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TMC Metrics Experiment with Professor Gary King

Executive Summary

Progressive media is outgunned by conservative media in the United States. Whereas Fox News, to cite the leading example, is able to set the terms of public debate on important public issues, there is no progressive counterpart that has this power.

This imbalance is due to the fact that progressive media is a diverse sector comprised of independent organizations that march to different drummers. While a report by John Schwartz for the Democracy Alliance showed that the sector as a whole collectively operated on more than \$100 million annually in 2008, Schwartz pointed out that the sector is atomized, identifying about 20 progressive media organizations with annual budgets of \$1 million or more, the largest of which spent about \$10 million.

The progressive media sector will not coalesce into one organization because it is built upon the values of independence and diversity. However, the sector as a whole does have the potential to serve as the needed counterweight to the Fox machine. Both individually and through their trade association, the Media Consortium, US progressive media have shown an increasing willingness to coordinate coverage for greater impact.

This proposal entails establishing a rigorous method of ascertaining how progressive media affect the public debate currently, then running a series of experiments designed so that the participants can learn together how to make them more effective. The desired result is to achieve the “Fox level of influence,” which simply means the ability to frame the debate on some of the most important issues some of the time.

The Concept of Media Framing

Setting the terms of debate involves more than conveying information. It involves shaping the way individuals perceive issues and organize the facts they receive. There is an extensive academic literature on this subject. As Northwestern University political scientists Dennis Chong and James Druckman wrote:

A frame in communication “organizes reality” by providing “meaning to an unfolding strip of events” and promoting “particular definitions and interpretations of political issues.”¹ [internal footnotes omitted]

For instance, the nature of recent struggles in Wisconsin can be framed as an effort to repair a budget deficit---as the governor would have it---or as an effort to undermine the power of public sector workers specifically and progressive forces more broadly. Well-established frames become imbedded not only in citizens’ minds, but also in the way that journalists organize their coverage.

In sum, those who dominate framing dominate the debate.

New Research Methods

Until recent years, it was not feasible to track the transmission of media frames other than anecdotally. However, several factors have changed. First, there is now a vast trove of public opinion that is deposited---and can be retrieved---online through news stories, blog posts, Facebook entries, tweets, and the like. Academic researchers and private firms now maintain immense data sets and employ previously impossible levels of computing power to analyze the propagation of opinion.

Though the following studies did not undertake to track media frames, they give a sense of current research capabilities:

- Using statistical methods and large data sets, Stanford computer scientist Jure Leskovec and electrical engineering professor Jaewon Yang tracked the level and timing of online mentions in order to ascertain the relative levels of influence among various media outlets on topics ranging from politics to technology to sports.²
- Leskovec collaborated with Cornell’s Lars Backstrom and Jon Kleinberg to track 1.6 million mainstream media sites and blogs over a period of three months, documenting how memes originating in conventional media coverage are rapidly picked up in blog posts, and, occasionally, memes that originate in the blogosphere are soon echoed in conventional media coverage.³
- Two researchers at Hewlett-Packard’s Palo Alto labs analyzed a set of 500 million tweets plus 170 million news articles and blog posts on feature films to predict forthcoming movies’ box office receipts with high statistical accuracy.⁴
- Using methods developed by Harvard quantitative social scientist Gary King, social media analytics firm Crimson Hexagon parses enormous online data sets to gauge the nature and

¹ Chong, D. and Druckman, J., “Framing Theory,” *Annual Review of Political Science* 2007, p. 106.

² J. Yang and J. Leskovec, “Modeling Information Diffusion in Implicit Networks,” proceedings of the IEEE International Conference on Data Mining, pp. 599-608 (2010). <http://cs.stanford.edu/people/jure/pubs/lim-icdm10.pdf>

³ J. Leskovec, L. Backstrom, and J. Kleinberg, “Meme-tracking and the Dynamics of the News Cycle,” Proceedings of Knowledge Discovery and Data Mining (2009). <http://www.cs.cornell.edu/home/kleinber/kdd09-quotes.pdf>

⁴ S. Asur and B. Huberman, “Predicting the Future with Social Media,” arXiv:1003.5699 (2010). Also: <http://www.hpl.hp.com/research/scl/papers/socialmedia/socialmedia.pdf>

evolution of consumer opinions on products and brands “even if the category language includes sarcasm, abbreviations, foreign language, etc.”⁵

Proposal: Studying---and Training---Progressive Media

For this proposed project, Harvard professor and Crimson Hexagon co-founder Gary King has agreed to form a team to track the transmission of media frames, and, more importantly, develop methods to make the progressive media sector more effective in propagating them.

This work will be conducted under the auspices of Dr. King’s consulting firm, Beecher Analysis Group. It is to be organized into three stages.

The first involves fine-tuning a statistically rigorous method of understanding, measuring, and characterizing the public conversation on-line. Although human judgment establishes the controlling criteria, the effort will be carried out as a largely automated regime---principally through computer algorithms that amplify that human judgment such that it becomes practical to parse the billions of items contained in online data sets.

After setting up this automated process, the second stage is to conduct an observational analysis of how media frames are working now. What content are progressive and other media putting out regarding key issues? What is the public conversation about these issues? Are there discernible time series correlations between the media output and that conversation? In conducting this analysis, Dr. King plans to “run the monitors as far back as our data go and then going forward in real time,” utilizing enormous data sets collected by Crimson Hexagon.

Dr. King cautions: “Correlations are, of course, different than determining the causal effect of the media on the public discussion. We may be able to discern hints of the causal relationships from these observational data, but to get any firm estimates requires... experimental analysis.”

Hence, a third stage---the heart of the project---which is to conduct experiments on how the progressive media can increase their influence on media frames. As Dr. King writes, “our goal will be to simultaneously (a) seek out evidence of what has worked and (b) design intervention strategies that are increasingly effective...”

Because there will be an extensive sequence of experiments, and because new experiments will be based on prior results, it is not advisable to set forth all the possible permutations in advance. Dr. King plans to start small, probably by running experiments with individual progressive media outlets, then expanding the cohort to include larger segments of the progressive media, sometimes on a basis that involves the coordinated coverage on issues.

⁵ See: <http://www.crimsonhexagon.com/PDFs/Forrester-CrimsonHexagonWebinar-FINAL.pdf> and <http://www.crimsonhexagon.com/webinars/Forrester-Crimson%20Hexagon-4-20-11-Webinar-FINAL.pdf>

The details will at times be delicate. In order to be scientifically valid, the experiments need to be under the control of the experimenter, and will often involve random assignment of treatments, analogous to a good clinical drug trial. However, seemingly contrary to the concept of experimental control, media outlets need to determine the content of their reporting for reasons of editorial integrity.

Despite apparent contradictions, we expect to be able to accommodate the requirements of both social scientists and journalists in carrying out these experiments. The principal coordinating tool will be small grants to support reporting on specified issues at specified times by individual progressive media outlets pursuant to the experimental regime. These grants will be distributed by the Media Consortium, a national network of 50 progressive media organizations, including such outlets as *The Nation* and *Mother Jones* magazines, Free Speech TV and Link TV, Democracy Now, Alternet, and truthout.org.

Such grants are an outgrowth of current practice. Over the past 18 months, the Media Consortium has organized three significant collaborations involving multiple members: a response to the Citizens United ruling in October, 2010; a response to the Wisconsin protests in January, 2011; and an ongoing media policy reporting and education project. Future collaborations are being planned around the Outing the Corporations campaign conducted by Jay Harris's organization, We the People, as well as the Iowa presidential caucuses.

The Outing the Corporations project methods offer one example of how reporting can be coordinated without a loss of journalistic independence. The project plans to distribute grants "between \$2,500-\$7,500 to support between 5-10 members in the production of high quality investigative work about the influence of corporations on US elections..." Editorial criteria for grants specify the timing and orientation of coverage without arrogating control of the resulting stories.⁶

⁶ Editorial criteria for Outing the Corporations coverage grants are:

- Publish 1-2 investigative pieces during the September 19-November 2 window under the broad topic of corporate influence and politics. Organizations participating in this program should begin editorial planning as soon as they are accepted into the project. We are not looking for columns or opinion pieces. We want investigative reports that are going to break and drive news. Examples include:
 - Tracking corporate money on national/state elections or legislation
 - Tracking corporate money/interference on key political issues such as the environment, immigration, banking/economy
 - Who are the next or similar Koch brothers?
 - How is Wall Street gearing up for 2012 election?
 - Ongoing impact of Citizens United
 - And more...
- Pair a few investigative piece(s) with at least one additional "story telling" device. i.e. video, data visualization, podcast, graphics/charts.
- Integrate community and creative engagement tactics for developing, producing, promoting, sharing AND/OR discussing your investigative reports to help with broader discussion, and overarching impact.

As with prior Media Consortium grant programs, over the course of the experiment, all Consortium members will have the opportunity to apply for small coverage grants, and it is expected that a considerable cross-section of members will receive them during the course of the experiments. No media outlet will be required to accept a grant. Grant recipients will have editorial control over stories they produce with grant funds. The purpose is to map and improve the impact of reporting, not to usurp the role of editor or reporter.

Among the expected experimental measures:

- Effects of individual media outlets and the collection of all media outlets on the adoption of issue frames ;
- The volume of mention of progressive media frames;
- The reduction of mention of right-wing media frames;
- Changes in sentiment about frames or politicians associated with the frames;
- The adoption of progressive media frames in the blogosphere, the twittersphere, and media outlets that are not classified as progressive;
- Changes in traffic to progressive media websites.

Project Principals

Dr. Gary King will direct the research and experimentation. The Albert J. Weatherhead III University Professor at Harvard University, Dr. King also serves as Director of Harvard's Institute for Quantitative Social Science and is a member of the National Academy of Sciences.

Dr. King has developed research designs and statistical methods that enable one to estimate causal effects in very large scale experiments. These methods have been applied to a wide range of problems, including an evaluation of the Mexican Health Care system in an experiment with 500,000 Mexican citizens. Apropos of this project's subject matter, he has developed statistical methods to analyze unstructured text, such as social media posts, newspaper articles and transcripts of radio and television broadcasts. His biography is attached.

Coordination with progressive media will be directed by Jo Ellen Green Kaiser, Executive Director of the Media Consortium.

Progressive Media Involvement

This project has garnered the support of the Media Consortium, as well as the following progressive media organizations, as shown by the letters attached in Appendix _____.

Timeline, Staffing and Budget

Dr. King estimates that the research project will take approximately 18 months, with the effort spread approximately evenly over that time period, gradually changing from infrastructure building, to observational data analysis, to experimental studies.

In addition to Dr. King, staffing is budgeted to include four Harvard graduate students (one FTE and three half-time) working as analysts and programmers, plus six Harvard undergraduates (one FTE and five quarter-time) working as coders.

Commercial research of this type is costly. Applying commercial rates, we estimate that the research project expense would be approximately \$1.3 million. However, Dr. King has agreed to donate the bulk of his consulting fees in-kind and Crimson Hexagon is expected to allow the use of its facilities and data sets on very favorable terms. Because Harvard graduate and undergraduate students are supported in part by university funds, their work on the project is available at reduced cost. There will be no charge for the use of Harvard office space and other facilities.

As detailed in Attachment A, the 18-month project research budget is \$294,936 in cash. In addition, we estimate the value of in-kind support at \$1,009,810 from Crimson Hexagon (social media data, software, and computer infrastructure); Dr. Gary King (donated time); and Harvard University (student support and facilities).

Also as detailed in Attachment A, the budget to support coverage of issues by progressive media organizations is \$144,000. The principal use of these funds is to provide mini-grants to fund reporting.

Funds Secured, Anticipated, and Still Needed

The EBS companies have committed a total of \$87,475 from their current-year research and development budgets in support of research expenses, and anticipate that a further \$82,475 will be available for this purpose from next year’s funds. They also have sufficient funds in their current-year philanthropy budgets to fund the full \$144,000 media component, though board approval of such grants is required and has not yet been secured.

Below is a summary of the cash costs secured, anticipated, and still needed.

	<u>Total</u> <u>Cash Cost</u>	<u>EBS</u> <u>Secured</u>	<u>EBS</u> <u>Anticipated</u>	<u>Funds Still</u> <u>Needed</u>
Research	\$ 294,936	\$ 87,475	\$ 82,475	\$ 124,986
Progressive Media Coverage	\$ 144,000		\$ 144,000	
Total	\$ 438,936	\$ 87,475	\$ 226,475	\$ 124,986

Gary King Biography

Gary King is the Albert J. Weatherhead III University Professor at Harvard University -- one of 23 with the title of University Professor, Harvard's most distinguished faculty position. He is based in the Department of Government (in the Faculty of Arts and Sciences) and serves as Director of the Institute for Quantitative Social Science. King develops and applies empirical methods in many areas of social science research, focusing on innovations that span the range from statistical theory to practical application.

King has developed statistical methods and software that are used extensively in academia, government, consulting, and private industry. Of relevance to this project, he and collaborators developed a computer-assisted method for "clustering" text documents that is intended to classify them in useful and "insightful" ways. Social media analysis firm Crimson Hexagon licensed technology from King which it uses to parse enormous online data sets to gauge the nature and evolution of consumer opinions on products and brands.

King has been elected Fellow in 6 honorary societies (National Academy of Sciences 2010, American Statistical Association 2009, American Association for the Advancement of Science 2004, American Academy of Arts and Sciences 1998, Society for Political Methodology 2008, and American Academy of Political and Social Science 2004), President of the Society for Political Methodology (1997-1999), and Vice President of the American Political Science Association (2003-2004). He was appointed a Fellow of the Guggenheim Foundation (1994-1995), Visiting Fellow at Oxford (1994), and Senior Science Advisor to the World Health Organization (1998-2003). King has won more than 30 "best of" awards for his work -- including the Career Achievement Award (2010), Warren Miller Prize (2008), McGraw-Hill Award (2006), Durr Award (2005), Gosnell Prize (1999 and 1997), Outstanding Statistical Application Award (2000), Donald Campbell Award (1997), Eulau Award (1995), Mills Award (1993), *Pi Sigma Alpha* Award (2005, 1998, and 1993), APSA Research Software Award (2005, 1997, 1994, and 1992), Okidata Best Research Software Award (1999), Okidata Best Research Web Site Award (1999), Mendelsohn Excellence in Mentoring Award (2011), among others. His more than 125 journal articles, 15 open source software packages, and 8 books span most aspects of political methodology, many fields of political science, and several other scholarly disciplines.

King has had many students and postdocs, many of whom now hold faculty positions at leading universities. He has collaborated with more than seventy scholars, including many of his students, on research for publication. King received a B.A. from SUNY New Paltz (1980) and a Ph.D. from the University of Wisconsin-Madison (1984). His research has been supported by the National Science Foundation, the Centers for Disease Control and Prevention, the World Health Organization, the National Institute of Aging, the Global Forum for Health Research, and centers, corporations, foundations, and other federal agencies.