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Topic (iii): How to train and educate statisticians to tell the story behind the numbers

**TELLING THE STORY:
TRAINING STATISTICIANS AT STATISTICS CANADA**

Invited Paper

Submitted by Statistics Canada¹

I. INTRODUCTION

1. As a rule, it's fair to say that journalists and statisticians have little in common. Yet, journalists and national statistical agencies are virtually inseparable. Why? Because the general public is an important audience for national statistical agencies, and the news media is a powerful tool for reaching this audience. At the same time, journalists are becoming more aware that there are stories that cannot be told properly without resorting to statistics of one kind or another.
2. The overwhelming majority of the public will never directly consult a national statistical agency or communicate with it directly. For most citizens, the news media – newspapers, radio and television – provide their only exposure to official statistics. Consequently, collaboration with the news media as the agency's "gatekeepers" to the public is of great importance.
3. This presents a fundamental problem. A great many journalists have no formal training in statistics. Their level of statistical literacy is an ongoing concern for statistical agencies. Furthermore, journalists change assignments frequently. Only a handful remain in any particular field long enough to develop an expertise.
4. The media are the quickest path to the public, so it makes sense to train both statisticians and journalists to understand each other better. Or does it? Should statistical agencies provide formal training programs for journalists, in effect turning them into statisticians? Is this in fact feasible? Or, should agencies concentrate on educating their own staff to turn them into journalists? Is there a middle ground?
5. This paper will investigate the role of the media in accomplishing the mandate of data-gathering agencies, and the efficacy of training programs for journalists and statisticians. It will also review Statistics Canada's experience in this area.

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II. INFORMING THE PUBLIC

6. Statistical agencies are mandated to produce high-quality and timely statistical information. Their effectiveness depends on their credibility, the relevance of their information, and the accuracy and accessibility of their products and services, among others.

7. The news media afford statistical agencies a unique opportunity to fulfil a critical part of their mandate. The extent to which agencies can gain access to the news media and communicate effectively through them has an enormous impact on how well they can inform the general population.

8. Media coverage has two complementary goals:

- To inform the public about the population, society, economy and culture of the nation. This guides the public in doing their jobs, raising their families, making purchases and in making a multitude of other decisions;
- To demonstrate the relevance of the statistical agency to government and the general public. As a result, the agency can anticipate greater public support for the importance of its programs, as well as improved respondent relations and greater visibility of its products and services.

9. In Canada, most Canadians get their statistical information from the media, while the media get theirs from *The Daily*, Statistics Canada's official release bulletin. *The Daily* is published every working day on the Internet in English and French, Canada's two official languages. It plays such a vital role in Statistics Canada's communication with the public. As a result, the news media are the primary audience for major releases in *The Daily*. Other audiences are secondary.

III. JOURNALISTS VS. STATISTICIANS

10. Bruce Little, the widely respected economics writer with *The Globe and Mail* newspaper in Canada, talked about the gap between statisticians and journalists in a June 2, 1998 speech to the Statistical Society of Canada.

11. In general, he said, there is a perception among journalists that statistics are dry, hard to understand and, worse, of doubtful quality and reliability. Certainly, journalists have virtually no interest in methodological issues. In addition, many are absolutely ham-handed when it comes to numbers, and they are often unable even to calculate a percentage increase.

12. "Journalists are often people who avoided maths and sciences in school because they didn't like numbers," Mr. Little said. "They preferred words, so they took English, or other languages, or history or philosophy. Many journalists fear numbers and do what they can to avoid them. Too often, their eyes will skip uncritically over data they should be examining more closely. This is what people typically do with information they can't quite understand – they leave it out."

13. In a nutshell, statisticians thrive on numbers; journalists thrive on words. Statisticians try to avoid controversy; journalists live on controversy.

14. Statisticians can take months to produce an analytical article that might undergo constant revisions with the help of peer review; journalists have hours to produce an article that might be published with only slight revisions by a copy editor. Statisticians work in groups of experts; journalists work in groups of generalists.

15. The simplest terms for a statistician might be perplexing for journalists: median vs. average, quintile, decile, longitudinal, ratio.

IV. A DAY IN A JOURNALIST'S LIFE...

16. Two types of journalists may cover a statistical agency. There are 'beat' reporters with expertise in fields such as business and economics, and who are probably statistically literate.
17. However, the vast majority of reporters in Canada are general news journalists. These individuals do not regularly cover our releases and they may not have expertise in any particular field, such as economics. Consequently, they are probably not statistically literate. At Statistics Canada, analysts are advised to write their releases with these general news journalists in mind.
18. Journalists have their own crosses to bear. Financial cutbacks have depleted newsrooms. Two decades ago, the parliamentary bureau of Canada's domestic news agency, The Canadian Press, had two dozen reporters. Today, it has 12.
19. Newsrooms have responded to the cutbacks by eliminating specialists. Reporters these days tend to learn things on the fly. They face demanding editors on a daily basis and must file their stories on stringent deadlines. As their numbers go down, their workload increases.
20. Whether their stories come from a statistical agency or not, journalists have to keep a key element in mind: "Put a human face on it!" This is particularly true of one group that's comprised almost entirely of general news journalists: television reporters. Television is a visual medium. It focuses on pictures. Viewers don't remember what people have to say, they remember what people look like.
21. Television journalists keep the use of data to a minimum. Denis Ferland, a member of the parliamentary bureau of the French language arm of the Canadian Broadcasting Corporation in Ottawa, told a group of Statistics Canada analysts last fall that a TV journalist will focus on one or two key numbers.
22. "Instead of saying a 35% increase, we say something went up about a third," Mr. Ferland said. "It's not September 2003, it's 'a year ago'. We round off numbers. It's 'about 500', not 497."
23. To communicate effectively with these "gatekeepers", a statistical agency must understand the profile of the media. This means developing a solid working relationship with journalists.
24. The clearer an agency's communication to journalists, the more likely they will provide positive, accurate and informative coverage, not only of the data but the appropriate interpretation. So, what can statistical agencies do to help journalists better understand the data?

V. FORMAL TRAINING FOR THE JOURNALIST

25. Training agency staff in the ways of the media is more or less straightforward because it can be made a requirement of the job. Persuading journalists to take an interest in a formal training program to learn about data is far more difficult.
26. A formal training program for journalists could take a number of forms, for example:
- **Chargeable courses:** A statistical agency arranges and advertises a formal course through media umbrella groups and unions to provide training on specific or general statistical subjects.
 - **Workshops or tailored courses:** Media representatives are invited in for a formal seminar on a specific statistical subject or issue.

- **Individual tutoring:** A statistician gives up time to go through a particular area of statistical work with a journalist and explains all the meanings and interpretations.

27. **Chargeable courses** provide the statistical agency with a guaranteed audience, motivated to pay attention. If publishers put up the money, they are showing a long-term commitment to a better understanding of statistics among their employees. In addition, courses get the message across without analysts having to worry about being quoted.

28. Similarly, in the **workshop format**, statisticians can encourage journalists to improve their writing about statistics. They can help the media understand the analytical processes and difficulties in arriving at certain figures. **Individual tutoring** is an excellent method for getting a detailed picture across to a journalist, and for building personal relationships with the media.

29. On the other hand, most media groups are tight with their money. A chargeable course would require publishers to recognize the value and importance of their staff to be trained to interpret statistics. Furthermore, journalists face tremendous time constraints. They are at the whim of breaking news, and their attendance could not be relied on. Individual tutoring is of real use only to journalists who deal in special areas.

30. University journalism programs are helping to fill this gap. Students have no shortage of courses available to them with respect to working with data. For example, Ryerson University in Toronto offers courses on computer-assisted reporting, which includes modules in handling statistics. There are many websites dedicated to preparing spreadsheets, or explaining statistics to writers, such as <http://nilesonline.com/stats>.

31. There is also the question of scope. In Canada, at last count, there were 105 daily newspapers, 790 radio stations, 170 television stations and 950 weekly newspapers. Where does one start to provide a formal training program for journalists, who may or may not have anything to do with statistics?

32. One final point about journalists: Staff turnover in news rooms tends to be high as more and more news organizations cut spending. This is true particularly for radio, a very high turnover industry, where headhunting can be aggressive, and reporters come and go regularly. Not only would you be wasting your time training a journalist who is gone in six months. The organization itself would probably be loath to spend money training staff who may not remain loyal for long.

VI. FORMAL TRAINING FOR THE STATISTICIAN

33. If statisticians are to speak for themselves to the media, or write their own news releases, they must learn how to communicate simply and effectively. They need to understand how the media operate, what the media agenda is and what difficulties journalists face.

34. It makes good sense, then, that a media training program must be an integral part of a statistical agency's media relations strategy. For the statistical agency, these programs are far more preferable than courses aimed at journalists. That is because they provide the statistical agency a huge degree of control over the quality of information that is distributed to the public, and the way it is disseminated.

35. To make this work, media training must be valued within a statistical agency. It must incorporate the communications function deeply into its day-to-day operations, and make it a central part of the agency's thinking. This often requires a cultural change within the agency. Senior managers must make a total commitment to it.

36. For their part, statisticians must understand and accept that they work for the benefit of the public, not just for the interest of their peers. They must become more aware of the context in which they release their data, that is, what impact their data will have on other issues, news and events.

37. A formal training program incorporating courses on media relations and writing for the media has obvious benefits for statistical agencies. A media relations course is an important step for analysts who need to deal regularly with journalists. It increases their confidence, and improves their understanding of how journalists work. It helps them learn how to be in control of an interview, how to avoid panic, and how to avoid being stampeded into ill-considered or wrong responses.

38. A course on writing should teach them how to prepare news releases that are understandable to journalists, and thus understandable to the general public as the ultimate audience. Journalists write in the “inverted pyramid” style, in which the key news goes in the lead paragraph, followed by items in order of importance. Therefore, it makes sense to write the agency’s news reports in the same style so journalists get the message clearly and accurately. The course should also teach analysts the value of context and perspective.

39. These courses can be expensive, and they require constant commitment from senior management and the human resources division. But if the courses make it possible for the agency to release its material as clearly and concisely as possible, in a format that is readily understandable, then hopefully the journalists will transmit it accurately to the public.

VII. THE CASE AT STATISTICS CANADA: JOURNALISTS

40. Statistics Canada does not provide any formal courses for journalists. In the past, it has conducted seminars for journalists on the nature of the statistics produced by Statistics Canada and on the underlying general concepts. They have not proven popular, not necessarily because of lack of interest, but more because of lack of time.

41. Instead, the agency has opted to work with journalists through a number of informal programs. For example, under a media liaison program, media relations officers meet regularly with individual journalists or members of news agencies to explain the services we offer and how we can better meet their needs.

42. In addition, the agency regularly invites representatives of all forms of media – print, radio and television – to its Ottawa headquarters to formally address analysts and senior managers. These give-and-take sessions are invaluable as learning tools for both sides.

43. The Internet has become an important tool. Since April 2001, *The Daily*, our official release bulletin, has been the home page of the agency’s website, the most visible aspect of its operation. Where applicable, each news release contains electronic links that provide access to a comprehensive set of meta information.

44. The system offers journalists and others access to background information about the specific survey program, its concepts and methodology, data quality, and so on. While it is unlikely that every journalist will read the meta information, at least it is readily available to those who have an interest. As well, it provides a common point of reference when answering inquiries from journalists about details of a release and the underlying methodology.

45. The agency also recognizes that parts of its website can be confusing and complex for lay readers. As a result, it has prepared a new module specifically for journalists – a “media room”. This module provides a set of topic-based electronic links allowing quick, easy access to a wide range of data. The site also provides a set of easy-to-understand definitions for terms such as gross domestic product.

46. In the case of special news releases, Statistics Canada has invited representatives of the media to its headquarters to discuss coverage and potential story lines in advance. A superb example of this was coverage of the 2001 Census. A team of analysts and communications people worked hand-in-hand with a team of reporters and technical experts from The Canadian Press over the course of 11 news releases to deliver several thematic write-ups backed by huge volumes of data.

VIII. THE CASE AT STATISTICS CANADA: TRAINING FOR ANALYSTS

47. To bridge the “gap” between statistician and journalist, Statistics Canada has hired working journalists as media relations officers and writers. They are familiar with the needs of journalists, and speak their language. They are the people who provide the training at Statistics Canada.

48. Statistics Canada provides a number of formal courses – some mandatory, some not – for its analysts. The mandatory course, called Encountering the Media, requires all subject matter spokespersons to receive media training. This is provided by media relations officers who themselves have undergone formal training by professional communicators. This one-day course provides analysts with techniques they can use to communicate effectively through interviews.

49. Analysts are encouraged to prepare interview plans, which focus on three or four main messages for media consumption. In addition, they learn the importance of the “sound byte”. They are taught how to be in control of an interview, and they are trained in providing interviews for broadcast on both radio and television.

50. A second popular course is called Writing an Effective Release for The Daily. This one-day workshop is taught by Statistics Canada staff members who have several years’ experience as professional journalists.

51. The course does not turn analysts into journalists. Rather, it introduces them to the culture of journalism, and teaches them the inverted pyramid style of journalistic writing.

52. The workshop shows participants how to extract newsworthy and relevant information from new data sets; identify important contextual information that should be presented in the news release; develop story lines, leads and strong subheads; and present tables, charts and graphs effectively. It also includes a hands-on writing exercise.

53. Advice is down-to-earth. For example, this was the original lead paragraph on a draft October 2004 news release titled “Pregnancy outcomes”:

54. “An estimated 449,270 pregnancies ended during 2001, almost 15% fewer than the peak in 1990 (526,887) for the twenty-eight year period 1974 to 2001. The corresponding pregnancy rate reached its peak in 1975 when there were 76.1 pregnancies for every 1,000 women aged 15 to 49 years.”

55. Analysts were advised to find a more newsworthy story line. As a result, it became:

“Pregnancy rates among teenagers in 2001 were down by one-third from where they were nearly three decades earlier, according to new data. Meanwhile, women over the age of 30 were accounting for a much higher rate.”

56. Statistics Canada has other useful courses for analysts, such as writing for the web. Through lectures and hands-on writing exercises, this workshop explains how to compose effective written material for publication on a website.

57. Statistical agencies can also benefit greatly by making communications professionals an integral part of their publication processes. By doing so, they can bridge the gap between them and the media. As well as training, such staff at Statistics Canada provides a wide range of other services that promote positive relations with the media. These include:

- offering advice on news releases;
- facilitating journalists' access to spokespersons, data and publications through a media hot line;
- providing media lockups for key economic indicators;
- monitoring media coverage; and
- working with subject-matter staff to correct errors.

IX. CONCLUSION

58. Journalists are a particular group of clients of statistical agencies. It is not the role of a statistical agency to create statisticians out of journalists. It is to help journalists in whatever way possible to do their job. In addition, statisticians cannot be expected to become journalists any more than statistical agencies can expect all journalists to become statistically literate.

59. Training in media relations is key for any statistical agency. Rather than target training programs at journalists, the better idea is to direct them at agency staff. The more work statistical agencies do to provide journalists with 'ready-made' news stories, the better coverage they will get for their data.

60. Statistical agencies must recognize the importance of the media in fulfilling their mandate. They must make a commitment that recognizes media as a key audience, and back this commitment up with resources and programs which support the efforts to obtain news coverage.

61. In turn, media will publish survey results, thereby demonstrating the value of the data to a far larger audience than statistical agencies could reach on their own.
