A FrameWorks Institute eZine

Doing Social Math

In "Framing Public Issues," the FrameWorks toolkit that is available online, we devote a chapter to the important challenge of making numbers vivid and memorable for ordinary people. This eZine takes up where that chapter leaves off – by applying framing to numbers in the news.

Some years ago, the Advocacy Institute and Berkeley Media Studies Group pioneered an approach to communicating statistics that they call "social math." By this, they meant "making large numbers comprehensible and compelling by placing them in a social context that provides meaning." Typically, this means creating a relationship between a number that is hard to imagine and something known.

So, for example, environmentalists who wanted to call attention to the fuel-inefficiency of the nation's fishing fleet, decided to compare it to that of other countries, and came up with this equation:

"If the fishing industry were a country, it would rank with the Netherlands as the world's 18th-largest oil consumer.."

By placing the numbers in this context, they drove home the point that the industry is a major player in energy politics. And, by extension, environmentalists set the stage for a discussion of the need to oversee and regulate the industry's fuel efficiency.

Social math is often used to dramatize the numbers, to make them bigger or more startling. But the marriage of a framing perspective to the tool of social math yields another set of important insights for translating numbers effectively. Here are three lessons in communicating numbers, all drawn from the daily press.

The Equation Doesn't Work

Here are two examples where the frame sponsors didn't fully play out the numbers to see if they made sense. On December 13, 2005, Dana Milbank reported this story in The Washington Post:

"Interior Secretary Gale Norton, campaigning to win oil drilling in the Arctic National Wildlife Refuge, had the urgency of a saleswoman falling short of her monthly quota.

"ANWR would supply every drop of petroleum for Florida for 29 years,' she told a friendly audience at the Heritage Foundation yesterday, 'New York for 34 years, Illinois for 43 years, California for 16 years or New Hampshire for 315 years.'

So how many years would ANWR's oil keep the whole country fueled up?

Norton balked at the question. 'When you look at it for the whole country, you really get somewhat of a deceiving picture,' the secretary answered. She said that's 'not the way this operates,' and said the question 'assumes that unless a source of energy is going to meet all of America's needs then it's not worth looking at.'

For the record, ANWR's oil, using the administration's own estimates, would supply the whole country for 13 to 17 months before it runs out."

What's wrong here is that social math was used as merely another way to lie with statistics. The sole goal was to make a relatively small number seem Really Big. The bad tactic got its come-uppance.

Michael Kinsley, reporting on what he calls "Social Hypochondria," in the New York Times (March 1, 2002) catches another bit of bad math:

"Something called the National Center on Addiction and substance Abuse put out a study last week noting with alarm that a quarter of all the alcohol sold in America is consumed by teenagers. The New York Times reported on Wednesday that the study was 'wrong' because it 'had not applied the standard statistical techniques in deriving that number.' This makes it sound like the error was arcane and maybe a matter of interpretation, but the Times writer, Tamar Lewin, goes on to explain it quite clearly: forty percent of the survey sample was teenagers, but teenagers are less than 20 percent of the general population. Correcting for this flat-out mistake produces a figure more like 11 percent of alcohol consumption that is by teenagers.

But this raises other questions – or it ought to, but didn't among news organizations that publicized the original number. Shouldn't you want to know what percentage of the population is teenagers before you decide how alarming it is that they consumer 25 percent of the alcohol?...

It is not obviously alarming that teenagers consume 11 percent of the booze if they are 20 percent of the population. But then it would not be obviously alarming that they consumed 25 percent of the booze if they were 40 percent of the population. In other words, the alarm would be dubious even if the original statistic was correct."

Kinsley accuses groups who play out these crisis numbers as "sowing serial social panic."

The charge is an important one and gets at the heart of a good technique used poorly. In framing terms, we would say that this particular element of the frame – numbers – is being hijacked by its association with bad values. In other words, if you only use social

math to drive home the Level One value of Crisis, you are doomed to search again and again for ways to inflate the numbers to make them seem Really Big.

But social math is best used in partnership with other frame elements that are wisely chosen. The math needs to be fully integrated into the framing lesson, to help people see "what this is about," and "how it works." Take, by contrast, the great lesson in social math that our field project in Arizona created to dramatize the impact of the growing numbers of uninsured people on the state:

"If Arizona's highway system were in the same condition as its health care system, every five miles that you drove along the highway, you would come to a pothole a mile long."

What does this social math example accomplish beyond bigness? First, it translates the numbers from people to infrastructure, in keeping with the framing research on how to talk about the health care system. Second, it universalizes the impact of the problem by making it Everyman's problem. Finally, it promotes solutions of repair and maintenance, not crisis and sympathy. In short, the social math in this example "works" because it helps people see the problem more clearly.

Social Math as Frosting on the Cake

Too often, advocates use an example of social math as a simplifying device -- but fail to get rid of the rest of the numbers. Social math is meant to be a tool for bringing an aspect of the frame into sharp relief. But that can still get drowned out by the stream of statistics cited. That's what happens in this announcement from the Bill and Melinda Gates Foundation:

"What if every time you came across a grim statistic about children in developing countries, you saw a face instead of a number? A set of real human eyes with a real human life. It could change the way you look at the world. Approximately four million of these children die each year from vaccine-preventable diseases. And here are some more faces to think about. A child in a developing country is 10 times more likely to die of a vaccine-preventable disease than a child living in the industrialized world. At least 20% of children (about 25 million infants per year) still do not have access to basic immunization services, with the lowest coverage in sub-Saharan Africa."

The incipient social math comes in the sixth sentence, in a comparison between children in developing and industrialized countries. Not quite fully realized as a fairness argument, or a piece of social math, it is drowned out before it even has a chance to take hold by a litany of excessive descriptors. And, despite the promise that we will see the problem in a new way, this communications fails to deliver anything but a list of incomprehensible numbers. Given that most people know that children in the Third World are not doing well, this list didn't give them anything new to work with. How about calculating the impact of the Foundation's investment on evening the odds that

these children will make it through childhood? If you are going to set up a Fairness Frame, then the social math should deliver on that promise.

Numbers Undermined by the Analogy

Jenny Price's op/ed on "The Gun Control Lobby, Thinking Small" in The Washington Post (December 25, 2005) suffers from a similar tendency to numbers dump. But it has an additional and more interesting problem. The social math supports a counter-productive value. Here's the one bit of social math swimming in a sea of numbers: "Nearly 12,000 Americans annually use guns to (kill people), and the majority use handguns. Twelve thousand: that's comparable to the number of AIDS deaths each year in the United States." So what's wrong with this social math? First, by comparing gun deaths to AIDs, the writer thinks she is making a case for Prevention. But think about it – what do we do to prevent AIDS? Do we ban sex or needles? Primarily, we use education as a preventive tool – we try to teach young kids and at-risk groups to use safer techniques. So apply that to gun violence and what do you get? The same solution the gun lobby is promoting: safer storage and youth education programs, but certainly not government interference in the choices people make, whether safe or not so safe. Here the analogy dooms the equation.

So here are some essential rules for using social math as a powerful, and integrated framing tool:

- Re-examine the Values, Simplifying Models, Causal Sequences, etc. that make up the reframe you are trying to support.
- Ask yourself what Social Math should be used to do – what is its role in the reframe?
- Make sure the equation really works to that end, and isn't simply setting up a Crisis Frame
- Eliminate the other numbers that can now be replaced by the more vivid Social Math calculation
- Now go back and scrutinize the full effect of Values, Models and Social Math – are you helping people see how the world works and how a particular policy solution would ameliorate the situation? If not, go back to the drawing board.

***About FrameWorks Institute*:** The FrameWorks Institute is an independent nonprofit organization founded in 1999 to advance science-based communications research and practice. The Institute conducts original, multi-method research to identify the communications strategies that will advance public understanding of social problems and improve public support for remedial policies. The Institute's work also includes teaching the nonprofit sector how to apply these science-based communications strategies in their work for social change. The Institute publishes its research and recommendations, as well as toolkits and other products for the nonprofit sector at www.frameworksinstitute.org.

Please follow standard APA rules for citation, with FrameWorks Institute as publisher. FrameWorks Institute (2005). *Doing Social Math: Case Study in Framing Food and Fitness*. Washington, DC: FrameWorks Institute.