

Social Impacts of Computing

- Are computers, *in principle*, compatible with our ideas and ethics?
 - maybe, are computers, *in fact*, supporting...
 - contrast with evolutionary ideals
 - may have nothing to do with human ideals?
 - the question is then, who controls the machines...
- Main issues include
 - autonomy, access, community or isolation, deskilling, other stuff

Social Impacts

- you can get a degree in this stuff!
 - good jobs are available
 - social and multi-disciplinary studies of computing
 - legitimate academic pursuit?
- Underlying visions
 - positive
 - negative

Issue 1: Change

- Do computers produce social change?
 - has banking really changed?
 - has the “workplace” changed?
 - “direct experience” of the phenomena vs simulation
 - combat analogy

Big Issues

- Has technology changed the way we live?
 - our social structure is changed? (stronger)
 - if so, how? good/bad?
 - supports our ideals or not? should we support the changes?
 - what controls the direction for society?
 - what values do we want to preserve through the changes?

Second Issue

- Computing reproduces (reinforces?) preexisting social patterns
 - power relationships as example
 - employee monitoring
 - centralization of power rather than distribution

Third Issue

- Computers cause the change or other forces?
 - what is the role of computers in social change?
 - computers are malleable to our desires?
 - competition as a driver instead of technology?
 - business automation
 - employee deskilling

Fourth Issue

- Are computers value neutral or value laden?
 - this is hard to look at in abstract, use examples
 - Autonomy
 - privacy examples to show erosion in individual autonomy
 - » some are pushing back
 - hacker examples to show enhancement of autonomy
 - » but law enforcement pushes back
 - computers seem to have various effects

Centralization / Decentralization

- Power
 - organizations who use computers
 - hierarchy is the norm
 - division of labor, efficiency (defined narrowly)
 - structures of responsibility are centralized
 - » also possible to distribute (decentralize)
 - historical trend cited by Weizenbaum
 - centralization required by WWII scale of operations
 - stock exchange reversed its fate due to computing power
 - » computing as preventing change, preserving status quo

Decentralization

- Robert Paul Wolf (*In Defense of Anarchism* 1970) suggests real democracy via computing!
 - how much has materialized?
 - who does/doesn't want it?

Dual Effects

- Centralize store inventory for franchise
 - seems to gather power in center from local mgr
 - also frees mgr for working with local issues
- Expert systems
 - increase individual MD autonomy
 - as it gets “better” may decrease autonomy!
- What is happening?

The Nature of Computing to Blame?

- Research says
 - 4 possible positions
 - computers cause centralization
 - computers cause decentralization
 - computers and centralization unrelated
 - computers merely reflect centralization
 - “use of computing technology to reinforce decision authority status quo” in organizations (George and King)

Access to Resources as an Issue

- Computing resources and their social value
- Who has (should have) access to computing resources?
 - distinguish centralization issue: about power structures in decisionmaking environments
 - *competition* is a driving force in society
 - education, customers, wealth, protection
 - computing resources as powerful tools

Access to Resources

- Do wealthy and powerful have advantages?
 - nothing new here?
 - but computers not scarce... what gives?
 - for whatever reason, computing resources not equally distributed
 - recall idealistic visions of the “possibilities” of computing
 - » but do the handicapped provide a market?
 - » do the unemployed, the poor, the uneducated etc?
 - » how does the potential get realized?

Access to Computing Resources

- The “Free Market”
 - social, cultural, political, economic factors decide what gets produced!
 - that determines whose needs get addressed by computing

Are Computers Value Free?

- An old question (“science” as “value free” search for “truth”)
 - but try to explain large paradigm shifts
 - and accompanying backlashes!
- Simple shot: values of the designers
 - but inherent bias?

Value Freedom

- Consider binary nature of computing
 - to describe a continuous world
 - an example of abstraction
 - *all software* is an abstraction of reality
 - “unimportant” details are left out
 - that is the *value* of abstraction
 - but it is its bane at times!