



Conspiracy or Stupidity: The Trouble With Numbers

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So. Here in Australia, petrol prices are going up faster than iron ore being lifted onto a Chinese freighter, and the cost of putting a roof over our head is moving as fast as natural gas shooting down the pipeline to Japan.

Headlines repeat the IEA [warning](#) of a major "Supply Crunch" in the near future (as distinct from what we have right now - which, presumably, is just a minor "Supply Crackle"). Fuel costs and climate problems have driven food prices so high that the most common holiday job for university students this Christmas is likely to be riding shotgun on the Christmas food deliveries.

Oh... and our politicians are arguing about a five cent fuel excise. Five cents. Petrol is on track to hit \$2.00 a litre before Christmas, and politicians are debating a one-off five cent cut as if it was, well, relevant.

Our politicians don't seem to grasp the nature and magnitude of the problem. Is it a conspiracy? Or are they just stupid? I am going to argue that it is a problem with numbers.

Greater minds than mine have pointed out that training can change the way you think. I remember, back in my University days, sitting with a few engineer friends on a beach and watching the way the numbers of pretty women ebbed and flowed as the day progressed. One of my friends observed "If we could just integrate the equations for female distribution, based on time and location...."

"We could put our towels at a local maxima before the maxima happened...." one of the other guys broke in.

"Wouldn't work," said another, "It is an uncertainty situation - the act of observing changes the outcome."

"It is worse than that," another replied. "It is input-sensitive - chaotic - organized but unpredictable. We represent an input, but we can't predict outcome."

And at that moment we realized that our minds were forever changed.

People trained in engineering or science deal with numbers and outcomes. Our lawyer friends are trained to look for precedents - data that supports their argument - while we are trained to derive the argument from the data.

Greater minds than mine have further observed that plenty of lawyers go into politics, but for a scientist or an engineer this career path is about as likely as an agoraphobic becoming a sky-diving instructor. As a result politics tends to be framed by lawyer thinking, not engineer thinking.

Our leaders base decisions on lawyer thinking.

The outcome of a trial is not based on the facts; it is based on what they can convince the jury the facts might be. Likewise the outcome of an election is not based on facts; it is based on what they can convince the electorate the relevant facts, issues and threats might be.

Politicians do not deal in facts. They deal in perception. After years of working this way it becomes a framework in which they think. They don't question this framework any more than I question the theory of gravity – less, because in their experience their framework always works, whereas in my experience theories change.

This brings me to the next aspect of my argument: Experience. People with scientific or engineering training will sometimes base an estimate on experience, if nothing else is available, but by preference they will generate numbers to support this estimate. If the numbers contradict their experience, they will look into the numbers to see what has caused the difference.

Numbers may not tell the complete truth, but they tend to tell the truth within the limitations of their domain and context. I trust numbers to the same extent that I trust the context and domain that they came from.

Unfortunately, a politician's relationship with numbers is different from mine – partly because the numbers they are exposed to are often statistics. Statistics can be used to prove that there is a crying need for our nation to invest taxpayer dollars into bankruptcy protection for igloo insurance salesmen. Politicians see this sort of number way too often.

This endemic misuse leads politicians to be somewhat sceptical of numbers. Politicians believe their experience, not numbers. Within the context of a politician's day-to-day job, this is a good thing; their training has equipped them with an attitude that makes it harder for them to be misled.

So, summarising the numbers problem: Scientists will tend to believe numbers rather than rely purely on experience, whereas politicians tend to trust their experience rather than numbers.

As long as the problem under discussion is within the experience of the politician this is a good thing. But what if the situation is different in nature and/or magnitude from anything in the politician's experience? For example, how many current politicians have experience with events that will change day-to-day life for the entire population? Events such as the Great Depression only come along once in a century; our politicians have no experience with them, so no frame of reference for dealing with them – or even accepting them.

Politicians are not unique in this regard. Journalists, investors, and even some economists seem to trust their "gut reaction", rather than numbers. Clearly this attitude has served them well – until now.

So we have two problems;

1. Politicians tend to limit their thinking to events within the scope of their experience. They trust "gut-instinct".
2. Politicians tend to inherently believe that the outcome of an event will depend on people's perceptions and beliefs about that event. Politicians have very little experience with situations where objective reality is more important to outcome than the subjective perception of the reality.

These two factors lead to flawed and inappropriate responses. This in turn leads us to an underlying question. Is it a politician's job to respond to a crisis?

An engineer's job is to "solve the problem", but that isn't the job of a politician. The difference is important. A politician's job is not to think about the problem, it is to think about people's reactions to the problem. They have little or no framework that allows them to think about a crisis directly, they tend to think about how to "deal with" the crisis in terms of how to deal with the perception. That is their job.

However, if politicians want to keep their job they need to find the appropriate people to respond to any perception-altering crisis. So how do we make them recognize that they face such a crisis?

Numbers describing a problem that is outside of their experience will not have any meaning to them – they have been trained to ignore numbers and believe their experience. They are not conspiring to hide the truth; they are dealing with the problem in exactly the way they have been trained to deal with it.

So what can we do about it?

1. If politicians only respond based on experience, then we need to put the nature and magnitude of the problem into concrete terms that they can relate to. We need to show them things that grab them by "the gut" - they need to see graphic, real-life imagery that illustrates the nature and magnitude of the problem. What happens when fuel supply to a community is restricted? (Graphically, in real life - what happened to the Palestinians when this occurred?) What real-life images can portray the impacts when commerce is interrupted? It needs to be made real, in a format that politicians can experience and relate to.

2. I have argued that a politician's job is not to respond to a crisis, it is respond to the population's attitude to the crisis. However politicians clearly understand that some people do have the job of responding directly to a crisis, and politicians have the power to bring these other people onboard if the crisis appears to be significant. So we need to make politicians understand:

- i. The nature and the magnitude of the crisis.
- ii. That the population is unhappy about the crisis.

Politicians already know that people are unhappy (that is why they are debating 5-cent excises), what they have failed to grasp is the nature and magnitude of the problem. We need to address that in a way they understand. It won't hurt for us to highlight just how much potential for increased public unhappiness still exists, but our real task is to stop putting numbers in front of them and start giving them something they can believe in.

We need to provide graphic, real-life examples that they can relate to at the gut level.

If we can present in a way that they can relate to, politicians will start assigning serious resources to this crisis.



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