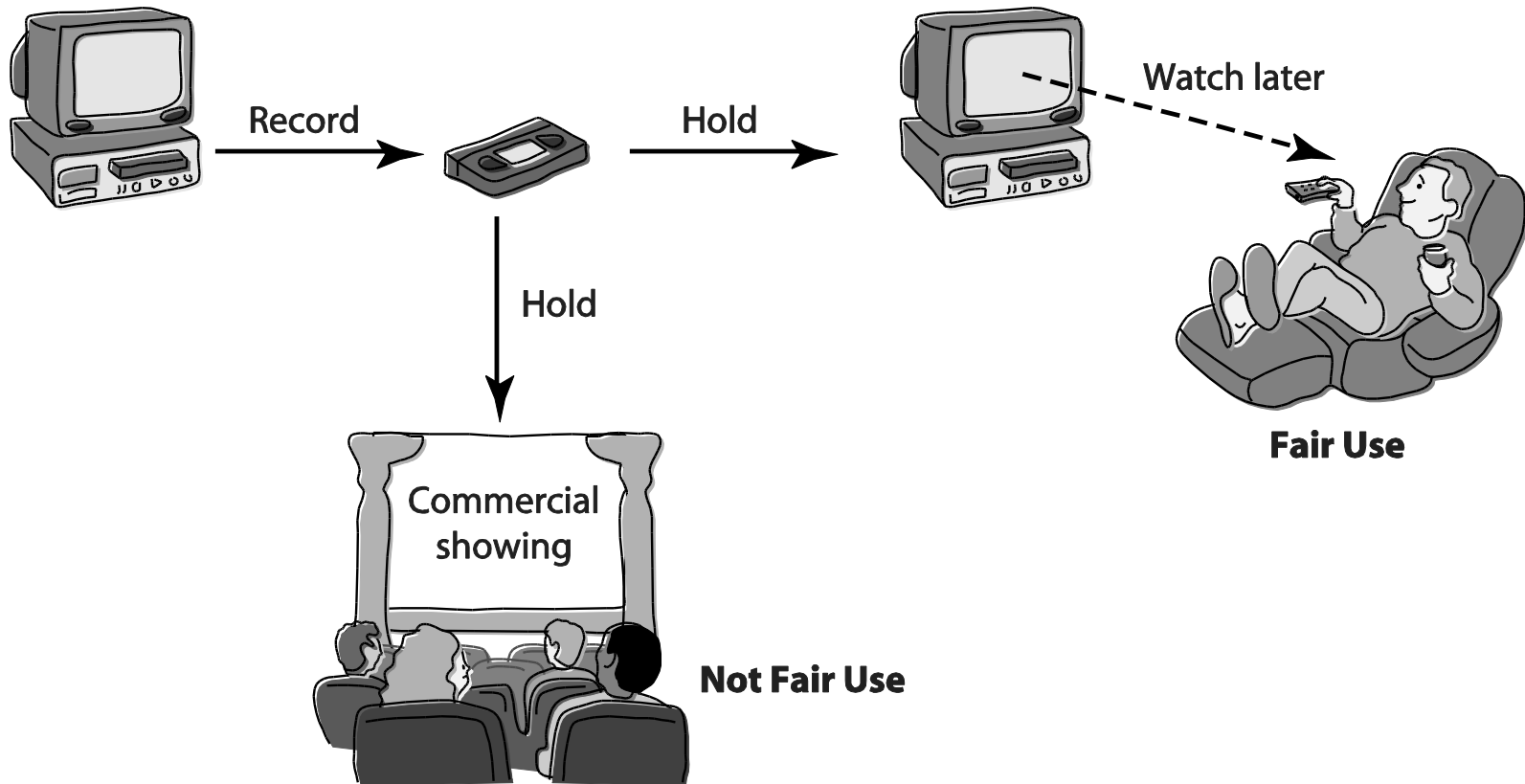
- Since 1790, protection for books extended from 28 years to 95 years or more
- Some suggested latest extension done to prevent Disney characters from becoming public domain
- Group of petitioners challenged the Copyright Term Extension Act of 1998, arguing Congress exceeded Constitutional power

4.4 Fair Use

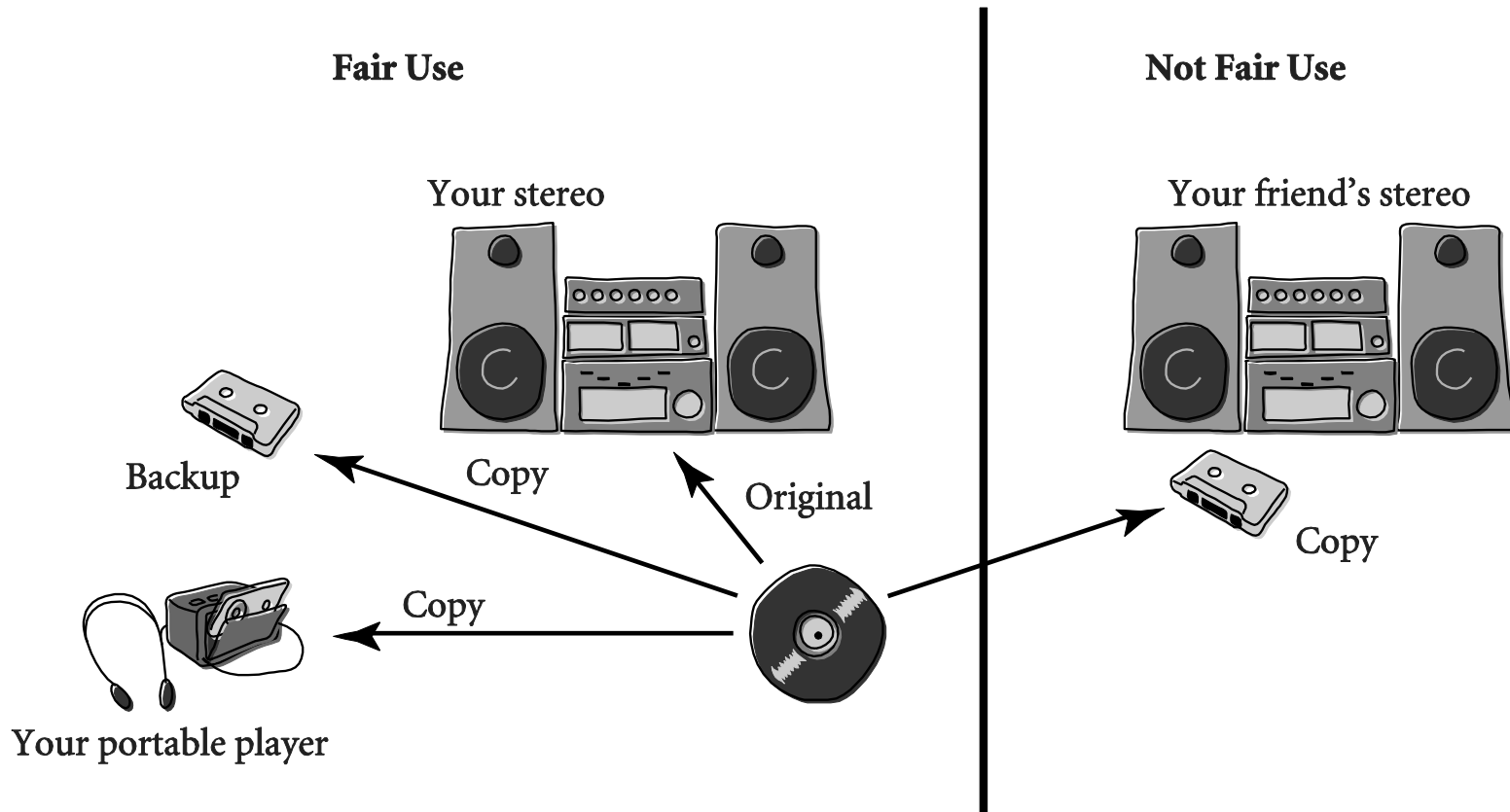
Fair Use Concept

- Sometimes legal to reproduce a copyrighted work without permission
- Courts consider four factors
 - Purpose and character of use
 - Nature of work
 - Amount of work being copied
 - Affect on market for work

Time Shifting



Space Shifting





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Google Books



- Google announced plan to scan millions of books held by several huge libraries, creating searchable database of all words
 - If public domain book, system returns PDF
 - If under copyright, user can see a few sentences; system provides links to libraries and online booksellers
- Authors Guild and publishers sued Google for copyright infringement
 - Out-of-court settlement under review by U.S. District Court for Southern District of New York

Benefits of Proposed Settlement

- Google would pay \$125 million to resolve legal claims of authors and publishers and establish Book Rights Registry
- Readers would have much easier access to out-of-print books at U.S. public libraries and university libraries
- University libraries could purchase subscriptions giving their students access to collections of some of world's greatest libraries
- Authors and publishers would receive payments earned from online access of their books, plus share of advertising revenues

Court Rejects Proposed Settlement

- March 2011: U.S. District Court for Southern District of New York rejected proposed settlement
- Judge ruled agreement would have:
 - Given Google significant advantage over competitors
 - Rewarded Google for “wholesale copying of copyrighted words without permission”
 - Given Google liberal rights over orphaned works

Digital Rights Management

- Actions owners of intellectual property take to protect their rights
- Approaches
 - Encrypt digital content
 - Digital marking so devices can recognize content as copy-protected
 - Digital watermarking encryption cracked

4.7 Protections for Software

Software Copyrights

- Copyright protection began 1964
- What gets copyrighted?
 - Expression of idea, not idea itself
 - Object program, not source program
- Companies treat source code as a trade secret

Violations of Software Copyrights

- Copying a program to give or sell to someone else
- Preloading a program onto the hard disk of a computer being sold
- Distributing a program over the Internet

Software Patents

- Until 1981, Patent Office refused to grant software patents
 - Saw programs as mathematical algorithms, not processes or machines
- U.S. Supreme Court decision led to first software patent in 1981
 - Microsoft files ~3,000 applications annually
 - Licensing patents a source of revenue
 - Reverse engineering okay

4.8 Open-Source Software

Open-Source Definition

- No restrictions preventing others from selling or giving away software
- Source code included in distribution
- No restrictions preventing others from modifying source code
- No restrictions regarding how people can use software
- Same rights apply to everyone receiving redistributions of the software (copyleft)

Beneficial Consequences of Open-Source Software

- Gives everyone opportunity to improve program
- New versions of programs appear more frequently
- Programs belong to entire community
- Shifts focus from manufacturing to service

Examples of Open-Source Software

- BIND
- Apache
- Sendmail
- Android operating system for smartphones
- Firefox
- OpenOffice.org
- Perl, Python, Ruby, TCL/TK, PHP, Zope
- GNU compilers for C, C++, Objective-C, Fortran, Java, and Ada

Examples



GNU Project and Linux

Goal: Develop open-source, Unix-like operating system
→ 1991



Crititque of the Open-Source Software Movement

- Without critical mass of developers, quality can be poor
- Without an “owner,” incompatible versions may arise
- Relatively weak graphical user interface
- Poor documentation

4.9 Legitimacy of Intellectual Property Protection for Software

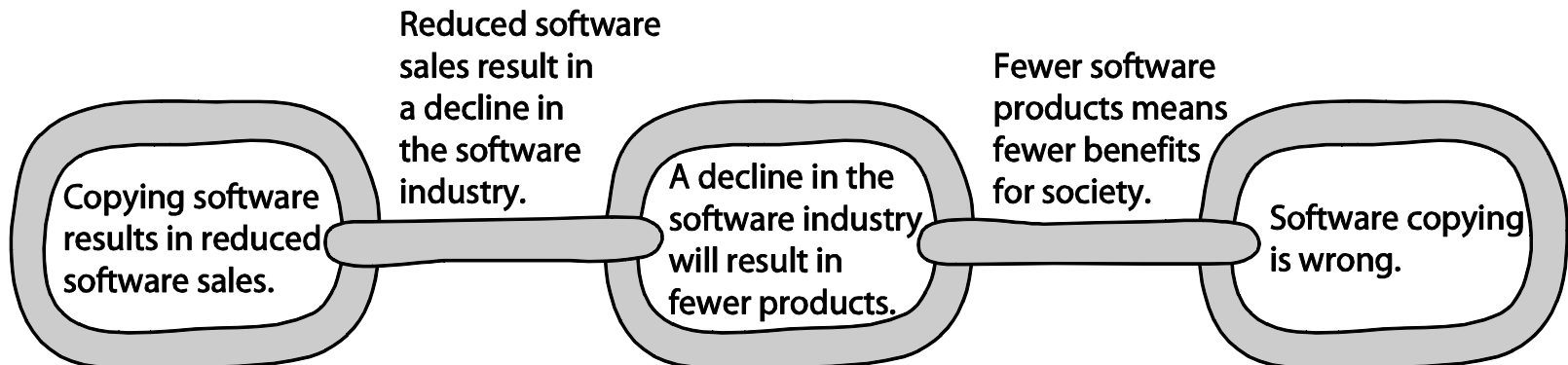
Do We Have the Right System in Place?

- Software licenses typically prevent you from making copies of software to sell or give away
- Software licenses are legal agreements
- Not discussing morality of breaking the law
- Discussing whether society *should* give intellectual property protection to software

Rights-based Analysis

- “Just deserts” argument
 - Programming is hard work that only a few can do
 - Programmers should be rewarded for their labor
 - They ought to be able to own their programs
- Criticism of “just deserts” argument
 - Why does labor imply ownership?
 - Can imagine a just society in which all labor went to common good

A Consequentialist Argument Why Software Copying Is Bad



Beth Anderson

Utilitarian Analysis

- Argument against copying
 - Copying software reduces software purchases...
 - Leading to less income for software makers...
 - Leading to lower production of new software...
 - Leading to fewer benefits to society
- Each of these claims can be debated
 - Not all who get free copies can afford to buy software
 - Open-source movement demonstrates many people are willing to donate their software-writing skills
 - Hardware industry wants to stimulate software industry
 - Difficult to quantify how much society would be harmed if certain software packages not released

Conclusion

- Natural rights argument weak
- Utilitarian argument not strong, either
- Nevertheless, society has granted copyright protection to owners of computer programs
- Breaking the law is wrong unless there is a strong overriding moral obligation or consequence