

**Fact 37 : Rigorous Inspections
are worthwhile despite expense**

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Code inspection

- Claims:
 - sometimes called code review
 - inspections dramatically reduce errors
 - inspections are hard, mentally and socially
 - institutions have rituals around code inspection (Fact 40) to keep programmers from harming each other

For a book billing itself to be filled with facts, this is harder to fact-check than I was expecting; most of the references are only on dead trees.

Inspections—Some Surprising Findings

- Glass cites one of his earlier essays on inspections:
- *Robert L. Glass, “Inspections—Some Surprising Findings” Communications of the ACM, April 1999*
- http://faculty.fortlewis.edu/ADAMS_E/CLASSES/CS370SWENGRII/WebWinter04/NOTES/Glassinspectionarticle.pdf

Inspections—Some Surprising Findings

- Cites computing “wisdom literature” in favor of scant peer-reviewed research
- Attacks some conventional tradition (called Fagan inspections) without defining it (jargon transgression!)
- Glass favors meetings to report individual findings rather than inspection as a group

Another list of facts

- Boem & Basili “Software defect reduction top 10 list” IEEE computer Jan 2001
<http://www.cs.umd.edu/projects/SoftEng/ESEG/papers/82.78.pdf>
- Also from the wisdom tradition, but not written by Glass, so some of the facts are different!

Personal experiences

- In 2011, I adopted the maintenance of a piece of scientific software (Fraggenescan)
- Testing revealed errors—use of uninitialized inputs, buffer overflows, portability issues, and occasional segmentation faults.
- Inspection revealed mistakes—wrong data file was read, comparisons between symbols and numbers, scant error handling
- Correspondence with authors clarified some issues, but most of the issues came out of testing and inspection of the code.

Reflections

- I kind of doubt most scientific code gets looked at—until the first user needs to *add a feature or fix a troublesome bug*
- Who would I get to look at my code?
- Whose code would I stare at for hours?
- Are PIs going to read their students' code?
Are students going to read their PI's code?