

Nova Scotia Doctors – March 25, 2021

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The cognitive biases and heuristics underlying vaccine hesitancy

In the face of COMPLEXITY people are more likely to revert to SIMPLICITY

Daniel Kahneman's Thinking fast and Slow:

- System 1 – operates automatically, no sense of voluntary control
- System 2 – requires effort, careful thought
- Dual systems- require both

When it comes to vaccination, people operate more on SYSTEM 1 and DO NOT weigh out facts

Medical schooling and post-graduate training had done a good job to create a more scientific mindset and to dismiss the narrative, even though at ONE TIME...

I was told stats like, (and this is true)...According to the W.H.O.

- Vaccines have saved more lives in the last century than every other medical intervention except for sanitation.
- 10 million lives saved from vaccines between 2010-2015
- Polio has been nearly eradicated (just 3 countries to go)
- 1974- only 5% of the world's children were vaccinated
- Now – 86% is

Having been raised on old school sanctimony, the days of which had their advantages, I would share these stats with patients.

That was the argument used to vaccinate their kids. Full stop.

If they didn't agree, they were dismissed from the practice – after all, this was one of THE most important things I'd perceived that I could do for them.

But patients rely on MENTAL SHORTCUTS, called "heuristics"

AFFECT heuristics are what is more often used –i.e., emotional responses guide judgement more than objective information.

In vaccination- powerful NARRATIVES have a greater effect than STATISTICS.

This is a problem if your name is Iris Gorfinkel.

AVAILABILITY heuristic – what comes to mind is the DRAMATIC, not the banal.

e.g. Meningitis risk vs. Influenza risk.

The narrative of COVID-19 equated with death, hospitalizations and long haulers is FAR more memorable and newsworthy than the 40% who have no symptoms.

AMBIGUITY aversion – People dread facing what they don't understand. This creates uneasiness and fear of making the wrong decision.

Consequently some VH will OVERESTIMATE the risks of vaccines and UNDERPLAY the risks of the diseases.

Solution: Suggesting that EVERY medical decision is a comparison: *What if I do vs. what if I don't?*

Many do the opposite when facing uncertainty and say, "I'll do whatever you say"

This holds hands with the **SCARCITY EFFECT** - Scarce things have a higher value and abundant things are less desirable.

Too many vaccine choices create a fear of missing out and increase stress because of the ambiguity in trying to decide which vaccine is best to get.

OPTIMISM BIAS – underestimating negative events feeds into VH

ANTICIPATED REGRET – "What if I choose the wrong path?" = VERY STRONG in VH

GOAL – focus attention on harms from NOT vaccinating

OMISSION BIAS – the tendency to prefer harm due to omitting an act over COMMITTING an act

Vaccine benefits an entire POPULATION – but RISKS of the disease are taken by individuals

DUNNING –KRUEGER effect – the more you know, the more you realize there is to know. The less you know, the MORE YOU THINK YOU KNOW.

The VH often overestimate their own knowledge – e.g. individuals who know LESS about autism are MORE likely to believe that vaccines cause autism.

MORAL FOUNDATION THEORY points out that ideology is what can BECOME a HEURISTIC

e.g. in the U.S. "I'm a Republican. I'm pro-gun, anti-abortion, anti-mask AND anti-vaccine (or VH)

This has LITTLE or NOTHING to do with science.

The biggest predictor of anti-vaccination beliefs are those having CONSPIRATORIAL beliefs.

