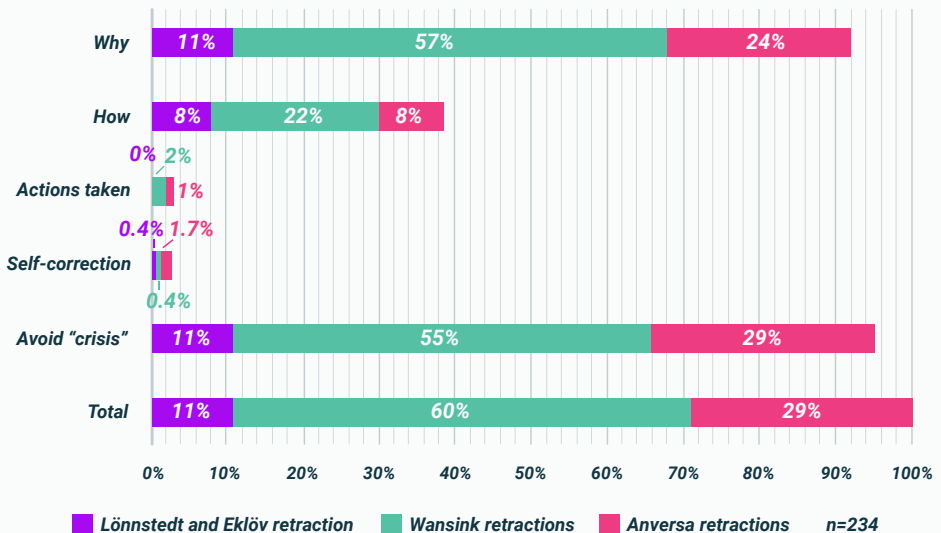


How the Media Frame News Stories About Retractions of Scientific Findings

News stories covering cases of retracted scientific findings often employ the counterfeit quest narrative structure, chronicling the activities of a deceptive researcher who has gulled custodians of knowledge such as journal editors and peer reviewers to advance problematic findings. In this digest of the third Annenberg Science Media Monitor*, our content analysis focused on news coverage of three high-profile scientific retractions from 2016-19. These involved work by Oona Lönnstedt and Peter Eklöv on the consumption of plastic by fish, Brian Wansink on human eating behavior, and Piero Anversa on cardiac stem cell therapy. A search of LexisNexis, Factiva, and Google News by the names of these scholars located 234 print and digital news articles. An analysis by our team found† that:

- 92% of the stories involving these retractions report the circumstances leading to them (Why)
- 38% report how the errors or misconduct were identified (How)
- 3% outline steps the scientific community has taken to prevent future research mismanagement or misconduct (Actions taken)
- 3% say retractions are evidence of self-correction in science (Self-correction)
- 95% avoid generalizing from a few retractions to the conclusion that science is broken or in crisis (Avoid “crisis”)

Reporting on Retractions in Print and Online News



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† Krippendorff’s alphas are, respectively, 0.85, 0.85, 0.74, 1, and 0.74.

Counterfeit Quest Narratives

Published in *Science*, Oona Lönnstedt and Peter Eklöv's study "Environmentally relevant concentrations of microplastic particles influence larval fish ecology" (2016) reported that perch larvae preferred eating tiny plastic particles, a common form of marine pollutant, to plankton, leading to increased mortality. An investigation requested by their colleagues found that the study as described could not have taken place and that Lönnstedt and Eklöv had committed research fraud.

Brian Wansink's studies, among them "Bad popcorn in big buckets: portion size can influence intake as much as taste" (2005) in *The Journal of Nutrition Education and Behavior*, won praise for their straightforward takes on human eating behavior. An investigation by an informal team of researchers and journalists revealed instances of statistical manipulation and reporting errors. By June 2019, 15 of his papers had been retracted.

Piero Anversa's paper "Bone marrow cells regenerate infarcted myocardium" (2001), published in *Nature*, reported that adult heart muscle damage could be repaired by an injection of bone marrow stem cells. Failure to replicate his findings prompted an investigation of his work by Harvard Medical School and Brigham and Women's Hospital that revealed instances of fabrication and falsification of data. As of June 2019, 31 of his papers had been retracted.

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