

Post-causality: a Quiet Global Revolution in the Making

“I live on Earth at present, and I don’t know what I am. I know that I am not a category.

I am not a thing – a noun. I seem to be a verb, an evolutionary process – an integral function of the universe”

R. Buckminster Fuller (1895-1983), I Seem to be a Verb

If one were to cut a cross-section through social classes, nationalities, ethnicities, professions, and so forth, one of the few commonalities that would emerge is shared *causality*, a globally predominant belief in the supremacy of cause and effect. It is the beginning of the 21st Century. From business strategy to macroeconomic models, and from political debate to Big Data, causality is still pervasive. The implications are profound. Yet, the still-maturing multidisciplinary field of complexity, particularly social complexity, is forcing a fundamentally different – i.e. post-causal – perspective on the world we thought we knew. Through this essay then, I intend to introduce the notion of **post-causality** and let its implications emerge out of an argument weaved around the key themes of this year’s Global Drucker Forum: *complexity* and the *art and science* of management.

Certain catastrophic events such as the 9/11 attack on America and the 2008 financial crisis have encouraged the population at large to question their assumptions about cause and effect. In the wise words of Nassim Talebⁱ, might we allow for the possibility of “Black Swans.” What started as a trickle is quietly building into a torrent as the world’s scholars and the population at large are converging on the understanding that current events and circumstances are increasingly beyond the grasp of causality. In particular, the practice of management finds itself at the forefront of this quiet revolution. The wisdom of its visionaries, long pointing to a world where emergent outcomes are impossible to trace to an initial cause (and even to the logical inconsistencies of a philosophy of science based on a primordial cause) is more relevant than ever.

We are awakening to a world where causality is no longer the *only thing* – what bestselling author Daniel Pink calls the *Conceptual Age*ⁱⁱ. (Note: Causality is indeed a useful way of looking at the world.) According to complexity management guru Dave Snowden, and others, causality and complexity *can* and *do* co-exist. While causality was essential to man surviving predators or discovering the motions of planets, man is capable of significantly more *complex* feats – creating beautiful works of abstract art for example. In

many areas of life, and especially in management, marked benefits can accrue in making room for a post-causal age that embraces complexity, that ushers a newfound pragmatism in holistic thinking, that finally catches up to Peter Drucker's often quoted but insufficiently appreciated belief that managing social systems is *as much science as it is liberal art*.

For the sake of symmetry, I will open the argument for post-causality with the foundational insights of an intellectual giant of the discipline of management, Russell Ackoff, and conclude with another – Peter Drucker. In between, I will reveal the correspondence for a post-causal worldview in the thinking of some of the world's top management practitioners and scholars – Dave Snowden, Erik Hollnagel, Peter Checkland, Roger Martin, Daniel Pink and Clayton Christensen. I will also make a brief case for an equivalency between complexity and the *art* of management.

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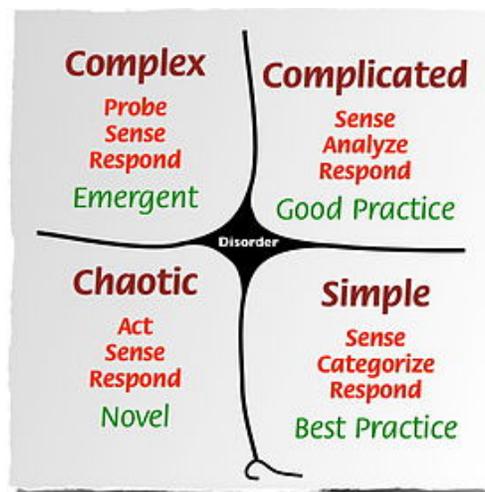
Cause and effect and complexity are mental models. As such, they provide an indispensable lens through which we can simplify the world of thought and action. Ackoff agrees. In his "Mismatch between Systems and Their Models" whitepaper, he proposes that mental models, incomplete as they may be, are "the lens through which we make sense of our reality." Ackoff articulates this point through a wonderful quotation from Barry M. Richmond, who defines thinking as

"consisting of two activities: constructing mental models, and then simulating them in order to draw conclusions and make decisions. The mental model is a 'selective abstraction' of reality that we create and carry around in our head. As big as some of our heads get, we still can't fit reality in there. Therefore all mental models are simplifications. They necessarily omit many aspects of the realities they represent."

There are limitations on relying only on the cause and effect mental model. Causality loses meaning in highly complex environments where cause and effect relationships do not repeat and therefore cannot be predicted. An example of this in the natural world is evolution by natural selection with its unpredictable outcomes. In terms of the artificial world, the world of our making, pure causal models can also prove too simple. The world's top management thinkers appear to agree in principle if not in jargon.

Let me then proceed in a search of post-causal thinking spanning leadership and decision making, safety and resilience engineering, real-world problem solving, the latest Big Data craze, human talent and motivation, and finally, innovation and the future of capitalism.

Dave Snowden is world-renown for introducing complexity thinking to leadership, strategy and decision makingⁱⁱⁱ. He is also the inventor of the Cynefin model. In presenting Cynefin^{iv}, he makes a paramount distinction between categorization and sense-making models. Cynefin (see diagram below) is a model that abstracts different approaches predicated on distinct mental outlooks: simple, complicated, complex and chaotic.



Because Cynefin helps one make sense of the *type of situation* he or she is presented with, it is a *sense-making model*, which corresponds, as I shall shortly argue, with a post-causal worldview. For now, here's the distinction between categorization and sense-making models which Snowden proposes:

*"Cynefin is a sense-making model, not a categorization model. And the difference there is key: a categorization model is a classic two by two matrix that you see in consultancy handbooks, and in those models the framework precedes the data. As a result it is very fast because we can just drop the data into the appropriate box and decide accordingly; the danger is that we won't see subtle differences until they're too late so we'll be caught out. **So categorization is good for***

exploitation, it is pretty poor for exploration or during periods of change.”

Snowden’s distinction is relevant to my argument in favor of post-causality: I propose there is a one-to-one correspondence between Snowden’s *categorization models* and *causality* on one hand, and *sense-making models* and *post-causality* on the other. In order to describe this correspondence, let me next move to the world of safety and resilience engineering.

Professor Emeritus Erik Hollnagel is the inventor of the Functional Resonance Analysis Method (FRAM), an approach which brings complexity and post-causality to safety thinking. In his book on FRAM^v he points out the limitations of causal safety models. Hollnagel argues that in causal approaches to safety:

*“The underlying model defines or describes a set of relations while the associated method provides a way to interpret events in terms of those relations. The relations typically invoke the principle of causality (causes leading to effects and effects being preceded by causes), where the causes typically are failures or malfunctions of components, of function, or control and so on. Since the models provide a clearly structured view of the world [i.e. non-complex], the methods are typically linear with either single or multiple cause-effect paths. In these approaches, **the methods in practice impose an a priori interpretative structure on the event.**”*

The bolded statement connects causal models with Snowden’s categorization models thus: in *causal models, the framework precedes the data*. If you still doubt my assertion, let me say that Snowden and Hollnagel agree on yet another point: that categorization models are fast but not thorough, or in Ackoff’s words, efficient but not necessarily effective. Echoing Snowden’s speed argument, Hollnagel says about causal or categorization models that,

*“In everyday practice, which means in the short-term, the advantage [...] is the efficiency of the associated method – even if the model is incorrect. The increased efficiency often outweighs the disadvantages, in particular **the lack of***

thoroughness that is a consequence of the simplified model assumptions."

Let me now extend the post-causal correspondence argument to real-world problem solving in messy situations that lack a formal problem definition. Enter the British management scientist and inventor of Soft Systems Methodology (SSM), Professor Emeritus Peter Checkland. In his own words, Checkland echoes Snowden's argument for the ineffectiveness of categorization models in complex, causality-blurred contexts. SSM relies on conceptual models of human activity systems. These are proposed to be *notional models*, not intended to represent what exists but to rather represent a stakeholder viewpoint. In other words *they are not categorization models*, but rather sense-making aids, and, in Hollnagel's wording, they *do not pre-assume structure and organization*. Checkland himself makes a clear distinction between what he calls *hard* – i.e. causal – and *soft* – i.e. sense-making – systems thinking thus:

*"Hard systems thinking goes along with everyday language and imagines that there are systems out there in the world, some of which don't work very well, and which can be made to work better. We were abandoning that, we don't use the word 'sistemicity, systems-ness' about aspects of the world, we say 'the world is very complex', but we have discovered through our experiential knowledge, the way you tackle the complexity of the real world can itself be created as a learning system; so the system-ness in that approach is in **the process of tackling the real world, it's not assumed to exist out there**".^{vi}*

Let's continue expanding the post-causal thinking correspondence to the world of information technology and its latest craze: Big Data. A recent article from the MIT Technology Review^{vii} is the first I've come across that proposes a more guarded view of Big Data's potential and signals its limitations. Roger Martin, the creative force behind several management concepts in use today and one of the most important business strategists, provides an outstanding synthesis^{viii} of the article's main point: "data analysis is only useful to the extent that the future looks like the past". Regarded from Martin's misleadingly simple insight, Big Data fits a causal, categorization model of the world, more suited for exploitation of the past than exploration of the future. And so, Martin continues, "if your intent is to invent the future, data from the past is as much of a hindrance as a help".

Causality works well for explaining the past, but fails when it comes to sensing and creating the future. Finally, Martin makes the point that analytic – i.e. causal – models cannot substitute for common sense and judgment: “data analysis will never, ever be more than an aid to judgment; anytime it is taken to be ‘the answer’, trouble will ensue”. Here is the pervasive causality mindset driving a huge investment in a technology that may make us more efficient in the short-term but quite possibly less effective in the long-run.

Let me next move to the latest thinking in human talent development and motivation. Daniel Pink’s “The Puzzle of Motivation” TED presentation is still one of the top twenty most watched TED videos of all time. He makes a compelling and scientifically backed argument that the classical stick and carrot approach to motivation, a proxy for cause and effect thinking, is ineffective and even counter-effective when it comes to highly creative – i.e. exploratory – human activities. Why? Because **stick-and-carrot motivation encourages speed of reaction**, and the best way to achieve speed in solving a problem is **to fit data to preconceived notions about reality, rather than take the time to sense and frame emerging patterns**. Drucker and Ackoff would likely agree that stick-and-carrot motivation propels efficiency but not effectiveness; it drives algorithmic left brain thinking but not right brain pattern sensing. Creativity, an emergent property of human thought, doesn’t seem to respond well to a causal approach. And so, to Daniel Pink’s question as to why there is still a huge gap between what science knows and what business does, I would propose a simple answer: because the causal mindset still dominates our society. Should our educational systems suddenly acknowledge the notion of post-causality, re-establishing post-causal neural pathways or breaking old habits in popular jargon would take time.

Let me next invoke the world of business, where categorization models are still the norm in both the majority of business schools, and the management consulting establishment. This is important because, as Professor Gary Hamel says, management is the “technology of human accomplishment”, and it is business where much of the management innovation happens, which in turn drives all other innovation – yes, your iPhone 5.0 and my Galaxy S4 too. So why should we care that the vast majority of business schools and consulting houses continue to promote a causal view of the world that is based on categorization models? Well because, to combine Roger Martin’s and Dave Snowden’s insights, categorization frameworks that precede data **hold the future hostage to the past**, slowing the pace of innovation. And, as **innovation is what prevents capitalism from becoming a zero sum game**, the future and sustainability of democracy itself is at stake. So it’s not just your iPhone that is in jeopardy, but your right to vote,

freedom of speech and liberty itself. **When Clayton Christensen says that innovation is slowing^{ix}, yes, you should pay attention and you should care** – at least if you live in the free world and are appreciative of its benefits.

Ultimately, *causality* and *post-causality* circle back to Peter Drucker’s apparently universal distinction between *doing things right* and *doing the right thing*, which is why we should continue to revere and expand the genius of his lifework. The post-causal correspondence thread I’ve explored reinforces Peter Drucker’s anti pre-conception, pro-possibility philosophy to problem solving, evidenced in the question he would often ask of those who would come to him with a problem: *why is this a problem?* The world needs both causality and post-causality, but a post-causal way of thinking gains particular relevance as the complexity of our world continues to expand.

The universality of Drucker’s paramount distinction also provides an equivalency between the *art* of management and the *science* of complexity. While Drucker’s *doing things right* could be adequately served by armies of workers and subject matter experts scaled around scientific management and best practices in the Industrial and Knowledge Economies respectively, it will take more singular artist-like minds operating outside the constraints of analytical thinking and established causal models to sense the *emergent right thing to do* from the complex, causality blurred patterns of 21st Century’s Conceptual Economy.

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In closing, a categorization, causal, efficiency view of the world has served humanity well, but Ackoff’s effectiveness, Martin’s judgment and Snowden’s sense-making gain importance in a world where complexity is pervasive. From human motivation to the future of capitalism, from the safety of our critical infrastructures to the security of our retirement savings, a post-causal worldview shift is essential to our collective sustainability. Unleashing what Daniel Pink calls the Conceptual Age requires a post-causal worldview. Indeed information technology will likely take over knowledge tasks, and so, avoiding a social crisis of global proportions requires us to adapt, to move to where computers are unlikely to catch-up for quite some time, but where humans tend to excel and *derive satisfaction* from: ideas, ideals, visions and dreams. We need to move more of the planet’s population in this sweet spot of human effectiveness, and away from repetitive “knowledge” work. More of us have to become artists dreaming the world of tomorrow. There is so much to be explored and the world so urgently needs more explorers. Humanity itself needs to avoid a zero sum game of exploitation that can result from an excessive reliance

on a causal mindset. And no, I am not referring to exploitation of natural resources, but of knowledge itself; after all, there is a good reason Einstein insisted on imagination being more important than knowledge and further pointed out that knowledge is limited while imagination encircles the world.

I will conclude with a rhetorical argument for the population at large and thought leaders alike. For the population at large, I recommend embracing post-causality, and pondering carefully what thought leaders have to say, especially when there is a strong correspondence to their insights. Post-causality is not equivalent to chaos and should not be feared as such. It rather represents the liberation from mechanistic thinking that applies human capital to activities situated below its true potential, even as they are deemed as “knowledge work”. Surely, not having a prescribed framework where the data always fits the problem nicely is a bit daunting, but no more so than repeatedly applying prescription remedies without room for *expression of self*. Yes creativity embeds risk, and sense-making is fraught with dead ends; but the rewards are commensurate with the hazards, and the satisfaction is no less than that of an artist on the brink of a masterpiece, or an alpinist reaching new heights.

I applaud the thought leaders for sharing an iconoclastic stance against fads in the instantiations – models, technologies, etc. I would nevertheless urge a reconciliation of the various terminologies to the benefit of a unified message for a post-causal world where more of us become validity thinkers pondering the right thing to do.

Finally, there is hope: the mindset revolution that started with Peter Drucker and his contemporaries is quietly but firmly picking up steam. Drucker’s distinctions are probably more relevant today than ever, with their transformational potential only matched by the fragility inherent in spreading a message that cuts through the many societal cross-sections I mentioned. The Global Drucker Event in Vienna represents a unique platform for a message in support of post-causality, should one emerge. This year’s topic is especially relevant to just such an argument, and I hope the participants bring fresh perspectives in support of the continued validity of Drucker’s *right thing* in our age of growing complexity.

Liviu Nedelescu,

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- ⁱ Taleb, N. N. 2007. *The Black Swan*. New York: Random House.
- ⁱⁱ Pink, D. 2005. *A Whole New Mind: Why Right Brainers Will Rule the Future*. New York: Penguin.
- ⁱⁱⁱ Snowden, D.J., and M. E. Boone. 2007. *A Leader's Framework for Decision Making*. Cambridge, M.A.: Harvard Business Review Magazine.
- ^{iv} Snowden, D.J. 2005. *Strategy in the Context of Uncertainty*. Handbook of Business Strategy.
- ^v Hollnagel, E. 2012. *FRAM: The Functional Resonance Analysis Method – Modeling Complex Socio-technical Systems*. United Kingdom: Ashgate.
- ^{vi} Excerpt from transcript of video recording of Peter Checkland's speech at the *Systems Colloquium in honor of Professor Peter Checkland*, recorded on April 20th 2012 at the Lancaster University Management School (available on YouTube).
- ^{vii} Cukier, K., and V. Mayer-Schonberger. 2013. *The Dictatorship of Data: Robert McNamara Epitomizes the Hyper-Rational Executive Led Astray by Numbers*. MIT Technology Review.
- ^{viii} Quoted comments were posted by Roger Martin on social media.
- ^{ix} Christensen, C. 2013. *We Are Living the Capitalist's Dilemma*. New York Times.