**Fear and loathing in official statistics (or: The death of the expert as a target audience)**

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**Abstract**

Statistical agencies are in general most comfortable speaking to experts on our various subject matters. This approach is increasingly, if not already, untenable in the face of the modern media environment, where Google is king and content is only alive in so far as it is found through search and viral media. Why are we afraid – as sole stewards of gold mines of up-to-date information – to share our insights with a more general audience? Do we suffer from an elitist disdain of the common man, setting ourselves up for the cries of “fake news” from political populists?

In this talk I argue that we need to reconsider our role in society and think of ourselves less as crunchers of numbers for policy makers, and increasingly as “uncrunchers” of those same numbers for popular consumption. I will outline what user testing tells us that we need to do to begin presenting statistics in a tone of voice that an inquiring citizen will want to listen to. I will also argue that an approach that demonstrates our worth to the public at large, and not just narrowly to experts and vested interests, is essential to the long-term survival of the statistical agency as we currently know it.

**Keywords**: statistics and society, media, user testing, communication, popular interest

## Introduction: Number crunchers anonymous

As long as there have been organized states in the world, there have been statistics. The need to know what you are ruling, if you are to rule it at all, was apparent to the ancient Egyptian, Chinese and Indian civilizations, long before our times.

Statistics were originally used to raise armies, and to raise taxes. There was, in other words, little upside for the population in getting counted. And while we may not today subject those who refuse to be counted to capital punishment, as in the times of the Roman empire[[1]](#footnote-1), and so no longer employ executioners, modern law still gives us the right to hand out fines to those who will not comply with our demands.

It is safe to say, therefore, that the advantages accruing to the common man were not from the outset a part of the reasonings legitimizing the production of official statistics. Although the advantages of living in a modern society would seem to be intrinsically dependent on a highly evolved system of collecting statistics, statisticians have traditionally prided themselves on the services they render to those who rule society, not to those who are ruled.

I think of this as the “number cruncher” image of the statistician: Their role is to take raw data and crunch it through statistical technique, thereby making it useful. The end product is figures that are ready to be used as the raw material for public policy, investment decisions and other undertakings of great societal consequence.

Crunching numbers for the state is no mean thing! Both modernity and globalization are all but unthinkable without it. And there is a definite romantic air over the image of the anonymous bureaucrat trudging away at work that is noticed, at best, only when it is not completed; toiling for the greater good at the mind-numbing task of counting things both small and large, and people, even when they do not want to be counted. This is who we are, and who we want to be, the number crunchers anonymous.

## The times they are a-changing

Change, however, often comes whether we want it or not. The technological revolutions of the modern age do not ask permission before rendering a skill set obsolete – it is enough to remember that “computer” was once a professional title[[2]](#footnote-2). Grander occupations than the statisticians’ have been summarily pushed to the side as a consequence either of technological change, increased competition or both.

The truism that no one is immune to change does not make exceptions for number crunchers. Although many parts of the traditional activities of a government statistical agency still do not face (much) competition, the situation is very much in flux, and will hardly be tenable for many more years.

I will here give an outline of some of the complex reasons why this is the case.

### The data economy

Data on the population used to be scarce. Limits on computing power meant that few, if anyone, were able to make full use of all available information, and government statistical agencies were staffed accordingly. We became monopolies, both as the only institutions in our respective countries with the resources to make sense of the data, and as the only data collector with the legal basis to compel others to provide the information we deemed relevant.

Today, the cost of computing power and data storage has decreased by several orders of magnitude. This means that there are now many corporations who can make use of data on an almost unlimited scale. When they do, the possibilities for profit multiply, which gives the private sector a great incentive to become producers of data. There are new entrants to this market daily, across the globe. Data, as they say[[3]](#footnote-3), is the new oil.

At the same time, the importance of our legal protections is declining. While we still are the only institutions empowered to punish non-responders, companies such as Google and Facebook already have data on the population that, probably, more than rivals what we collect. Much ink and many pixels have been spent musing on why people so readily give away data to commercial entities, when actors working for the public good meet a reticent population. But this should come as no surprise. When I give away my personal information to the commercial services of my choice, it works as a currency that buys me access to a wealth of useful tools. The statistical agencies hardly even give responders a thank you note. As psychologists will tell you, carrots beat sticks every time, and free services beat a government mandate in just about all cases.

### Modern media

It is redundant to point out that the modern media landscape is very different from what held sway just a short time ago. Most adults today can attest from their own experience that their media habits are markedly different from what they were just five years ago, and hardly recognizable from ten years ago.

Why does this matter to statistical agencies? For one thing, since it means that information simply is not consumed the way it used to, it follows that it would be a great coincidence indeed if the methods we have traditionally used for reaching out were still the most effective ones. For another, there is today far greater personalization in media consumption, and, consequently, we cannot expect to reach everyone in the same way.

Thus, information is consumed in an ever more atomized way. The modern web effectively has only one front page, and it is Google. Directly in proportion to how well the search engine works, the number of visits to our websites that begin with our own front page, declines. What we cannot get exposed in a Google search, we might as well in many cases not publish.

Although dissemination of statistics has its roots in paper yearbooks, the modern statistical agency can no longer live on this analogy. Finding information on the modern web simply does not have much in common with leafing through dense books of limited circulation. Nor is it the case that the back-up solution is to find something akin to the paper publication and digest it systematically. The alternative to not finding the information you are looking for, in the place where you expect to find it, is to make do without it. If we were to act as if this were not the case, we would risk obsolescence sooner rather than later. We ignore modern media at our peril.

### What is fake news?

One of the hottest topics of recent times, even in the internal discussions of government statistical agencies, is fake news. And it does seem obvious that this is something we should work to counter. After all, our job is the methodical establishment of facts, which is real news if anything is. If others see fit to publish articles that are clearly at odds with reality, should we not correct them?

Viewed from a different perspective, we might as easily see that the phenomenon of “fake news” is a natural result of the changes outlined above: Media habits are changing, and there are many producers of facts. With new ways of reaching an audience available, what is to keep those interested in propagating “alternative facts[[4]](#footnote-4)” from spreading them to the best of their ability? In the online economy, there is value in converting others to my world view. And the personalization of media consumption means that individuals encounter corrective voices far more rarely than before.

This, perhaps, makes it easier to see that fake news does not simply consist of news-like items that are out of line with established facts. It is just as much a political slogan, and my choice of which news outlets to trust – or to share on social media – is part of what defines me as a person. The problem with fake news, one might say, is not that it is untrue, but that to its believers, traditional sources of information are not seen as relevant to checking its contents. And seen in this light, it is perhaps not all that obvious that the statistical agencies are the solution to the problem. After all, if you are the kind of person to look to official statistics to check the news, it is doubtful that you would fall for fake news in the first place.

This succinctly summarizes the crisis of legitimacy that is faced by the structures traditionally expected to spread the news of the world, statistical agencies included. The “real news” is simply no longer trusted by a growing part of the population, and in their minds the “fake news” is a real competition. So, far from the problem being that the spreaders of fake news have not checked the sources, it is that they do not trust the sources – of which we, obviously, are one. The root problem, then, is not that known falsehoods are being spread by malicious actors, but that the institutions which have been trusted to convey facts are beginning to lose legitimacy.

## The legitimacy of statistical agencies

The traditional reasons given for the existence of the government statistical agencies are, for the reasons given above, no longer straightforwardly applicable. We are no longer the only ones with the resources to collect and analyze data, nor are we the only ones to whom the population will reveal their data. In short, the period when no one could challenge our role as suppliers of data to government is coming to an end.

This is not to say that the information we gather will no longer be necessary to the powerful. Someone will be calculating CPI in the future, just as today. But it is necessary to no one that it is done by the same people and in the same way as today. It does not matter whether the calculators of CPI are human, nor who owns the machines, as long as the number is reliable. As soon as someone can sell a reliable enough number for less than we are asking, we would be well advised not to wager too much that our present good relations with the bureaucracy will save us.

Put bluntly, government statistical agencies face an existential threat. With the rise of new, cheaper and more exact data sources, our labor intensive, traditional organizations lose their value to our owners. If we are going to survive in a form at all resembling what we know today, we will have to find new sources of legitimacy. We must demonstrate our own indispensability in niches other than those we have traditionally filled, and show that our work will provide value that commercial organizations will not.

This means we will have to change. In a relatively short period of time, we must acclimatize from being a protected monopoly to clawing out our place in the attention economy, like anyone else. Now, in this respect, we have many advantages. One is a culture of professionalism that few newer actors can match. We are organizations dedicated to producing the correct numbers, and we are streamlined and laser focused to this end. We know the possibilities as well as the limits of the statistical endeavor like no one else.

Accordingly, if there is a niche for us to fill, we are uniquely positioned to find it. Still, change is always painful, and the examples abound of companies that disappeared because they were not able to change with the times. Kodak, famously, invented the digital camera, but discarded the product as not fitting their business model. Today they are no longer in the photography business[[5]](#footnote-5).

## Fear and loathing

Like any company that has enjoyed formal protection, and has done so for a long time, statistical agencies have a conservative culture. Our culture has served us well over the years, and cultures do not change on their own accord. Changing times in themselves are not enough – a corporate culture will not change until it meets an existential threat, and in many cases not even then (as with Kodak). We are in the first stages of an existential challenge, and our responses to it are bound to be guided by our history.

If our reasoning is right, and the statistical agencies’ utility to government is no longer as sure a bet as it used to be, the natural consequence is to look for new groups that we can bring a benefit. Any attempt at reaching out to new audiences, however, naturally inspires a negative reaction. After all, what we are doing today is what we know, and what we are good at. If the criteria for success change, most employees will feel that this does not play to their strengths. Obviously, no one will freely choose to move down a professional path where what they do best is no longer valued. And fear of change can lead to desperate measures. “Let them eat cake,” Marie Antoinette is reputed to have said when the hungering masses were at the gates demanding she hand out her bread. Going nobly down with the ship is a real option to many, when the alternative is to pander to the needs of unfamiliar groups.

Further, it is sometimes argued, even acknowledging the threat, we must work to counter the forces aligned against us. Reaching out to new groups is well and good, but it must be an outreach limited to educating them in our mode of thinking. Effectively, instead of making it easier to find the information we produce, we must complicate it enough that users are worn down to accept reality on our terms. Keeping every nuance intact is not a debatable virtue, and losing control of how our numbers are used is no more acceptable. We will not be satisfied with limiting the access to bread, so to speak, we must outlaw the making of cakes as well.

Or perhaps the better analogy here is to Don Quixote’s battle against the windmills, because our efforts in this realm are surely just as doomed. Whether our refusal to accept modernity is grounded in the fear or the loathing of its agents, we will not defeat the threats of the modern age with weapons belonging to a different time. Whether we feel comfortable about it or not, we will have no way to require that our products are used only in certain, specific ways in the future. Even if the superior excellence of a previous state of affairs were to be convincingly argued, it would not matter. Because that would not make it come back.

What all this still does not tell us, however, is what to do. Which path, out of all our possible choices, will be the one to lead us forward? Choices of this kind are never easy. What counts to our advantage, however, is that we are far from the first public monopolist to be attacked by change. And some of our predecessors have waged a successful war against the tides of time. I want therefore in the following to look at two such examples, to see what lessons they have for us and our future.

## The paternalism of monopoly: Two examples

Ever since humanity first began experimenting with democracy, skepticism about mob rule has abounded. It did not take many decades of Athenian popular votes before the philosophers began to devise systems to save the *hoi polloi* from their own worst instincts. This sort of paternalism has been influential well into modern times, when, in a spirit that Plato might approve of, it has often taken the form of instituting public monopolies in areas where the populace might on its own make the wrong decisions. In recent decades, however, there has been a definite swing away from this approach. Here, I will outline the stories of two classic monopolists and their paths through this change.

### Alcohol monopolies: A paternalism of public health

Despite the best efforts of warning labels of all sorts, it turns out that people tend to not drink responsibly. And when they don’t, they tend to do more or less ill-considered things, resulting in both funny stories and deep regret, depending on which side of the morning you are standing on. Alcohol regulation, no doubt, is an important part of civilized society, and a wide spectrum of approaches exist. In the Nordic countries, the favored model – outside of Denmark – has been to build monopolies on the sale of alcoholic beverages to the public.

Now, a public monopoly on sales does not in itself reduce alcohol consumption. What matters is the way the monopoly is implemented; what measures are taken to discourage the consumer. Taking Norway as our example, this was done, in the first place, through spotty coverage and short opening hours. Secondly, the shopping experience was designed to be somewhat intimidating. There were typically long lines during anything that might be considered peak hours, and a system was used where you ordered your bottles at the counter – where you might easily feel your choices censured both by the salesperson and your neighbors in the line – and finally, a product catalogue heavy on French and wine-taster notes.

This system was broadly successful in keeping alcohol use low in Norway. However, from the 1980s onward, it ran into some headwinds in the form of more widespread liberal attitudes to alcohol, as well as more liberalist political attitudes in general. The public would no longer accept the limits imposed on what they considered lifestyle choices, and politicians were increasingly inclined to remove the limits. A public discourse was started: Articles were written about the options open to modernizing the availability of alcohol, resulting in the mainstream acceptability of something less than a full monopoly on alcohol sales, and sending us onto a slippery slope with the abolition of *Vinmonopolet* as its end point.

Except that was not what happened. *Vinmonopolet* was able to change with the times, and lives and breathes to this day. The slippery slope stopped being so slippery. What did they do?

In the first place, they opened more shops. A lot more, over the next few decades. Further, opening hours were relaxed somewhat and outlets were converted to modern self-service stores, letting buyers pick their bottles without having to learn French while in line. The message was clear: We are not here to moralize; we just make the alcohol available – you take your pick.

And, perhaps most interestingly, they were able to trade on their history as a public monopoly. Being an organization devoted exclusively to alcohol sales, and employing a steady, unionized workforce, they bring a lot of expertise to the process of filling up your shopping cart. Customers can expect any shop assistant to be well-versed in the bouquets of Burgundy as well as the terroirs of Tuscany. Not many Norwegians want wine sales moved to supermarkets anymore. In 2018 *Vinmonopolet* topped the list of Norway’s best regarded companies[[6]](#footnote-6). For the sixth year running.

### Public broadcasting: A paternalism of public entertainment

Not content with regulating what the public was drinking, European governments were traditionally minded to place quite severe restrictions on the media, through the national broadcasting monopolies. In Norway there was only one TV channel and one radio channel, and the public could but surrender to *NRK’s* mostly awkward programming. There was, after all, little alternative. If you craved entertainment outside of broadcast hours, there was always solitaire.

The opposition came along now familiar lines. A combination of technological changes and liberalization of both cultures and markets rendered the national monopoly largely redundant, before it was removed altogether. What remained for the national broadcaster was the obligatory license fee, growing yearly to a predictable increase of not unreasonable complaints – if I am not watching it, why should I pay for it?

This, though, was not the end of *NRK*. Further, contrary to the experience of many of its public service counterparts in other countries, *NRK* was not reduced to the second or third most used channel. It still ranks at the top for most media categories, leaving competitors to grumble about how its non-commercial model makes it impossible to compete with. How did this come about?

In the first place, *NRK* opened 24h programming on three television channels and tens of radio channels. They embraced web publishing early, and have worked to keep up with technological change in parallel with their audience. Possibly even more important, they have actively competed with their commercial counterparts in providing popular content, reasoning that their more obscure niche content is not diminished by large audiences gathering for prime-time television, no matter how dumb. In 2019, they were recognized as media house of the year in Norway[[7]](#footnote-7).

## Lessons to statistics & fake news redux

A common theme through these examples is surviving by reaching out. Embrace those who use you, and they will embrace you in turn. Not many points ought, perhaps, to be given for seeing the obvious: If the times turn against you, try turning with the times. It seems obvious in hindsight that Norwegians would not continue watching televised theater in Finnish, nor buy from shopkeepers who would rather they did not. No one likes the paternalist condescension inherent in having others make their decisions for them. Even (or especially) if they are right.

Except this turns out not to be all that obvious after all. The theory that you should not change a winning team is deeply embedded in human nature – so much so that the rule is commonly still followed when the winning streak is long gone. As we noted above, a long and distinguished history is a good place to start changing from, but it also naturally leads to conservativity. Statistical agencies must face the brave new world on their own terms, and the challenge is not diminished for being easy to set out.

What, then, is our brand of paternalism? What is the mindset that keeps statistical agencies from fully embracing our potential audiences?

It seems to me that what hampers us most is our insistence that we, ourselves, get to define what is important in the world. That is, instead of producing the numbers that the public finds interesting, we will simply produce the numbers that we see as being in the public interest; one might call this a paternalism of the public interest. This approach works well, in fact unbeatably, when your audience is a select group of experts who agree with your worldview. But as we have seen, the days when this was a productive approach are drawing to a close, and we need to move on.

Paternalism is also, in the final analysis, what feeds fake news. As we noted earlier, fake news is not simply the spreading of untruths, but necessarily also connected to the willingness of the population to believe them. Again, no one likes being spoken down to, and will, in general, turn away from those who do. When we are not willing to reach out to the public in a way that will answer their need for information, but require them to reach an expert understanding to make sense of our numbers in the first place, people will turn to other sources of information rather than expend their intellectual powers on our turf. And so, it turns out, in so far as we insist that we know best what is important, we lay down the very soil that feeds fake news. Far and away from being the solution to fake news, the government statistical agency, in this analysis, shares the blame for driving modern society into its arms.

## Moving on: Bootstrapping the statistical agency into the future

We started this paper considering the image of the statistician as number cruncher: Someone who takes the raw, statistical data of the world and performs just enough mathematical operations on them to make them useful to users with a given set of interests. Throughout, I have argued that this is not enough to take us into the future. What, then, do we need to add?

Remembering the examples given above, the argument here is not that the statistical agencies should stop crunching numbers, any more than the alcohol monopolist should stop selling alcohol or the public broadcaster stop showing programs that commercial broadcasters will not. Number crunching is our strength, and what we need to build on. I have argued that we need to reach out to acquire a legitimacy that will serve us as well in the future as we have been served in the past. In what would this reaching out consist?

What our two examples showed us, was that we need to follow our users and present our product in a way that the user will find, at the very least, not unpleasant. This might take the form of a less intimidating packaging of the product, as in the case of *Vinmonopolet*, or it might extend to a great expansion of the range of products that we produce, as in the case of *NRK*. Or both. In any event, to understand the path that lies before us in any degree of detail, we need to pay close attention to our users.

### Uncrunching the numbers

The only way to find out what the users want from us, is to ask them. Happily, there are many ways to glean information about our users, and most of them are good – at any rate better than not talking to them. The different approaches can, of course, be combined, and statistical agencies would in general do well to share our insights more systematically than we do today.

The confines of this paper prevent me from giving a satisfactory account of the empirical finds from user testing at Statistics Norway, but I will attempt a very short outline of our results.

* Users are task-oriented

This should come as no surprise. People do not consume statistics for the fun of it. They come to us because they have a need for a certain piece of information. If they find it, they are happy, if not, they are not.

* Text is consumed only when a question about the numbers arises

To users looking for data, our explanatory text is commonly just an obstacle. Users scroll around the page looking for relevant numbers, and information conveyed in text is consumed only when the user feels the numbers are unclear. Texts that do not clarify what the user finds obscure are routinely ignored, and can even lead to confusion when used.

* Numbers are easy – words are hard

When we present numbers clearly, they are immediately consumed. The user will then to a large extent quickly see their task as completed, and leave happy. What makes the presentation unclear, in the cases we have observed, is mostly the text that goes with it. Reading a number is easily accomplished without specialist knowledge, but many of the words we use are little understood outside academic circles.

Taking our task, then, to be packaging the statistics for easier consumption, we should heed these finds and emphasize presenting numbers clearly, using common language terms when an explanation is needed. This is what I will call *uncrunching the numbers*.

*Uncrunching* means to give the numbers a human form; to unpack them and sort them in a way that makes sense to the public at large. All too often, when we have crunched the numbers, we tell the world about them by disseminating an almost undifferentiated mass of figures, without a real attempt at turning them into a coherent message. We have produced the relevant numbers, and see our work as done. This is, of course, exactly the wrong approach. It is forgetting that the user comes with a task, and expect us to guide them in completing it. When we publish, the most important part of our job is to sort the figures according to what is most actively sought and what, in combination, answers common questions.

To uncrunch the numbers is, consequently, to try one’s best to account for what is often called *The curse of knowledge*: That as soon as one learns something, it becomes difficult to imagine that others do not know it[[8]](#footnote-8). When we have worked for a long time on a project, we naturally want to communicate the big picture that we have worked so hard to amass. What we must always keep in mind when doing this, is that our audience has not made the effort that we have. The user’s starting point has not changed, even if ours has, and our presentation must highlight even the basest details to start them on the road to enlightenment. It is a rule of thumb that *no one seeks out information they don’t know that they need*. We must start with the information that large groups are already interested in, and from there on advance to the bigger picture. In baby steps. This is uncrunching.

### Unfaking the news

As we saw above, the rise of fake news is intimately connected to the tendency of the sources of true facts to talk down to the population. This feeds a resentment towards officialdom on the part of the public, fought, mostly, with rolling eyes and stern editorials on the part of those in position. Can we, as statistical agencies, do better?

We will, clearly, not solve the problem on our own. But if we want to be part of the solution, and not the problem, there is a road for us to take.

Government statistical agencies are important suppliers of facts; that much is clear. This leaves us in a position to make a difference in the field of public facts, if, indeed, we can make a difference at all. This, of course, is the field where fake news is currently wreaking havoc. Following the arguments outlined above, our route to combating fake news is connected to what I have called uncrunching. If we can speak to the public in a way that is not patronizing, that does not come across as condescending, and that addresses people’s actual, experienced needs for facts, it does seem that we might be able to make some headway. Sometimes, solving the needs of the public also solves our own.

## Conclusion

Throughout this paper, I have argued that government statistical agencies need to reach new audiences, if they are to survive in a recognizable form. Since the traditional audience for our products has skewed towards expert users, it follows that these new audiences will amount to groups containing non-experts to varying degrees. I have included some thoughts on how these audiences are to be reached, although I believe that we all, still, have much to learn from experimenting to this end with new forms of statistical dissemination.

What, then, in the end, about the experts? Will they not be a casualty of this program? Does not making our services better for non-experts logically entail that experts will meet a worse service? And must we not assume that this will reflect badly on our reputation in the corridors of power?

This, of course, depends on the concrete user group that the experts amount to. What binds them together as experts? To what degree are they homogenous in their expertise? I cannot here claim much empirical evidence (though representatives of government, private enterprise and academia are frequent participants in our user tests), so I will limit myself to some general remarks on the nature of this group.

It bears mention that few experts, if any, are all-round experts. They may be experts in their field, but rarely in more than one. The statistical agencies, of course, publish in a very wide variety of fields. Another observation is that there is not a large degree of overlap between decision makers and experts. Although some bureaucrats are, indeed, experts, they are rarely those who make the decisions on how governments spend their money. The exceptions to this rule we likely know by name. And finally, I have yet to hear the complaint from external users – of any kind – that this or that part of our site has gotten too easy to understand. Making things easier to understand is, on the whole, making things easier for everyone.

1. <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.02.0151%3Abook%3D1%3Achapter%3D44> [↑](#footnote-ref-1)
2. <https://www.etymonline.com/word/computer> [↑](#footnote-ref-2)
3. <https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data> [↑](#footnote-ref-3)
4. <https://en.wikipedia.org/wiki/Alternative_facts> [↑](#footnote-ref-4)
5. <https://www.forbes.com/sites/chunkamui/2012/01/18/how-kodak-failed/> [↑](#footnote-ref-5)
6. <https://kantar.no/globalassets/ekspertiseomrader/kunde--medarbeider-og-omdommeutvikling/omdomme-2018-kantartns.pdf> [↑](#footnote-ref-6)
7. <https://www.nrk.no/kultur/nrk-karet-til-arets-mediehus-1.14544034> [↑](#footnote-ref-7)
8. <https://en.wikipedia.org/wiki/Curse_of_knowledge> [↑](#footnote-ref-8)