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# Trust in official statistics and why it matters[1]

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**Abstract.** It is easy to feel that official statistics faces unprecedented challenges in being a trusted voice for evidence. Official statistics are released into a foggy and polluted atmosphere full of dodgy data within a political climate where people all too readily cloak their vested interests in a fake veneer of statistical claims. This paper explores some enduring aspects of the way we as human beings interact with numbers and gives an historical perspective on how this has played out in official statistics. It explores some particular features of the challenges faced today given this context, especially in relation to capacity building. It highlights the essential role of the National Statistical Institute as a trustworthy servant of democracy at the heart of the evolving data ecosystem and explains why this matters. It voices a call to action for all those who care about the use of evidence in the public sphere, both those who deliver the statistical services and those who use them.

Keywords: Trust, democracy, independence, politics, technology, capability, data ecosystem

## 1. Naughty numbers

Numbers used in public are not mere facts. The person using them is doing so to influence their audience. The numbers are playing a role that can be good or it can be naughty.

Numbers often do get naughty. The advert telling us that 8 out of 10 people prefer their product. The politician telling us to "vote for me and be £1000 better off". The newspaper, full of alarm, screaming "'eat this and you are 20% more likely to die' says new research".

The naughtiness comes when the advertiser doesn't tell us about bias in the sample that generated 8 likes. When the political party doesn't tell us that delivery of £1000 is based on lots of conditions that cannot be guaranteed. When the journalist doesn't tell us that the 20% extra relates to a condition we are highly unlikely to get, so the extra risk is negligible.

There is an unprecedented amount of data, a proliferation of channels to propagate it and often weak incentives to ensure that the information we receive is what it purports to be.

The job of official statistics is the be a trustworthy servant of democracy and to stand up and stand out. Official statistics are released into a foggy and polluted atmosphere full of dodgy data within a climate that seems to get ever hotter. A climate where many people all too readily cloak their vested interests in a fake veneer of statistical claims.

But the challenges are not new. The task is not so much about restoring trust. It is about renewing it for today's world. And this really does matter. A lot. If the numbers are naughty, democracy cannot function effectively.

## 2. What's old

Throughout history our relationship with numbers has been ambiguous. When we make decisions, we are guided by our emotions (how do we feel), our biology (what do we need and desire) and our beliefs (what do we see as right or wrong). Only on a good day do our heads guide our often wayward hearts. This is true for all of us as human beings. And, by the way, remember politicians are human too. Daniel Kahneman, Nobel Prize winning economist, described these facets of our nature as "thinking fast and thinking slow".

[1]This paper is an abridged version of keynote presentation to PARIS21 conference on trust: October 2019.

Two thousand years ago, the Roman Empire solved this problem with the appointment of a person called the Censor. The Censor was the person trusted to keep the numbers (including conduct of the census).

One thousand years ago William, the Conqueror of England, solved it with the Domesday Book. He appointed someone to carry out a survey up and down the country. How many people? How much wealth?

Successful leaders established a role close to the highest authority that ensured they had good numbers to enable them to govern, to raise armies, tax citizens and retain power.

Two hundred and fifty years ago the enlightenment triggered new forms of government. Egalite, fraternite, liberte. Government of the people, by the people, for the people. The idea of statistics morphed in turn. John Sinclair brought the word statistics into the English language from Germany towards the end of the 18th century. In this new world the people should be the highest authority. Statistics should be close to them. In John Sinclair's words, statistics can be a means to "improve the quantum of happiness of the people".

During the 19th century, statistics flourished at the heart of enlightened thinking. The first female member of the Royal Statistical Society, Florence Nightingale, is an inspirational example. As a nurse she could save only one person at a time. As a woman she struggled to get her voice heard in a world dominated by men. As a statistician, through brilliant data visualisation and data advocacy, she could help the numbers speak and change the way everyone thinks about medical treatment and hygiene.

Skip forward into the 20th century. Winston Churchill in 1940 is struggling to make choices about the conduct of the war. He rants to his Cabinet Secretary that the "utmost confusion" is caused when the numbers are naughty. He wills the creation of a post at the heart of British democracy that we now call the National Statistician. The role is not about truth but about utility. In Churchill's words we need numbers that can be "accepted and used without question". The National Statistician must be independent of vested interests, trustworthy and serve the public good.

Official statistics has always been a mirror of the state. In autocracies, the numbers are controlled by the kings and emperors. Statistics is the "king's science". In democracies, statistics is for the people. It is the citizen's science. In each case, statistics confers power.

## 3. What's new

The world of what we now think of as "the new" starts in 1989 with the fall of the Berlin Wall. And the glorious coincidence of that year as the year of Tim Berners-Lee's realisation of the World Wide Web.

Official statisticians from the countries of Europe, through the Conference of European Statisticians, developed principles to guide the universal development of statistics in countries either side of the former Iron Curtain. Their work heralded the global adoption in 1994 of the Fundamental Principles of Official Statistics by the United Nations Statistical Commission. In the United Kingdom, these developments are linked with the sequence of events that saw official statistics as central to the Citizens Charter (1992), commitment to open government (1993), and constitutional reform (1998) which ultimately resulted in new statistical legislation.

Alongside political reforms, technology change, enabled by the World Wide Web and the internet, resulted in the social network. New possibilities for partnerships, communications and data ecosystems.

Connecting the political and technological, there has been a systemic challenge to the way governments work. Populism. Fragmentation. Instability. We live in a world that is continually morphing due to technological innovations such as artificial intelligence and public attitudes to that change, especially in the face of scandals such as "Cambridge Analytica".

So, what does this mean for the world of official statistics? We should hold on to our fundamental principles and values but challenge everything else. Innovate or die. The key attribute is trust within the current local context.

## 4. The leadership role of the NSO

Put at its simplest, the role of official statistics is not to produce statistics. It is about putting numbers to use to serve the public good. Helping our countries make better decisions as trustworthy servants of democracy.

If we see it that way, the task is urgent. As I said when I took the Chair of the United Nations Statistical Commission in 2015, official statisticians need to "step up, step forward and step on the gas".

We need to generate public value and command public respect. The prerequisites are trust in the numbers and trust in the institutions that generate them. The aim is not to find the truth: truth is always provisional.

Rather, it is to focus on statistics that are relevant to the concerns of the country and its people. Always being open to new information rather than defensive. Practical utility demands numbers that are granular, fast and relevant. The job is not done when statistics are released, only when they are used by all that could benefit.

One way to think about this is to consider how the lack of knowledge (or belief in false information) may be colouring judgements about how to vote or how to act. What insights are needed to get a good perspective on the issues that matter: on immigration, crime, education, health, employment, prices? The statistician needs to draw on all relevant sources of data; to invest in skills like data science; to develop policies, such as revision policies, that recognise the imperatives of the current situation; to go to users: Government, Parliament, business, civil society, individual citizens where they are. Communicating through channels and in a language that makes sense to them.

Alongside the generation of public value comes safeguarding of public respect. As data scientists we are working with information that people reasonably expect to be kept confidential. Data protection protocols and codes are fair dealing enshrined in law. In the case of businesses, if our promise to protect their secrets is not honoured, they could be out of business.

Linked to data protection, is the need to support a strong legal framework. The ability to sanction breaches of the law is especially important in earning respect, particularly for international projects. Increasingly our concerns about data enter the complex world of ethics. As technology reduces the limitations on what we can do with data, we need to address the question of what we should be doing. Technology change also highlights security risks that need to be managed well if the research community is to deserve respect. Respect requires an appreciation of what people care about. In diverse communities, diversity of staff is a critical asset in making connections to all citizens to earn a licence to operate.

In these ways the National Statistician and the National Statistical Institute can play an important leadership role in a wider statistical system based on the Fundamental Principles of Official Statistics. In 2019 the Fundamental Principles had their 25th anniversary and remain fresh and relevant, even as technology and politics have been transformed. Now, however, the system embraces statistical producers in many government agencies, data holders in public and private sectors, media organisations, technology organisations and civil society. It is open to anyone who can help improve quality and trust.

## 5. Capacity building

Against this background, a major challenge in all countries, and at the local as well as the regional and global level, is capacity. Investment is needed to ensure demand matches supply. A critical element of capacity relates to leadership and the mindset of innovation. Given that the goal is not the production of statistics: it is the statistical service that helps improve decision making, the system must have the adaptability to be ready and robust when new decisions need to be made. The value of statistics that come too late is zero.

The leaders of the system need the courage both to speak up when the evidence is unpalatable and to make clear that there are margins of error in the face of demands for certainty. The ability to exercise the judgements that neither underclaim or overclaim.

Internal capacity building within the statistical system should go hand in hand with building the demand side in government (all branches: legislature, executive and judiciary). If we view the statistical system as a "mirror of the state", the reality of a semi- or non-democratic state will be reflected in the level of independence and capacity of the statistical system to report the state of the nation transparently, without fear or favour. Strong democracies foster strong statistical systems and weak ones do not.

Building the demand side amongst the population, businesses and third sector with levels of statistical and data literacy that encourage curiosity and questioning of statistical claims should go hand in hand with this. One aspect of the demand side that merits particular attention is the capacity to respond when certain actors have their own agenda and spread information that is unsupported by, or even in opposition to, what the statistics show. Strong, impartial media (and social media), have a beneficial multiplier effect, given their role in communicating understanding.

Governance too is an essential feature of capacity, nationally and internationally, built into the statutes of good government up to and including the United Nations General Assembly. Legislation can hard wire and enshrine independence to make it resilient to events and elections. It can make plain the high calling of statistics as a public good. It can spell out the duty to say clearly that misuse of statistics is corrosive to democracy.

Hard wired governance in turn supports the softer, but no less important, work to nurture the data ecosystem. Nurturing is about feeding the soft tissue to foster a healthy organism. The roles of connectors such

as PARIS21, the International Association for Official Statistics and the Global Partnership for Sustainable Development Data are particularly to be appreciated. These bodies are especially valuable in nurturing connections and being a catalyst for vigorous growth. We are looking to an ecosystem that is adaptive to whatever fog and pollution there is in the atmosphere and resilient to what seems to be an ever hotter political climate.

## 6. Call to action

Unless we renew trust in official statistics, democracy will not function effectively.

Good statistics help us to understand our economies to aid the creation of jobs and prosperity for all.

Good statistics help us to identify injustice and enable the powerless to hold the powerful to account.

Good statistics enable us to take decisive and proportionate actions in the face of disaster.

Good statistics help us to assess the state of the world in which we live so we can act to create an environment we want to live in and a sustainable future for our children.

Trusted statistics help us make better decisions and live better lives.