

Reading synopsis

From Chapter 2, "A Geology of Media" by Jussi Parikka

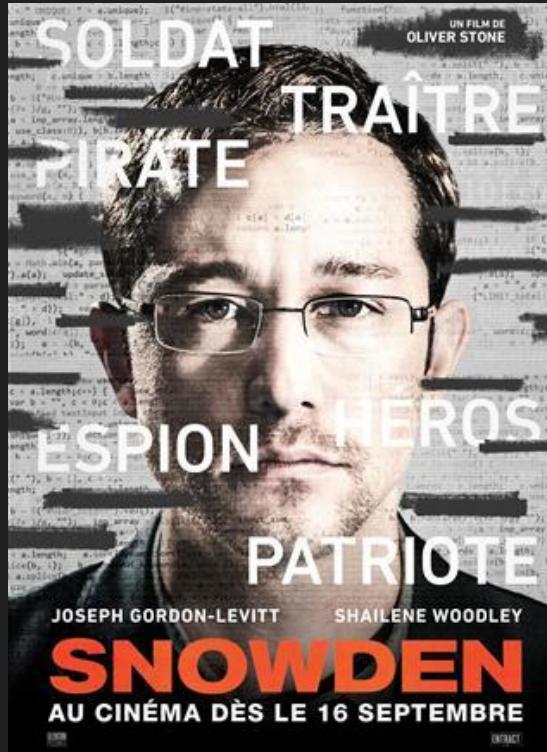
The Submerged Cloud

There is a debate about the Anthropocene and the electronic waste

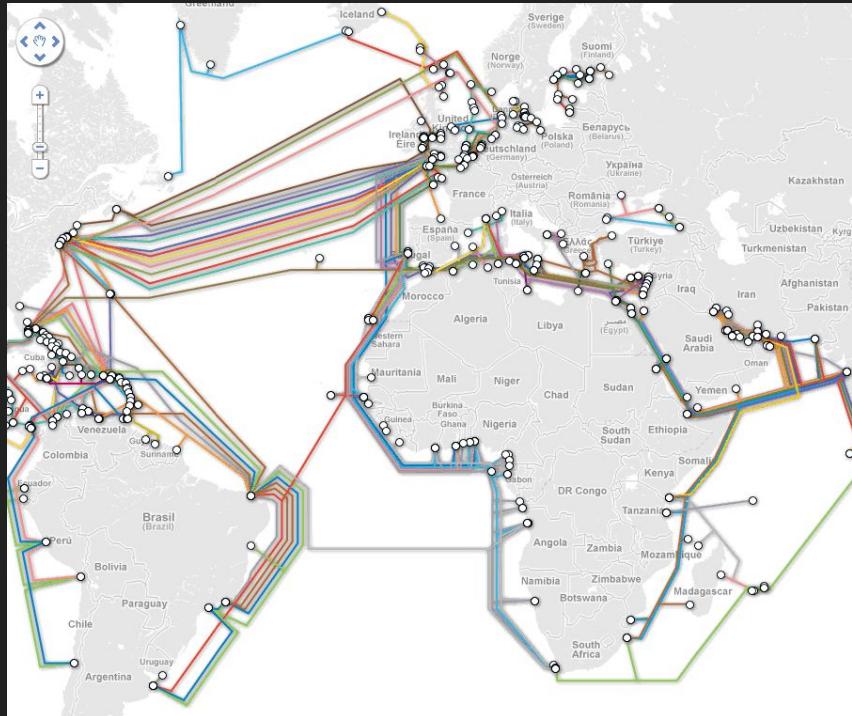
The Submerged Cloud



The Submerged Cloud



The Submerged Cloud



Submarine Cable Map, Telegeography.

The Submerged Cloud

- Earth as a resource, but also as transmission of media
- Underground addressed as “deep time”
cf German media (an)archaeologist and variantologist Siegfried Zielinski

The Submerged Cloud

"However, in the context of the materiality of media, we need to ask, do we need more strongly to underline the geophysical aspects of this geology of media and deep time? Do we need to go underground, submerge, and dig out cables submarine and subterranean to understand further hidden depths of materiality of media?"

And the Earth Screamed, Alive

Earth as a living entity



Professor Challenger
Arthur Conan Doyle's character

And the Earth Screamed, Alive



"The underground became both a poetic and an engineered realm of technology"

And the Earth Screamed, Alive

Geological scars

Diavik Diamond Mine, Canada.



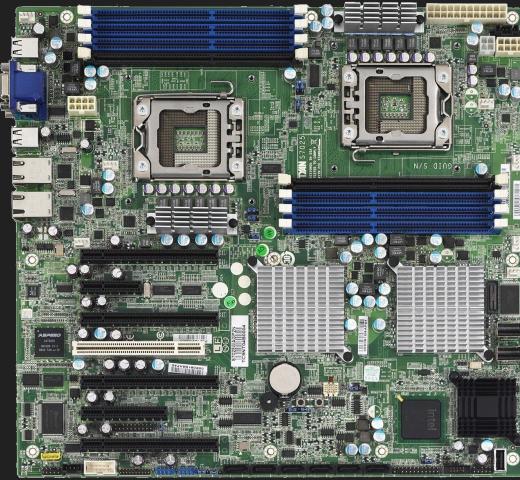
And the Earth Screamed, Alive, Again



And the Earth Screamed, Alive, Again

Valuable & Precious metals - where they are in Computers:

- **Gold** - Printed Circuit Boards, Computer Chips (CPU), connectors / fingers
- **Silver** - Printed Circuit Boards, Computer Chips, keyboard membranes, some capacitors
- **Platinum** - Hard Drives, Circuit board components
- **Palladium** - Hard Drives, Circuit board components (capacitors)
- **Copper** - CPU heat sinks, wiring and cables, Printed Circuit Boards, Computer Chips
- **Nickel** - Circuit board components
- **Tantalum** - Circuit board components (some capacitors)
- **Cobalt** - Hard Drives
- **Aluminum** - Printed Circuit Boards, Computer Chips, Hard Drives, CPU heat sinks
- **Tin** - Printed Circuit Boards, Computer Chips
- **Zinc** - Printed Circuit Boards
- **Neodymium** - Hard Drives (magnets)



List of Chemical Elements used in Computers & Electronics:

Magnesium, Radium, Barium, Niobium, Osmium, Cobalt, Manganese, Titanium, Hafnium, Tungsten, Germanium, Gold, Silver, Copper, Mercury, Bismuth, Silicon, Gallium, Zinc, Iorn, Sulfur, Phosphorus, Cadmium, Palladium, Tantalum, Platinum, Aluminum, Carbon, Lead, Nickel, Boron, Chromium, Potassium, Fancium, Casium, Sodium, Lithium, Calcium, Nitrogen, Oxygen , Arsenic, neodymium, Selenium, & Tin.

And the Earth Screamed, Alive, Again



And the Earth Screamed, Alive, Again

The nonmediatic matter that contributes to the assemblages and durations of media as technology.



An Ecology of Deep Time

An Ecology of Deep Time

Tiefenzeit - Deep Time

Critique of temporality: past, present and future

“A critique of a teleological notion of media evolution that assumes a natural progress embedded in the narratives of the devices”

Zielinski says instead Geology disproves the myth that media progress is linear



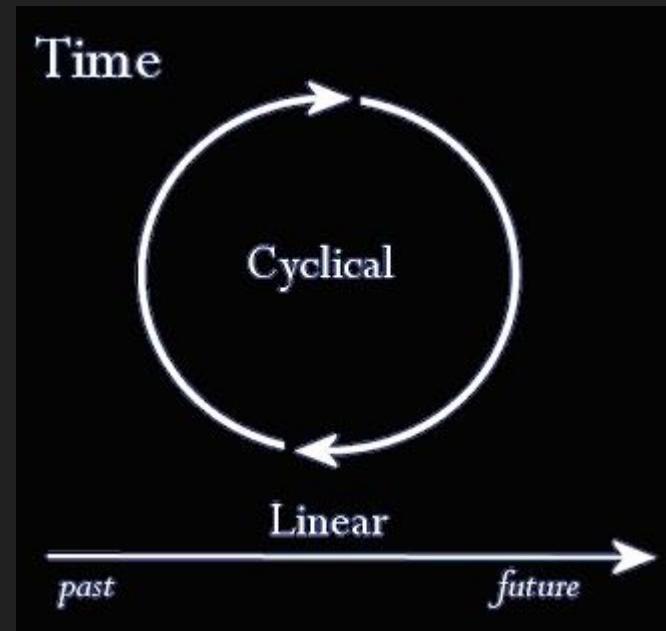
An Ecology of Deep Time

Hutton - Theory of the Earth

Religious question: how do we explain the difference between biblical time (1000 years ago) and geological time (1,000,000s of years ago)

Earth is constantly restoring itself, deep time is not linear but cyclical

“Hutton was also the first to recognize the profound importance of subterranean heat, [...], and he argued it was the key to lifting up formerly submerged land.”



An Ecology of Deep Time

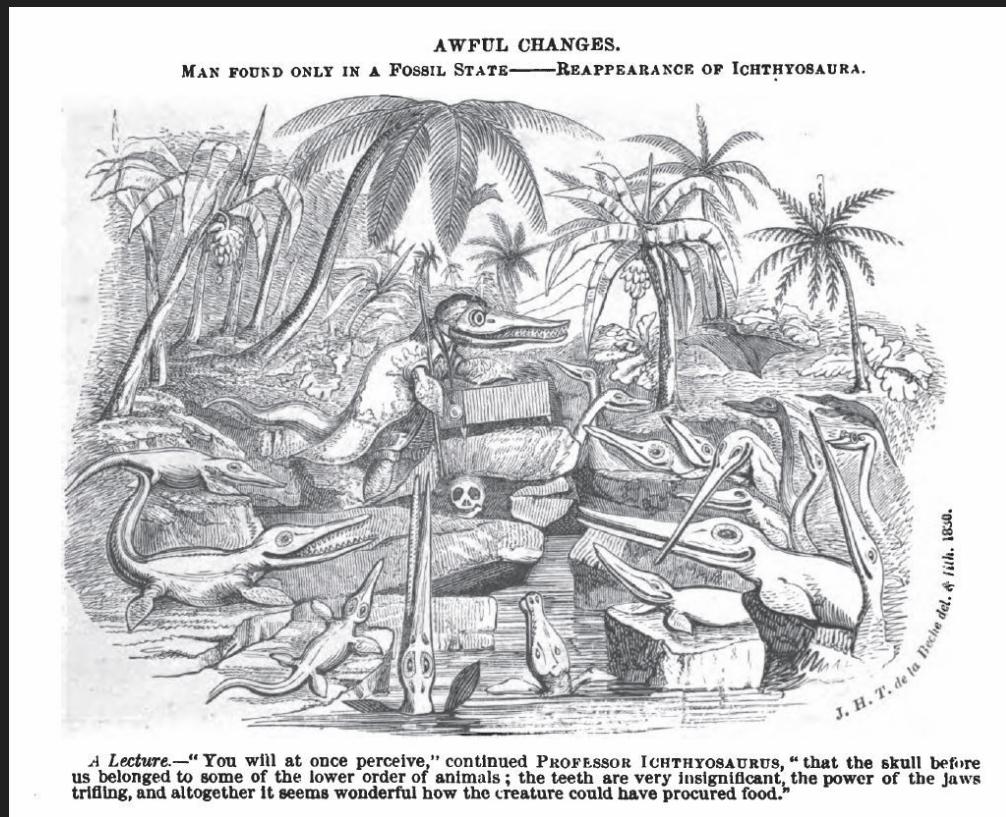
Lyell

Geology vs. History

Earth vs. Humans

Big distinction!

He sees them as two entities that do not overlap



An Ecology of Deep Time

Braidotti

In contrast to Lyell, she demonstrates that human/moral concerns are deeply related to the geological, especially with post-colonial/feminist concerns

Example:

Disregarding “mythopoesis” of “mother earth” or the myth of “westward expansion”



An Ecology of Deep Time

Zielinski + Gould

Gould says there is no uniformity to geological time - change instead happens at different speeds

Zielinski sees this as a way to understand media archaeology

“Media do not progress from simple to complex, there are no blueprints for prediction”



An Ecology of Deep Time

Electronic Waste Returns to the Earth

Think of the geopolitical and economic considerations of how we, as humans, have manipulated this geological history at a huge rate



From Scrap Metal to Zombie Media

Investigating the radical transformations
in the living conditions of the planet

An·thro·po·cene

Relating to or denoting the current geological age, viewed as the period during which human activity has been the dominant influence on climate and the environment.

Analysis of the dead media

- iPhone's Geological Extracts
 - Africa (coltan - conductor)
 - Alaska (zinc -> indium - touch sensor)
 - Many more :
 - South Korea
 - Belgium
 - Russia
 - Peru



Consequences

- Growing waste problem
- Energy and power harvesting
 - Cloud computing ->

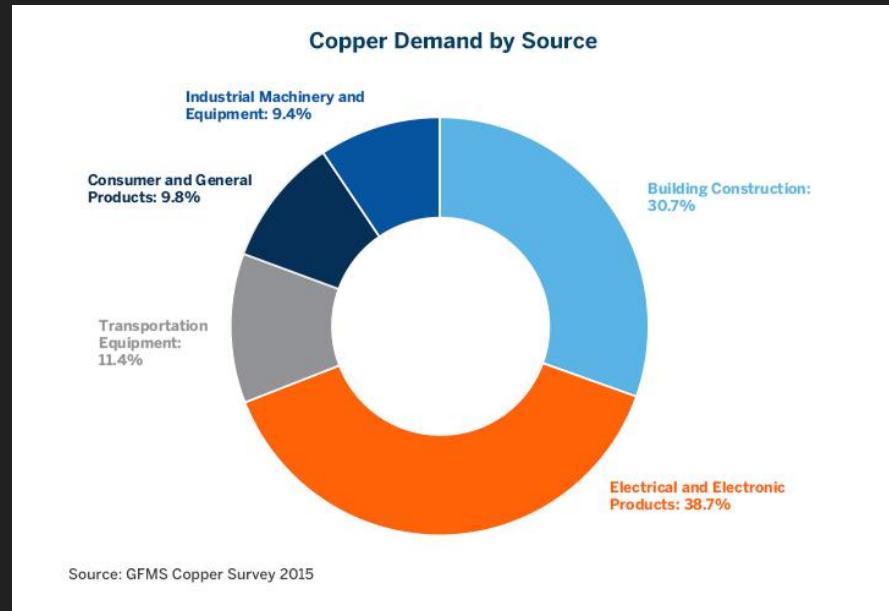


U.S. Army Corps of Engineers plans called for the NSA data center to use 1.7 million gallons a day.

<http://www.sltrib.com/home/2118801-155/nsa-utah-data-center-using-more>

China's demand

- Copper - 2012
 - Produced :
 - Total : 5.6 million tons
 - Scrap : 2.8 million tons
 - Imported
 - 70% : from USA



Politics

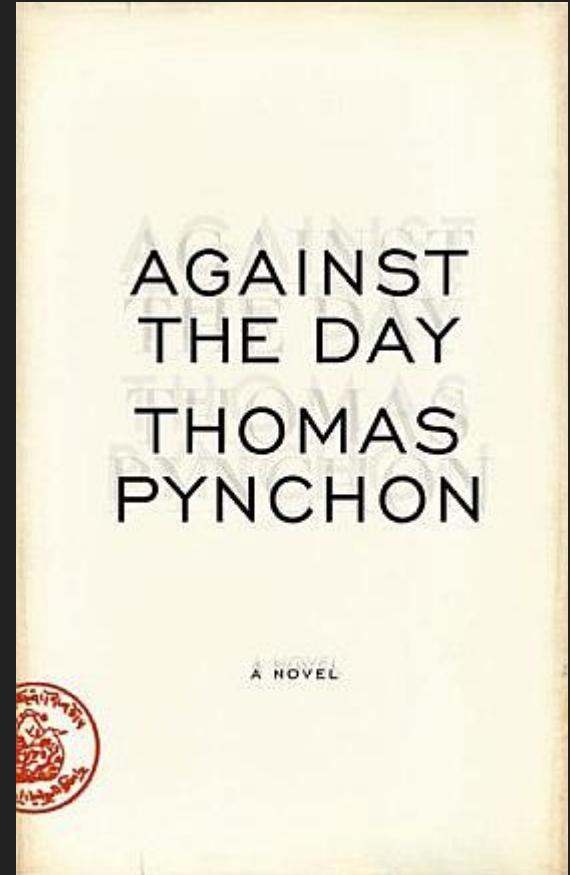
Theorists, policymakers, and even politicians are increasingly aware of the necessity of cobalt, gallium, indium, tantalum, and other metals and minerals for media technological ends.

- p.51 *Geology of Media* by Jussi Paprika

Cultural Techniques of Material Media

Thomas Pynchon

"our need to understand media history through its materials."

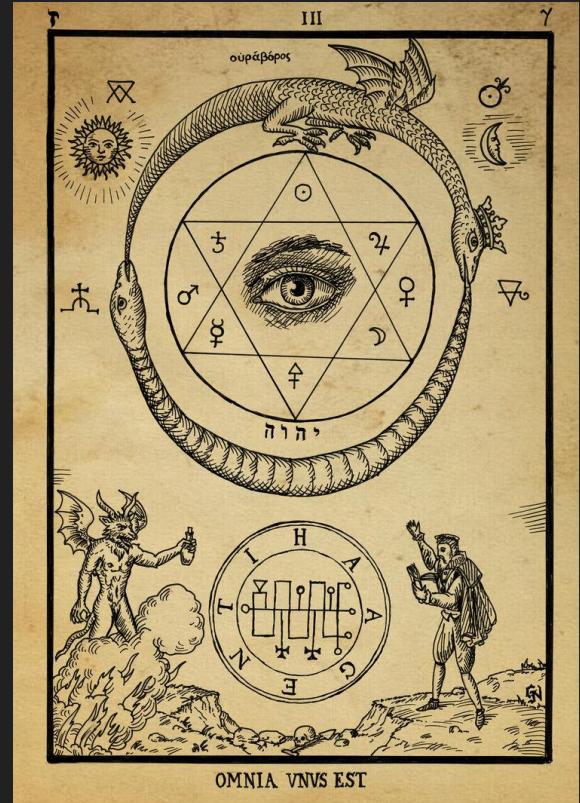


Alchemy

Occupies a position between arts and sciences

With capitalism, alchemy becomes chemistry.

“Maybe capitalism decided it didn’t need the old magic anymore. Why bother? Had their own magic, doin just fine, thanks, instead of turning lead into gold, they could take poor people’s sweat and turn into greenbacks, and save that lead for enforcement purposes.”



Deep time

"Digital culture starts in the depths and deep times of the planet. Sadly, this story is most often more obscene than something to be celebrated with awe."