Beware Stories: Manufacturing Intent
Kevin McLeod & James Westcott

Clear signals lost during COVID-19: Infodemic clusters, January-May 2020 Twitter activity. CoMuNe lab infographic.

"We're not just fighting an epidemic; we're fighting an infodemic."

– Dr. Tedros Ghebreyesus, WHO Director-General, February 15, 2020

"Next!" (1904) Udo J. Keppler's illustration of Standard Oil's monopoly repurposed. Public domain.

We have a problem. One so vast, yet so simple and intrinsic to almost every way we share information, in nearly every form of communication we use, in even our news and our legal systems, that solving it may seem almost impossible: storytelling. Without our realizing, stories may be the key to why despite the internet connecting us, so many people perished from COVID last year, how our political systems are trapped in crisis after crisis, how identity is becoming a central issue of contention, and how we may all be going extinct from climate collapse in the coming century.

Stories are dangerous, at times deadly illusions. Look closely and we can see them creating havoc all around us. And not merely fake news, or fake stories. But true stories. Storytelling shapes alternate realities, virtual states within physical ones, offering fertile ground for ideological warfare, growing conflicts that have already spiraled into newsworthy mayhem. It's here arbitrary narratives grow into conspiracies like QAnon and other behavior-steering misinformation. These imaginary conspiracies serve as gateways to growing conflicts, yet they derive their core powers of persuasion from the same format that frames our news and much of our history.

Recent neuroscience tells us we've been living in an illusion ever since we began using stories to communicate, some 75,000 years ago. Not only can we not find their core ingredients in our brains, on closer inspection, the complex, chaotic nature of events may have little to do with the simplistic causes and effects that stories shoe-horn for our convenience. By simplifying reality into bite-sized pieces, storytelling may actually be drugging us into short-term complacencies without us becoming aware. Yet some are starting to take notice.

Advocates of storytelling tell us things like "stories are what make us human,"¹ yet this is a false statement that relies on omission. What makes us human, what distinguishes us from all other animals, is our expansive consciousness: a nebulous skill-set that includes other forms of thought besides narrative, like analytic thought. This offers us what stories can't: mastery of long-term multi-

¹ An oft quoted sentence by writer Joan Didion functions the same way. "We tell ourselves stories in order to live" is a clever form of storytelling that if we change the agreement to "I tell myself stories in order to live," shifts to an analytic statement describing how writers end up paying the bills, how stories provide sustenance: people pay for them.

seasonal planning and complex tools. And in fact, stories weren't with us from the beginning; Sapiens existed some 200K years before their invention. When you really think about it, life has existed and thrived for over a billion years without the need for stories. And as a relatively recent development, they may be a form of thought we've yet to come to terms with. Stories may be unruly children that need minding and care and education.

While clearly, we're storytelling beings – we come wired to make them – storytelling is actually not innate. Rather, we *exapted* storytelling, which means stories use parts of the brain or body for something very different than what they evolved for. Stories, along with language itself, are like plug-ins or accessories we added to our brains. Because we don't come with this format built-in at birth, stories are a form of technology or culture we have to teach one another.

By its very design social media demands we depend more and more on narratives for explaining events to one another. While they're probably ideal for groups sitting around campfires in small settlements, for billions of us trying to make sense of today's chaos, stories are distortions growing progressively more dangerous. A society increasingly reliant on storytelling for explaining how the world works may be divorcing itself from reality without even noticing. We may have to break our addictions to stories simply in order to survive.

If stories are what underlies our malaise – functioning as a disease – logically then our symptoms come from their parts, things we categorize as beliefs, desires and intentions.² We think we can read these things in people's behavior and then use them to explain what's going on in our world. And the scientific root of this is the idea we can find them in our brains with any accuracy, yet recent discoveries dispute this. And dangerously, our latest technologies like A.I. and brain machine interfaces are being built with the very assumption these things are quantifiable in our minds.

The roots of storytelling come from our folk psychology, a little-discussed, rarely taught process we and many animals use every day without thinking:

² While some might assume stories are made from things like mysteries and conflicts, how we've imagined brains interacting with stories and how we've made them computational through algorithms are through these categories: beliefs, desires, and intentions.

mindreading. We try to predict how people around us will behave, why they behave in certain ways, whether a glance is threatening or welcoming, whether an approaching animal is dangerous or not, whether a mate is hungry or sad or happy. As we acquired the ability to speak, our mindreading laid the foundation for simultaneous inventions that separated us from all other animals: complex languages and stories. It's here mindreading initiates the basic structure of stories, abstracting the complexities of events into simple, easy to understand tales. And that will be part of the problem if we realize stories are dangerous: they're for all practical purposes inseparable from our languages.

And mindreading comes with a chemical by-product: oxytocin. Each and every time we mindread, the brain releases this neurotransmitter, assuring its continued use because it offers users sensations of comfort and stability. As we began spinning tales about ourselves and others we accelerated our reliance on mindreading. That's where our chemical addiction takes root.

We should start with what stories are. They can be as short as a sentence or as long as the longest narrative in human history; length and simple content are poor criteria for deciphering what stories are. What's key is their format, which separates stories from other forms of thought, and all stories follow a basic rule of sequencing. Narratives (or stories, myths – the terms are interchangeable) are built from the intentions of protagonists (other terms are applicable, belief, desire, goals, needs etc.). These are combined, at times even in a single sentence, into cause-and-effect relationships to explain what's going on. That's how any event or episode becomes a story.

To demonstrate this, let's use a single sentence. A story is a sequence of events organized by **cause and effect**,³ framed by a protagonist's **intention**. Or in other words: "She does that **to achieve that goal** and **we think we know why**." That's a story.

We think we can read intentions in events and in people's actions, yet can we really? More to the point, the source of stories – mindreading – might be little

³ The layperson's daily reliance on cause and effect is massively influenced by a basic bias known as the "Illusion of Explanatory Depth"

Matute et al. *Illusions of causality: how they bias our everyday thinking and how they could be reduced* <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.00888/full>

more than an elaborate parlor trick that's long overstayed its welcome. Yet it's this very trick that scaffolds not only our languages, but our institutions, our political systems, our laws, our histories, even banking. Life and death decisions using them are made on a daily basis, lending intentions and our society the appearance of long-term stability. In reality, both are probably more like houses of cards posing inside a monolithic fortress.

Science has more elaborate names for mindreading, like neuroscience's *mentalizing* and psychology's Theory of Mind, but more complicated words or phrases can't hide the fact the underlying process may still be nothing more than a trick of mindreading.⁴ While it may be shocking to discover that our society's primary way we communicate and explain events to one another is built from a simple trick, it's far more shocking that we've never really begun questioning this in any broad way until recently, as neuroscience began looking into the details of mindreading.

In terms of psychology, stories are products of our mythic-narrative mode of thought. Although the narrative mode now dominates our information and our way of understanding the world, we have three other modes of thought: episodic, mimetic and analytic, all acquired through evolution's long, arduous process. Evolutionary psychologist Merlin Donald summarized the array in his 1991 book *Origins of the Modern Mind*:

Episodic mode appears in early humanity, evidenced by Erectus's and Habilis's symbolic-representational abilities to model early tools and create fire. Episodic thought allows us the ability to perceive events we can model and later use – "Intelligence in animals might even be defined in terms of the complexity of events they can perceive". (Donald, 153) And by his criteria, Donald implies our abilities to perceive complexly went into decline despite our new abilities to contain events in stories. And crucially, episodes and episodic mode aren't necessarily reliant on the deciphering of intention in order to function - episodes can operate independently. This suggests if we demote or restrict our uses of narrative, our overall intelligence may increase.

⁴ On a basic level, we know that any claim to mind-reading is false, the work of charlatans and the stuff of parlor tricks. Yet mind-reading is precisely what we all claim we can do when we try to read the intentions of others in behavior and in events in order to tell stories or frame the news. Mindreading – with its inherent, sometimes wildly inaccurate results – makes our world go 'round.

Mimetic mode, which is the ability to mimic others, is extensively seen in various animals, yet in primates, with the teaching of complex skills and behaviors like group hunting, these complex mimetic abilities become “a conscious map of the body and its patterns of action in an objective event space.” (ibid 189) Mimetic mode is the precursor to all human culture. Both episodic and mimetic modes precede our acquisition of stories and language by millions of years and can be found in other animals.

Narrative mode (Donald uses the term **mythic**) appears along with language. “The myth is the prototypal, fundamental, integrative mind tool ... to integrate a variety of events in a temporal and causal framework.” (ibid 215) With mythic mode, intentions take root in human culture through narratives. They contain the messiness of events in mythic rhythms and neat completions.

Analytic (or **theoretic**) modes of thought appear finally by the Neolithic (12KYA), in the form of rational, complex formulas that defy the easy containment of narratives: intricate ceramic firing/decoration, visuographic information integrating both symbols and images at multiple scales, evident in practices like the tabulation of resources, calendrical planning based in astronomy requiring cohesive recordings of symbols (e.g. Stonehenge), and complex, interlaced domestication and agricultural systems. While a highly advantageous invention of humanity’s, analytic mode today remains trapped under the vast weight of the mythic mode, controlling, organizing the complexity of events into conveniently plotted sequences.

While these modes seem a bit abstract, it’s easy to demonstrate them in everyday use. Try an experiment the next time you walk down the street. As you pass each person, try to read their minds from how they walk and their facial expressions. Guess their intentions, imagine what they’re thinking. Chances are you’ll be very wrong. This is the basic thought process behind the creation of stories: projecting the beliefs and intentions of other people to explain or predict their behavior.

Now try the experiment again, only this time don’t read minds, just observe occurrences, let your eyes do the searching. Instead of creating and imposing

stories, now you are observing episodes and practicing mimicry. Try not to imagine intentions, offer no mentalizing to what you observe. Someone will stumble, and you may feel the urge to help them as well as a sensation mimicking their tripping. A bird will fly too close and you'll flinch. Stepping away from the interior worlds of others has benefits when taking in lots of data. This method, not mind-reading, but observing events in more component ways, offers a wider range of the brain's modes of thought.

While we don't know enough about how *mentalizing intentions*, this precursor to storytelling, operates, we know it emerges in evolution from a primal prey-predator system, a hyperactive agency-prediction coupled to oxytocin that spans sensations of both aggression and satisfaction. Stories and our mythic mode are spawned from this basic drive in all vertebrates to survive the earliest moments encountering other animals, including ourselves – hunter-prey – and relationships among our kin group and beyond. Along the way this predictive ability coupled to our analytic skills helped us gain the top of the food chain.

Mindreading is an aspect of what cognitive scientist Daniel Kahneman calls our 'system 1' of thinking. System 1 is 'fast thinking,' a largely automated process that shortcuts our more reasoned, harder to learn 'system 2' where more rational thoughts arrive after the sensations of system 1 dissipate. The emotions and the confirmatory sensations of oxytocin are hard to shake. Despite system 1 being spontaneous and error-prone, with this suite of sensations it tends to feel accurate. Obviously, relying on system 1 isn't ideal since it can lead to poor decisions in the heat of the moment, yet it's this very fast system where stories are born. And it's this fast system where we process them.

Despite being both fast and error-prone, mentalizing enabled us to settle into larger and larger groups. But once it no longer satisfied local realities, we expanded storytelling for mediating events beyond our eyesight. This is where mass media appears, eventually helping build cities, then territories, externalizing narratives in imagery, myth, theater, news, radio, movies, television. As they veered across higher scales and rates of transmission, stories grew more addictive – and less accurate – the wider we projected them. Where do maladies like war and racism come from? They come from our innate biases that find their external forms in stories, many pretending to be accurate news.

We invented stories to simplify explanation and events, yet no event can ever be contained in narrative. That may be humanity's most basic flaw. The world flows, stories contain that flow with illusory beginnings, cuts, and endings. To explain any one action in your life requires we unpack every event in your life prior. (Maybe that's a bit devil's advocate, but the point must be made that any story-told explanation is at the lowest end of accuracy.)

Stories gain, then maintain their dominance over episodic, mimetic, and analytical explanations by integrating these more accurate modes within easier-to-digest, less accurate narratives, along the way biochemically rewarding its users by offering manageable and persuasive pieces of information for monetizing.

All stories are in a sense 'cover stories,' subsuming events so we can better manage our reactions to them. They're coping mechanisms. Take notice when parents admonish kids for lying, their go-to phrase is the give-away: "Stop telling stories," and yet later they'll read them stories at bedtime. This coping mechanism becomes deception without the transition ever being detected. That's how stories become a primary, external operating system hijacking a much more complex brain.

While the components of stories – beliefs and desires – have their origins in the Paleolithic exaptation of storytelling, and were reified by philosophy and religion, their scientific organization under the concept of intentions secularizes them well-enough that we expected to find their actual physical presence in our brains. So much so that in parallel we created a fiction called *mind*⁵ as a way to fit intentions into the brain – as if our thoughts operate similarly to machines. But just what are intentions? The notion of intention implies we can capture in your brain accurately what just caused you to do something.

Yet once the complexities of brains become apparent in the latter half of the 20th century, this idea that we can extract intention like a magic elixir grows unlikelier

⁵ "There really isn't a special thing called a mind. The mind is just the brain." Patricia Churchland

by the day. The notion we can reduce a brain to a model called mind now seems improbable. This simplification of brains emerged in science in 1890 with the help of psychology's founder, William James, whose organization of the mind's proposed operation set the stage for calibrating beliefs and desires into a flow-charting computational model with behavior as its output. James is where psychology placed the concept of mind officially into brains, a kind of soft-colonization through intention, pre-certified in the canon without proof.

As the quanta to the qualia mindreading demands, our explanations using intent make perfect sense. We first use folk psychology to mindread, likewise we use it to help answer questions about ours and other people's behavior externally in stories.

Still, the word 'intention' remains a scientific term describing what goes into the decisions we make, leading to the languages we build, our systems of government, law, and finance. The construct became ubiquitous, yet alarmingly, recent neuroscience undermines the entire framework, with some dismissing James' program as a kind of 'neo-phrenology,' others rejecting the idea of mind altogether. This implies quite a bit of 20th century neuroscience was spent digging in the wrong places.

Look carefully at brains: we don't find intentions. They're everywhere and nowhere. And that means the concept itself may not be reducible either to brains or within them. We may have many more specific things than intention: habits, behavior, long-term planning, conditioning, goals, purpose, needs, memories, and on and on, and even these are difficult to decipher. A seminal 2014 paper that reviews decades of research into intent asserts: *"despite the intuitive appeal of the picture, intentions as discrete states that cause our actions should not be assumed as an explanatory construct when investigating the neural mechanisms for action control."*⁶

A recent book, *How History Gets Things Wrong: The Neuroscience of our Addiction to Stories*, by Alex Rosenberg, explores storytelling's overreach in narrative histories and in classical conceptions of how the brain works. Using

⁶ Sebo Uithol et al. "Why We May Not Find Intentions in the Brain," *Neuropsychologia*, January 24, 2014.

recent neuroscience, Rosenberg dismantles the Rube Goldberg-like diagrams of Theory of Mind – the idea we can read people’s thoughts from their behavior – where stimuli meet intentions using belief-desire and voila!: out pops behavior.

Rosenberg analytically retells through the Nobel Prize-winning research of James O’Keefe, Eric Kandel and May-Britt & Edvard Moser into how sea slugs, mice, and humans plan behaviors in the hippocampus, revealing how we learn and remember. There are no such things as beliefs about things in our brains, there are no cells representing things like location – there are only *associations*. He insists, from our widespread belief minds contain simplistic concepts like beliefs, that aspects of our culture are still stuck way back at Ptolemy.

These are striking parallels: tying the Earth to the center of the universe, superimposing intention through the concept of mind into our brains as our folk psychology’s mode of explaining behavior, and placing stories at the center of explanations for the world we’ve built. By their very definition this is egocentricity externalized. First in astrophysics and later in neuroscience. It demonstrates our collective folk psychology remains spookily trapped in this pre-16th century framework when we use stories to explain what’s going on. If ever the zombie metaphor applied to humanity, it’s here.

Even scientific fields are skewed by storytelling. In attempts to explain behaviors, intentions are easily incorporated, unconsciously, as matters of fact. Take for instance our counter-intuitive reactions during the pandemic. Cognitive scientist Steven Pinker employs storytelling to explain the rejection of self-preserving behaviors – social-distancing and mask-wearing, claiming ‘tribalism’ is to blame. He tells it in the simplistic cause-and-effect mode inherent to any story: “There’s a moralistic component to this kind of tribalism, mainly that people tend to see their own tribes as victims of some kind of oppression or harm by some rival coalition.”⁷ Yet more nuanced accounts are found in neuroscience disregarding intentions: one study suggests deficits in working memory are what’s behind groups openly defying life-saving behaviors.⁸ Another study found a deficit in

⁷ Robert Bazell, “Steven Pinker on the Tribal Roots of Defying Social Distancing,” Nautilus, June 27, 2020: <http://nautil.us/blog/steven-pinker-on-the-tribal-roots-of-defying-social-distancing>

⁸ Weizhen Xie et al., “Working memory capacity predicts individual differences in social-distancing compliance during the COVID-19 pandemic in the United States,” PNAS, July 8, 2020: <https://www.pnas.org/content/117/30/17667>

analytical thought (indicating a potential overreliance on narratives) is to blame for our susceptibility to misinformation.⁹ Another sees the complexities underneath Pinker's mythic explanation, in the interrelationships and differences between representations of the self, the world and others as culturally distinct constructions that emerge in mask-wearing protocols.¹⁰

One of the largest problems emerging from narrative thought is the creation of the mind concept-model (rather than accepting our thinking organ as just a brain). But the mind construct persists, and it's now steering the development of computers and algorithms that reflect this mistaken model of how we think. Illusory intentional states are being made digital.

By design, this assembly line of thought we've called a mind, built from our narrative mode, transfers rather easily if crudely to computers and computational models. Here the original illusions of belief, desire, intention are fed to our devices as codes, careening at one another through algorithms abstracting them even further than stories from real events, calculating categories, indirectly multiplying and monetizing our biases. No wonder stories expand their domination as our drive to individuate myth using social media grows: we're being driven towards stories with their simplistic explanations in order to serve technology and markets. That's how our signaling, our communication declines – we're stuck in a similar dream-state about the things in our brains anyway. Social media doesn't just reflect that, it enacts it, it embodies this key illusion.

The difficult thing to understand is why we continue relying on storytelling-as-news for crucial information. The increasing costs of stories are beginning to outweigh their benefits. (As climate extinction becomes more and more likely, it may be their costs have already exceeded benefits long ago, sometime in the 60s or 70s.) If we discovered a widely-used tool of ours was inaccurate or possessed fatal design flaws, we'd quickly discard it and seek formats with more accuracy. Yet with storytelling, we've not only turned a blind eye to the mode's

⁹ Jon Roozenbeek et al., "Susceptibility to misinformation about COVID-19 around the world," The Royal Society Open Science, October 14, 2020: <https://royalsocietypublishing.org/doi/10.1098/rsos.201199>

¹⁰ Andrea Scalabrini et al., "What COVID-19 tells us about the self: The deep intersubjective and cultural layers of our brain," December 10, 2020: <https://onlinelibrary.wiley.com/doi/10.1111/pcn.13185>

inherent distortions, we've accelerated and amplified their usage electronically. Relying on stories surely contributed to the chaotic responses to Covid-19, a scatterbrained approach with the U.S. at times accounting for 25% of global cases despite only having 4% of world population.¹¹

And journalism, positioned as an antidote to social media's distortions, unconsciously operates under the rules of storytelling we've come to accept as accurate reflections of events. In the medium, events are essentially deciphered through what we might describe as 'facts in the service of illusion.' Use the U.S.'s steady stream of mass-shooter events as example. A gunman kills many and journalists descend upon workplace and neighborhood attempting to decipher just what caused them to commit mass murder. And they'll discover manifestoes or online posts, or they'll hear eyewitnesses describing the shooter's behavior, or interview their friends, family, coworkers. The journalist's story will focus on key aspects of their personality, or read the rants and glean that they hated immigrants, or had disagreements with their co-workers, or were bullied, or were autistic, or schizophrenic, etc. And this array of clues will be placed days later into news, or weeks later in long-form articles or months later in books and all will serve as explanations.

Only there's a big problem. None of them are accurate. How do we know? It's simple. Not every immigrant-hating, co-worker disagreeing, autistic or schizophrenic who was bullied as a child (or any combination of these or any other category of behavior) becomes a mass murderer, or even merely a murderer. Go find any piece of journalism that tries explaining the why of any event and do the disproof yourselves. You'll discover that reducing, rearranging events into simplistic sequences converts them for our 'benefit' into easy-to-digest stories, isolating causes and linking them to effects. And the disproof indicates that journalism, and all narrative fiction or non-fiction, even histories, are primarily for entertainment purposes only, residing on the very low end of the accuracy scale. Journalism is focused on personalities and dramatic events in very local timescales. It's wholly incapable of finding the essential patterns in

¹¹ "...the first comprehensive survey of the traditional and online media landscape on this issue": Evanega et al., *Coronavirus misinformation: quantifying sources and themes in the COVID-19 'infodemic'*: <https://allianceforscience.cornell.edu/wp-content/uploads/2020/09/Evanega-et-al-Coronavirus-misinformationFINAL.pdf>

long-range experience. And that appears to be its trick, keeping us trapped in short-terms for monetizing attention. By focusing on an ever-expanding pool of illusory explanations based on local intent, journalism actually prevents us from discovering the broad evidence that links these events and can lead to a solution. In mass shootings in the U.S. 98% share the same two facts: they're committed by men with guns.

There are exceptions in journalism. *Rashomon*-like¹² comparative chronologies that expose our inherent error-prone event perception. Works that carefully annotate transcripts or statements to provide missing aspects of events. And new forms of the genre that involve hacking information or identity. Yet for the most part, journalism is a clever way of keeping us like hamsters spinning in wheels, believing we grasp the complex dynamics of our reality.¹³ In a society ruled by stories, there's little possibility for anything approaching media literacy or even competency. If narratives remain the standard bearer for explaining events to one another, in scientific terms we are media illiterate.

The clearest summary of the problem comes from Marshall McLuhan's warning: "Failure in perception occurs precisely in giving attention to the program 'content' of our media while ignoring the form."¹⁴ Distracted by falsehoods and inaccuracies in conspiracy theory and disinformation, we fail to notice the forms we rely on like journalism use the same exact format as fiction and propaganda.

¹² *Rashomon* (1950) is Japanese director Akira Kurosawa's groundbreaking film in which a murder is retold separately from the viewpoint of four different participants, including its victim. It reveals the improbability of clearly understanding any event since even with these separate interpretations, the event is incompletely understood.

¹³ While there are few differences between 'who, what, where, how and why' news journalism and 'creative/narrative' journalism, even when news tries to omit why explanations in an effort to remain impartial, it almost always leaves open opportunities for readers to create their own – "The individual news item is very low in information and requires completion or fill-in by the reader." (McLuhan In the case of a mass shooting, where an eyewitness says the gunman was "targeting women [or people of color, or his co-workers]," the inclusion of these 'what' facts is convincing enough that any reader creates intention even in the absence of why explanations. So, try as we may to avoid the appearance of ascribing intention – and cause-and-effect – both are elemental to the medium. The permeation of storytelling in journalism is widespread enough that even essays and analytic articles that are made from the sequencing of episodes lacking intent, like scientific discoveries or theoretic statements like proofs or axioms, will sometimes be mislabeled 'stories' when placed in short-forms that resemble journalism. The distinction in this case *is* important, since these forms employ analytic, episodic information and are not stories leveraging intention.

¹⁴ Marshall McLuhan, *Understanding Media: The Extensions of Man* (1964), p. 281

Our goals have shifted to how to manage our content through moderation and fact-checking, but that approach will have no effect, the problem isn't content. It is format.

The digital vortex we inhabit in the connected world is an increasingly automated colonization of our brains by phones and TVs. While we might still be able to discern reality somewhat locally using our own eyes, ears and voices alternately through stories and episodes, in our computers, on our screens, stories grow their dominion unopposed.

Engineering's search for intention-based value is simply the newest stage to colonialism, from reality to digital, from land and people to brains, through the simplistic if not entirely illusory model of the intentional storytelling mind. Intention is the central resource to Silicon Valley's gold rush. Predicting what it thinks we want – in other words mining the mirage of intention – means filling coffers and pleasing shareholders by generating largely subjective states imposed by programmers and corporations. Already networks have begun wiring brains and bodies through interfaces to escalate our relationship to stories, as a means of efficiently plundering intention. BMI (brain machine interfaces) like Elon Musk's 'neuralink' are built on this premise. Yet if intention doesn't exist, the search for it instead imposes an illusion onto all of us for profit and behavioral control. The extraction of it electronically is then not merely cheap magic, it's a uniquely detrimental act. It's the parlor trick gone awry. A vast cognitive-science experiment performed on the public that's quickly going haywire. And that begs an existential question: How do you measure the 'accuracy' of a function in brains that never exists? Is that dictated by how profitable 'it' is? By where you set the parameters of intention in the models of the mind?

A.I., which has already mastered songwriting and the basics of writing, will soon be in control of storytelling: TV shows, movies, video games, documentaries even the news and beyond. The basic cause-and-effect format of stories – based on A.I.'s incorrect modelling of how 'minds' work – will soon be wrenched from our control. With stories as our basic communicative tool, A.I. will soon 'perfect' our narratives of xenophobia, culturally practiced exclusion, and value-of-industry tales that promote economic growth at the expense of our collective. These A.I.-driven narratives will proliferate, making Russian misinformation campaigns look

like child's play, and we'll absorb them uncritically, as we do with the narratives we currently use.

If we take a longer-term view of storytelling's damaging effects, 'civilization' is really just a narrative framework sweeping away complex, non-narrative ways of thinking, evidence of who we possibly are, under the rug of cause-and-effect history. The problem is: connecting emotions through cause-and-effect, stories feed the mistaken belief that they're as real as the emotions. But the opposite is true: the emotions are real, the cause-and-effect relationships are not.¹⁵

This is all probably – without putting it delicately – a slow way of committing collective suicide. Mind and cause-and-effect places magical thought into most of our explanations and damages much of the relationship we hope to have with reality. Brain became mind through storytelling and mindreading and now slowly, through social media and information collapse, we are forced to finally come to terms with the brain's complexities. While we're hardly aware, our current epistemological / existential crisis implies that we've reached the limits of narratives. Stories helped us survive and eventually dominate. Now at the massive scales we operate at, they're an adaptive niche we're trapped by, steering us and much of the living world towards extinction. As long as they dominate our media landscape, we're paralyzed. We face an unprecedented challenge as a species: we must outwit the forces of evolution trapping us here. We have to step past storytelling in order to enter complexity.

To avoid the terminal effects of stories will require something like a conscious renaissance, a carefully discussed enlightenment. A sea-change that's both global and local. Relying on stories for news and decisions simply won't cut it. In

¹⁵ When we scan brains to look for clues that may explain behavior, we see the emotions but we cannot find the explicit intentions. And even when we find the emotions, they tend to be idiosyncratic, varying wildly between subjects and contexts. This suggests retrofitting emotion into computers reverses how humans experience them, tying them together through cause-and-effect. Do we have BMI backwards here as well? "Given the same input information, individuals may have unique interpretations, feelings, and plans, often leading endogenous representations to be *idiosyncratic* across individuals." Chang et al., "Endogenous variation in ventromedial prefrontal cortex state dynamics during naturalistic viewing reflects affective experience," *Science Advances*, April 2021, Vol 7 no. 17.

metaphorical terms, the bill is coming due for our having built our institutions and society from such error-prone abstractions of reality.

Our current information collapse hints what we are really experiencing is a crisis of change. Neuroscience, and our popular understanding of it, is finally joining biology and astrophysics, both which began shedding intention in the 19th and 16th centuries through the respective discoveries of adaptation and heliocentricity. And that notion is entering culture sideways, catching us up unconsciously, the quanta spilling into media. The crisis of misinformation forces us to adapt or perish. Our storytelling problems suggest we're not newly in any post-truth era as pundits would have us think; probably we've always existed in some form of post-truth framework as long as we've relied on stories. Anthropologist Yuval Harari suggests this: "Humans are a post-truth species."¹⁶ Just as some claimed prematurely that the election of Barack Obama was evidence of a 'post-race' society, post-truth became a convenient sign-post for the recent explosion of disinformation.¹⁷ We're likely flirting with the beginnings of a 'post-story' era and just don't know it yet.

As neuroscience adapts and relies less on the notion of intention it enters a wider framework. The brain revealed – lacking intention – is far more interactive than the model of mind coiled inside our heads for extracting things like meaning, suggesting the interactivity of brains doesn't end at the boundary of your body and senses.¹⁸

What happens if we discard intention? Perhaps our relationship to reality and one another changes, it opens up in ways we couldn't have imagined. This Copernican vault to a next level has always been available, but storytelling has kept us all unaware, moored to the past.

¹⁶ Yuval Noah Harari, "Humans are a post-truth species," *Guardian*, August 5, 2018: <https://www.theguardian.com/culture/2018/aug/05/yuval-noah-harari-extract-fake-news-sapiens-homo-deus>

¹⁷ The crisis here is the deficiency of narrative itself, but all sides are merely imposing new narratives in the guise of truth or solutions. All of us feel something is wrong but no one has the framework to name it.

¹⁸ Lisa Feldman Barrett, "Your Brain Is Not For Thinking," *New York Times*, Nov 23, 2020: <https://www.nytimes.com/2020/11/23/opinion/brain-neuroscience-stress.html>

Humanity desperately requires a new medium for modelling larger scales of societal interaction, creating accurate representations with better uses of memory and analytic thought. Some tools for this already exist in media; we need to combine them creatively. But we'll need to be inventive in ways we've never been before. What we are experiencing in information collapse seems predicted back in 1991 by Merlin Donald. What McLuhan diagnosed in our disregard of formatting for content, Donald prescribes in a rejection of the format itself:

“Nothing illustrates the transition from mythic to theoretic culture better than this agonizing process of demythologization, which is still going on, thousands of years after it began. The switch from a predominantly narrative mode of thought to a predominantly analytic or theoretic mode apparently requires a wrenching cultural transformation.”

What he labels demythologization awaits us on the horizon, the treatment for our addiction to storytelling, cure for the symptoms of belief, desire and intention,

Caveat storia.

Kevin McLeod is a game developer with essays on Stanley Kubrick's spatial syntax in *Elements of Architecture* (Taschen, 2018).

James Westcott is editor of *Elements of Architecture* and author of *When Marina Abramovic Dies: A Biography* (MIT Press, 2010). He teaches at the Architectural Association in London.

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