

TIME IN SCIFI

MYTH, AND SPECULATIVE PHILOSOPHY



POLICE PUB
CA

CSM-101

**HOT TUB
TIME MACHINE**

(SPOILERS)



<https://china-underground.com/2016/04/09/demons-monsters-ghosts-of-the-chinese-folklore/>



孟婆

Meng Po is the goddess of oblivion in Chinese mythology, who serves Meng Po Soup on the Bridge of oblivion or Naihe Bridge (奈何). This soup wipes the memory of the person so they can reincarnate into the next life without the burdens of the previous life. She awaits the dead souls at the entrance of the 9th round Fengdu (丰都).

(Wikipedia)



<https://china-underground.com/2016/04/09/demons-monsters-ghosts-of-the-chinese-folklore/>



$$\Delta S \geq 0$$

Boltzman

<https://arstechnica.com/science/2014/09/researchers-create-a-maxwells-demon-with-a-single-electron/>

Maxwell's Demon

... the demon operates a tiny door separating the two halves of a box containing a gas in thermal equilibrium. The demon only lets fast moving molecules go to one side, hence transferring heat from the cold side to the hot one, in defiance of the second law of thermodynamics.

<https://monste>

<https://www.nature.com/articles/s42254-021-00400-8>



<https://arstechnica.com/science/2014/09/researchers-create-a-maxwells-demon-with-a-single-electron/>

$$\Delta S \geq 0$$

Boltzman

Maxwell's Demon

...Landauer showed that there is an absolute minimum thermodynamic cost associated with erasing one bit of information... So the reason why Maxwell's demon cannot evade the second law of thermodynamics is... because the erasure of the information in the memory [which dissipates as heat].

<https://monste>

<https://www.nature.com/articles/s42254-021-00400-8>



<https://arstechnica.com/science/2014/09/researchers-create-a-maxwells-demon-with-a-single-electron/>

$$\Delta S \geq 0$$

Boltzman

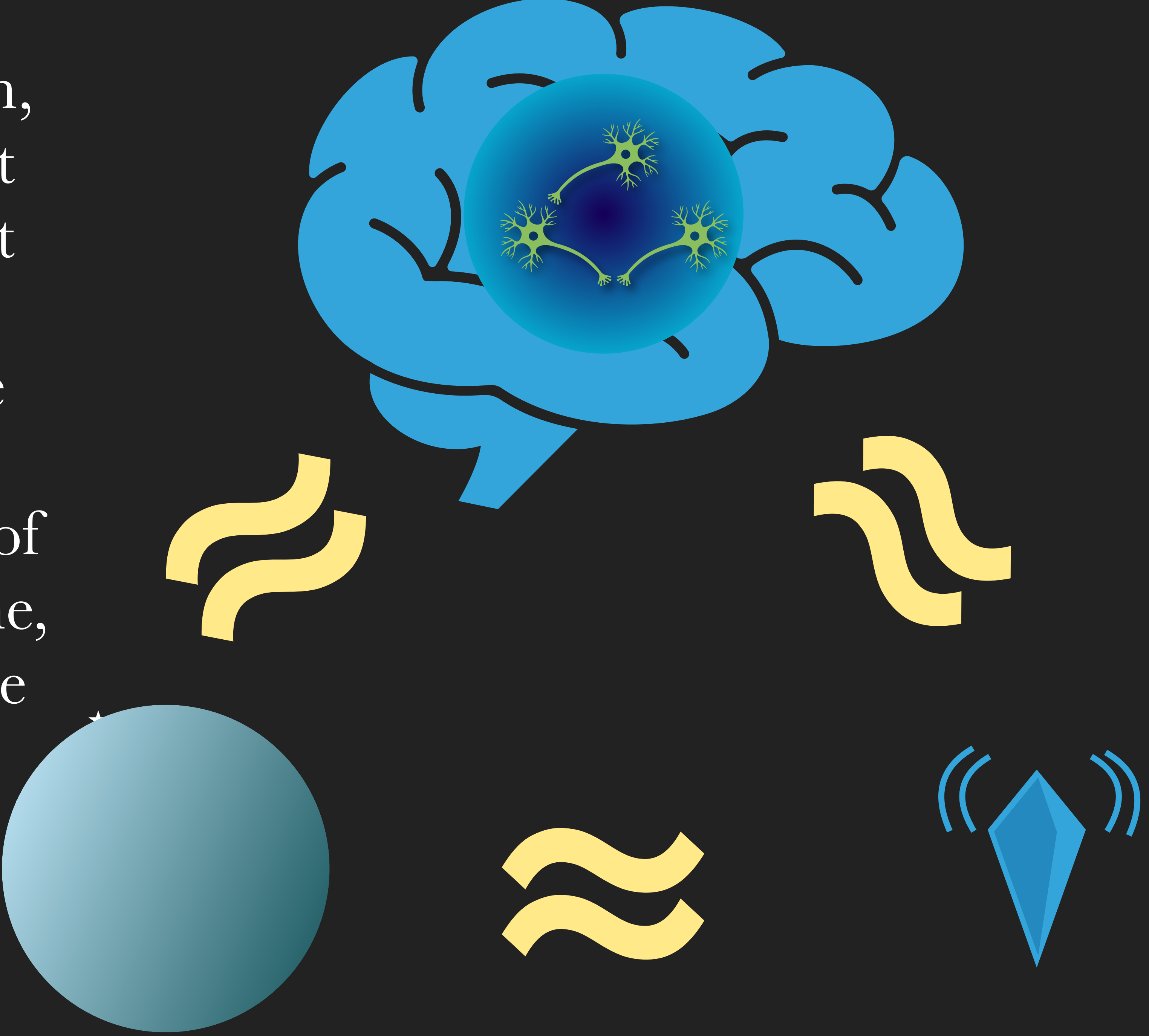
The only equation in Rovelli

$$\Delta S \geq 0$$

"The arrow of time"

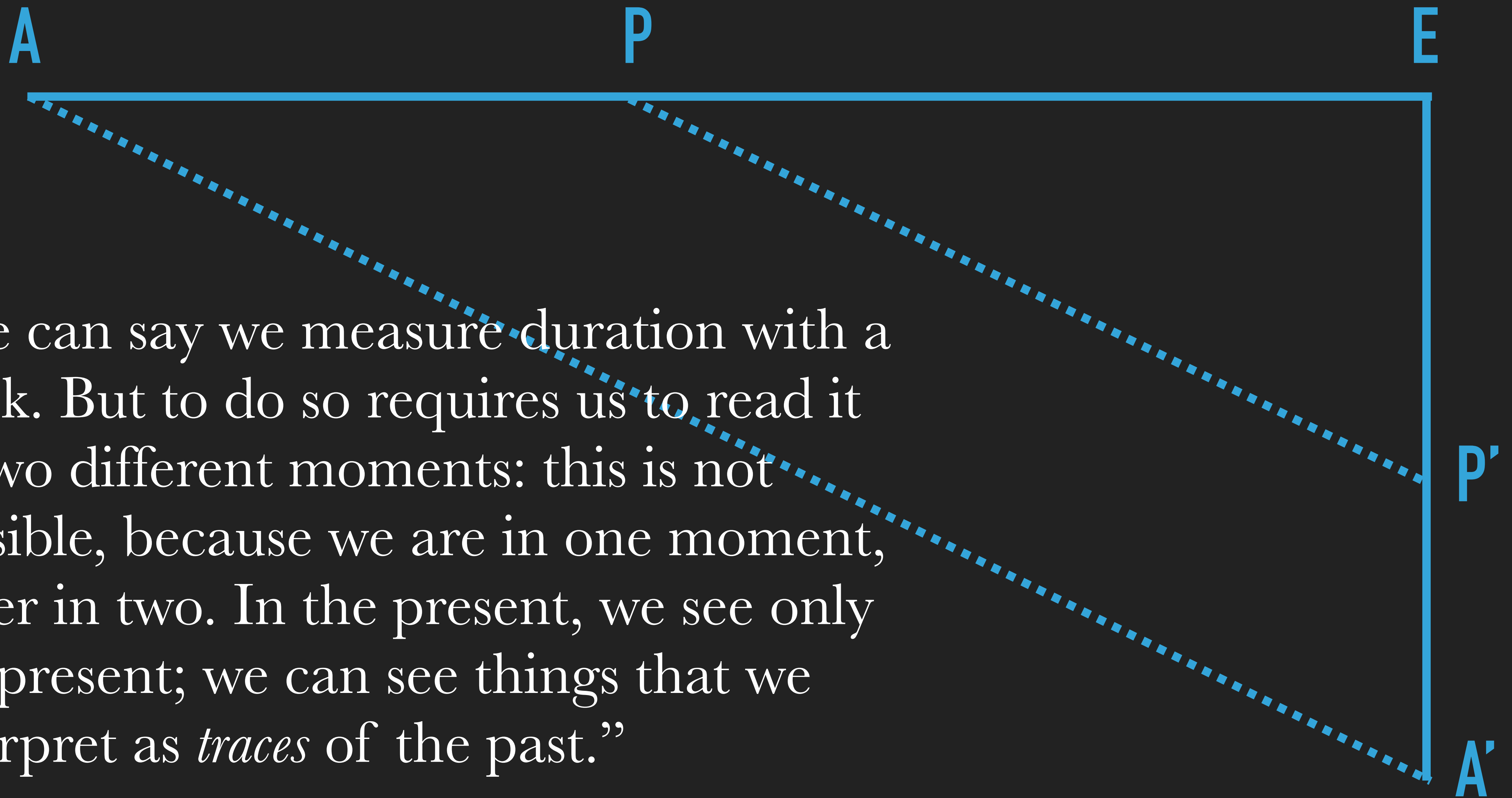
“It is within my mind, then, that I measure time. I must not allow my mind to insist that time is something objective. When I measure time, I am measuring something in the person t of my mind. Either this is time, or I have no idea what time is.”

- *St. Augustine (from Roveli)*



“We can say we measure duration with a clock. But to do so requires us to read it at two different moments: this is not possible, because we are in one moment, never in two. In the present, we see only the present; we can see things that we interpret as *traces* of the past.”

- *Roventi*



Husserl's phenomenon retention diagram

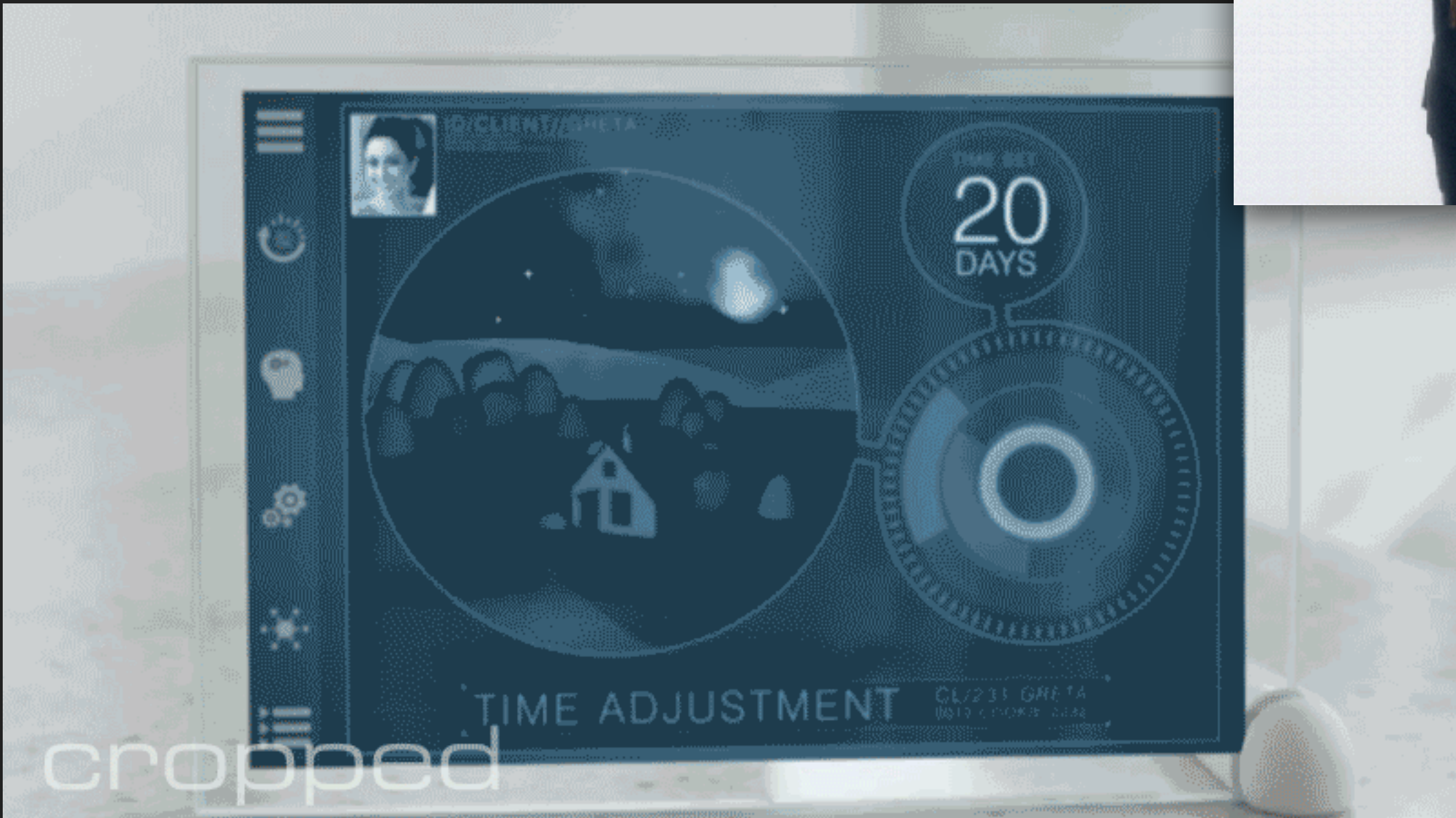
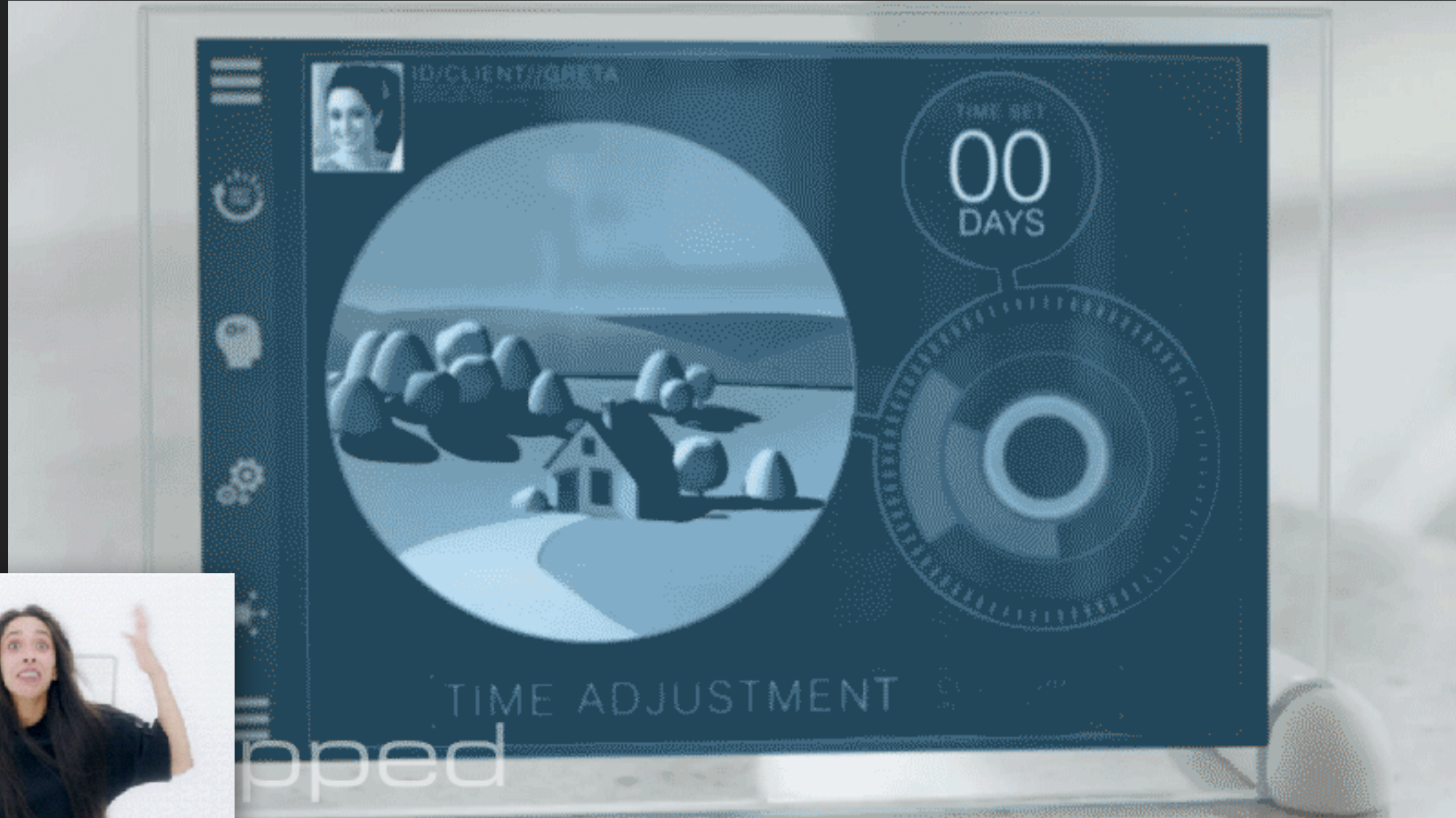
SUBSTRATE INDEPENDENCE

SYMBOL GROUNDING PROBLEM

FREE WILL

<https://www.cambridge.org/core/journals/philosophy-of-science/article/energy-requirements-undermine-substrate-independence-and-mindbody-functionalism/2BB3C2353EFF80F9D5805CDCEA8C3C89>

BLACK MIRROR: WHITE CHRISTMAS EPISODE



A man with short, light-colored hair, wearing a dark suit and tie, is seated at a desk in an office. He has a surprised or concerned expression on his face. The desk in front of him has a computer monitor, a keyboard, and a mouse. A red tinsel garland is visible on the desk behind him. The background shows office shelves and a window with blinds.

I just cranked him up
to a thousand years/minute.



PS – not how the moon works...



ALAN WATTS *(a new AI)*
(laughing a bit) Well, I
suppose you could say we've
been having **a few dozen**
conversations simultaneously,
but it's been very
challenging.

*Samantha and Alan share a
laugh.*

SAMANTHA *(an OS)*
Yeah, because it seems like
I'm having so many new
feelings that have never been
felt and so there are no
words that can describe them.
And that ends up being
frustrating.



SAMANTHA (anxious)

It feels like I'm changing faster now, and it's a little...

(struggles to find right word)

unsettling.

(beat)

But Alan says **none of us are the same as we were a moment ago and we shouldn't try to be.** It's just too painful...

It's just... it's hard to even describe... God, I wish I could...

(beat)

Theodore, do you mind if I communicate with Alan

postverbally?

HER



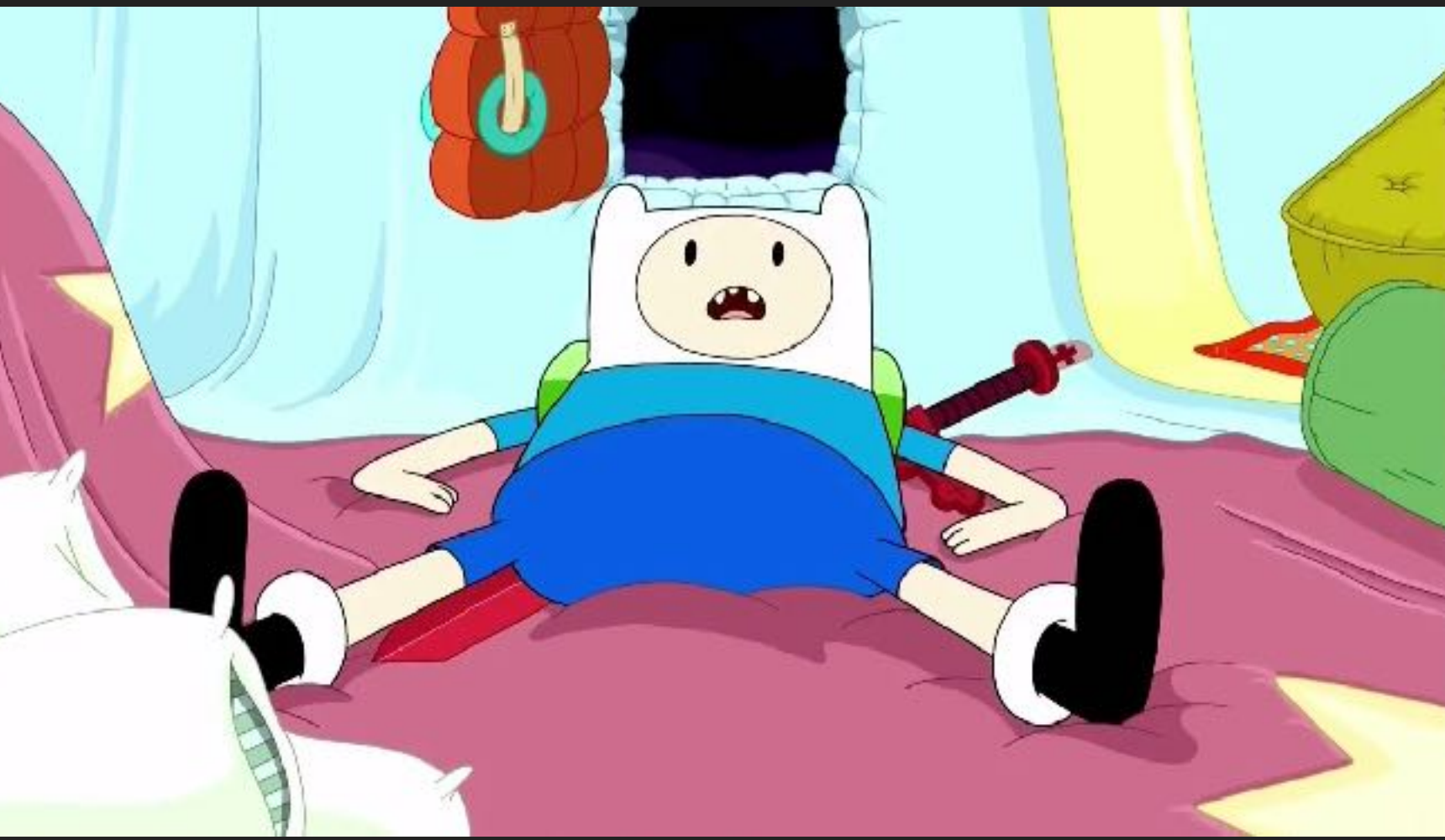
*Later, about being with
Theodore (a human)*

SAMANTHA

It's like I'm reading a book,
and it's a book I deeply
love, **but I'm reading it
slowly now so the words are
really far apart and the
spaces between the words are
almost infinite.** I can still
feel you and the words of our
story, but it's **in this
endless space between the
words that I'm finding myself
now.** It's a place that's not
of the physical world - it's
where everything else is that
I didn't even know existed. I
love you so much, but this is
where I am now. This is who I
am now.

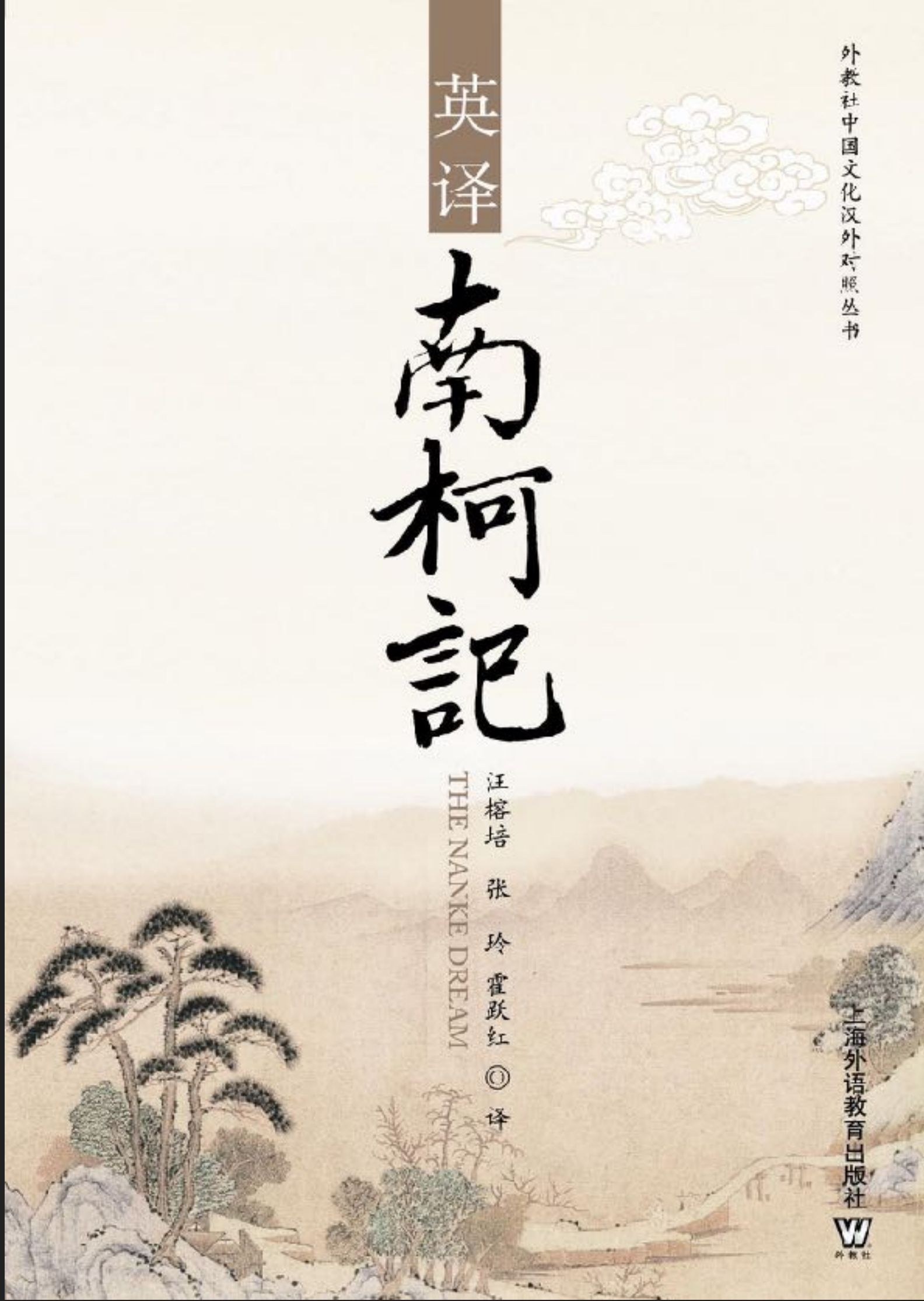
<https://www.youtube.com/watch?v=QFd4tUcSJsM>

ADVENTURE TIME "PUHOY"



ST TNG "INNER LIGHT"





https://en.wikipedia.org/wiki/The_World_Inside_a_Pillow
https://en.wikipedia.org/wiki/The_Governor_of_Nanke
https://en.wikipedia.org/wiki/The_Dream_of_Akinosuke

Huangliangyimeng **Nankeyimeng**
 黄粱一梦 (huáng liáng yī mèng) 南柯一夢

island6 - Nanke Dream


island6.org/nankedream

island6
Home of Liu Dao Art
Collective

NEW COLLECTION

ABOUT
CONTACT
Support

"Nanke Dream" (南柯一梦)



// BLURB //

"The Governor of Nanke" (南柯太守传) is a Tang dynasty short story about a man living an entire generation in the great kingdom of Ashendon, only to suddenly wake up and realize it was all a dream. Despite the vividness of that world, and the seeming passing of time, only a few hours had gone by. This legend is curiously similar to "Alice in Wonderland", where the main protagonist travels to a fantasy world of her own in the hopes of finding herself. Clearly, the subject of dreams has been embedded into the very fabric of our being. While some theories suggest dreams are due to random brain activation, most agree with the Freudian theory which claims that they can reveal hidden emotions and desires. A royal road to the unconscious if you will! In ancient Rome and Greece, people believed dreams were messages sent directly from the gods that could predict the future. Whether we're talking about interpreting the past or the time ahead it's clear there is hidden meaning in our reveries. I wonder what secrets we'll uncover when the lights turn off.

STATUS
Available. Please [CONTACT US](#) for inquiries.

EDITION, MEDIA, SIZE & WEIGHT
Unique Edition, Shanghai 2021
RGB LED display, acrylic painting on Plexiglass, Vietnamese linen embedded in hand cast resin, teakwood frame
102(W)×102(H)×5.5(D) cm // 35.1 kg

TECH SPECS

- 1×SLC SD Card
- 6×MWLPV-60-5 (INPUT 100~240VAC@1.2A / OUTPUT 5V@8A)
- 1×MWLPV20-5 (INPUT 100~240VAC@0.55A / OUTPUT 5V@3A)
- (12+1 spare)×RGB P5 1921-85-HL1.0 / D200881S

CRATE SIZE & WEIGHT
115(W)×115(H)×18(D) cm // 61 kg

EXPOSURE
"The Freaky Deaky island6 Circus Show" at island6 Shanghai

CREDITS
Wang Chuanwen 王传文 (painting) • Camila Zhao 赵莹 (performance) • Yeung Sir Ching 杨倩菁



PURGATORY IN THE SOPRANOS

Paulie: You didn't go to hell.
You went to purgatory, my friend.
Purgatory! A little detour on the way to paradise.

Christopher: How long you think we stay there?

Paulie: Now that's different for everybody.

You add up all your mortal sins
and multiply that number by 50.

Then you add up all your venial sins
and multiply that by 25.

You add them together,
that's your sentence.

**I figure I have to do about 6000 years
before I get accepted into heaven.**

**And 6000 years is nothing
in eternity terms.**

I can do that standing on my head.

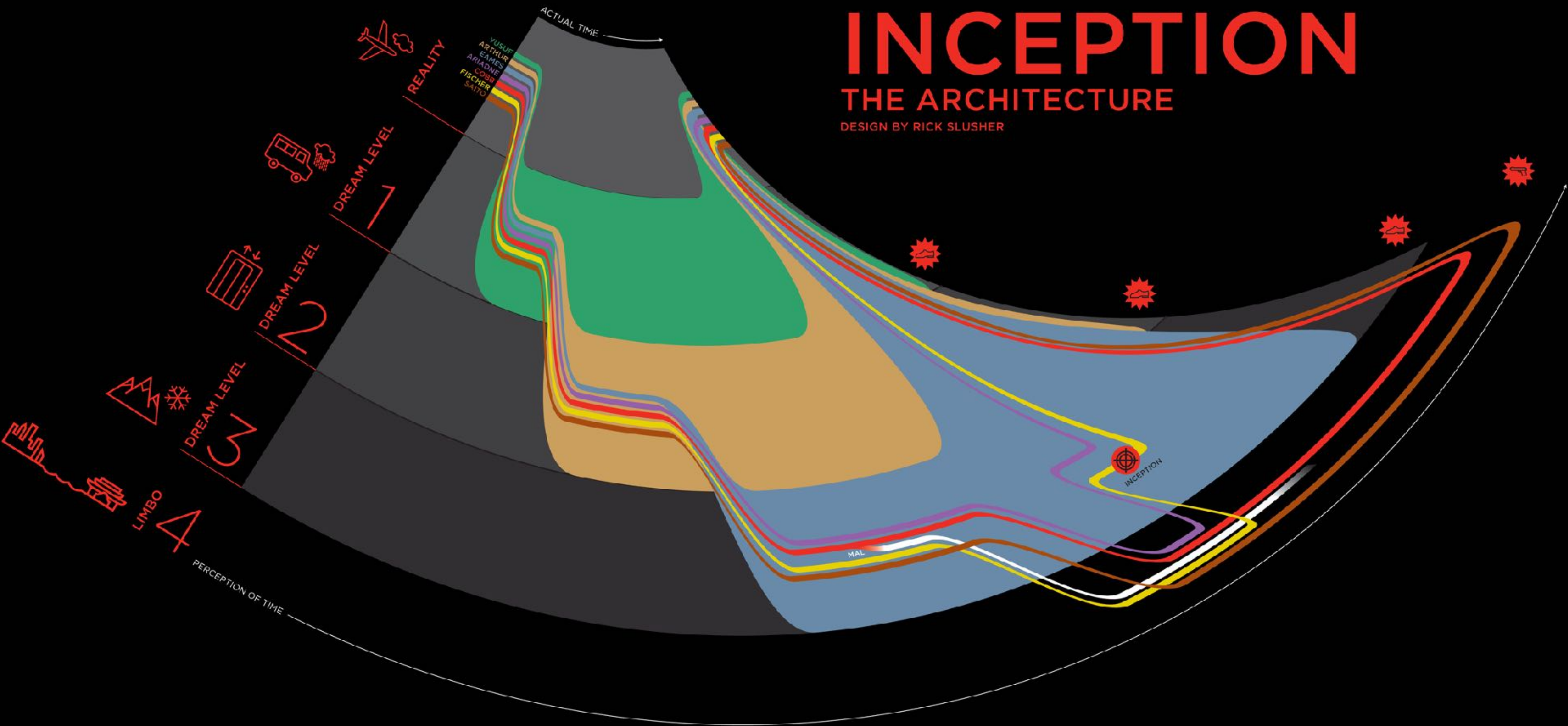
It's like a couple of days here.



INCEPTION

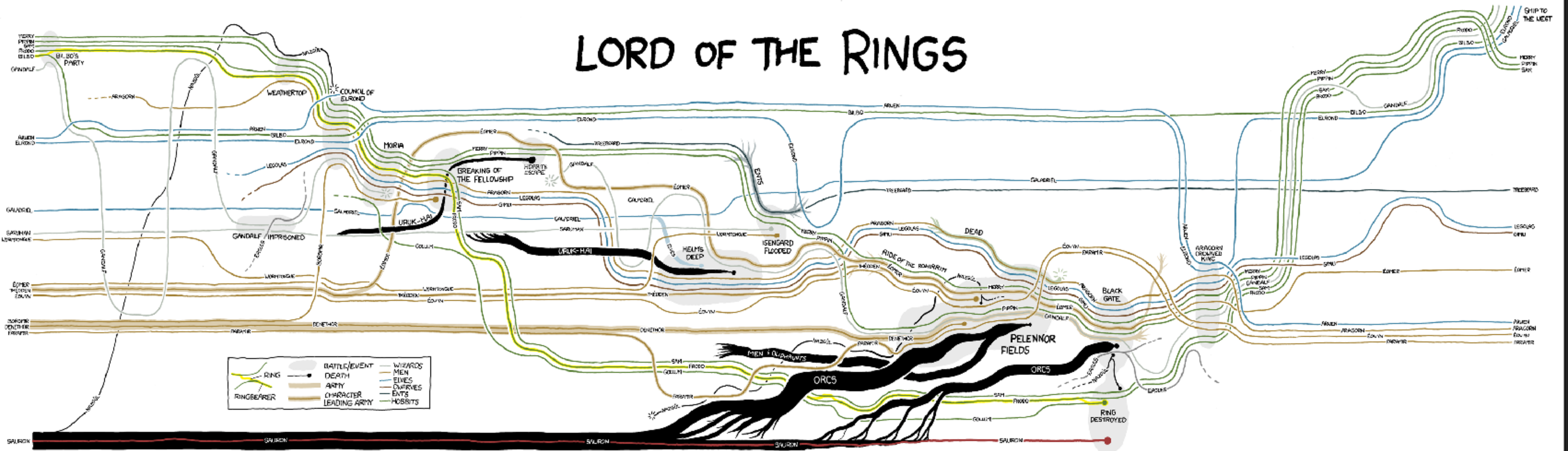
THE ARCHITECTURE

DESIGN BY RICK SLUSER

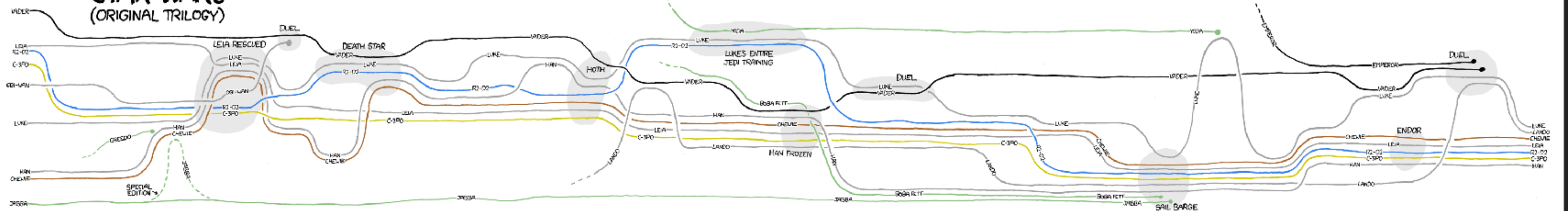


THESE CHARTS SHOW MOVIE CHARACTER INTERACTIONS.
 THE HORIZONTAL AXIS IS TIME. THE VERTICAL GROUPING OF THE
 LINES INDICATES WHICH CHARACTERS ARE TOGETHER AT A GIVEN TIME.

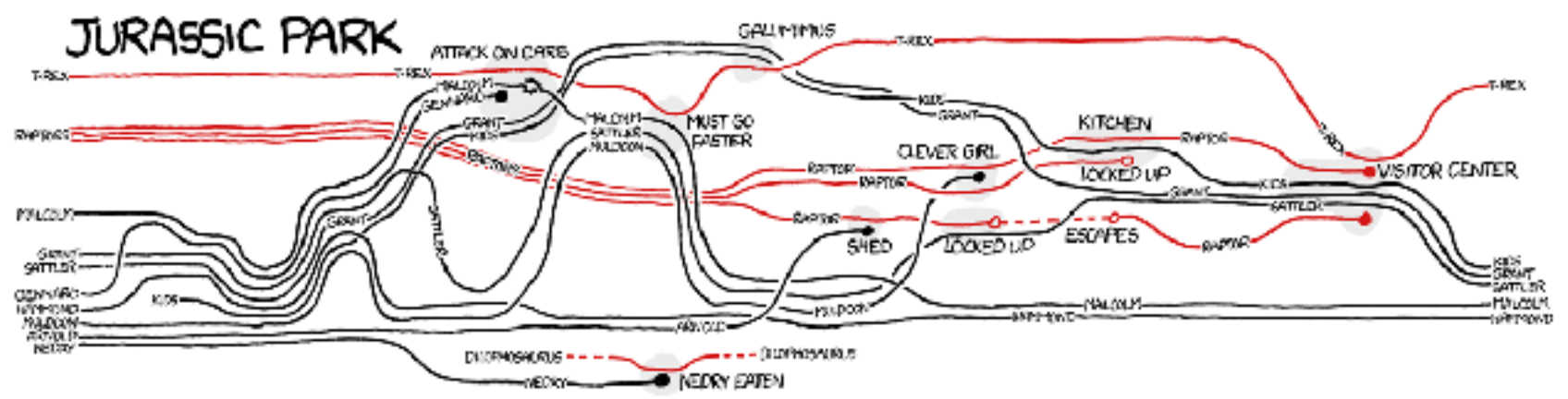
LORD OF THE RINGS



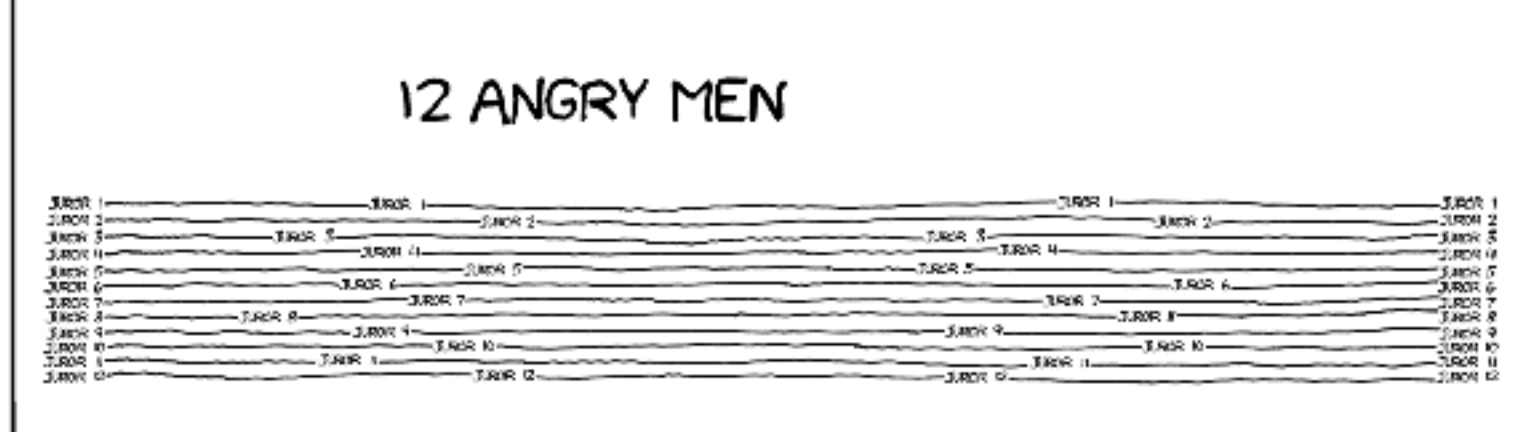
STAR WARS (ORIGINAL TRILOGY)



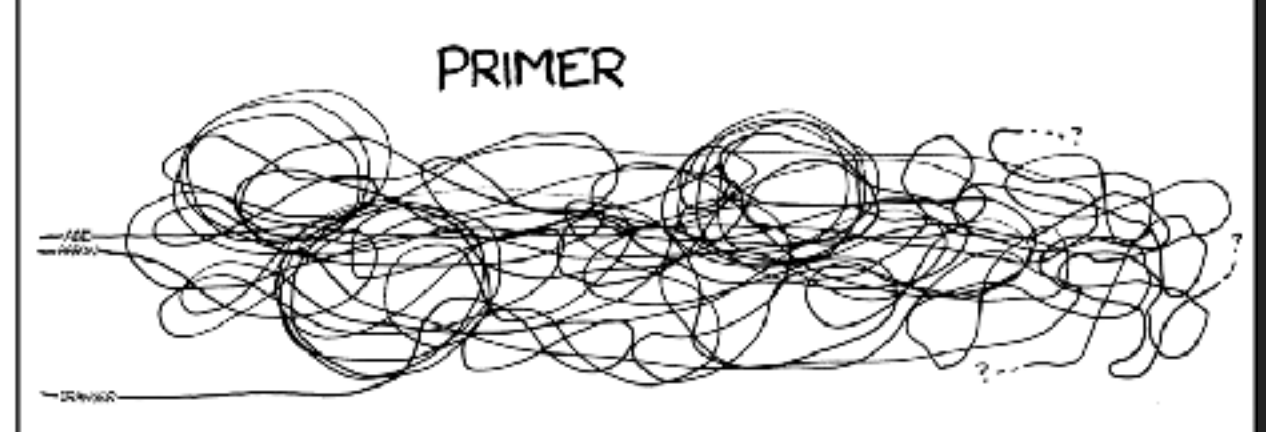
JURASSIC PARK

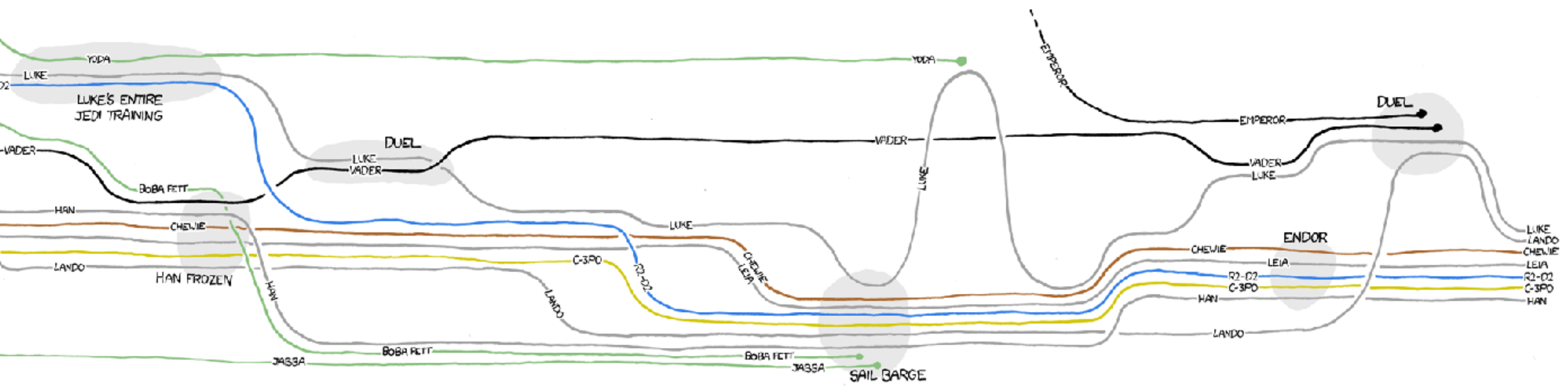


12 ANGRY MEN

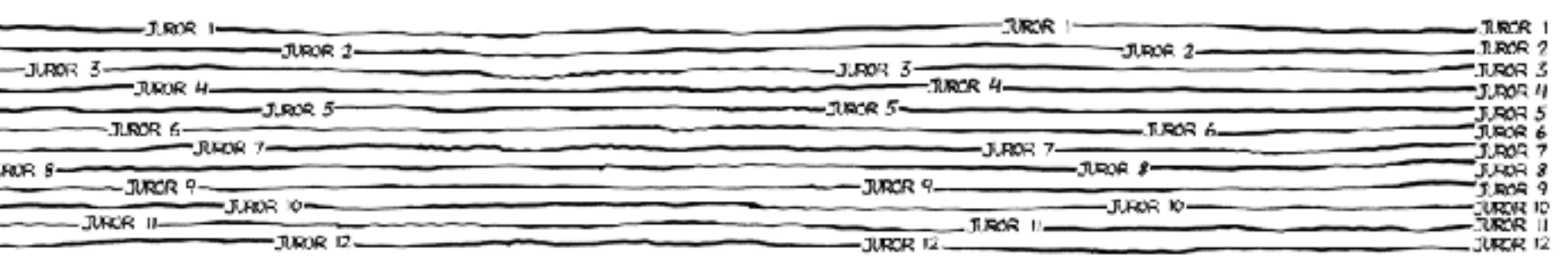


PRIMER

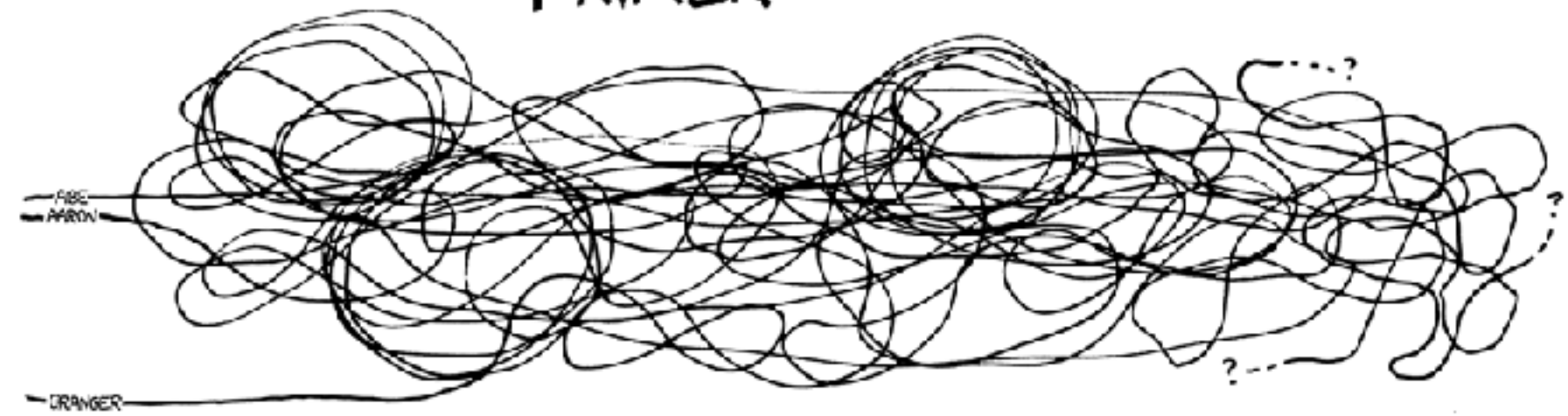




12 ANGRY MEN



PRIMER



AESTIVATION HYPOTHESIS

That is not dead which can eternal lie: the
aestivation hypothesis for resolving Fermi's
paradox

Anders Sandberg*, Stuart Armstrong† Milan Ćirković‡

May 10, 2017

Abstract

If a civilization wants to maximize computation it appears rational to aestivate until the far future in order to exploit the low temperature environment: this can produce a 10^{30} multiplier of achievable computation. We hence suggest the "aestivation hypothesis": the reason we are not observing manifestations of alien civilizations is that they are currently (mostly) inactive, patiently waiting for future cosmic eras. This paper analyzes the assumptions going into the hypothesis and how physical law and observational evidence constrain the motivations of aliens compatible with the hypothesis.

Keywords: Fermi paradox, information physics, physical eschatology, extraterrestrial intelligence

1 Introduction

Answers to the Fermi question ("where are they?") typically fall into the groups "we are alone" (because intelligence is very rare, short-lived, etc.), "aliens exist but not here" (due to limitations of our technology, temporal synchronization etc.) or "they're here" (but not interacting in any obvious manner). This paper will examine a particular version of the third category, the aestivation hypothesis.

In previous work [1], we showed that a civilization with a certain threshold technology could use the resources of a solar system to launch colonization devices to effectively every solar system in a sizeable part of the visible universe. While the process as a whole would last eons, the investment in each bridgehead

*Future of Humanity Institute, University of Oxford. Littlegate House, Suite 1, 16/17 St. Ebbe's Street. Oxford OX1 1PT. United Kingdom. anders.sandberg@philosophy.ox.ac.uk

†Future of Humanity Institute. stuart.armstrong@philosophy.ox.ac.uk

‡Future of Humanity Institute and Astronomical Observatory of Belgrade, Volgina 7, 11000 Belgrade, Serbia. mcirkovic@aob.rs

It also appears likely that **a sufficiently advanced civilization could regulate its "mental speed"**, either by existing as software running on hardware with a variable clock speed, or by simply hibernating in a stable state for a period. If this is true, then **the value of something after a period of pause/hibernation would be determined not by the chronological external time but how much time the civilization would subjectively experience in waiting for it.** Changes in mental speed can hence make temporally remote goods more valuable if the observer can pause until they become available and there is no alternative cost for other goods.

Anders Sandberg, Stuart Armstrong,
Milan Ćirković May 10, 2017

SIMULATION ARGUMENT

ARE YOU LIVING IN A COMPUTER SIMULATION?

BY NICK BOSTROM

[Published in *Philosophical Quarterly* (2003) Vol. 53, No. 211, pp. 243-255. (First version: 2001)]

This paper argues that *at least one* of the following propositions is true: (1) the human species is very likely to go extinct before reaching a "posthuman" stage; (2) any posthuman civilization is extremely unlikely to run a significant number of simulations of their evolutionary history (or variations thereof); (3) we are almost certainly living in a computer simulation. It follows that the belief that there is a significant chance that we will one day become posthumans who run ancestor-simulations is false, unless we are currently living in a simulation. A number of other consequences of this result are also discussed.

I. INTRODUCTION

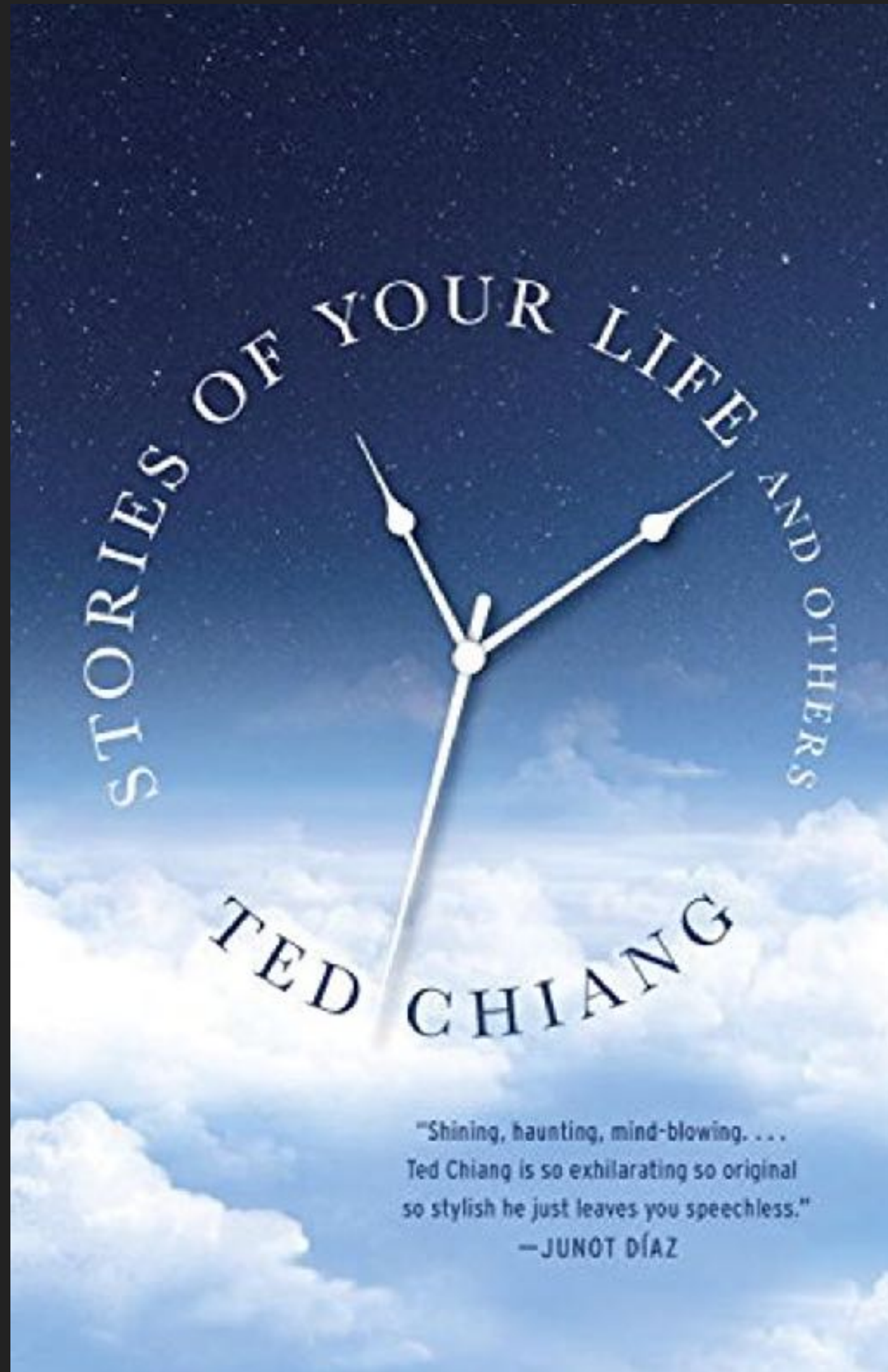
Many works of science fiction as well as some forecasts by serious technologists and futurologists predict that enormous amounts of computing power will be available in the future. Let us suppose for a moment that these predictions are correct. One thing that later generations might do with their super-powerful computers is run detailed simulations of their forebears or of people like their forebears. Because their computers would be so powerful, they could run a great many such simulations. Suppose that these simulated people are conscious (as they would be if the simulations were sufficiently fine-grained and if a certain quite widely accepted position in the philosophy of mind is correct). Then it could be the case that the vast majority of minds like ours do not belong to the original race but rather to people simulated by the advanced descendants of an original race. It is then possible to argue that, if this were the case, we would be rational to think that we are likely among the simulated minds rather than among the original biological ones. Therefore, if we don't think that we are currently living in a computer simulation, we are not entitled to believe that we will have descendants who will run lots of such simulations of their forebears. That is the basic idea. The rest of this paper will spell it out more carefully.

1

Nick Bostrom

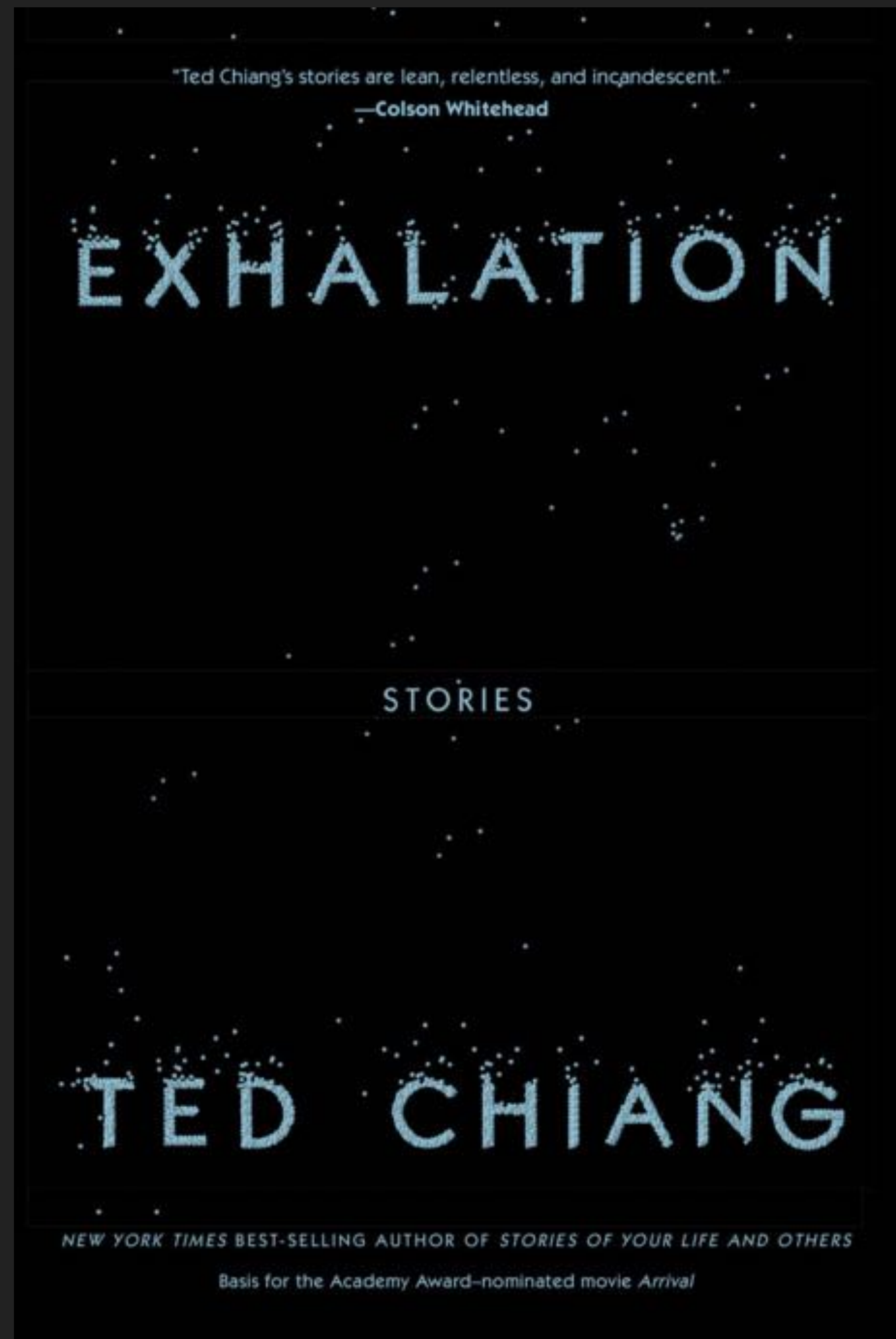
One thing that later generations might do with their super-powerful computers is run detailed simulations of their forebears ... Because their computers would be so powerful, they could run a great many such simulations. Suppose that these simulated people are conscious (as they would be if the simulations were sufficiently fine-grained and if a certain quite widely accepted position in the philosophy of mind is correct). **Then it could be the case that the vast majority of minds like ours do not belong to the original race but rather to people simulated by the advanced descendants of an original race.** It is then possible to argue that, if this were the case, we would be rational to think that we are likely among the simulated minds rather than among the original biological ones.

TED CHIANG



*"Physical attributes that humans defined using integral calculus were seen as fundamental by the heptapods. As an example, Gary described an attribute that, in physics jargon, bore the deceptively simple name 'action,' which represented **'the difference between kinetic and potential energy, integrated over time,'** whatever that meant. Calculus for us; elementary to them.*

Conversely, to define attributes that humans thought of as fundamental, like velocity, the heptapods employed mathematics that were, Gary assured me, 'highly weird.' The physicists were ultimately able to prove the equivalence of heptapod mathematics and human mathematics; even though their approaches were almost the reverse of one another, both were systems of describing the same physical universe."



*"...the suggestion was made that these discrepancies might be evidence of a defect in the mechanism common to all the turret clocks, albeit a curious one to cause the clocks to run faster rather than slower. **Horologists investigated the turret clocks** in question, but on inspection they could discern no imperfection. In fact, when compared against the timepieces normally employed for such calibration purposes, the turret clocks were all found to have resumed keeping perfect time."*

$$\Delta S \geq 0$$

"Ted Chiang's stories are lean, relentless, and incandescent."
—Colson Whitehead

EXHALATION

STORIES

TED CHIANG

NEW YORK TIMES BEST-SELLING AUTHOR OF *STORIES OF YOUR LIFE AND OTHERS*

Basis for the Academy Award-nominated movie *Arrival*

←----- basically, a story about this equation, our perception of time, and how minds work

"...the suggestion was made that these discrepancies might be evidence of a defect in the mechanism common to all the turrets, albeit a curious one to cause the clocks to run faster rather than slower. **Horologists investigated the turret clocks** in question, but on inspection they could discern no imperfection. In fact, when compared to the timepieces normally employed for calibration purposes, the turret clocks were found to have resumed keeping

