

The first book that wowed me in the Lund program was actually not the usually stated one – for me it was Ten Questions About Human Error: transportation human factors. I was astounded to read for the time really how Dekker went after the human factors discipline – saying it has not advanced in 50 years – since the Fltts & Jones landing flap discovery. In asking about error, Dekker showed the limits in current thinking. E.g. structuralist, static thinking, the information processing paradigm, the quantitativist bias in research and the individualist emphasis as a left over from the Enlightenment. *This all blew my mind – first time I had ever heard of this - it answered what I had been wondering about in human behaviour. My undergrad degree was all about biomechanics, physiology, anatomy – I had sociology and psychology also and it has helped me with my trade in workplace ergonomics.* So this book and the Lund master's degree taught me that Human Factors has its roots in engineering and experimental psychology. And how we still see the through the 17th century scientific revolution lens as manipulating the material world as a controllable, predictable, and programmable machine.

New thinking is about reconstructing and delving into the information environment and the social relationships. Incomplete information gets filled in with expectations. What are those expectations? What information is shared openly, secretly, not shared?

This completely changes how we think about decision making – what I think and prefer is influenced by my local rationality given the information, expectations, pressures, budget, schedule, workload, workforce (macro) environment. Organizational structures, processes, tasks influence individual cognitive practices. So this added greatly to my workplace ergonomics knowledge – and yet workplace safety considers none of those things or very little – production pressure may be acknowledged - and yet we still hold the individual accountable.

We aim to control behavior in safety. In this book Dekker addressed Behaviourism as a form of control, with no introspection into consciousness, the mind, so just the information processing brain and observable, repeatable behaviours dominate the knowledge produced by psychology. And so I learned how limited are methods are that we use in workplace safety.

And also that “Human error” is a rationalist and normative approach. **I see most of my work as normal, not risky. And so the book also was about that and how** Accident investigations have an invisible social impact. Language & norms used. So this was my first book and it really ended up becoming papers and books on their own but this less well known books – one of the first of Dekkers – offered me so much learning.

Diane Vaughan's Challenger Launch Decision (1996) was the first I have seen an example of an accident investigation using sociology and organizational principles. It was a system safety case study, not occupational but the conclusions are applicable. It reconstructed 9 years of the decision making environment at NASA and described in detail the incrementally more risky risk assessments & increased tolerance of error using culture – very good learning in this book.

I loved how it moved the accident investigation story away from individual causal explanation to the power of structure and culture, the impact of competition and scarce resources on decision making, reframing decision making as incremental descent into poor judgement.

This book gave me the analytical examples to talk about structural and cultural causes of accidents. Cultural beliefs and conventions become part of individual worldview, they are invisible and

unacknowledged constraints on individual behaviour. Institutional arrangements determine the range of choices that people see as rationale. Decision making is bounded by what is considered rational by the organization and these “decisions” are often *satificing*, not weighing all costs and benefits.

The culture of engineering was also explored and was very intriguing. The distinctive ways of engineers like the culture of positivism, measurement and the interpretation of results and how engineering is also a craft because you have to fit universal rules to specific situations. I had not thought of that before. “engineers as servants of power” – how engineers expect advancement in their careers from the maintenance of the institutional order and rules. I had not thought of that before, so very interesting.

And the story Diane Vaughan told was how all the psychological, social and organizational & institutional factors influenced risk assessment. Whereas the acceptable story of the Challenger failure was the flawed decision making of middle managers.

So this book showed be specific examples of actions by organizations that become solidified into norms, standard operating procedures and a shared worldview that shapes future choices. Interpretation of signals is subject to history, competition, scarcity, bureaucratic procedures, power, rules, and normal, hierarchy, culture, and patterns of information.

Scott Snook’s Friendly Fire: The Accidental Shootdown of the U.S. Black Hawks over Northern Iraq. (2002) was the other amazing discovery. Again a system failure, but gave a very different approach to the inquiry and told the story in a way that you felt you were discovering it along with the author.

The causal map going forward in time and proximity was a great visual I learned. So the incident is placed in the bottom right hand corner of an XY graph. And the X axis is built forward in time to the event and the Y axis builds events in terms of proximity to the event. It is, right there, a gem of a way for a JHSC team doing an investigation can engage at a whiteboard. Just draw the axes and start placing events on the board, and then start drawing arrows.

Instead of analyzing decisions, took a sense making approach (Karl Weick) and asked “what’s going on here”. Asking why leads us towards fundamental attribution error. Really hit home that in the moment of every situation, it makes sense or we are trying to make sense of what is going on. As a flow of experience (constructivist approach), it avoid normative discourse we often see in OH&S investigations. When looking for more than describing what happened – how it made sense, allows for the power of context that takes away a little bit the loading onto the shoulders of the individual with our blame game.

It talked about arousal and desire/expectation when operating under uncertainty and there is a time deadline. Social definition (What others are doing) and diffusion of responsibility (someone else will do it) was brought into the explanation. Then of the course the ODAM on the coordination and interdependencies across departments in the military – that operated independently and yet were interdependent – and how the communication routines and habits that worked very well within a department, can contribute to a coordination failure on a large scale – such as shooting down your own team. Vaughan’s structural secrecy was also used to help explain the communication conditions.

And it even touched on leadership style – being too hands on and what we may normally think of as a good leader (rose up through the ranks), one who is not commanding or managing is also being a handicap.

Practical Drift – the slow, steady uncoupling of local practice from written procedure. So the local rationality principle at work

You know how in OHS it is so mechanical, cause-effectual. The analysis in this book was an example of organizational and human behavioural theory applied to accident analysis to explain it. IN this case it occurred in a high reliability organization, so I associate that to many organizations *large) that have serious injury or fatality only very rarely, so in a sense are reliable. This book gave me the ability to say – wait – there is life beyond the cause-effect mechanical, Newtonian methodology which underlie most of the specific methods in OHS. Avoid causal models was Snook's advice.

Really a gem of a book based on qualitative research and a rich case study giving us fairy dust we can sprinkle across OH&S activities.

How It Is, The Native American Philosophy of V.F. Cordova (2007) was an amazing piece to read. I recall that was a specific book recommendation from Ivan Pupilidy. The dynamic nature of reality and how we tend to apply static models. It addressed individualism – and I of course liked the perspective she writes like a poet and there is poetry in the book -but it is the Native perspective she gives as an Apache & Hispanic women – published posthumously – she died in 2002. I loved the rebellious undertone of her writings. So it underscored for me just how static and individualistic our safety programs are, our policies and how we love holding people accountable and hoe we tend to dismiss the conditions. So I learned from that book – although not everyone would want to read a native American philosophy book – it was a joy to read.

Another unrelated but helpful book was **Cod by Mark Kurlansky (1997)** – and I totally identified with the collapse of the cod fish from over fishing as a drift into failure and he described how dynamics work to keep people believing everything is still okay even though it isn't. And he shows how it is not on purpose but just like today's views – there is a split of opinion and that confuses people who then maybe do not act when they should. And I can totally relate that to safety standards, and how we do things – but also how safety does safety, and how safety does too much safety and not enough supporting work – and meanwhile operations are being more risky but we are focussed on our safety programs not the safety of work. And this book was about cod fish but I applied it as a system example.

Why we do what we do: Understanding Self-Motivation, by Edward L. Deci with Richard Flaste (1995) should be required reading for every safety practitioner. It was one of the discoveries in my last 3 years studying with Dr. Rob Long and the Centre for Learning and Leadership in Risk (CLLR) in Australia. It basically tosses out extrinsic motivation schemes as undermining the innate intrinsic motivation people have in the practice of their occupation – a natural desire to feel competent being way more important than meeting some sort of externally imposed goal that comes with rewards – because it creates a controlling environment. Anyways bottom line it suggests an autonomy supportive style that includes open listening and taking others' perspective. Very insightful into behaviour, I highly recommend it.