

The Dark Forest Theory of the Internet

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end-user manually generated the crashdump.

This is the first time you've seen this stop error screen, start your computer. If this screen appears again, follow these steps:

1. Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer any windows updates you might need.

2. If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing. If you need to use safe mode to remove or disable components, restart your computer, press F8 to select Advanced startup options, and then select Safe Mode.

3. Technical information:

STOP: 0x000000E2 (0x00000000, 0x00000000, 0x00000000, 0x00000000)

When you receive the error message, the system writes a memory dump to the file %SystemRoot%\debug\ntbtstmp. The file name is ntbtstmp followed by a hexadecimal number. To help diagnose the problem, you must obtain the following information:

4. Follow these steps:

- Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer for any windows updates you might need.

5. If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing. If you need to use safe mode to remove or disable components, restart your computer, press F8 to select Advanced startup options, and then select safe mode.

6. Technical information:

** STOP: 0x000000E2 (0x00000000, 0x00000000, 0x00000000, 0x00000000)

7. Beginning dump of physical memory
Physical memory dump complete.
8. Contact your system administrator or technical support group for further assistance.





“Where are we going?” Shi Qiang asked.

“To the darkest place.”¹

There is a Quichua riddle. El que me nombra, me rompe. Whoever names me, breaks me. The solution is, of course, ‘silence.’ But the truth is, anyone who knows your name can break you in two.²

The internet is a dark forest. The roots grow upwards, the crown reaches downwards: wrapped around the planet, the internet circulates between satellites and underwater cables. The internet is a tangible space, yes, but also a mental expanse. Made for sleepwalking, for a mundane delirium. For sacrificial rituals. People get lost in it by shining light in all the wrong places, exposing too much about themselves, communicating impulsively, recklessly.

You can enter through an interface, but also through your pocket. You can enter through a screen, but you must screen something of yourself in return. A traveler who enters the forest is never alone, eyes wrapped around her like insulation tape.

There is only one, simple riddle to answer at the entrance to the internet:
What's on your mind?

It's a riddle we must answer over and over again.

A simple question. What's on your mind?

An invitation to communicate.

★

In the 1990s, Mark Fisher's philosophical reading of the cyberpunk novel gave us a persuasive theory of cyberspace as a prosthesis of humanity, a cybernetic nature, an extension of the human nervous system. For Fisher, akin to the characters in William Gibson's druggy cyberpunk classic, *Neuromancer*, we are possessed by the internet; only as alive as the digital current that circulates in our veins. We are dispossessed of will, and inert as the machines that we get neurologically intimate with, letting them hack our endorphin channels and social impulses, addicted to their stimulants.³ Our neuroses, emotions and attention are ordered by our computers. As if in a trance, we follow the collective pattern of feeling transmitted to us—collective hypnosis, a feeling of shared outrage, fear, anger, joy, catharsis, justice, revenge, pleasure. Online, all impersonal worldly events are experienced as intensely personal, even if we don't play a role in them. We internalize everything, struggle to see beyond ourselves, to see the mechanisms that are not centered on us. The internet is a claustrophobia of interiority that



only appears to be ours. It “doesn’t work by suppression, or repression, but through a participative process . . . [It] doesn’t represent or even ‘manipulate’ public opinion but substitutes for it.”⁴ All actions are reactions, predictable reactions, endless nervous systems swaying to the same rhythm.

Most of human suffering comes from an exaggerated belief in agency and purpose, a belief that the personalized aspect of Web 2.0 accelerates. “What should be done and who am I?” is the question it poses to us repeatedly, as if the answer mattered. What’s on my mind? Where is my mind? Is what I see on the screen an expression of my mind? Philosophy of digital culture is perpetually torn between two overkills: declaring the internet a blessed place of productive schizophrenia, where we lose our own self-importance to communicate with the world, or, to the contrary, condemning it as a narcissistic delirium, where everything we do fortifies our self-importance.⁵ Benjamin Bratton captures this contemporary paradox by noticing that “paranoia and narcissism are . . . two functions of the same mask.”⁶ What should be done and who am I?

On the one hand, we feel pluralized, composite, collective, constantly shaken up by the diversity of human natures laid bare on our screens, we feel implicated in the fate of others. But there is simply too much otherness, and we decide not to trust it. This threatening chaos tightens the walls around the self instead of dissolving it in an encounter with the other. Epistemological paranoia settles in—what is true? Who is on my side? Where is my side?

On the other hand, we are sold the illusory integrity of the world and the self—free will, agency, causality, ethics. Everything feels personal, even the fate of the world, which appears to us as one, common world streamlined alongside our individualized news feeds. There seems to be nothing outside of this narrative that encompasses everything but nonetheless centers upon us. Each of the millions of users is injected with global, cosmic tasks daily through supposedly unique individualized feeds that all communicate the same information.

Each new medium both expands and shatters the human ego, showing us more of the universe and then promptly reducing it all to us. Bound to discover that it cannot insert itself into an active social network and hope for a straightforward exercise of choice and ethics, “each generation is obliged to verify this horror anew for itself, and to discover that it is impotent.”⁷ The more the world can be described through complexity theory and emergent extra-human behavior, the more science tells us that notions such as free will and causality might be shaky, the more dogmatically humans reassert detailed textual descriptions of individual thoughts and morals as a panicked solution. In the prison of interiority that is the internet, everything hinges on us and yet no one among us can bring about the change that she desires. No wonder that neurosis underlies this paradox: everything is internalized, even the weather and the fate of the planet are down to us, and yet we can do only what the medium affords us—externalize, communicate.



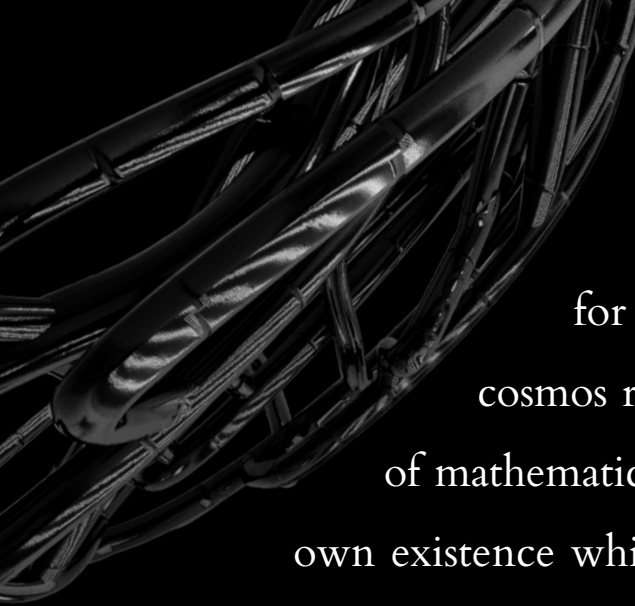


“I could choose to communicate with you.”

“If you do that, you should be aware of the price you’ll pay: You’ll have exposed your existence to me.”⁸

The dark forest theory of the internet is about the tragedy of communication, its compulsion, necessity, futility, and risk. It’s an experiment with “hardboiled survivalist hyper-nihilism,”⁹ with metaphysical sci-fi, rather than cyberpunk, as a model for the cyberspace. Where Mark Fisher wanted to distil the internet’s uniqueness, I aim to describe its genericity on a cosmic level. I want to grasp the brutality of our situation: communication is a compulsion and yet it is also the source of conflict.

Chinese science-fiction writer, Liu Cixin, elaborates his dark forest theory in the *Remembrance of Earth’s Past* trilogy, as an answer to the Fermi paradox—if we are surrounded by life, why is the universe silent? Shouldn’t the whole universe be a noisy social media feed, everyone vying for everyone else’s attention? The dark forest theory flips the underlying assumption, explaining that communication, because it reveals our existence to others, is a sign of stupidity rather than intelligence. This is not because all alien civilizations are hostile, but because the laws of the universe necessitate mortal conflict among all civilizations that share the same dimension.



Survival is the primary need of all civilizations. They expand and their need for resources grows, but the total matter in the cosmos remains constant. “Exponentials are the devils of mathematics”¹⁰—if life keeps growing and aching for its own existence while resources do not expand, they need to be fought for. “The entire universe has been dealt that dead hand.”¹¹ The universe is a battleground, existence is war. In the darkness of the universe lie many civilizations, all both hunter and prey. In this darkness, one better stay silent. Communication can potentially draw the attention of another civilization. When the two notice each other, one irrevocably must die at the hand of the other. The smarter one stays silent or attacks first. Why such a brutal solution? Given the limited pool of resources, assuming the other’s benevolence is too much of a gamble within “the cosmic chain of suspicion,” where inter-cosmic communication is necessarily risky. Aliens might have a very different definition of truth, ethics, or the common good. Sure, you *might* be “benevolent,” as I understand it, but, would I risk a whole planetary society on that assumption? And would you risk yours by giving me the opportunity to explain my idea of “benevolence” to you? What if one of us lies? Interdependent behaviors become complex quickly but the result is mercilessly constant: one of us will die. This trilogy considers various scenarios that could prevent this outcome, eventually disproving all of them. Humanity makes this monumental scientific discovery late, but for cosmic civilizations the dark forest theory is as fundamental as any

law of physics. It is automated, unreflective, independent of emotion, will or ethics. “Entropy increases in the universe, and order decreases ... As for any meaning higher than that, it is pointless to think about.”¹²

Some might object to the cold calculation of Liu’s dark forest theory. And yet it does nothing more than generalize the laws of physics to arrive at a cosmic game theory of civilizational development. The assumption that all existence is suspended between conatus and entropy affirms the laws to which humanity is subservient, just like any other form of complexity. (We could wish for a different world but we have this one.) In the notion of entropy provided by statistical mechanics, many systems, whether biological or social, can be grasped with the same tools that we use to understand entropy in physics. Every isolated system tends to progress towards disorder—the high-entropy option. One way or the other, conflict and dissipation of energy are woven into the fabric of existence. It’s a question of “how” and “when,” not “if.” A recent analysis of over six hundred years of human history confirms that each “human system” must rid itself of its own excess; with the rise in complexity, there is a rise in entropy as well. “War is simply one of the methods that the system has to dissipate entropy at the fastest possible speed.”¹³ Dissipation of energy is not simply a result of “bad choices” or “unethical actions,” but an inescapable, statistical probability tied to complexity. The more complex and intelligent life becomes, the higher the price it may have to pay in conflict.





The chain of suspicion [is] unrelated to the civilization's own morality and social structure. It's enough to think of every civilization as the points at the end of a chain. Regardless of whether civilizations are internally benevolent or malicious, when they enter the web formed by chains of suspicion, they're all identical ... To sum up: one, letting you know I exist, and two, letting you continue to exist, are both dangerous to me.¹⁴

The dark forest theory of the internet is about the risk tied to the very passport we need to enter our everyday cyberspace: communication, screening the self, telling the truth about ourselves, revealing or concealing our coordinates. It is not a winning game plan or a blueprint for “change,” but a description. (Normative theories of what the world *should* be like in its ideal state are better left to priests and utopians.) Web 2.0 rests on two axioms. First, sociality is a primary human need, communication is necessary for survival. Second, sociality is the carrier of all human conflict. More sociality, more entropy. Our nervous systems cannot distinguish between sociality and survival, and so we are sentenced to each other. The whole internet has been dealt that dead hand.

When communication is everything, thoughts, expressed in language, are endowed with a unique power. We draw them like maps that are supposed to lead others into our minds and hearts. But are thoughts truly representations of our beliefs or ourselves? Thoughts are experiences in the brain.

They are how we get from one moment to the next, how we experience a moment passing. They need not imprint themselves on us, even when each is immortalized in the lifeless glow of the cyberspace. And yet, frozen, they fortify the hallucination of the self—a “hard proof” that it “exists,” believes things and has convictions, and things to do. A transcendental hallucination common to us all, sustained by the communicative interface through which we live our lives. By giving undue attention to thoughts, especially those that we believe to be ours, “it is not only that we deceive ourselves; it is also that we are deceived about having a self.”¹⁵

The dark forest theory of the internet bypasses that fallacy and instead outlines automated dynamics tied to communication. As an isolated system it tends towards the high-entropy option. Connection produces conflict. Intent, hostility, or internal benevolence do not matter once each one of us is reduced to a node in the cybernetic chain of suspicion. To signal “safe” sociality, each user needs to be legible in her self-representational practice; everyone needs to make themselves known. The forest-system needs to be able to read us, as do the other users. What’s on your mind? We describe our thoughts incessantly, in detail. But this legibility means that our coordinates are exposed. We can be seen, attacked, and governed. The more detailed our descriptions are, the easier we are to govern. The more we are seen, the easier for us to become a target.

In the cosmic dark forest, those who speak up gamble with entropy, attract eyes, provoke attacks. Others focus on pre-emptive strikes: attack before they attack you. Liu optimistically believes that for humans, in

contrast to alien societies that are too metaphysically remote to effectively communicate, the chain of suspicion “will only extend a level or two before it’s resolved through communication.”¹⁶ But this assumes that communication between humans is truthful. This is why settling the *truth* is the internet’s guiding paranoia—*what does she really think; but who are they, really, underneath, unbeknownst to themselves*—as is making endless interpretations, self-disclosures and declarations so that there is *no doubt* about the intentions of the other, or our own. If only we described things clearly enough, if only we communicated relentlessly, excessively, then surely, we could prove our benevolence and unbind from the chain of suspicion. And so, every exchange is designed for maximum clarity to pre-empt interrogation but requires endless disclaimers nevertheless. Connection produces complexity, complexity produces conflict: a self-sustaining mechanism.

But entropy flows through us, too. Disintegration is bland, predictable, laying us down softly. Every system oscillates between order and chaos. In the prison of interiority that is the internet, someone always has to be discarded: directing entropy away from the self, towards the other. Complexity—of arguments, of human groups—rises until there is too much of it, and some sacrifice has to be made to return to the short-lived equilibrium, where the illusion of benevolent communication can still be maintained. What is any online “community” if not a sophisticated form of mutually assured destruction, suspended between neurosis and narcissism, tied to the unnegotiable need to communicate?



Madness, mayhem, erotic vandalism, devastation of innumerable souls—while we scream and perish, History licks a finger and turns the page.¹⁷

Symbolically and materially, existence is a conflict, a discord that produces complexity. The dark forest theory generalizes on a cosmic level the entropic nature of communication. Its trees grow roots everywhere. We patrol the forest, listening for each other's steps, all of us hunter and prey.

In some Amerindian ontologies, predation, warfare, and cannibalism underlie the relations between humans and other species. “In Amazonia, shamanism is as violent as war is supernatural. Both retain a link with hunting as a model of perspectival agonism ... marked by a profound conviction that every vital activity is a form of predatory expansion.”¹⁸ To exist as a plant or an animal is to be in a conflict defined by consumption, by material and spiritual warfare, where one species can possess the body and mind of the other. Hunter and prey. Entropy rests in the necessary consumption of other souls. On the “other” side of the spiritual spectrum, Christian theologian, Pierre Teilhard de Chardin, admits that conflict is necessary, metaphysically, for human nature; it is “an organic *phenomenon of anthropogenesis*,” wherein humanity rises only in conflict with others.¹⁹ Humans hunt each other.

Friction produces meaning in a feedback loop, just as opinions often form in denial of the existing reality, interdependently making us who we are. Solidarity and benevolence do exist, but usually in defense of one group against another, and so even the better parts of human nature are paid for in entropy and the conflict that results in (symbolic or real) elimination of the other.

Some philosophers, like Georges Bataille, believed that we can get rid of this excess in another way, that we could utilize this underlying conflict. His bacchanalian, anarchic concept of expenditure “can be defined as the illogical and irresistible impulse to reject material or moral goods [that could have been used] rationally,” so that what is allowed into the social order gains meaning and value “only when the ordered and reserved forces liberate and lose themselves for ends that cannot be subordinated to anything one can account for.”²⁰ The destruction of material goods and submission to inhuman chaos are forms of entropy that, he believed, could release some of the energy circulating in a complex social network. But *some* form of destruction remained necessary even for Bataille.

Humanity is a form of energy – like all forms of energy – that answers to entropy. The dark forest framework is as suited to intergalactic game theory as it is to personalized communication on Web 2.0. We hallucinate the self within its mechanism, but the process has little care for the self. The interface of the forest might read us well, its plants releasing the titillating hallucinatory gas of subjectivity. Each node in the cybernetic chain of suspicion, sustained by the communicative interface, asks itself: What

should be done and who am I? We answer, again and again, through ever more sophisticated interfaces. Once the dark forest is set in motion, we might miss what's behind the thick fog of subjectivity—an automated extraction process that reduces every single one of us—to the complexity we generate, measuring our entropy-potential, playing one node against the other, designing patterns of disorder. In this forest, one better stay silent or prepare for conflict.

What's on your mind?





Notes

- 1 Liu, Cixin, *The Dark Forest*, trans. Joel Martinsen, Tom Doherty Associates (Tor Books), New York, 2015. Digital edition.
- 2 Machado, Carmen Maria, *In the Dream House*, Graywolf Press, Minneapolis, 2019. Digital edition.
- 3 Fisher, Mark, *Flatline Constructs: Gothic Materialism and Cybernetic Theory-Fiction*, Exmilitary Press, New York, 2018.
- 4 This is Fisher discussing Jean Baudrillard's example of the opinion poll but I think he'd argue that it is applicable to the cyberspace at large. (Fisher, *Flatline Constructs*, p. 24).
- 5 One example of this ongoing debate is Byung-Chul Han's Heideggerian condemnation of Vilem Flusser's digital optimism, in: Han, Byung-Chul, *In the Swarm: Digital Prospects*, trans. Erik Butler, MIT Press, Cambridge, Massachusetts, 2017, p. 37–43.
- 6 Bratton, Benjamin, "The Black Stack," *e-flux journal*, no. 53, 2014, p. 9
- 7 Ferrante, Elena, *Frantumaglia: A Writer's Journey*, trans. Ann Goldstein, Text Publishing, Melbourne, Australia, 2016. Digital edition.
- 8 Liu, *The Dark Forest*.
- 9 Fisher, *Flatline Constructs*, p. 17.

10 Liu, *The Dark Forest*. Also, “in the early 1990s Cixin Liu wrote a software program in which each intelligent civilization in the universe was simplified into a single point. At its height, he programmed 350,000 civilizations within a radius of one hundred thousand light years and made his 286 computer work for hours to calculate the evolution of these civilizations. Although the final conclusion of the program was somewhat naïve, it formed the basis and shape of his world view.” This is an excerpt from the magazine *Peregrine*, cited in: Vandermeer, Ann & Vandermeer, Jeff (eds.), *The Big Book of Science Fiction*, Vintage Books, Penguin Random House LLC, New York, 2016. Digital edition.

11 Ibid.

12 Liu, Cixin, *Death's End*, trans. Ken Liu, Tom Doherty Associates (Tor Books), New York, 2016. Digital edition.

13 Martelloni, Gianluca, Di Patti, Francesca, Bardi, Ugo, “Pattern Analysis of World Conflicts over the past 600 Years,” *arXiv, e-prints*, 2018, <https://arxiv.org/abs/1812.08071>.

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16 Liu, *The Dark Forest*.

- 17 Ligotti, Thomas, “Professor Nobody’s Little Lectures on Supernatural Horror”, *Song of a Dead Dreamer and Grimscribe*, Penguin Classics, New York, 2011. Digital edition.
- 18 Viveiros de Castro, Eduardo, *Cannibal Metaphysics: For a Post-Structural Anthropology*, Skafish, Peter (ed. and trans.), Univocal Publishing, Minneapolis, Minnesota, 2014, p. 152. See also: Willerslev, Rane, *Soul Hunters: Hunting, Animism, and Personhood among the Siberian Yukaghirs*, Berkley, University of California Press, 2007.
- 19 Virilio, Paul, *Speed and Politics*, trans. Marc Polizzotti, Semiotext(e), Los Angeles, 2007, p. 130.
- 20 Bataille, Georges, “The Notion of Expenditure”, Stoekl, Allan (ed.), *Visions of Excess: Selected Writings 1927–1939*, trans. Allan Stoekl, Carl R. Lovitt and Donald M. Leslie, Jr., p. 128.

About the Author

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