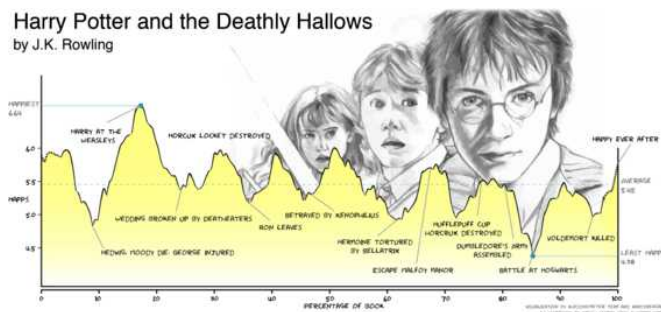


Fiction books narratives down to six emotional story lines

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Annotated emotional arc of Harry Potter and the Deathly Hallows, by JK Rowling. Credit: SciencePOD

Our most beloved works of fiction hide well-trodden narratives. And most fictions is based on far fewer storylines than many have imagined. To come to this conclusion, big data scientists have worked with colleagues from natural language processing to analyse the narrative in more than 1000 works of fiction. By deconstructing some of the structure of narrative in fiction books, they have also confirmed that there are six common ways of telling a story that can be found repeatedly in popular stories. They were inspired by the work of U.S. fiction author Kurt Vonnegut, who originally proposed the similarity of emotional story lines in a Masters's thesis rejected by the University of Chicago.

These findings have just been published in *EPJ Data Science* by Andrew Reagan from the University of Vermont, USA, and colleagues.

From the 50,000 books included in a major open access literature digitisation initiative called Project Gutenberg, the authors selected 1,327 books representative of English works of fiction. They then applied three different [natural language](#) processing filters used for sentiment analysis to extract the [emotional content](#) of 10,000-word

stories.

The first filter—dubbed singular value decomposition—reveals the underlying basis of the emotional storyline, the second—referred to as hierarchical clustering—helps differentiate between different groups of emotional storylines, and the third—which is a type of neural network—uses a self-learning approach to sort the actual storylines from the background noise. Used together, these three approaches provide robust findings, as documented on the [hedonometer.org](#) website.

Reagan and colleagues thus determined that there were six main emotional storylines. These include 'rags to riches' (sentiment rises), 'riches to rags' (fall), 'man in a hole' (fall-rise), 'Icarus' (rise-fall), 'Cinderella' (rise-fall-rise), 'Oedipus' (fall-rise-fall). This approach could, in turn, be used to create compelling stories by gaining a better understanding of what has previously made for great storylines. It could also teach common sense to [artificial intelligence systems](#).

More information: Andrew J Reagan et al. The emotional arcs of stories are dominated by six basic shapes, *EPJ Data Science* (2016). [DOI: 10.1140/epjds/s13688-016-0093-1](#)

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