

Who Gets to be an Expert?

Doug Magnuson and Jenny McGrath

In the past few months we have been flooded with graphs, models, and vocabulary about the spread of the virus. Here is a not-so-brief list of some of the words that appeared in newspapers, Twitter, and on Facebook in the first 30 days of the pandemic:

Confirmed cases, presumptive cases, number of tests, number of positive tests, proportion of positive tests, log(2) scale, log(10) scale, exponential growth, linear growth, lagged effects, number of hospitalizations, number of patients on ventilators, number of ICU patients, deaths from COVID, deaths from COVID in hospitals compared to at home, time since the 10th confirmed case, percentage change, skewness, asymptomatic patients, deaths per million, deaths per 100,000, cases per million, infection rates, testing rates, percentage of positive rates, proportion of cases who have recovered, lag-corrected epidemiological curves, jurisdictional sampling, empirical vs. experimental results, modeling, r -nought, effective retransmission rate, false positives, false negatives, excess deaths, 7-day rolling average, contact tracing, community spread, social distancing, self-isolation, self-quarantine, flattening the curve.



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If you want to be an expert in infectious disease, these words are just the start of what you need to know. For the rest of us there are three choices: Learn all of these words and how to interpret the graphs associated with them, choose wisely which experts to follow, or ignore all of them and use “common sense.”

The first option is only possible for people with a lot of free time. The third option has proven to be a catastrophe, because common sense for some of us is exactly the wrong thing to do. Common sense may be common only to some people. That leaves the second option, figuring out who we should listen to. In recent weeks even the anti-science academics, in CYC and not, are retweeting and reposting statements from scientists about what should be done.

Our lives are too complicated to be an expert in everything that affects us. We have to rely on experts for many things. The phrase, “I am the expert about my life” or “Children are the experts” is fine for a poster and is sometimes appropriate, but these slogans can also be deadly in real life. The great feature of modern life is that there is so much expertise available to us because of the internet. The great problem of modern life is sifting through all the bullshit to figure out who the real expert is, and the existential goal is to recognize when our own point of view is part of the bullshit.

The virus has made it possible to quickly determine who is competent and an expert on infectious diseases, because we have access to real-time consequences of decisions from states, provinces, and territories from around the world, and because the time from prediction to outcome is so short. The first principle of selecting an expert is to look for evidence that they make wise decisions in similar situations. For the current situation, look for people with expertise responding to Ebola.



A second way to evaluate an expert is to see whether they have access to data or information that is different or better than others or whether they are using better or different methods with the data they have. If they do not have access to better sources of information than anyone else, they are guessing.

Third, do they have experience with the specific problem or issue that is in front of us? This is the criteria that separates the true expert from the amateur. Many data scientists have misinterpreted data that they know how to graph but do not know how to interpret. Here again, SARS2 and ebola are the criterion.

Fourth, has your expert ever made a mistake, and have they acknowledged it? Numerous experts have backtracked on previous claims, because their data surprised them, or they made predictions that did not come true. This is a feature—not a flaw. There is a curvilinear relationship between the degree of certainty and the quality of the expertise. Avoid those who are adamant all the time, about everything. Experts recognize the limits of what they know, and they modify their assertions based on what recent events.

These principles apply to CYC. Everyone has been a child and knows a child, and because of this almost everyone thinks they are an expert on childhood. We all have ideas about what should be done for and about youth “at-risk” whether we have experience or not. Instead, we should be able to generate a vocabulary list, like the list above, of theories, concepts, ideas, data – and experience – that we should know to be called an expert.

Towards this end, we also want to systematically collect and document evidence about our own successes, failures, and foibles so that we remember and can repeat what works—and avoid what does not. I regret not writing down, even informally, what I learned in my professional work. I



lost a lot of data by assuming that I would remember. The experiences of my supervisors and my colleagues are also part of that record, and I did not write down what I learned from them either. I wasted their and my time.

We need a method for tracking our work. In the next column I will write about a kind of practice lab book that helps keep track of what we have done.

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