ANCESTORS AS INFRASTRUCTURE

Sean Cubitt · November 2019

combined slides from talks at NEoN Re@ct (Dundee), a lecture at Goldsmiths, and a class for design students at Chealsea School of Art

Fortune Global 500 Top 10 Companies 2019

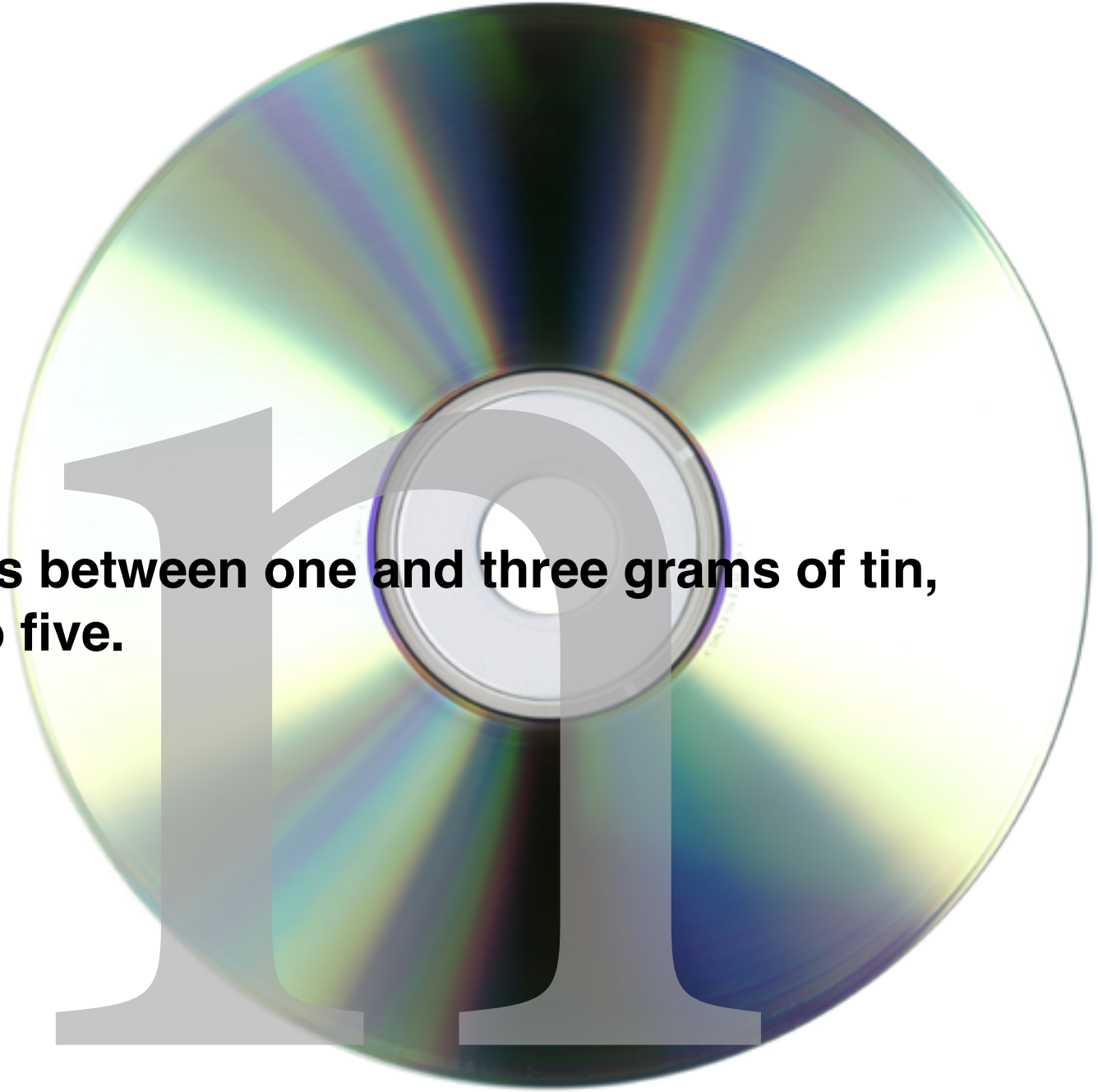
Rank	Company Name	Revenues ($M)
1	Walmart	$514,405
2	Sinopec Group	$414,649
3	Royal Dutch Shell	$396,556
4	China National Petroleum	$392,976
5	State Grid	$387,056
6	Saudi Aramco	$355,905
7	BP	$303,738
8	Exxon Mobil	$290,212
9	Volkswagen	$278,341
10	Toyota Motor	$272,612

Ecology: What media are made of

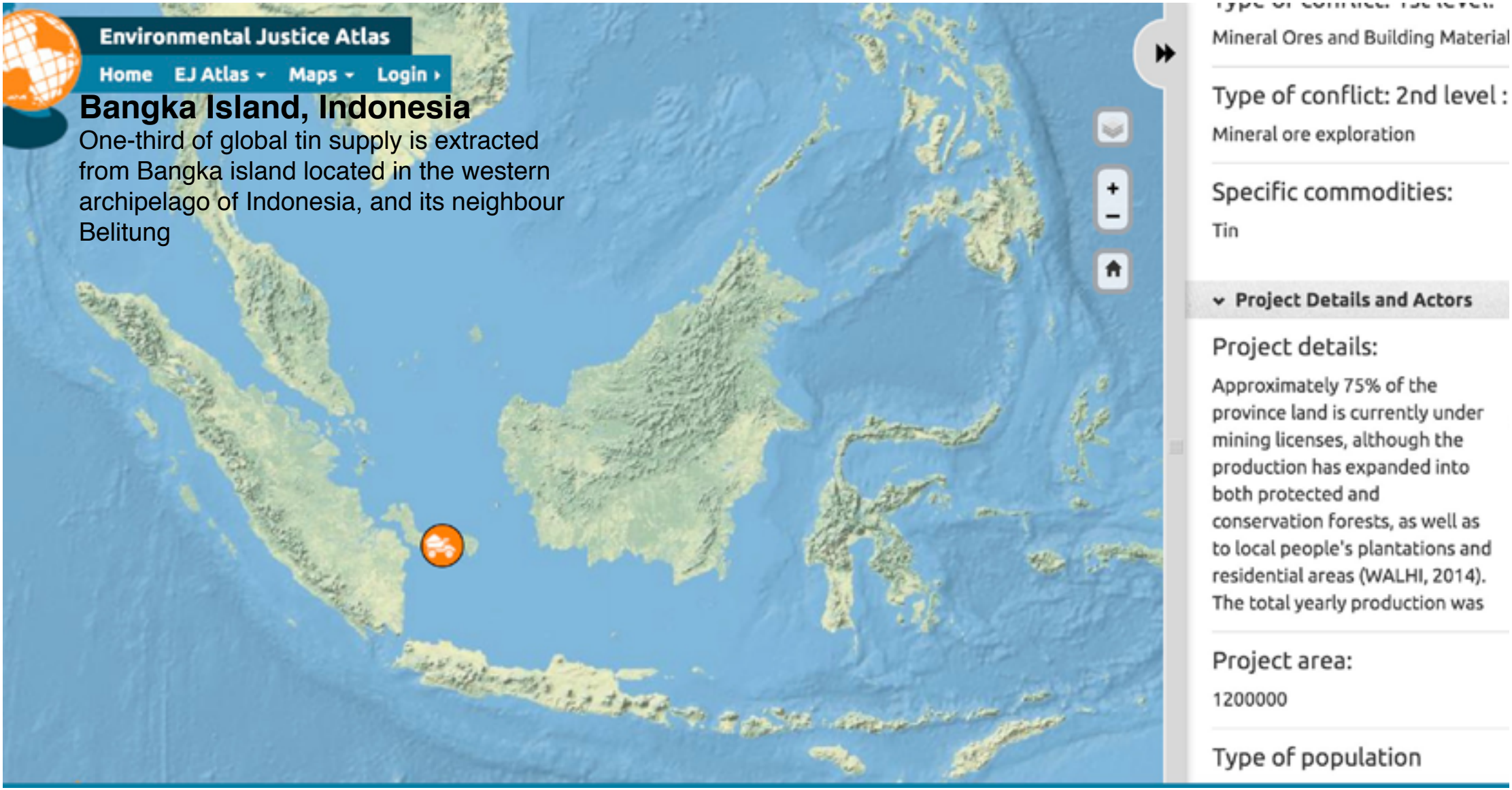
Some basic materials:

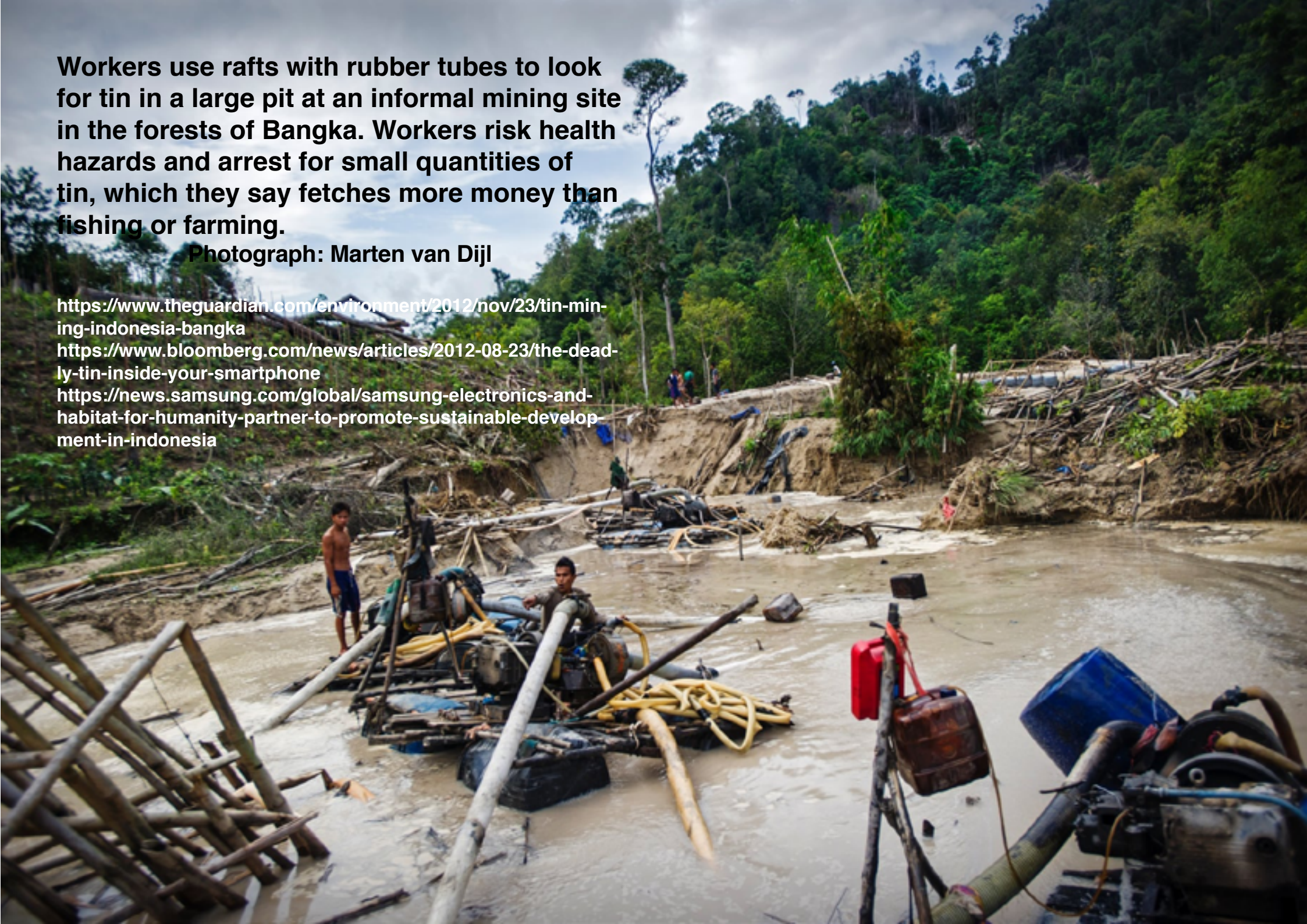
indium
gallium
arsenic
germanium
sapphire
copper
aluminium
lead
gold
iron
zinc
nickel
tin
silver
. . . .

Sn



A tablet computer holds between one and three grams of tin, a large-screen TV up to five.


Environmental Justice Atlas
Home
EJ Atlas
Maps
Login
Bangka Island, Indonesia
One-third of global tin supply is extracted from Bangka island located in the western archipelago of Indonesia, and its neighbour Belitung
Mineral Ores and Building Material
Type of conflict: 2nd level :
Mineral ore exploration
Specific commodities:
Tin
Project Details and Actors
Project details:
Approximately 75% of the province land is currently under mining licenses, although the production has expanded into both protected and conservation forests, as well as to local people's plantations and residential areas (WALHI, 2014). The total yearly production was
Project area:
1200000
Type of population



Workers use rafts with rubber tubes to look for tin in a large pit at an informal mining site in the forests of Bangka. Workers risk health hazards and arrest for small quantities of tin, which they say fetches more money than fishing or farming.

Photograph: Marten van Dijl

https://www.theguardian.com/environment/2012/nov/23/tin-mining-indonesia-bangka
https://www.bloomberg.com/news/articles/2012-08-23/the-deadly-tin-inside-your-smartphone
https://news.samsung.com/global/samsung-electronics-and-habitat-for-humanity-partner-to-promote-sustainable-development-in-indonesia

After exhausting open cast mines on land, PT Timah corporation, majority owned by the Indonesian state, which recently declared windcat mining illegal, uses inshore dredgers to sift for tin. Sand and debris are said to be choking the reef.

A typical hybrid car uses between 5 and 9 kilograms of lithium in its batteries.
A typical mobile phone battery contains 5-25 grams of lithium
In 2018, around 1.56 billion smartphones were sold worldwide

Li

Salar de Uyunyi, Bolivia
https://www.opendemocracy.net/democraciaabierta/rafael-sag-rnaga-l-pez/bolivia-s-lithium-boom-dream-or-nightmare

According to Graydon Laraby of Texas Instruments, the manufacture of just one batch of chips requires on average 27 pounds of chemicals, 29 cubic feet of hazardous gases, nine pounds of hazardous waste, and 3,787 gallons of water, which requires extensive chemical treatment.

http://www.towardfreedom.com/home/content/view/154/57/

The Worldwide Semiconductor Market was up 13.7% in 2018 to US$468.8 billion, an all-time high. The year 2019 is forecasted to be down 13.3% to US$406.6 billion. All geographical regions are expected to decrease.

For 2020, all regions are forecasted to grow with the overall market up 4.8 percent. Optoelectronics is expected to grow by 8.2 percent, all other products are forecasted to grow low-to-mid single digit compared to 2019. (https://www.wsts.org/)

fabrication

Growth drivers in global semiconuctor industry:

Artificial Intelligence

Autonomous vehicles

Internet of Things (IoT)

5G and AR/VR

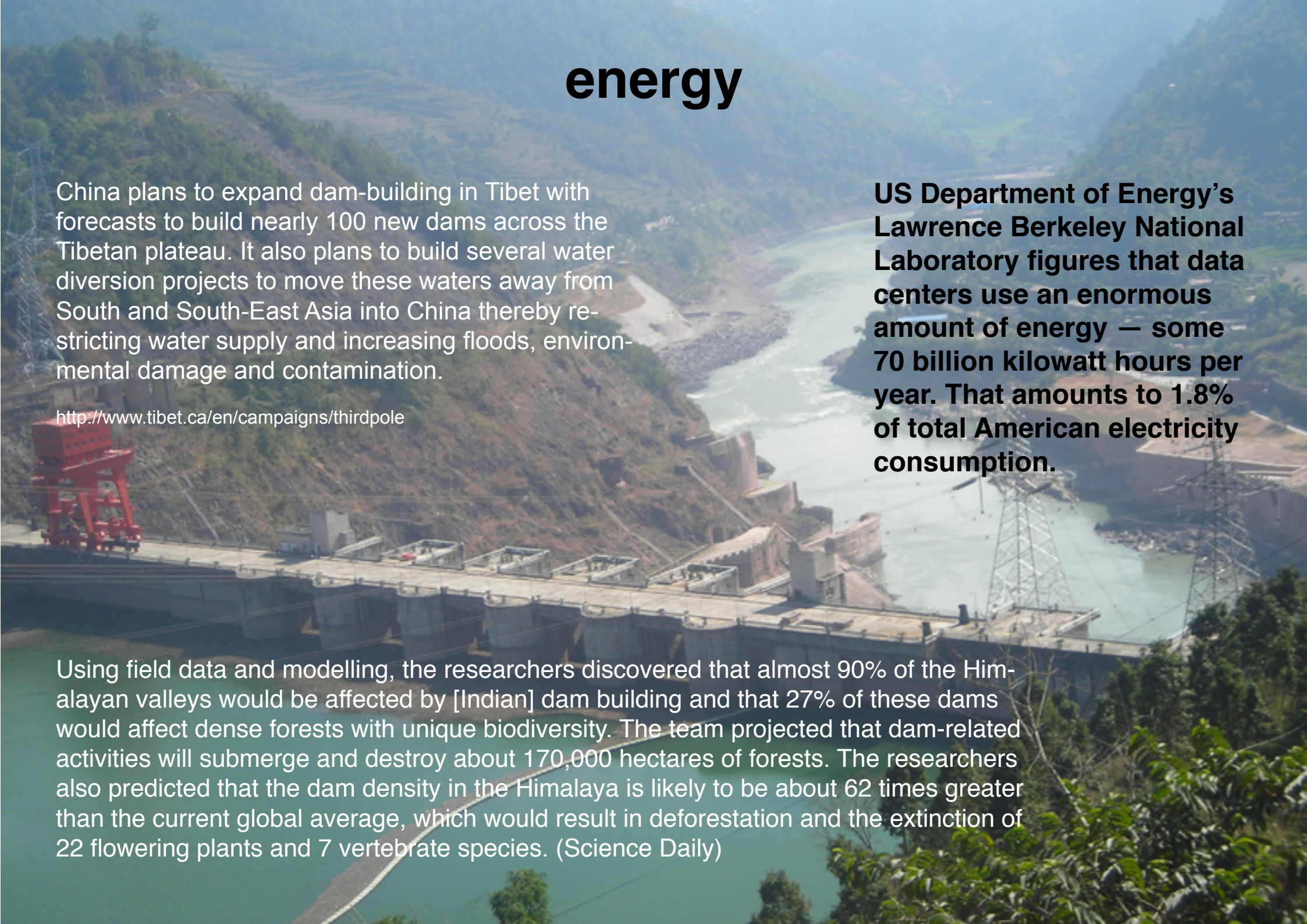
Kaohsiung City, Taiwan

In June 2014, the Taiwanese Environmental Protection Agency fined Advanced Semiconductor Engineering (ASE) NT$20 million for water dumping infringements. In the same month, ASE announced it would be raising up to NT$15 billion to support expansion. Water, including reuse and recycling, can account for up to one and a half per cent of operating costs. ASE were reported to have paid seven fines for ongoing pollution dumps between July 2011 and October 2013. The same report quotes activist assertions that the company had enjoyed tax exemptions of NT$3 billion

Synthetic quartz crystals are grown in autoclaves. The process requires very pure forms of silicon tetrachloride and germanium tetrachloride and highly purified oxygen, nitrogen, helium, chlorine and sulphur hexafluoride, each of which requires significant amounts of energy to produce while, in the various purification processes, removing impurities which have then to be recycled. The quartz is formed into a tube, and dried using chlorine before fine layers of the dioxides of silicon and germanium are deposited inside, each layer fused to glass with burners operating at 1700 degrees Celsius. The richest layer of germanium oxide glass forms the operating core of the fibre. The tube is then collapsed by heating again, then sleeved with another layer of quartz of a slightly different refractive index, ensuring the internal reflection is close to total, and heated once more to fuse the components into a single column known as the preform. Finally the preform is loaded into a furnace operating at 2100 degrees Celsius and extruded to a diameter in the region of 125 microns, cooled in a helium tank, coated with a protective acrylic plastic cured with ultraviolet light, and ready to use.

Optical fiber production reached 325 million kilometres in 2018
up from 230 in 2012.

energy



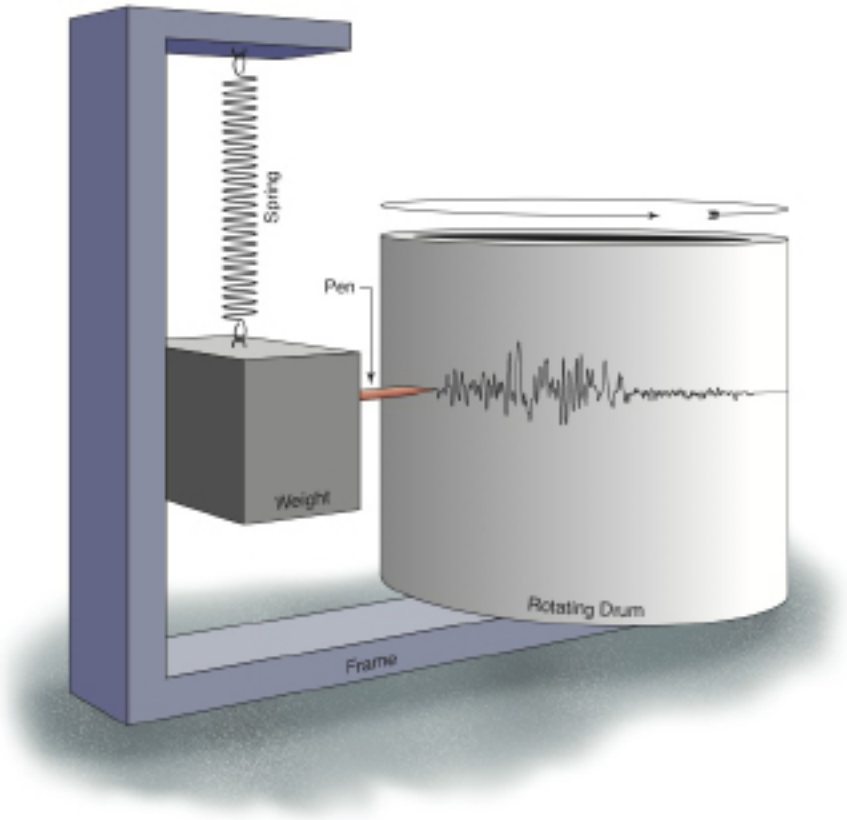
China plans to expand dam-building in Tibet with forecasts to build nearly 100 new dams across the Tibetan plateau. It also plans to build several water diversion projects to move these waters away from South and South-East Asia into China thereby restricting water supply and increasing floods, environmental damage and contamination.

http://www.tibet.ca/en/campaigns/thirdpole

US Department of Energy's Lawrence Berkeley National Laboratory figures that data centers use an enormous amount of energy — some 70 billion kilowatt hours per year. That amounts to 1.8% of total American electricity consumption.

Using field data and modelling, the researchers discovered that almost 90% of the Himalayan valleys would be affected by [Indian] dam building and that 27% of these dams would affect dense forests with unique biodiversity. The team projected that dam-related activities will submerge and destroy about 170,000 hectares of forests. The researchers also predicted that the dam density in the Himalaya is likely to be about 62 times greater than the current global average, which would result in deforestation and the extinction of 22 flowering plants and 7 vertebrate species. (Science Daily)

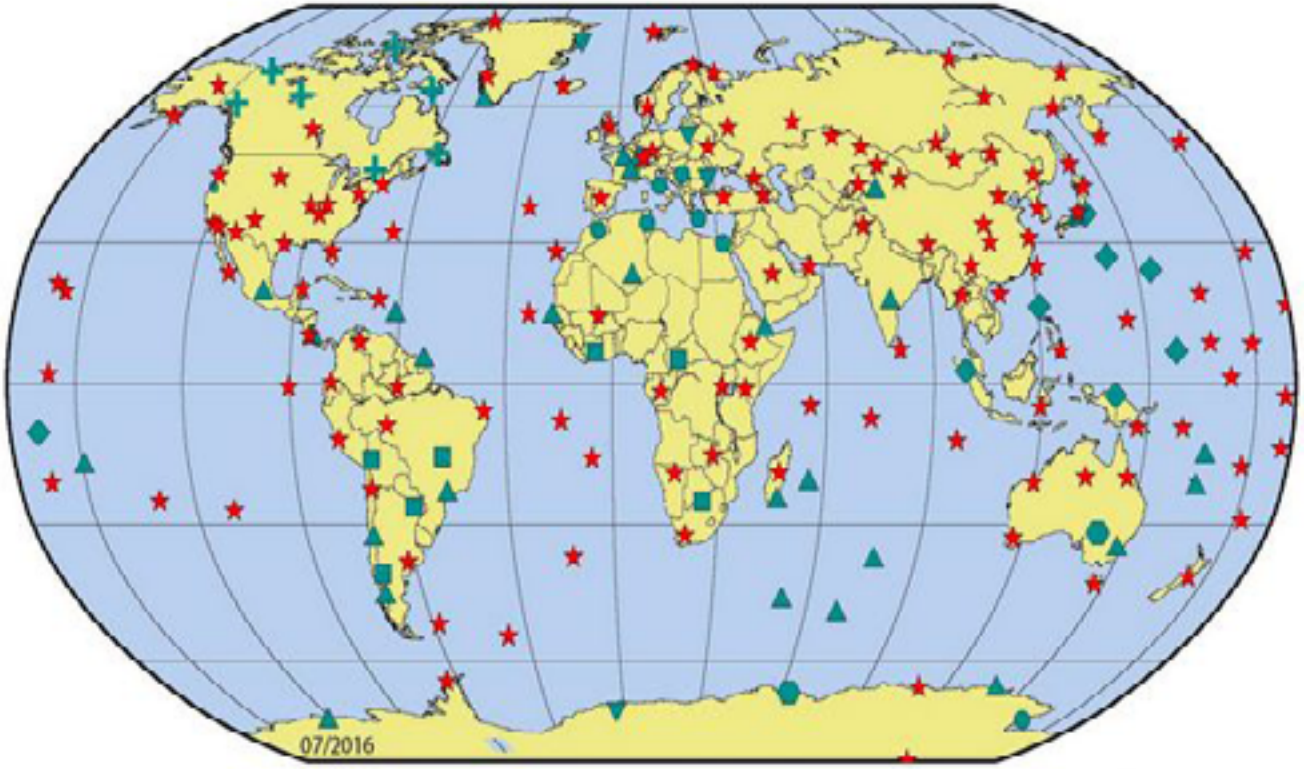

disposal

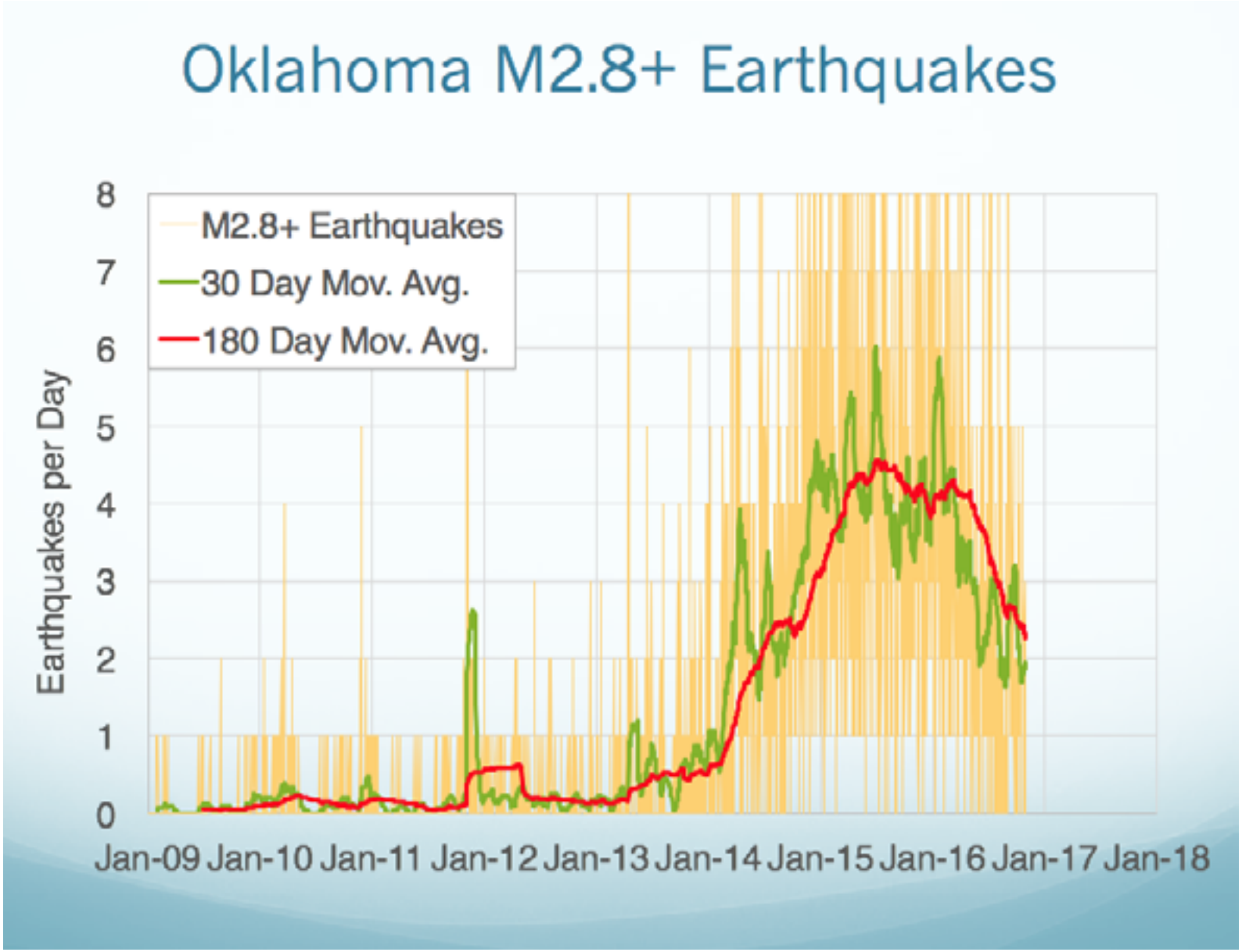


Seismographs

scientific instruments as
collaborations between
ecologies and humans

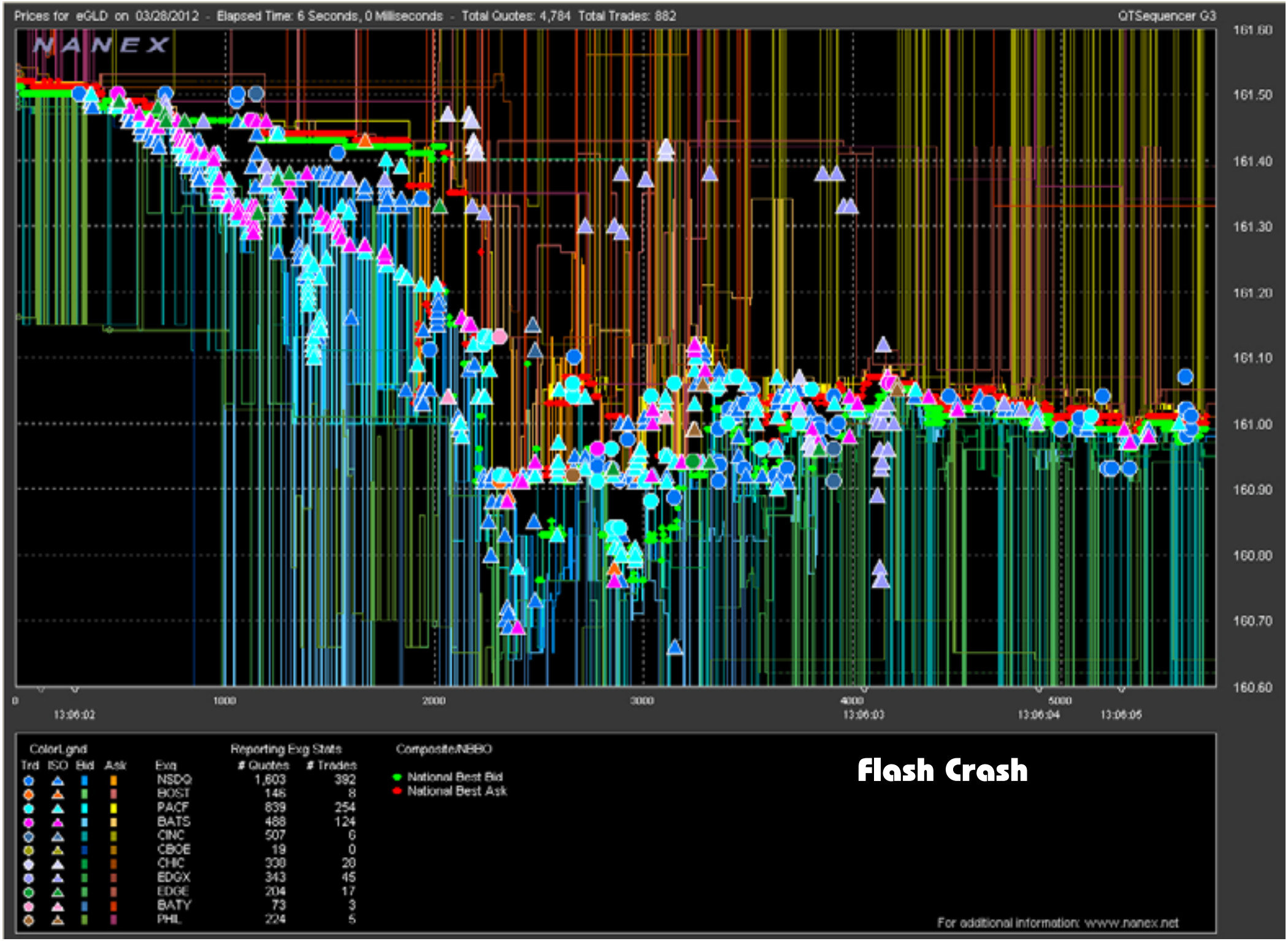
Global Seismographic Network





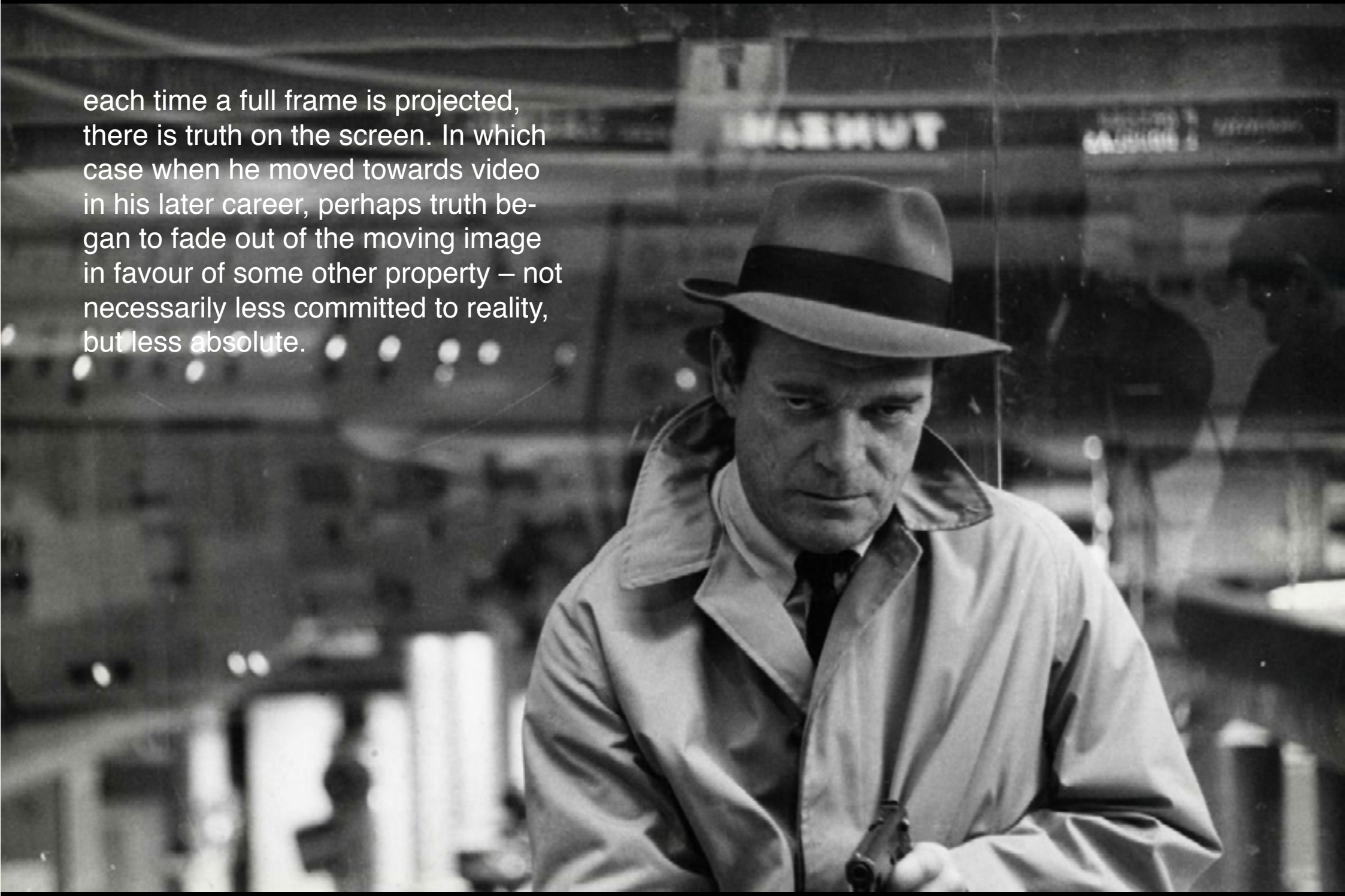
abstraction

temporal data visualisation in animated time-compressions - shared by financial software (next slide)


Prices for eGLD on 03/28/2012 - Elapsed Time: 6 Seconds, 0 Milliseconds - Total Quotes: 4,784 Total Trades: 882
QTSequencer G3
NANEX
161.60
161.50
161.40
161.30
161.20
161.10
161.00
160.90
160.80
160.70
160.60
0
1000
2000
3000
4000
5000
13:06:02
13:06:03
13:06:04
13:06:05
Color Legend
Trd ISO Bid Ask
Exg
NSDQ
BOST
PACF
BATS
CINC
CBOE
CHIC
EDGX
EDGE
BATY
PHIL
Reporting Exg Stats
Quotes # Trades
1,603 392
146 8
839 254
488 124
507 6
19 0
330 20
343 45
204 17
73 3
224 5
Composite/NBBO
National Best Bid
National Best Ask
Flash Crash
For additional information: www.nanex.net

Cinema is truth twenty-four times a second

Jean-Luc Godard



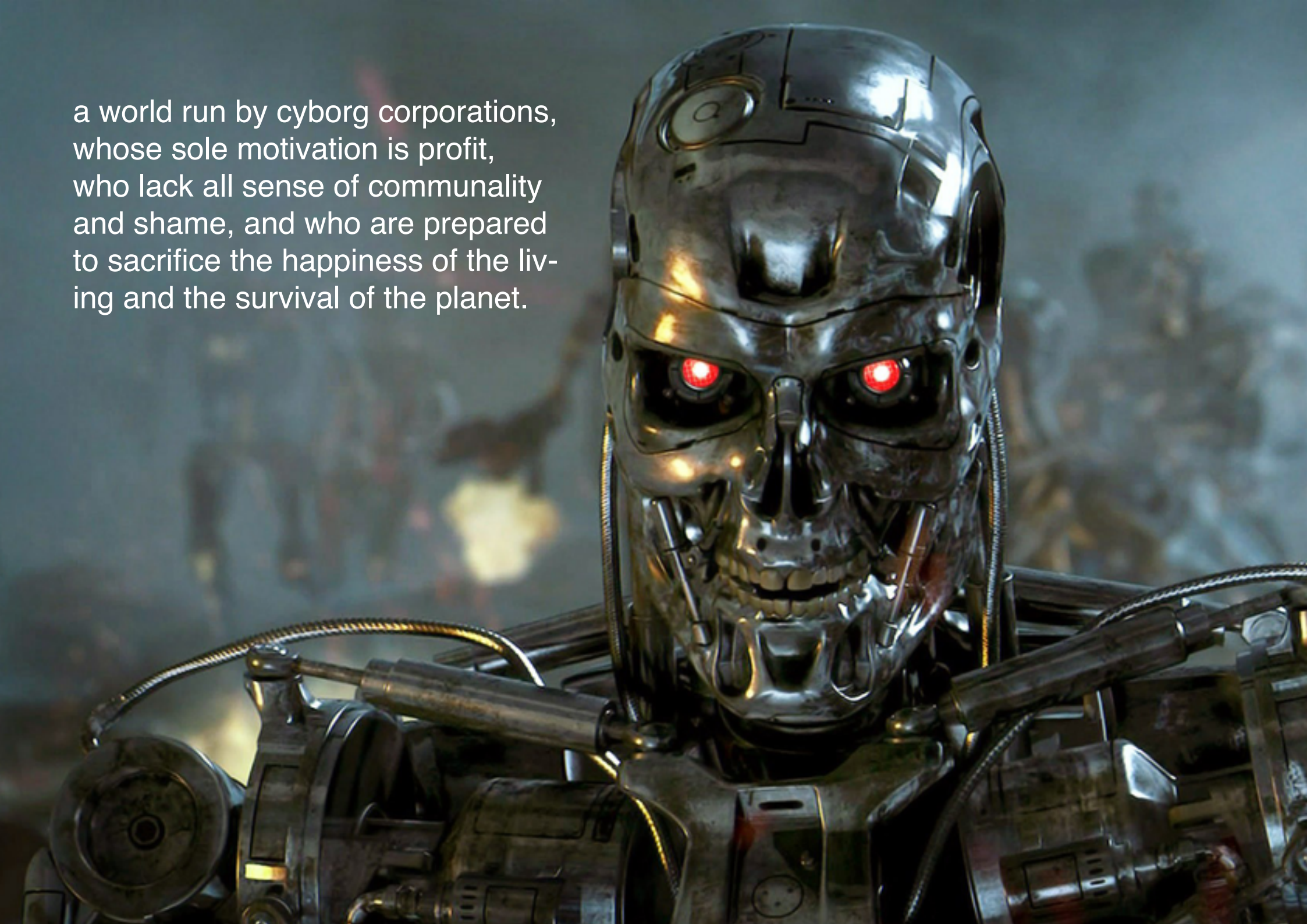
each time a full frame is projected, there is truth on the screen. In which case when he moved towards video in his later career, perhaps truth began to fade out of the moving image in favour of some other property – not necessarily less committed to reality, but less absolute.

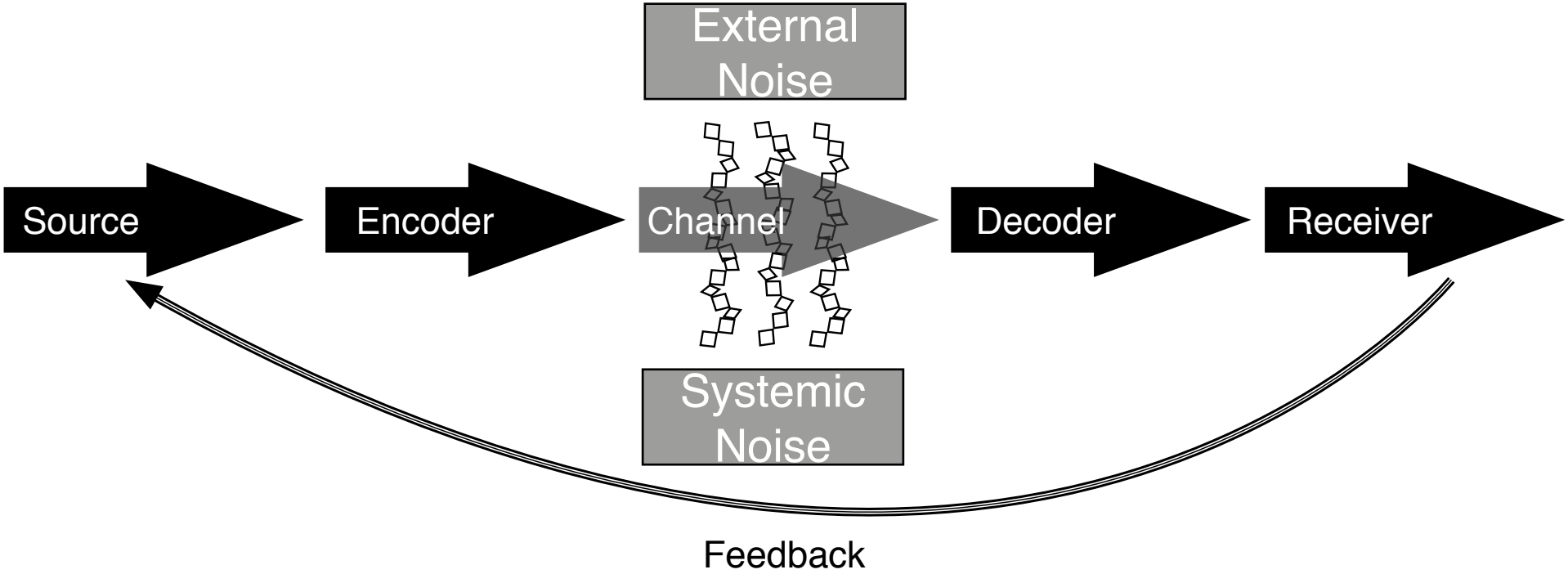
it’s also possible that Godard was thinking of something else that occurred twenty-four times a second: the closing of the camera’s or the projector’s shutter to mask the move of the film strip from one frame to another.

Where is the truth in cinema? It is there every one of those twenty four times that the screen is blanked, the audience is cast into darkness, and nothing appears

The screen fades and refreshes, fades and refreshes, whatever content it displays, perpetually repeating itself, perpetually unstill. But it is like film, all the same, in the sense that for fleeting moments in some area of the screen there is nothing.

What disappears into the blanks between images is not only consciousness but our connection with the world. In this, video imitates the environmental relationship at large. The difference between ecology and environment is that everything is interconnected in an ecology, but an environment is a product of exclusion, of disconnection. In this light we'd have to say that video is an environmental medium, but not an ecological one: it is a medium of disconnection.


a world run by cyborg corporations,
whose sole motivation is profit,
who lack all sense of communality
and shame, and who are prepared
to sacrifice the happiness of the liv-
ing and the survival of the planet.



glitch

truth to materials - noise as means for excluded technologies and ecologiues to participate in communication

Rosa Menkman, The Collapse of PAL

(participation of hardware through lens flares and retro-engineering)

Jacques Perconte, Árvore da Vida

(participation of codecs and file formats)

Bill Morrison, Decasia
(participation of microbes and chemical decomposition)