

Summary of Key Points in *The New Division of Labor*

- The authors, Richard Murnane of the Harvard School of Education and Frank Levy of MIT, ask two simple but profound questions:

What do computers do better than people?

What do people do better than computers?

- The answers: Computers are more accurate and faster than people at any task that can be expressed as a set of rules (e.g., calculate the square root of 17, or attach this bolt to this spot on this fender); and humans are better than computers at anything that involves pattern recognition (e.g., looking around a restaurant and figuring out who needs service, or making a diagnosis from strange symptoms that do not fit into any existing protocol, like what Dr. Gregory House does on TV).
- Murnane and Levy have done extensive research on the change in task content across jobs over the past 20 years as computerization has spread through the economy. As illustrated in the first of the two graphs on the next page, they found that the task content of jobs in all sectors of the economy is shifting towards non-routine cognitive analytic skills, what they call “expert thinking” in the book (the ability to analyze and forecast using technical knowledge), and towards non-routine cognitive interactive skills, what they call “complex communication” in the book (the ability to communicate across disciplines and cultures).
- Perhaps their most surprising finding, as illustrated in the second graph, is that the *rate* of change in task content towards expert thinking and complex communication is occurring most rapidly in jobs which are held by people with a high school diploma or less, presumably because jobs held by people with a least some college already had a lot of this task content.
- What does this all mean? First, there will no longer be manual and thinking jobs, just different levels of thinking jobs. And the thinking skills will not involve the routine cognitive tasks that made up the bulk of the work of managers in the rules-based industrial economy. All of us will have computers to do our routine thinking; our job is to use them to solve problems by employing our pattern recognition abilities.
- The challenge for education is that pattern recognition is a fundamentally different cognitive process than rules-based thinking. Pattern recognition does not lend itself to book learning and classroom instruction. It is based largely on tacit knowledge...one learns to recognize patterns best by trying to do it, in the company of someone else who is already good at it, who may not even be fully conscious of how they do it. It is the essence of good experiential learning and mentoring, which must become the core, rather than the margin, of the education experience, particularly at the secondary and post-secondary levels.

Figure 2. Bivariate Relationships Between Recent Industry Computerization 1984 - 1997 and Decadal Industry Task Change: 1959 - 1998

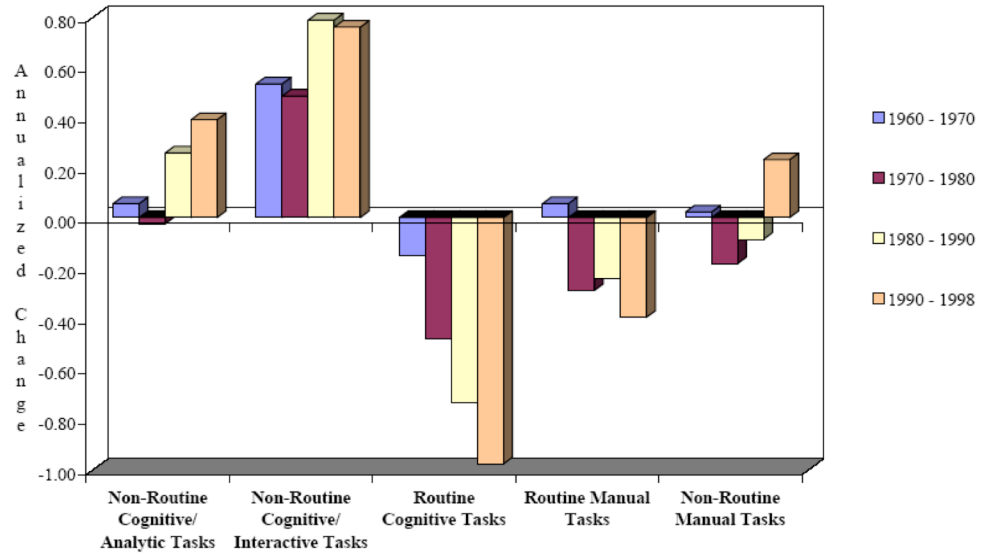


Figure 3. Contribution of Computerization to Task Change Within Education Groups, 1980 - 1998

