

The Media Coverage of Nanotechnology

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Introduction:

Work on the social and ethical issues surrounding the emerging field of nanotechnology has long been supported by the nano community. Some of the key issues discussed among this group are ethical, legal, economical, business-related, or political in nature.

A preliminary content analysis was completed last summer as a first effort at exploring the extent to which such social and ethical issues are reflected in the media and in public opinion. Articles relating to nanotechnology published between the dates of 1 January 1986 and 30 June 2003 in the New York Times, Washington Post, Wall Street Journal, and Associated Press were used in an analytical approach similar to a study done in Europe with the field of biotechnology.

The focus of this project is to update the existing preliminary analysis by coding articles published from the dates of 1 July 2003 to 30 June 2004 and to pursue the analysis in greater depth. The work involves identifying and retrieving media stories using computer databases, reading the stories and coding their content based on the prominence of themes, perspectives and positive or negative assessments, entering the data into a statistical database, and analyzing the results.

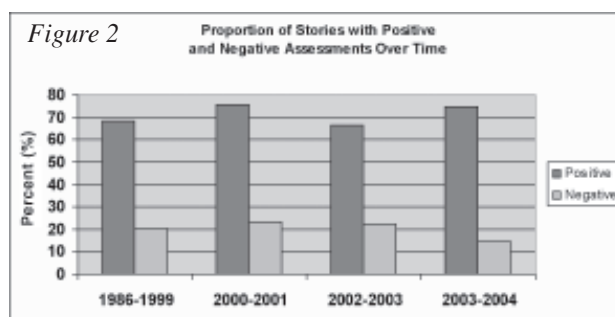
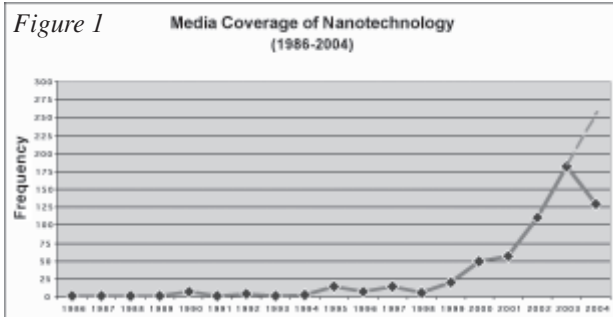
Procedure:

The keyword “nanotechnology” was used to search online databases of newspaper articles published by the New York Times, Washington Post, Wall Street Journal, and the Associated Press dating from 1 July

2003 to 30 June 2004. A total of 245 articles containing the keyword were printed, read, and coded. The approach involved identifying key themes in the articles as well as frames, or perspectives. The main theme categories found in these articles were applications, policy, politics, financial, and safety/risks. The frames in these stories included progress, economic prospects and opportunities, ethical, Pandora’s box, runaway, public accountability, long way away, and confluence. For each theme and frame, either a zero (no mention), one (briefly mentioned), two (present), or three (dominant) was assigned depending on the prominence of the specified theme or frame in the article.

For instance, an example of Pandora’s box would be: “...studies have shown that nanoparticles can act as poisons in the environment and accumulate in animal organs” [1]. An example of the runaway frame: “...a swarm of millions of self-replicating microscopic robots, in a ravenous quest for fuel, would consume the entire biosphere until nothing remained but an immense, sludge like robotic mass” [2].

A rating was also given on the degree of positive and negative assessments of nanotechnology within the article. It is important to note than one article can have many different themes and frames as well as have both positive and negative assessments. After all articles were coded, the gathered data was entered into the Statistical Program for the Social Sciences in conjunction with the data from the existing preliminary analysis to achieve our results.



Results and Conclusions:

Similar trends to the previous media analysis lead to the same general conclusions. Our results show that the media coverage of nanotechnology dramatically increased beginning in 1998, themes and frames found in the media coverage of nanotechnology roughly match those seen in early examples of emerging technology, such as biotechnology, and that both positive and negative aspects of nanotechnology are present in media coverage [3].

Figure 1 shows an almost nonexistent media coverage of nanotechnology up until 1998 when coverage dramatically increased at an almost exponential rate. The projected coverage through 2004 shows an even greater rate of coverage. Figure 2 shows a greater proportion of positive stories to negative ones in 2003-2004 compared to previous time periods. If we look at positive assessments by theme (Figure 3), we see that most of the positive comes from applications in nanotechnology as well as in financial opportunities. The possible applications of nano, in areas such as the environment and the medical field, are being widely discussed in these stories as well as the potential opportunity for investors to take part in what many consider to be the next revolution. Figure 4 shows that most of the negative assessments come from the risk and applications themes. There is great concern that nanoparticles could be potentially toxic and that such powerful technology can also be used for negative applications such as terrorism and environmental deterioration.

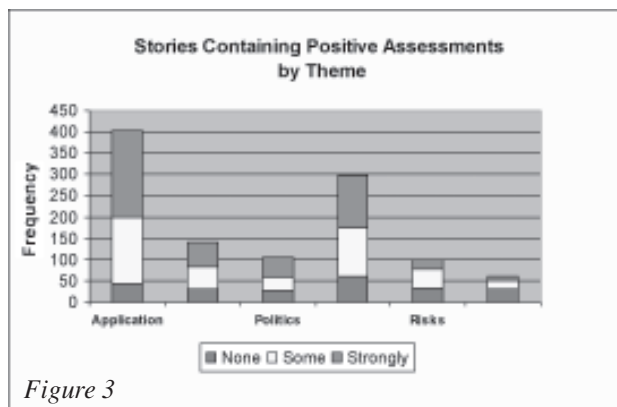


Figure 3

Future Work:

Further research in this area would include updating the already existing media analysis on an annual basis to continue monitoring the media coverage of nanotechnology. By coding these articles into numerical representations of themes and frames, a big portion of the rhetoric, tone and overall content is lost. Therefore, expanding the project to include a more in-depth content analysis of the articles would be appropriate.

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References:

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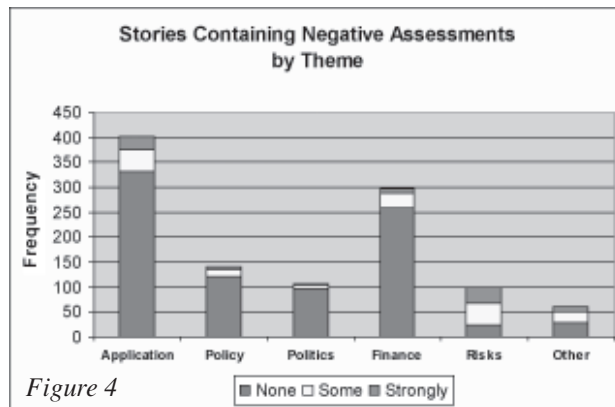


Figure 4