



Feature

EBLIP7 Closing Keynote Address: Evidence Based Everything

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The closing keynote speaker for EBLIP7 was Canadian journalist, author, and lecturer, Dan Gardner. This feature article summarises his keynote address which was based on a chapter of his upcoming book about forecasting, and explained how difficult it can be to think in an evidence based way. For thousands of years the concept of “evidence” did not exist and human life expectancy was dismal. Life expectancy only improved in the 20th century when physicians started to question, inquire, and **doubt** some of the medical interventions instead of being so very sure that a treatment – like bleeding a patient – was effective. Gardner posited that the ability to doubt, and in turn demand evidence to prove or disprove a theory, brought real progress to the field of medicine.

This all sounds great – except that our brains do not naturally function in an evidence based way. Drawing upon the work of Daniel Kahneman, Gardner provided an overview of our two modes of thought: System 1, which is unconscious, automatic, and effortless; and

System 2, which is conscious, slow, and takes effort. Because we have no conscious access to System 1, we often have strong intuitive responses that are not based on any real truth. For example, we are prone to confirmation bias, where people only seek out evidence that confirms their beliefs, and disconfirmation bias, where people set higher standards for evidence that contradicts their beliefs. These biases, among others, lead us to come to quick, confident conclusions based on scant evidence.

To demonstrate how difficult it can be to doubt and to force System 2 thinking in order to fight biases and automatic responses, Gardner provided the example of Archie Cochrane (1909-1988), the pioneer of evidence based medicine. This man brought about lasting changes to the field of medicine by asking the question “how do you know that?” He spent his career challenging subjective opinions and he struggled to keep physicians from saying “I just know” instead of taking an evidence based approach. Cochrane, however, was not immune

to the power of System 1 thinking. He was referred to a surgeon because of suspected cancer and that surgeon performed an invasive surgery because it really seemed like Cochrane had cancer. It was only after the surgery that the pathologist's report came back stating that there was no cancer. The crazy thing is that Cochrane did not doubt the surgeon and agreed to the surgery even though **he knew** the pathologist had not yet reported his results.

It really does seem like there is no hope for the rest of us if even someone so entrenched in evidence based medicine could have failed to insist upon an evidence based approach to his own health care. Gardner did, however, provide some hope by highlighting that medicine has advanced and continues to advance by using the scientific method and valuing inquiry and doubt. Therefore, other fields could potentially make similar advances in the future. The popularity of the phrase "evidence based" does point to some progress. In the end, we can all consider the question – why do I believe what I

do – and attempt to use evidence to find the answer.

There were several questions from the audience related to ethical issues around non evidence based public health activities that may not be doing any harm, meta-cognition, prioritizing areas of society that should become evidence based, how to personally cope when we know how biased our brains can be, and some self-reflection about a tendency to the confirmation bias.

Gardner's comment that we naturally recognize the biases in others more than we see them in ourselves gives me hope for evidence based library and information practice. I believe that the high level of collaboration that we have established in many aspects of our work will serve us well to overcome these biases. As we learn more about how our brains work, as we practice asking the question "how do you know that", and as we continue to be inspired by the EBLIP conferences, we will be better prepared for an evidence based future.