Slicing work smaller — or "putting the 'micro' in microwork"
Concurrent with the body of work on the complexity of crowdsourcing has been a thread of work exploring the decomposition of work. In this section we'll discuss some of the work that the crowdsourcing community have made toward making tasks more finite and discreet. Then, as in the previous section, we'll discuss some of the insights that piecework research has offered. Finally, we'll discuss similarities and differences between crowdwork and piecework, and how crowdwork's limitations and potential differ from piecework's.

Crowdwork's perspective. **The crowdsourcing research into slicing work into smaller parts has largely centered around removing extraneous context from the worker's view.**

While Kinnaird, Dabbish, and Kiesler advocated that greater context of the task would foster more reliably high–quality work (especially, according to their findings, when applied to more veteran crowd workers) the consensus that emerged seems best–represented by Verroios and Bernstein's framing of the tension still present in the design of crowd work, that "the crowd must be able to act with global understanding when each contributor only has access to local views" [5, 6]. While Kinnaird, Dabbish, and Kiesler showed that it's possible to achieve higher quality work by providing people with more information about the work they're doing, an alternative approach to dealing with crowd workers — one which treats micro task workers as "modular, protocol–defined computational services" — ultimately prevailed [5, 4].

One of the emergent properties of micro–tasks has been the relative cost of *finding* worthwhile tasks. The research community has documented and to some extent attempted to intervene in the discovery of worthwhile tasks [1]. Cosley et al. attempts to address this by directing workers to tasks through "intelligent task routing" [2]. Much of this work and the work at the periphery of this space, then, has focused on minimizing the amount of time that people need to spend doing anything other than the work for which they are paid.

Piecework's perspective. The beginnings of systematized task decomposition stretch back as far as the 17th century, when Airy employed young boys at the Greenwich Observatory who "possessed the basic skills of mathematics, including 'Arithmetic, the use of Logarithms, and Elementary Algebra' " to *compute* astronomical phenomena [3]. Airy's tasks were unique at the time for several reasons:

1. Each task was quickly verifiable by a qualified (human) computer;
2. tasks were discrete — that is, independent from one another; and
3. knowledge of the full scope of the project — indeed, knowledge of anything more than the problem set at hand — was unnecessary.

What's changed. [al2: todo]

References

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The finding here is that crowdwork can be more carefully micro–managed than piecework could be, and that this is a double–edged sword: we can effectively give feedback to workers on everything they do, but this is emboldening us to try to over–manage workers just as piecework tried to do.

My goal for this section is to make two points:

1. show how this is related to the assembly line and scientific management, and how piecework literature tried to measure everything, but found it untenable given the extra equipment that was necessary (but generally which didn't exist) to track every movement and action that workers took.
2. show how this work was enabled by the "verifiability" of work output(?)