

Data are lost to science at 'astonishing rate'

December 19 2013

New evidence reported in the journal *Current Biology* on December 19 confirms long-held fears about the fate of scientific data. Careful evaluation of more than 500 randomly selected studies found that the original data behind those published papers have been lost to science at a rapid rate.

Two years after publication, data are essentially always available to other researchers who might wish to confirm the findings, the researchers found. By 20 years post-publication, 80% of that data obtained through publicly funded research is inaccessible due to mundane issues, primarily old email addresses and obsolete storage devices. The researchers call on journals to require that authors share their data on a public archive before a paper can be published.

"I think nobody expects that you'd be able to get data from a fifty-year-old paper, but to find that almost all the data sets are gone at twenty years was a bit of a surprise," says Timothy Vines of the University of British Columbia.

"Publicly funded science generates an extraordinary amount of data each year. Much of these data are unique to a time and place, and are thus irreplaceable, and many other data sets are expensive to regenerate," he adds. "The current system of leaving data with authors means that almost all of it is lost over time. The data are thus unavailable for future researchers to check old results or use for entirely new purposes. Losing data is a waste of research funds, and it limits how we can do science."

Vines and his colleagues came to this conclusion by examining papers reporting a very specific and relatively simple type of data: length measurements of plants and animals. Those papers were selected because length measurements have been collected in exactly the same way for decades, making straightforward comparisons over time much easier to do.

The analysis found that the odds of obtaining an original data set for any one of those papers fell by 17% every year. In Vines's estimation, journals are the only party with sufficient leverage to ensure that the data underlying published studies will get shared.

"Scientific data are being lost at an astonishing rate, and concerted action—particularly by journals—is needed to make sure it is saved for future researchers," Vines says.

More information: *Current Biology*, Vines et al.: "The availability of research data declines rapidly with article age."

[dx.doi.org/10.1016/j.cub.2013.11.014](https://doi.org/10.1016/j.cub.2013.11.014)

Provided by Cell Press

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