

## Macro Roundup Article

**Headline:** [Papers and Patents Are Becoming Less Disruptive Over Time](#)

**Article Link:** <https://www.nature.com/articles/s41586-022-05543-x>

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**Tweet:** A new @nature study documents a decline in the average "disruptiveness" of science and technology across both papers and patents, but notes that the absolute number of highly disruptive works remains stable. @michae1park

**Summary:** Across fields, we find that science and technology are becoming less disruptive. Figure 2 plots the average CD5 [an index that characterizes how papers and patents change networks of citations in science and technology] over time for papers (Fig. 2a) and patents (Fig. 2b). For papers, the decrease between 1945 and 2010 ranges from 91.9% (where the average CD5 dropped from 0.52 in 1945 to 0.04 in 2010 for 'social sciences') to 100% (where the average CD5 decreased from 0.36 in 1945 to 0 in 2010 for 'physical sciences'); for patents, the decrease between 1980 and 2010 ranges from 78.7% (where the average CD5 decreased from 0.30 in 1980 to 0.06 in 2010 for 'computers and communications') to 91.5% (where the average CD5 decreased from 0.38 in 1980 to 0.03 in 2010 for 'drugs and medical'). For both papers and patents, the rates of decline are greatest in the earlier parts of the time series, and for patents, they appear to begin stabilizing between the years 2000 and 2005. For papers, since about 1980, the rate of decline has been more modest in 'life sciences and biomedicine' and physical sciences, and most marked and persistent in social sciences and 'technology'.

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**Primary Topic:** Innovation/Research

**Topics:** Academic paper, Data, Database, Innovation/Research

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