The stories we tell; the stories we're told - Clare Kelly | clare.kelly@tcd.ie
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Humans are story-telling animals. The earliest traces of human expression - figures etched on cave walls - tell stories that are tens of thousands of years old. Today, art remains a universal medium through which humans tell stories, and while our languages differ, the stories we tell have shapes that are shared across cultures. The ability to tell stories may even account for our evolutionary success as a species; telling stories about bountiful rivers, poisonous plants, trustworthy characters, and dangerous places may have helped our ancestors to survive and thrive.

When abilities or characteristics bestow an evolutionary advantage, they become integrated into an animal's body as "adaptations." The human brain is "adapted" for narrative. We find it easier to understand, to remember, and to share information when it's woven into a story. We spend large parts of our day engaged in "narrative mode" - the (re)imagining of pasts, nows, and futures, sometimes grounded in truth, sometimes flights of fancy. Our creativity and problem-solving abilities are based on this ability to project a narrative - to imagine a sequence of "what ifs" through which we discover the consequences of actions and choices through simulation rather than reality.

Studies using brain imaging technology reveal how this works: narratives engage the same parts of our brain that are engaged by real experiences. This is why, when we are engrossed in a good story, we can *hear* the crunch of leaves on the ground and we can *feel* the wind on the face of our heroine as she escapes. But even more than that, we can feel her heart race with fear as she faces the monster, her relief and triumph upon vanquishing the enemy, the wrenching sadness of her loss, and the wistfulness of her reminiscence. Stories engage brain networks for perspective taking and empathy - our ability to put ourselves in someone else's shoes and to *feel what they are feeling*. This allows us to simulate actually *being* someone else, while also allowing us to retain a sense of exactly who *we* are. As the neuropsychologist Oliver Sacks, whose work inspired me to become a neuroscientist, said, "*We have, each of us, a life-story, an inner narrative - whose continuity, whose sense, is our lives. It might be said that each of us constructs and lives, a "narrative," and that this narrative is us, our identities."*

Stories, then, are central to how we understand other people and ourselves. As key to our identities, narratives enable us to make sense of who we are, how we behave, and what we value, and, through the processes of simulation, perspective-taking, and empathy, they enable us to make sense of other people, predict how *they* will behave, and make inferences about what *they* value. What's remarkable is how similarly this process plays out across people. Brain imaging research has shown that when several people listen to the same narrative, *the activity in their brains becomes synchronised.* The better the story-teller, or the more the listeners share the same interpretation or emotion evoked by the story, the stronger the synchrony amongst their brains.

Together, these observations give us insight into why stories are so powerful - they engage the same brain networks as real experiences, they are engines for empathy, and they temporarily make our brains more similar. Over time, repeated exposure to the same narratives *physically changes our brains* - shaping how we understand ourselves and uniting

us with others through shared narratives. One important implication of this is that those with the power to set or control the narratives we are exposed to - think about what we're taught at school, the news we hear, the social media we engage in, the advertising we cannot escape - are very powerful indeed. The stories we are told become the stories we tell.

One of the most important stories we tell is of how we understand ourselves, as humans. What is our nature? How do we make sense of the existential crisis we face? What should we do - what *can* we do? The stories we tell act to frame the problem and determine the solution space. For example - let's examine two contrasting stories. Think back to before private land ownership was commonplace, when people shared what were called *commons* - communal land where members of a community would fish and hunt, grow and gather food, harvest trees for wood, and so on. Now let's imagine two groups of people and their respective commons. The first group operates on a purely self-interested basis. Families compete with each other to take as much of the commons resources as possible for their own benefit, often accumulating short-term excess that is wasted, because they do not share or plan ahead for periods of scarcity. After a while, this approach severely degrades the commons and exhausts its resources. In contrast, the second group is cooperative. They collectively decide how to fairly manage competition for resources, and work together to take good care of the land and maintain a sustainable food supply. They ensure that excess is redistributed fairly, and they plan ahead to protect against periods of scarcity. Community members who fail to do their fair share or uphold community rules are subject to social sanctions (such as exclusion). The first group ultimately starves, leaving no ancestors. The second group is successful - its families thrive by maintaining their sustainable commons over multiple generations.

Scientists believe that the story of the second group, the cooperators, reflects how our ancestors actually lived. But, it is the story of the *first* group, the self-interested, competitive, short-termist individuals that became the model of human behaviour at the core of economic and political theory and policy. You might recognise the story as the *"Tragedy of the Commons."* This archetypal narrative about human nature leads to pessimism - *doomism* - about global heating and ecosystem destruction, which are seen as **the inevitable outcomes of our selfish nature**. As writers such as Kate Raworth and George Monbiot have so compellingly outlined, this narrative became central to the orthodoxy of the academic disciplines of economics and politics, and infiltrated the culture of Western, Global North countries. Implicitly, subconsciously, it has become the Story of Us – we have come to understand ourselves as the self-interested, individualist *Homo Economicus,* a greedy consumer whose focus only on the short-term means we *cannot help* but destroy the commons - our planet. This narrative constitutes the greatest barrier to meaningful and urgent action to address our climate and ecological crisis, because it justifies the postponement or avoidance of action in favour of *business-as-usual*.

This narrative of human nature as incorrigibly self-interested is truly hegemonic - it is so powerful, so all-encompassing, and so deep-rooted that we are unaware of the extent to which it shapes our daily lives, nor do we question its dominance. How did this happen?

The idea that humans are innately bad, selfish, and destructive can be traced through the history of Western thought - from the ancient Greeks, through Christianity ("original sin"), to philosophers like Machiavelli and Hobbes. It was reinforced by Darwin's theory of evolution,

which many saw as confirming our instincts as animal and savage. Our saving grace, as Hobbes had described, is our ability to create governments and institutions (the *Leviathan*) that reign in our base natures with a social contract that forces us to refrain from pursuing only our self-interest. According to this narrative, we are right to be suspicious and cynical about other people. Rather than altering our nature, civilisation has merely added a *veneer*; human morality - kindness, altruism, kindness - is merely a performance required by society. Underneath this veneer, our true selfish and destructive nature persists.

Homo Economicus has its roots in this narrative. The idea of "economic man" arose during the late 19th Century. It was initially used in the discipline of economics as a mathematical device - a model of the rational, calculating, selfish, and optimising consumer that was required to make mathematical models of the economy work out. During the 20th Century, *Homo Economicus* became the bedrock of what is now known as neoclassical economics, not just as a model, but as an *ideal* - a story of human behaviour required to sustain the economic system of neoliberal capitalism. According to the *Homo Economicus* narrative, selfishness, greed, competition are *good*, since a capitalist free market economy provides an ideal space for these motivations to play out in a way that drives economic growth, which is crucial to a healthy, happy society. From the *ideal* human behaviour under capitalism, it was only a short psychological step to complete the circle, and for *Homo Economicus* to become a description of the *true nature of humanity*. As George Monbiot puts it, *""...the concept was formulated, by JS Mill and others, as a thought experiment. Soon it became a modelling tool. Then it became an ideal. Then it evolved into a description of who we really are."*

Since the 1970's, the *Homo Economicus* narrative has influenced politicians, policy-makers, and international institutions such as the World Bank and International Monetary Fund. It is favoured by large corporations and the financial elite (the "1%"). The story now serves a dual purpose. The narrative of humans as self-interested, competitive, greedy, short-termist individuals supports *business-as-usual* - the maintenance of the neoliberal capitalist system and the juggernaut that is perpetual economic growth. After all, *we* created this economic system because it is most conducive to our selfish, competitive natures; *capitalism merely reflects our innate motivations and characteristics*. In parallel, the narrative *justifies* the outcomes and consequences of capitalism - colonialism; destruction of indigenous peoples, cultures, and lands; inequality and injustice; insatiable extraction, consumption, and waste; ecosystem destruction; and global heating - the *"Tragedy of the Commons"* writ large. These outcomes are unfortunate, but they are inevitable. After all, *capitalism merely reflects our innate motivations and characteristics. You can't change human nature*.

Although compelling, this narrative is simply wrong. Study after study has shown that most people don't act in accordance with the expectations of the *Homo Economicus* model. An excellent example is the *"Tragedy of the Commons"* - described in a paper by Garett Hardin in 1968. Hardin argued that, just like the first group described in the example above, common resources will always be over-exploited and depleted because humans are selfish creatures motivated by short-term gain. Hardin's paper is enormously popular (it has been cited over 50,000 times) - it has informed economic and social policies all over the world. In particular, it has been used to justify the enclosure of common land and resources by private corporations, who then convert those common resources into private profit. This is despite the fact that Hardin's arguments were roundly debunked by studies showing that the *"Tragedy of the Commons"* is by no means inevitable, that humans can and often do

collaboratively manage limited resources in the research lab and in the real world, and there are examples of commons that have been sustained over generations. This debunking was so thorough that the author of some of the first studies to dismiss the tragedy as a myth, Elinor Ostrom, was belatedly awarded the Nobel Prize in Economic Sciences (she was the first woman to receive the prize). Despite this, and testament to the enduring appeal of the selfish narrative, Hardin's Tragedy endures in both the public and political imagination; the fact that his argument was debunked is less commonly known.

There are innumerable examples of studies showing that people often defy the expectations of neoclassical economics by cooperating, sharing resources, responding to inequity, planning for the future, or accounting for future generations. But rather than retiring *Homo Economicus*, these contradictions have been accommodated within the model. Humans are now seen as selfish but flawed - they are "irrational," beset by cognitive shortcuts and biases that sometimes lead them to act in ways that are not in their self-interest. Other evidence demands that the story of humans as purely self-interested, short-termist creatures be abandoned completely. Returning to our "commons" thought experiment, scientists across a range of disciplines, from evolutionary biology, primatology, and neuroscience, to anthropology, psychology, and developmental science believe that the story of the second group, the *conditional cooperators*, reflects how our ancestors actually lived. What the converging evidence suggests is that, several hundred thousand years ago, something in the ecology of our early human ancestors changed that forced us to become collaborative hunters and foragers, working in groups composed of individuals beyond our immediate kin. Needing to collaborate means becoming invested in the wellbeing of others - it requires *caring*. Caring, in turn, entails *empathy* - the ability to identify when others are in need and being motivated to help them. The ecological pressure to become collaborative was the initial trigger for the expansion of human empathy beyond our immediate relatives to unrelated others, paving the way for altruism. Those individuals with brains that were better at empathy were also better at collaboration, and as a result, they were more successful - they survived and left more offspring than individuals who were not so good at caring about others.

What this means is that the psychological capabilities we now think of as *moral* capacities - cooperation, helping, caring for others, empathy, altruism - are capabilities that *evolved* to enable cooperation within groups. That is not to say that humans are innately good, and never selfish or competitive - our ancestors would not have survived if they *never* acted in their self-interest. Instead, what it means is that humans are capable of working together to balance self-interest with the interest of the collective. Our moral capacities evolved to enable us to put *Us* over *Me* so that we could reap the survival benefits of cooperating within groups. What is most fascinating about this account is that it not only explains human capacities for empathy and altruism towards strangers, but it also accounts for the darker side of our social capacities. To avoid evolutionary invasion, every cooperative group must include a smaller number of uncooperative members. As a result, our moral machinery features capacities that evolved to support *conditional* cooperation, including exquisite sensitivity to threats to cooperation (e.g., failure to reciprocate, freeloading, unfairness) and social mechanisms that operate to keep people in check. For example, moral judgement and gossip serve to monitor and report on those who may be cheating, shirking, or acting selfishly or unfairly, while feelings of embarrassment and guilt prevent us from transgressing or encourage us to express sorrow or regret for transgressions that might threaten

cooperative relationships. Moral emotions such as anger, disgust, shame, and social exclusion all serve the function of punishing uncooperative others. We are not only storytelling animals, we are moral animals.

Support for the evolutionary origin of morality comes from surprising sources. Studies with human infants and children, for example, show that even infants as young as 6-9 months distinguish between kind and cruel actors and enjoy seeing good actions rewarded and bad actions punished. Because these judgments emerge before they could have been learned, they are likely innate. Studies with young children show that from 3 years of age, we are intrinsically motivated to help others and are deeply sensitive to inequality. Other research shows that morality is not unique to humans. The primatologist Frans de Waal finds evidence of the building blocks of empathy, cooperation, and sensitivity to fairness in animals from apes and monkeys, elephants and dolphins, to rodents and birds. These observations suggest that, like story-telling, morality is an "adaptation" of the human brain. de Waal's work leads him to conclude that *"Morality is as firmly grounded in neurobiology as anything else we do or are"* and indeed, neuroimaging research shows that moral emotions and decisions engage the same brain networks as other emotions and decisions. There is no specialised circuitry for morality; it is simply part of what our brain does. By the same account, morality also does not make humans "special," instead, it reinforces our place in and interdependence with nature and removes the separation between us and other animals, who share the same biological foundations of empathy and care.

Together, these findings call for a sweeping revision of the narrative of human nature, from one dominated by short-term self-interest, competition, and greed, to one characterised by empathy, a drive to cooperate, a sense of community and obligation, care for future generations, and a depth of belongingness and interdependence within nature. It is important to note that this alternative narrative is not "new" - it is characteristic of many indigenous peoples. Adopting this alternative narrative will empower those of us who have become stuck in the wrong story with the agency to imagine and enact alternative economic and political systems - ones that will lead to an end to inequality and injustice, a restoration of the commons, regenesis of our ecosystems, and a reversal of global heating. But why, given this transformative potential, does the story about our selfish, destructive nature persist? Why is it such a barrier to action on the climate and ecological crisis? The answer is simple: because that story is central to the maintenance of the neoliberal, capitalist economic system that enriches a small number of people at the expense of a great many and at the expense of vital ecosystems, species, and a livable climate. It is a narrative that is so important to the maintenance of current power structures, wealth accumulation, and inequality, that capitalist elites, fossil fuel corporations, and the organisations they discreetly fund dedicate considerable effort to keeping it alive. These efforts include influencing our media and politicians to propagate *discourses of delay* - narratives that tell us that the onus for change lies with individuals (not corporations or economic systems), that change is impossible (since human nature is at fault), and that it's too late anyway (we're doomed). These narratives reinforce our cynicism about human nature, hamper climate action and maintain *business-as-usual*. Recognising this pattern, Rutger Bregman characterises the story of human selfishness as a *nocebo* - the negative version of placebo: *"Cynicism can become a self-fulfilling prophecy - a nocebo that paralyses us with despair, while temperatures climb unabated."*

It doesn’t have to be this way. The destruction of our home is not inevitable - it is simply part of a story - a story of a selfish, self-destructive, planet-destroying monster.

A story that turns out to be a fiction.

By exposing this fiction, we can seize our power and agency to resist the forces of *business-as-usual*. By embracing the scientific evidence of our innate capacities for cooperation and empathy, we are empowered to tell a new and transformative story, one in which we reimagine our economic system, enact a new history, and weave a new identity that is infused with care for one another and for our planet.

That is the story I hope our great-great-great-grandchildren will tell about us.