

MEGA TRENDS OF "FOURTH INDUSTRIAL REVOLUTION": TECHNO-HUMAN CO- EVOLUTION

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OVERVIEW

- ▶ WHY “4TH INDUSTRIAL REVOLUTION” IS MISNOMER
- ▶ WHAT EXPONENTIAL – “PHASE SHIFT” CHANGE IMPLIES
- ▶ KEY DRIVERS – CONVERGANCE & TRANSGRESSION

"FOURTH INDUSTRIAL REVOLUTION"

NOT FUELED BY FOSSIL ENERGY

NOT MECHANICAL

NOT CONTROLLED FROM THE TOP

NOT STANDARDIZED

NOT MARKET BASED

INDIVIDUALISTIC

NOT GEO-SPECIFIC

ZERO SUM

NON MATERIAL

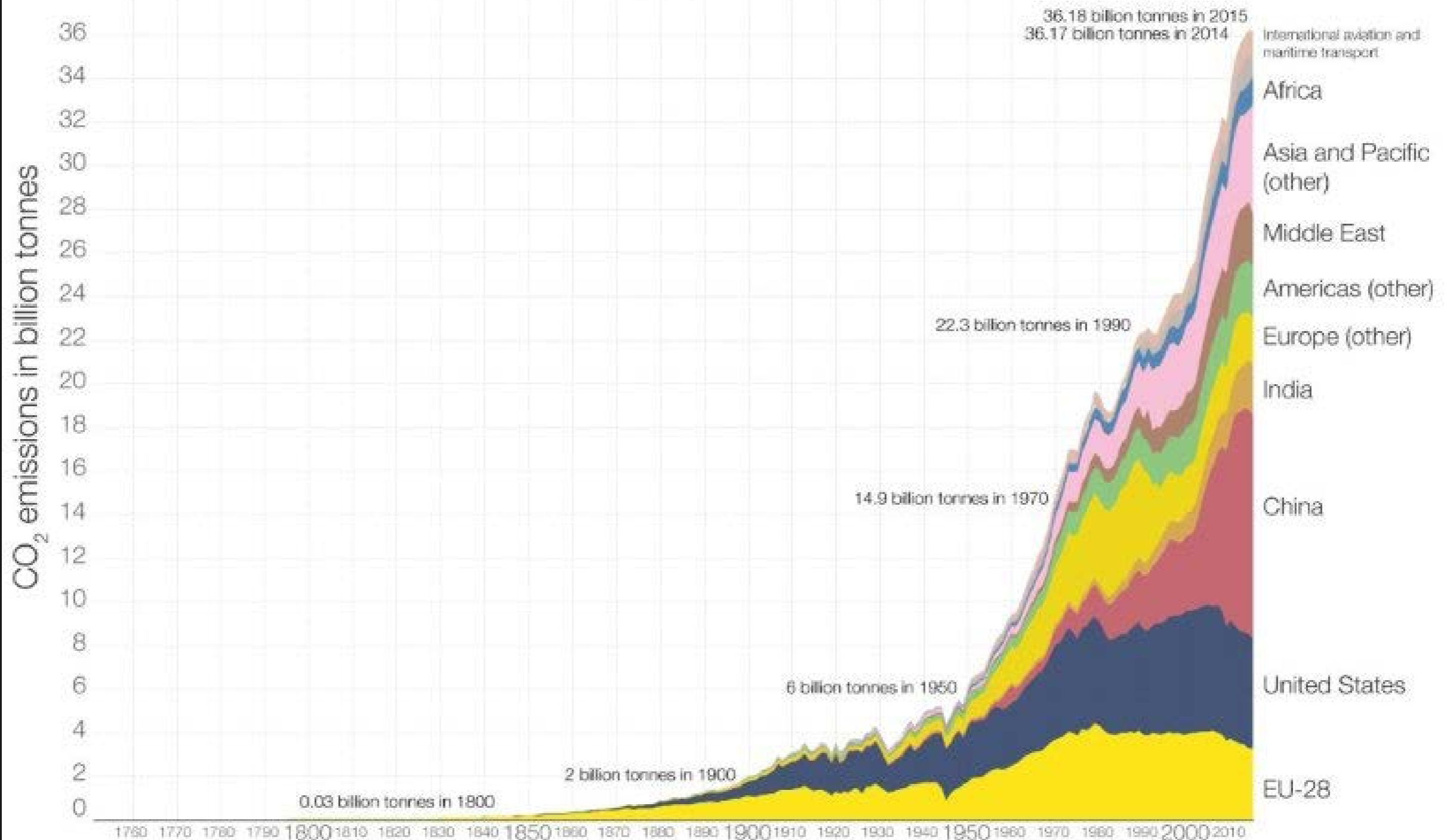
NO MANAGEMENT LABOR DIVIDE

INDUSTRIAL ENERGY REVOLUTION

Global CO₂ emissions by world region, 1751 to 2015

Annual carbon dioxide emissions in billion tonnes (Gt).

Our World
in Data



Data source: Carbon Dioxide Information Analysis Center (CDIAC); aggregation by world region by Our World In Data.
The interactive data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic.

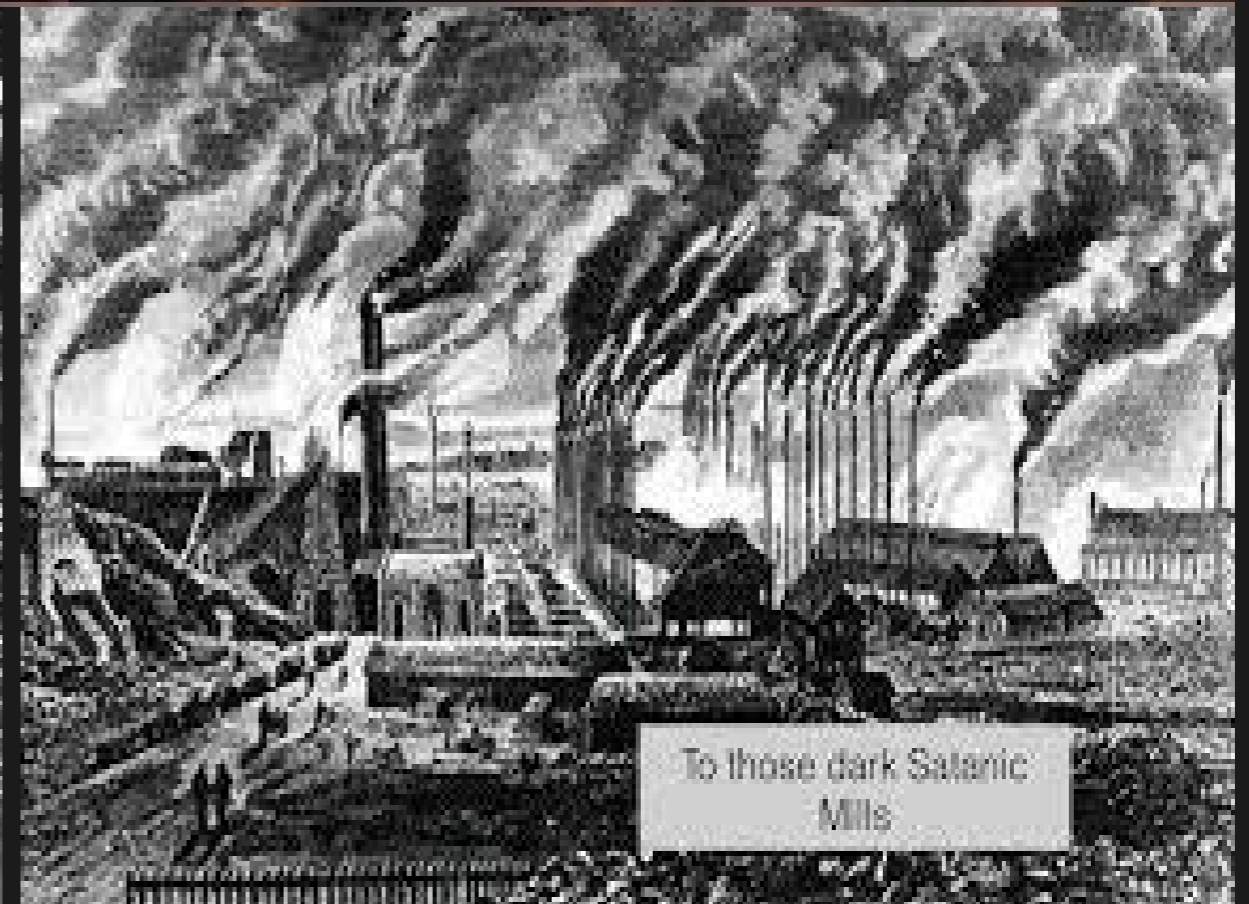
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*And was Jerusalem
builted here, Among these*

DARK SATANIC MILLS?

— WILLIAM BLAKE —

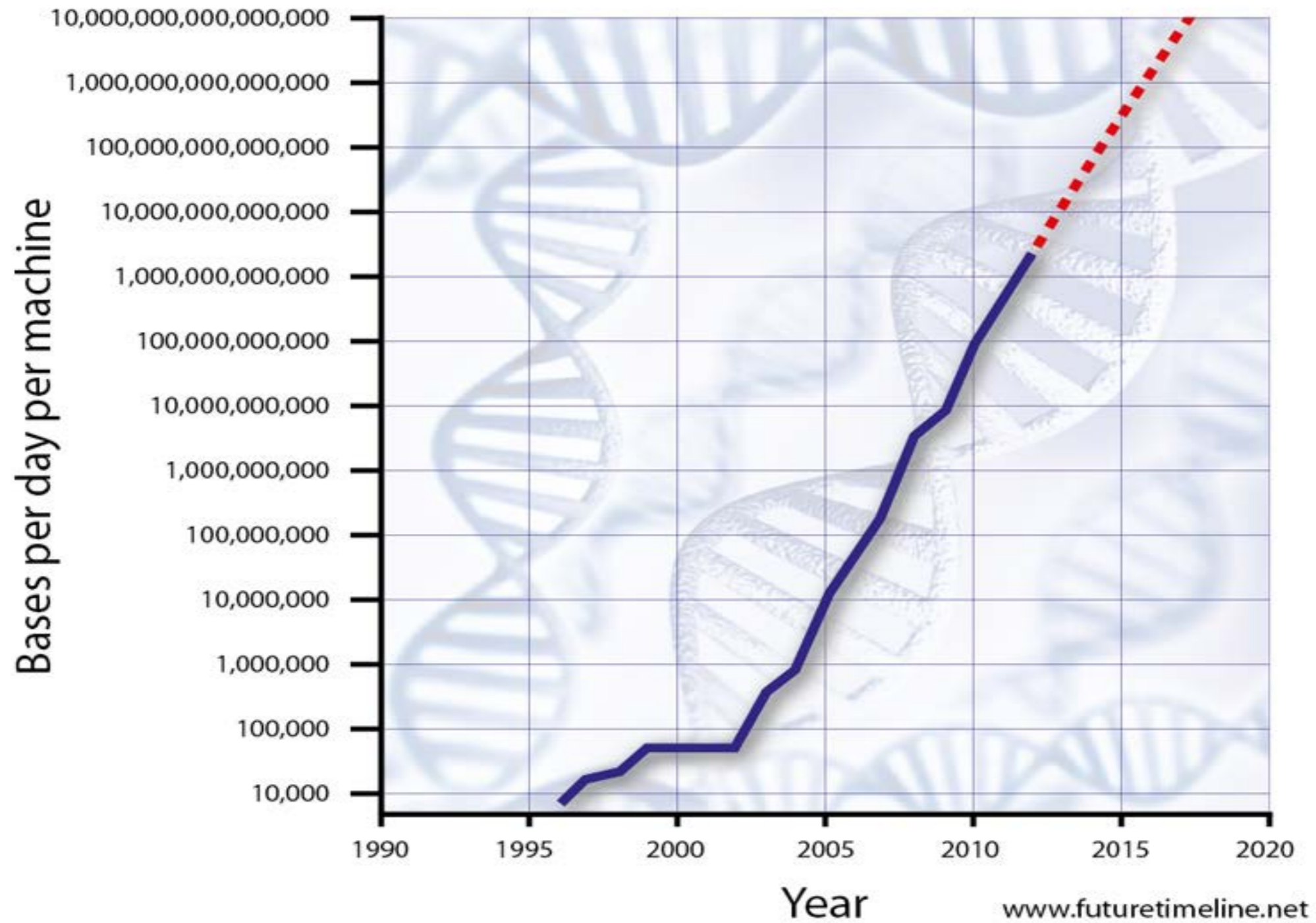


To those dark Satanic
Mills

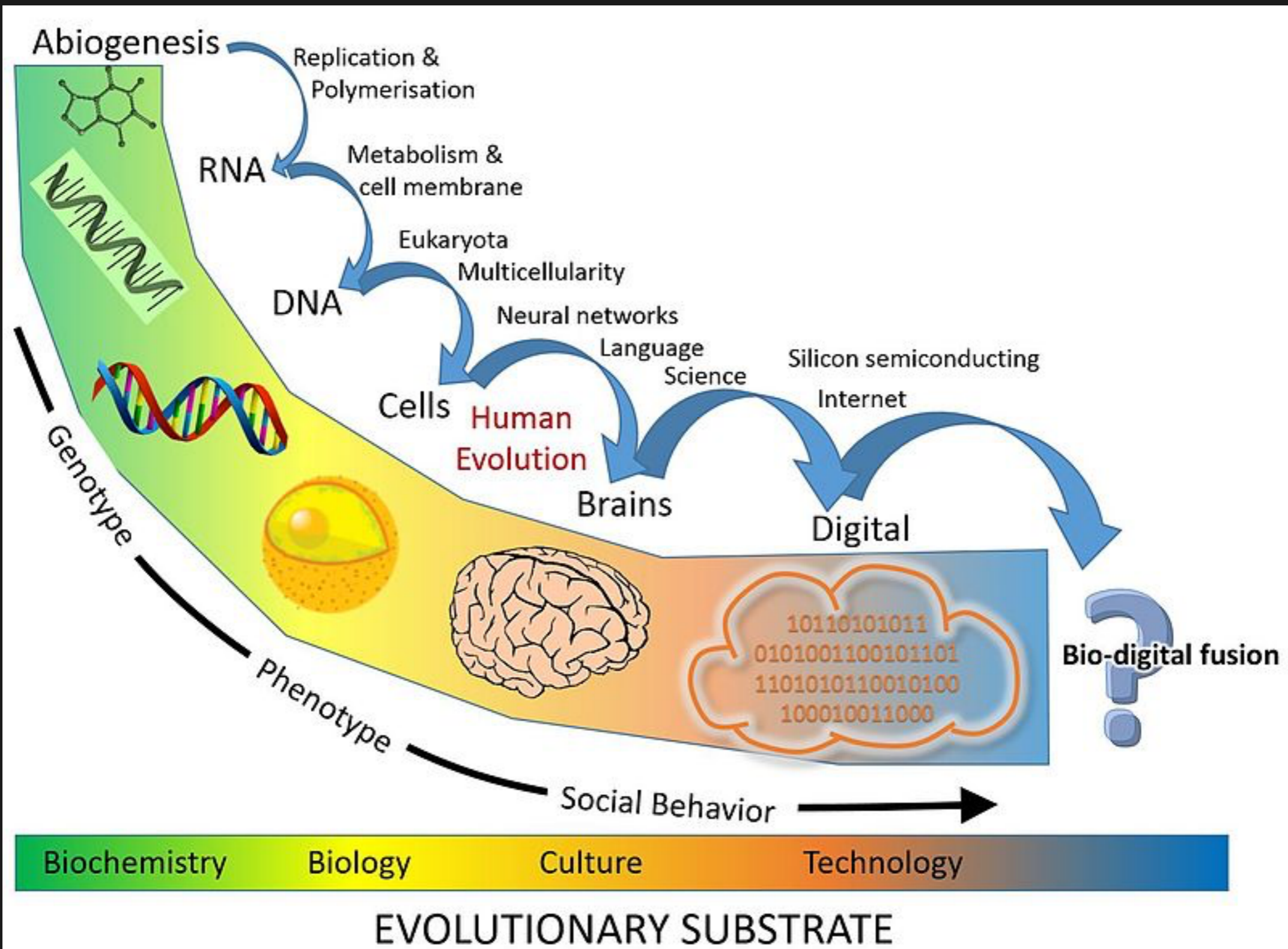
WHAT IT IS: ECOLOGICAL

- ▶ BIOLOGICAL–LIVING – DECENTRALIZED AUTONOMOUS NETWORKS
- ▶ DYNAMIC – RESILIENT – EMERGENT –
- ▶ RELATIONAL AND MUTUALISTIC
- ▶ AWARE OF ACTIONS AND IMPLICATIONS
- ▶ MULTI–SECTORAL ADAPTIVE
- ▶ FUSION OF PHYSICAL AND DIGITAL
- ▶ BORDERLESS
- ▶ FUELED BY SUSTAINABLE PROCESSES

HYPERCURVE INNOVATION IN GENOMIC SEQUENCING



EVOLUTION AND BIO-DIGITAL FUSION



based on: Gillings, M. R., Hilbert, M., & Kemp, D. J. (2016). Information in the Biosphere: Biological and Digital Worlds. *Trends in Ecology & Evolution*, 31(3), 180–189. <http://escholarship.org/uc/item/38f4b791>

STEP PHASES OF *PUNCTUATED METAMORPHOSIS*

Step Phase 3:

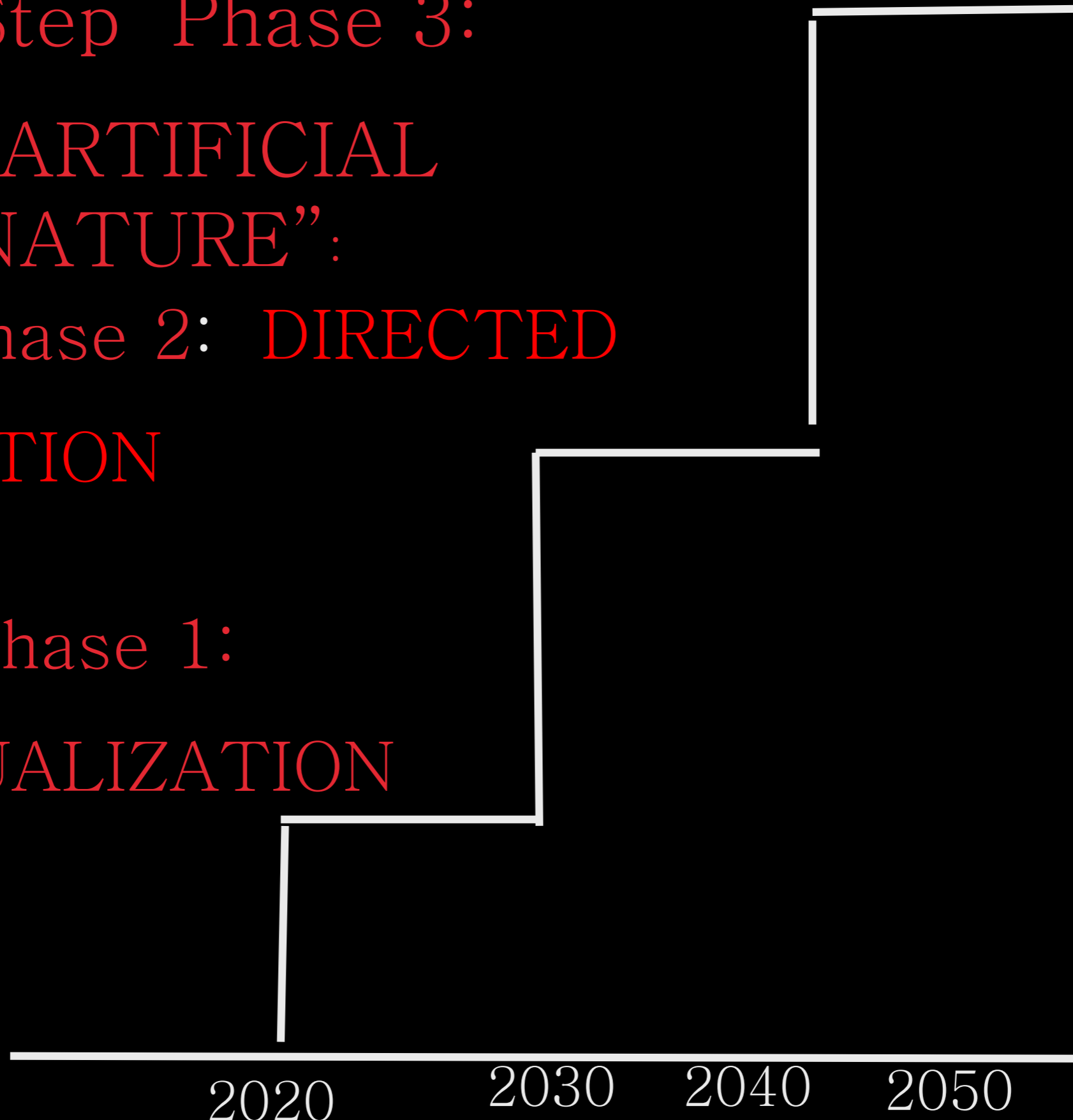
“ARTIFICIAL NATURE”:

Step Phase 2: DIRECTED

EVOLUTION

Step Phase 1:

VIRTUALIZATION



NN

MAJOR NEAR TERM TRENDS

- ▶ DIGITIZATION – VIRTUALIZATION
- ▶ DIGITIZATION OF FINANCE – LEGAL-
AUTHORITIES – GOVERNANCE
- ▶ SELF-EXECUTING BOTS – AUTONOMOUS
IOT
- ▶ TRANSITION TO SOLAR ENERGY ECONOMY
- ▶ TOKENOMICS – BLOCKCHAIN – CRYPTO-
TOKENIZATION

EXPANDING DATA UNIVERSE

BY 2015

90%

of data will be
UNSTRUCTURED

GROWTH OF THE WORLD'S "DIGITAL UNIVERSE"



EVERY 60 SECONDS, THE WORLD GENERATES MASSIVE AMOUNTS OF UNSTRUCTURED DATA

 **98K+**
TWEETS

 **695K**
FB UPDATES

 **11BIL**
INSTANT MESSAGES

 **168BIL**
EMAILS SENT

1,820,000,000,000+
BYTES OF DATA CREATED!

NEW ECONOMIC MODELS OF FINANCE AND VALUE CREATION

- ▶ PORTFOLIO THEORY – GAUSSIAN DISTRIBUTIONS – BETA RISK MODELS – ALL FLAWED
- ▶ TECH NEW CATEGORY CREATION – LINKS INNOVATION TO VALUE
- ▶ TECH INNOVATION CURVE ENABLES FORWARD CONTRACTS
- ▶ VALUE APPRECIATION METRICS V_s EPS – PROFITABILITY
- ▶ ALL MAJOR CATEGORY GENERATOR – APPLE, MS, GOOGLE, FACEBOOK, UBER, AIRBNB, AMAZON



Institute for
**New Economic
Thinking**

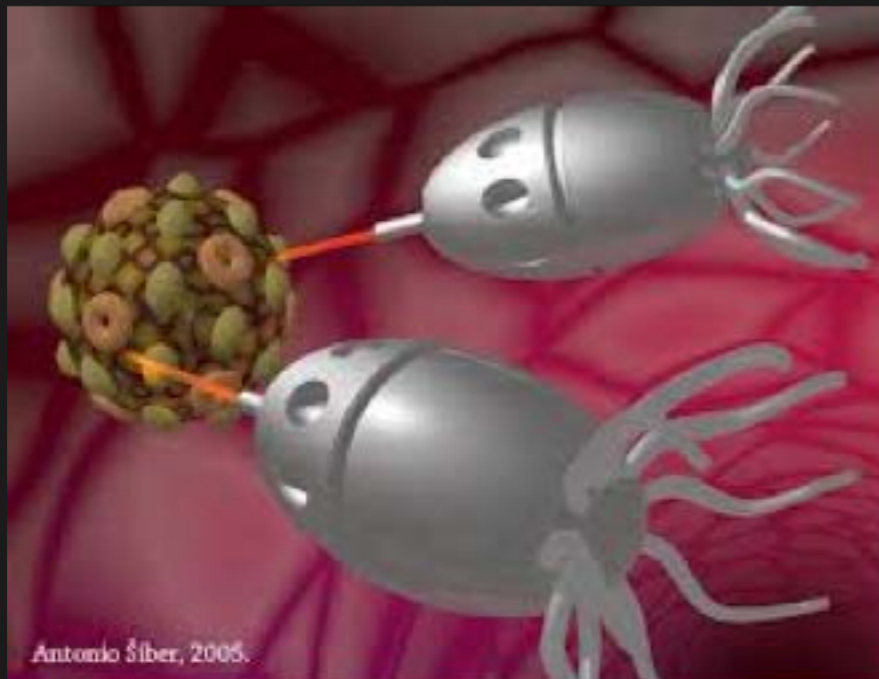
TRANSGRESSION TREND

- ▶ TRANS GENDER IDENTITY – 51 RECOGNIZED BY FACE BOOK
- ▶ TRANS SPECIES – CHIMERA – CRISPR
- ▶ TRANS BORDER – CULTURAL
- ▶ BREAKING AND REDEFINING NORMS
- ▶ REDRAWING BOUNDARIES
- ▶ TRANSFORMATION OF PHYSICAL INTO DIGITAL

TRANSHUMANISM



SURREAL ECOLOGIES

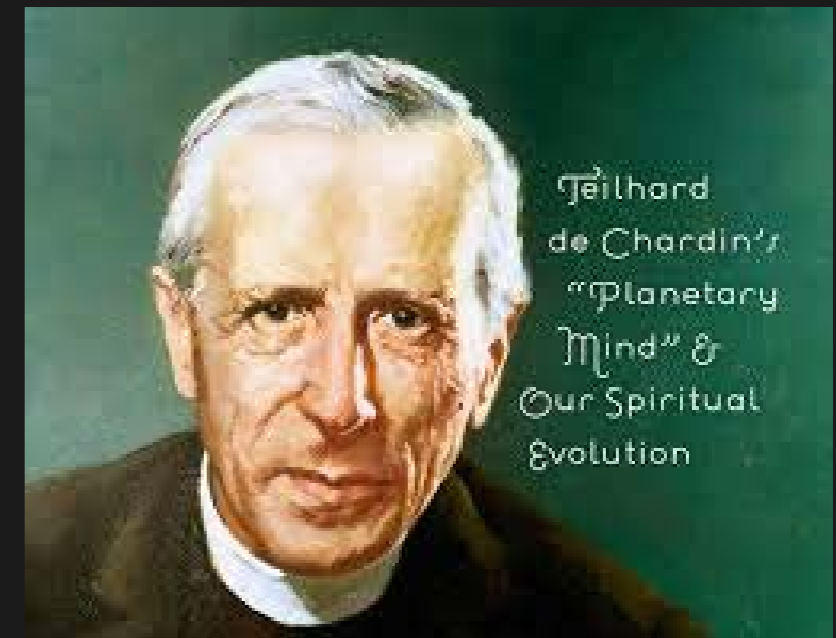


Antonio Šiber, 2005.



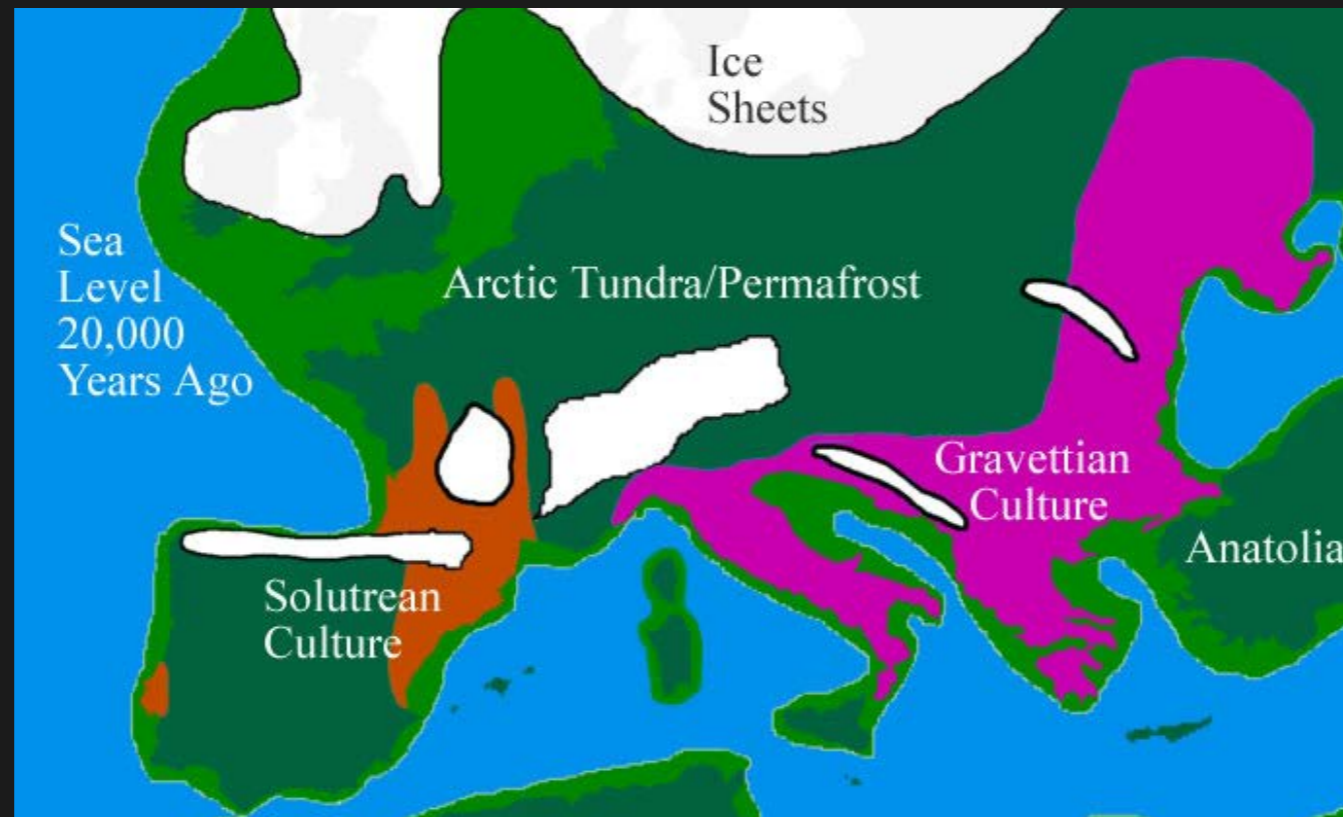
NOOSPHERE

You are not a human being in search of a spiritual experience. You are a spiritual being immersed in a human experience.



Phenomenon of Man
Certain terms used by Teilhard:
d. Noosphere
e. Convergence
f. Complexification

ENVIRONMENTS THAT CO-EVOLVED HOMO SAPIENS



CURRENT ENVIRONMENTS

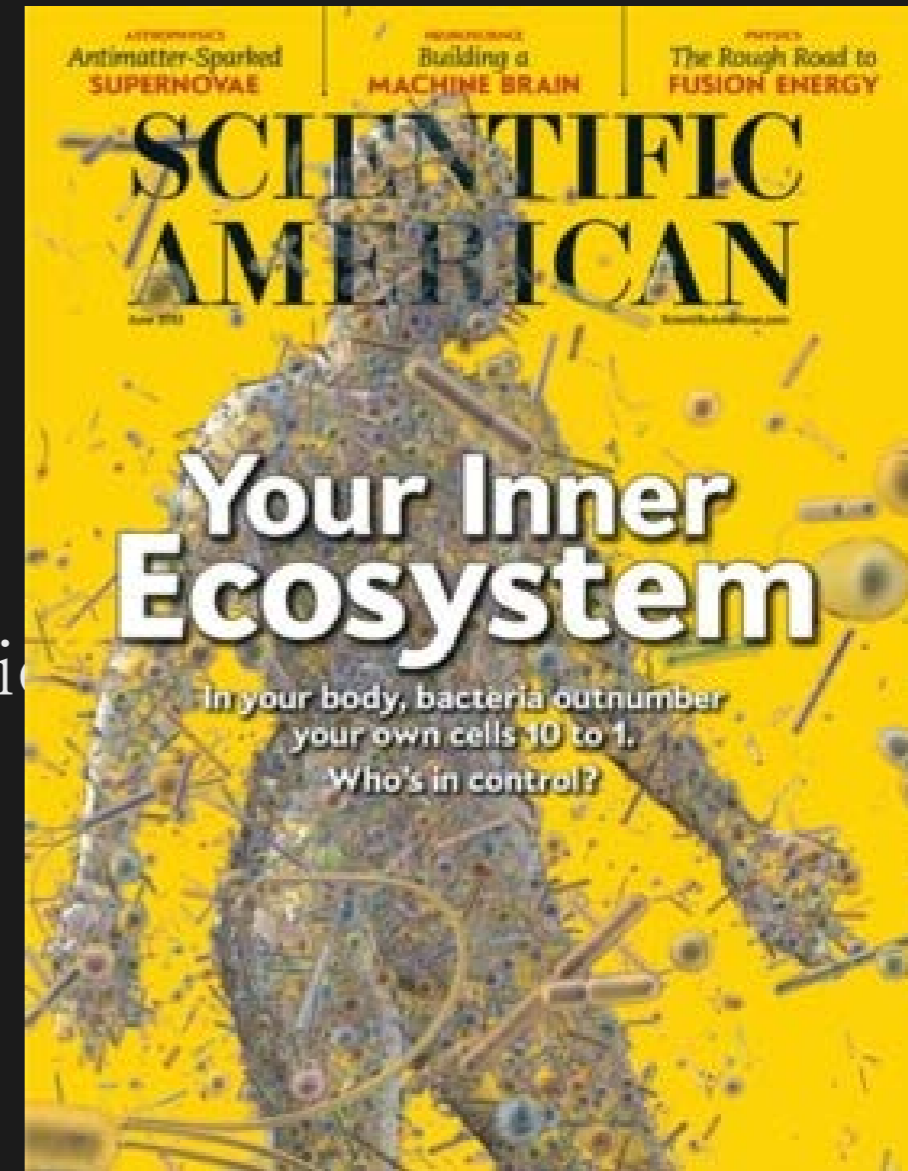


HOMO SAPIENS

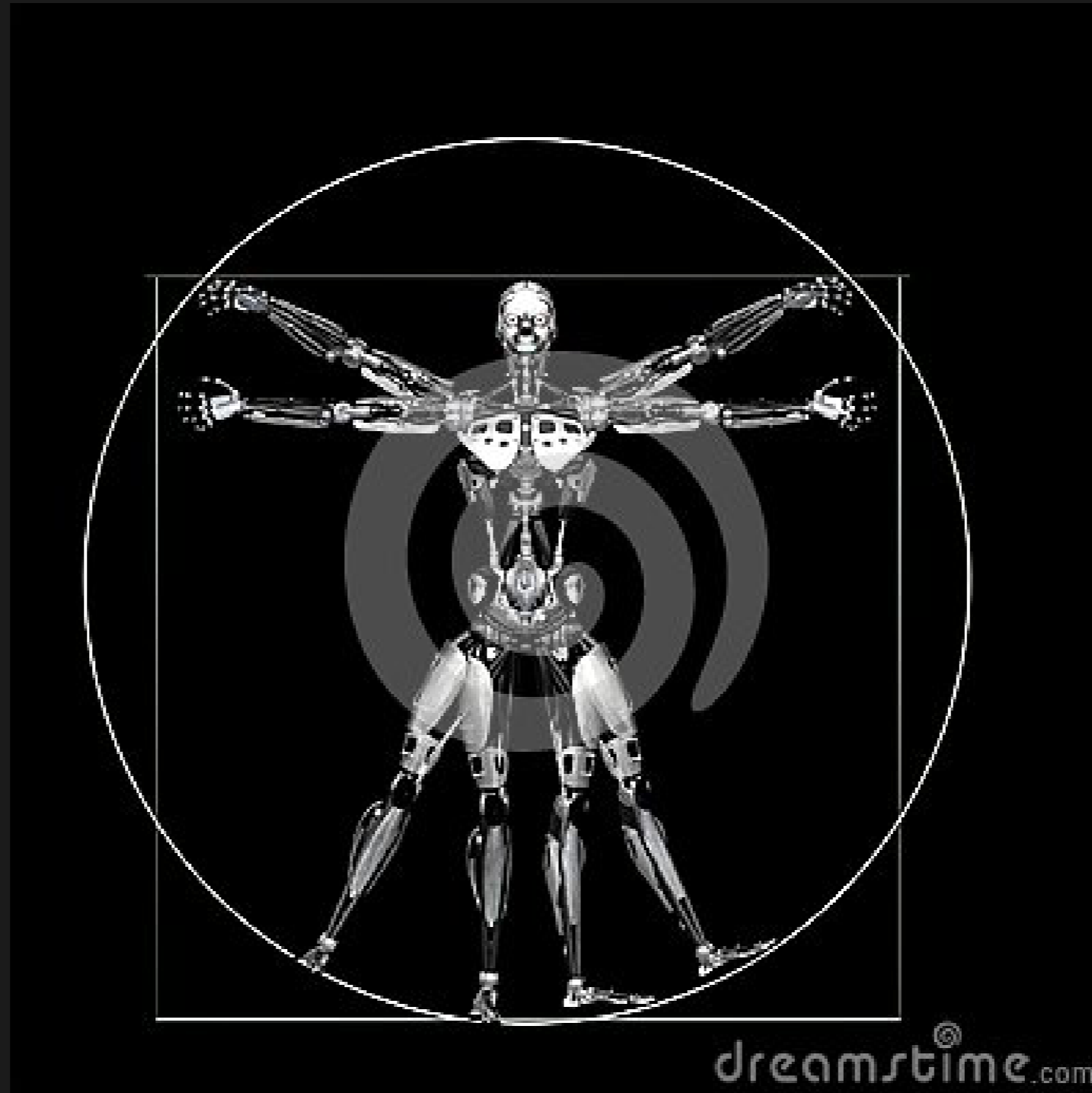
- ▶ HOMO SAPIENS – 200,000 YRS
- ▶ HUNTER – GATHER 190,000 YRS
- ▶ FLORA – FAUNA DOMESTICATION – 10.000 YRS .05
- ▶ INDUSTRIALIZATION 200 YRS
.001
- ▶ DIGITALIZATION – 50 YEARS
.00025
- ▶ REPLICATION OF LIFE –
- ▶ AUTONOMOUS LIFE –

WHAT ARE THE BOUNDARIES OF HOMO SAPIENS BIOLOGICAL IDENTITY ?

- ▶ 37 Trillion Cells
- ▶ 100 Trillion bacteria
- ▶ 90% of cells are not ours but Microbes
- ▶ 100 X viruses particles as human cells
- ▶ We persist as – replicating cooperating – colonial
- ▶ Blurred Boundaries



METAMORPHOSIS OF HUMAN FORM – FLEXIBLE EVOLUTIONARY ENVELOPE

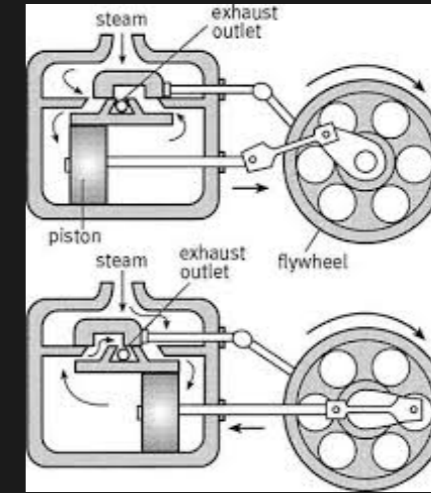
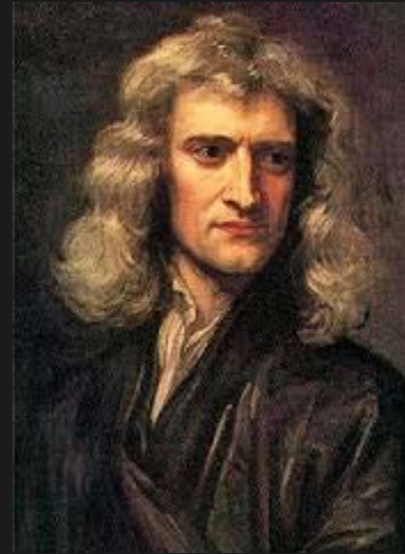


STEP PHASE 1:

DEMATERIALIZATION

FROM ATOMS TO QUBITS

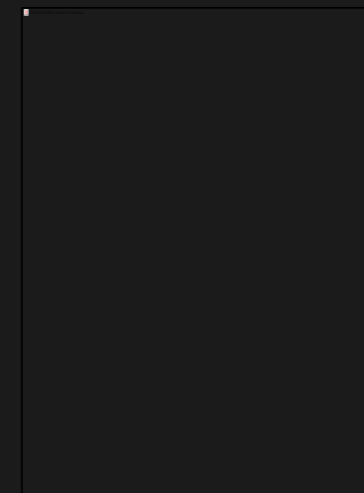
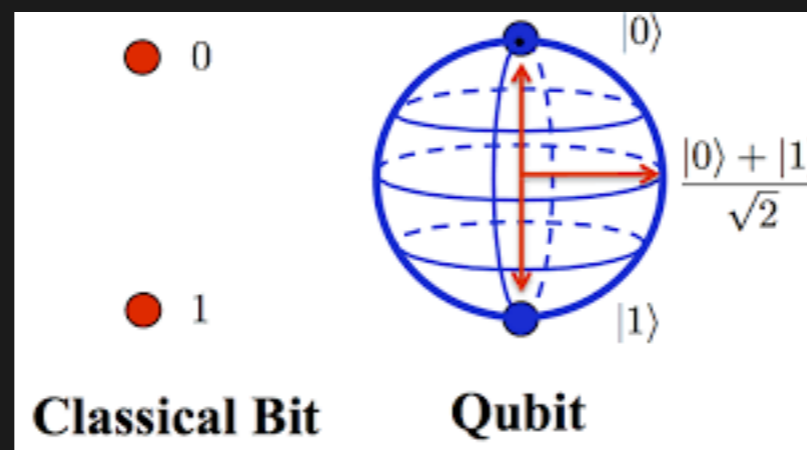
FROM NEWTONIAN TO QUANTUM PHYSICS - INFORMATION AS MATTER



Consciousness can be understood as a state of matter, "perceptronium", with distinctive information processing abilities. - Tegmark et al



Quantum Computers



Max Planck

DATA NEED TO FLOW - BE CLEAN - AND FREE
FROM CAPTURE

DATA ARE THE NEW WATER

DATA ARE NOT ABOUT BUT FOR:
SEEING - RECOGNIZING - DOING
INFLUENCING - LEARNING - IMPROVING
CONTROLLING - FEEDBACK - CORRECTION

WE ARE INSIDE LOOKING OUT -
NOT OUTSIDE LOOKING IN

DATA ARE LIKE WATER -
ESSENTIAL NUTRIENT OF
DIGITAL ECOSYSTEM

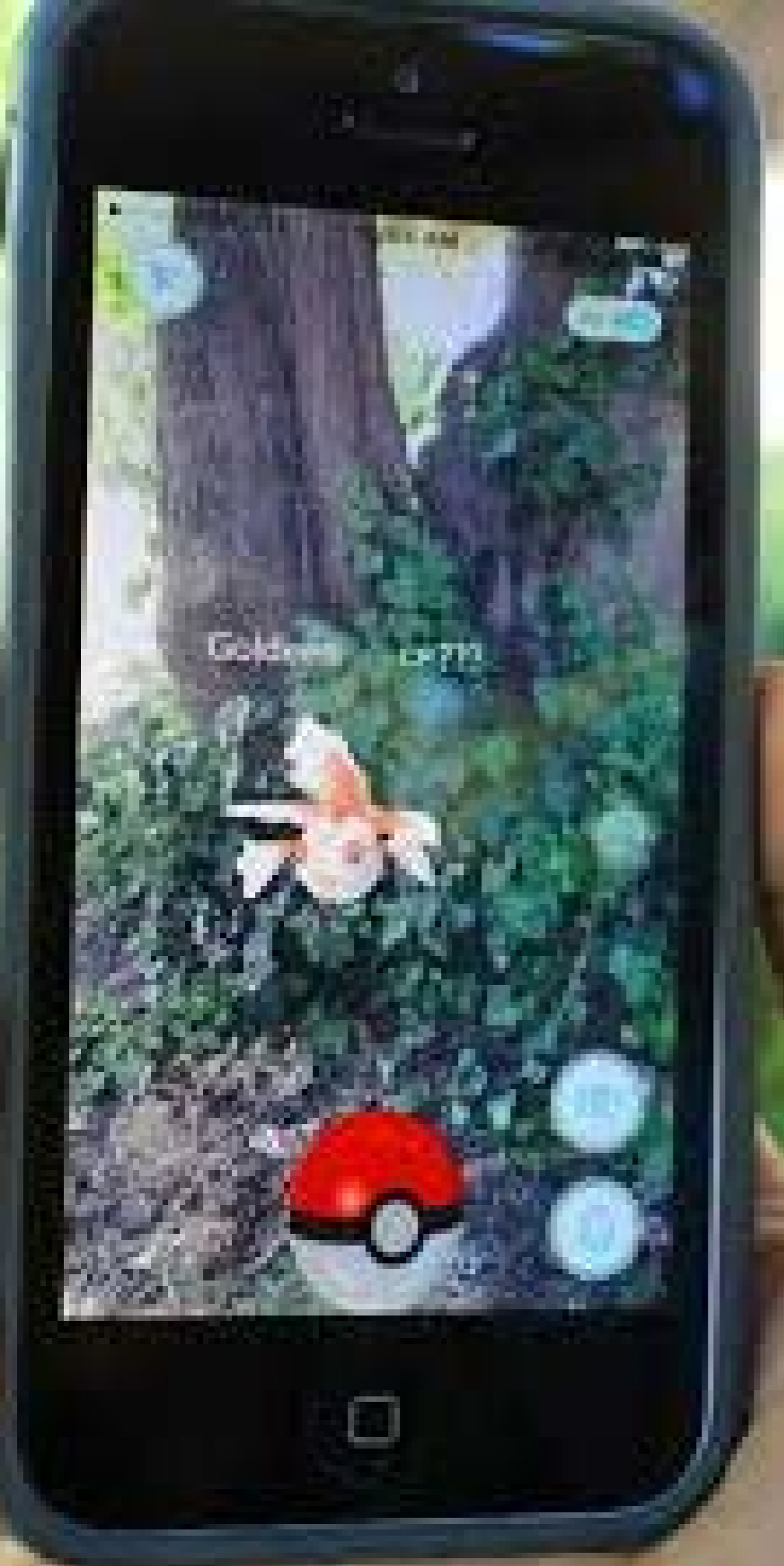
OBSERVERS AND ACTORS ARE
NOW DIGITAL DEVICE



THE FUSION OF PHYSICAL INTO DIGITAL - LIVING INTERFACES







POKEMON GO" INSTANT VIRTUALIZED SOCIETY & ECONOMY

GUINNESS WORLD RECORD FOR FASTEST GROWING APP:

**\$206 MILLION AND 160 MILLION USER IN
ONE MONTH**

IN 7 MONTHS \$ 1 BILLION IN REVENUE

IN 55 COUNTRIES

DATA WILL AUGMENT EVERYDAY LIFE



STEP PHASE I : USE CASES

- ▶ AGILE ROBOTICS
- ▶ SELF ASSEMBLY NANO BOTS
 - ▶ NANO BOTS
- ▶ CRISPR – SYNTHETIC BIOLOGY
 - ▶ NETWORKED HYPERMIND

SELF-ASSEMBLY NANO BOTS



DIRECTED NANO BOTS



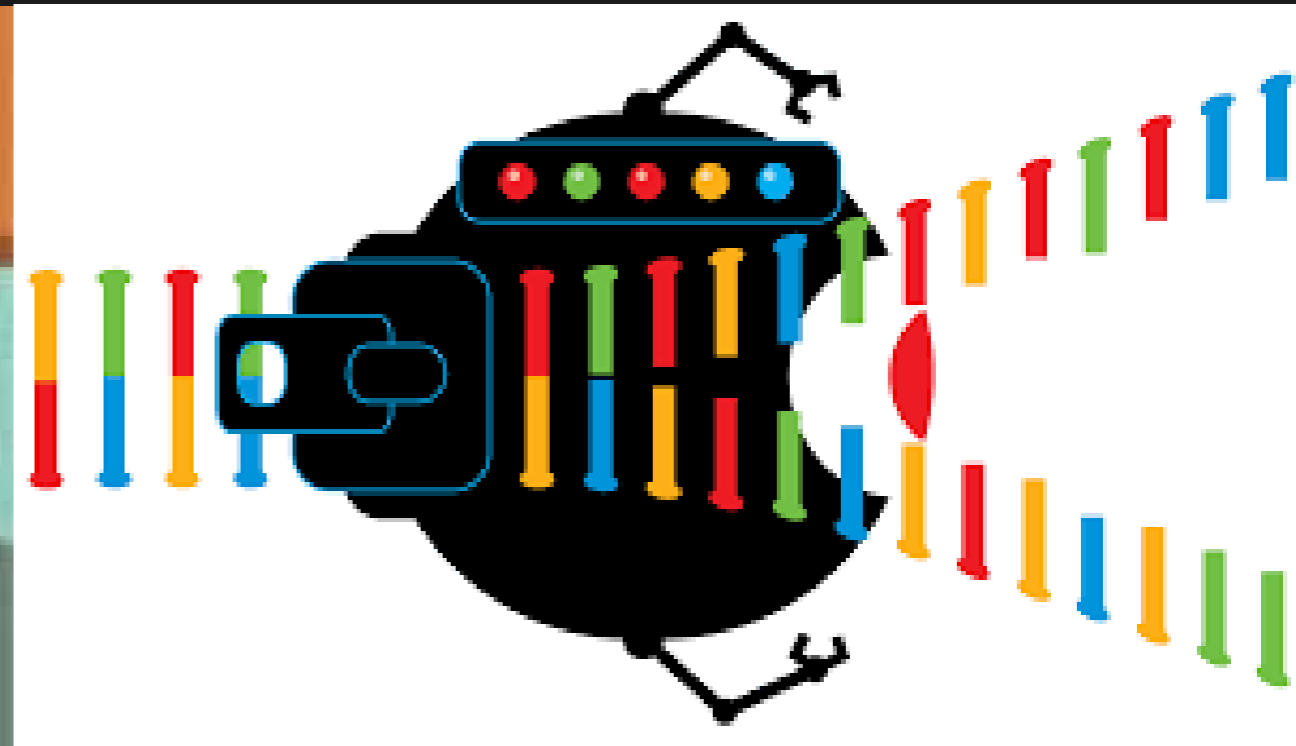
HYPERMIND



AGILE ROBOTS



CRISPR – GENE DRIVES – DIRECTED EVOLUTION



"SPY PHONE" VS. "MY PHONE"

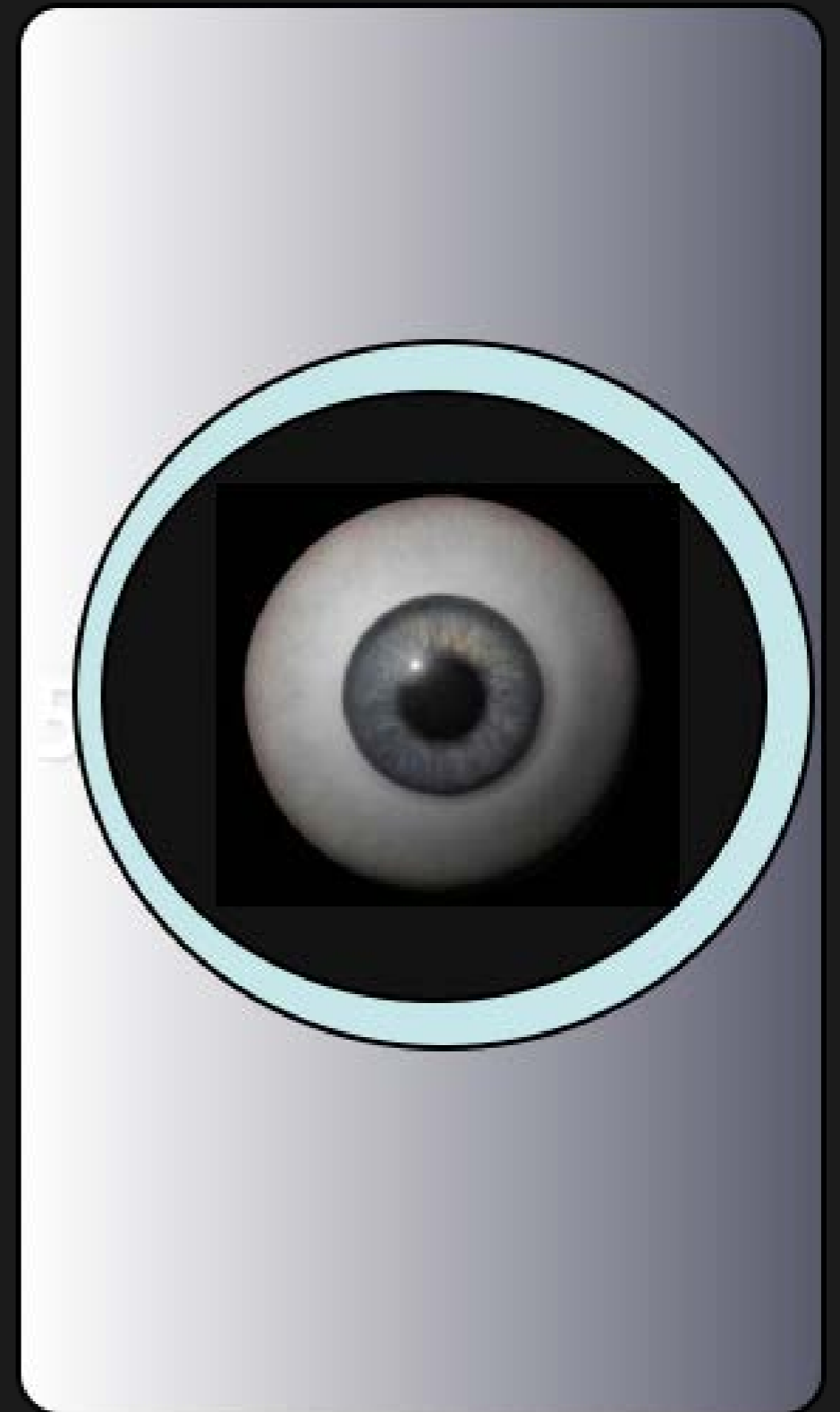
IT SEES

IT LISTENS

IT MONITORS

READS YOUR EMOTIONS

ORGANIZES YOUR LIFE





HOW DO WE COLLECT
DATA WITHOUT BEING
HACKED?

LOOSING PRIVACY?

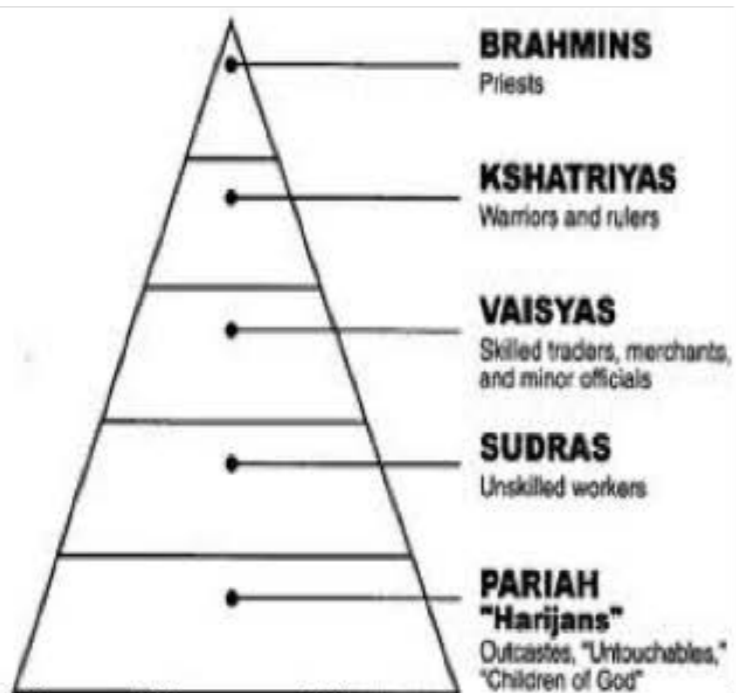
WHO ARE THE
TRUSTED
AUTHORITIES

DATA REGULATIONS BASED UPON OBSOLETE MINDSETS & PRACTICES

1. Do not collect = *do not see*
2. Opt out = *digital pariah*
3. Notification and consent = *denial of service attack*
4. Do not track = *do not know-learn*
5. Do not share = *digital ghetto*
6. *Harms and Duties come with the use of the specific use of the data and chain of custody*



TRADITIONAL AUTHORITIES ARE HIERARCHICAL AND STATIC



Hindu Caste System



Patriarchal Lineages



Medieval Chain of Being

TRADITIONAL ARTIFACTS OF IDENTITIES & ACCESS





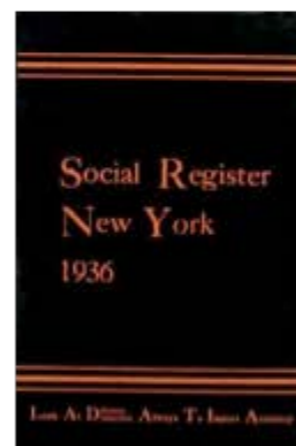
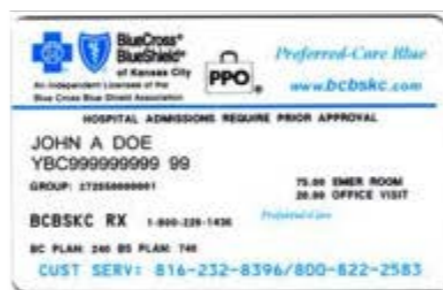
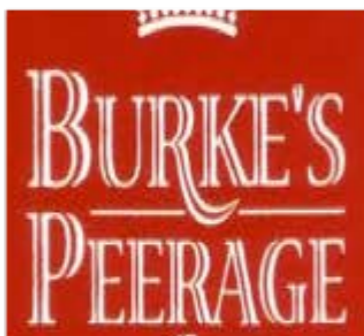
User login

Username: *

Password: *

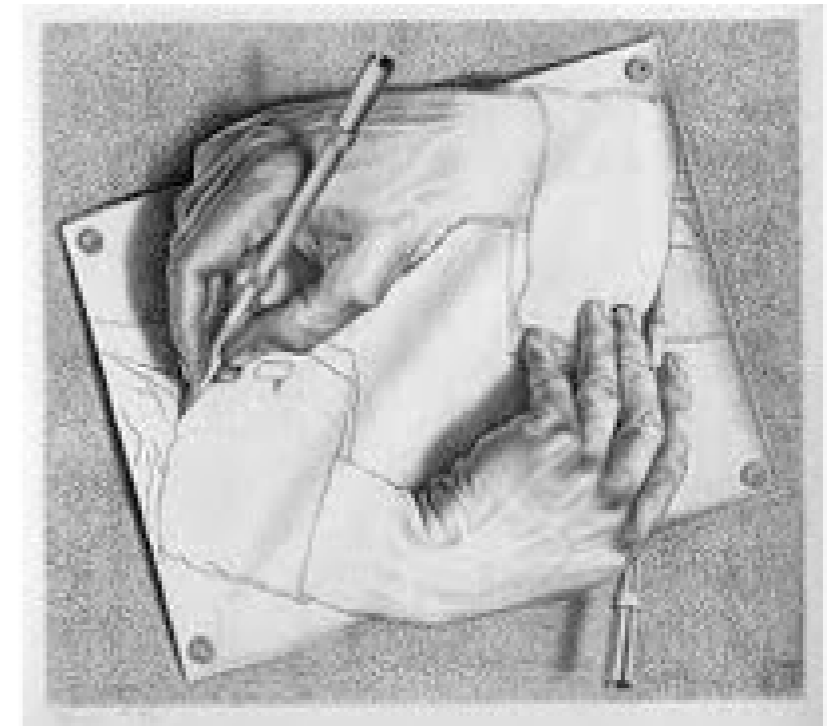
Log in

-  Connect with Facebook
-  Log in using OpenID
- Create new account
- Request new password



AUTONOMOUS GOVERNANCE TECHNOLOGIES ?

- GOVERNANCE WITHOUT GOVERNMENTS
- AUTHORIZATION WITHOUT AUTHORITIES
- REGULATION WITHOUT REGULATORS
- ADJUDICATION AND SANCTIONS WITHOUT LAWYERS AND JUDGES
- POLIS WITHOUT POLITICIANS
- AUDITING WITHOUT AUDITORS



▶ FIFTH AVENUE NC 1904 – FIND THE CAR



▶ FIFTH AVENUE 1912 FIND THE HORSE

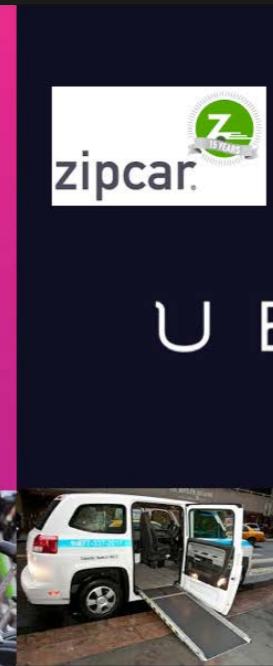


ON DEMAND TRANSPORTATION

- ▶ DYNAMIC DATA DRIVEN TRANSPORTATION INFRASTRUCTURE
- ▶ RIDE HAILING CARS – POOLS – SHUTTLES – LONG HAUL – SHORT HAUL TRUCKS – BIKES – PACKAGE DELIVERY
- ▶ SEMI AUTONOMOUS AND AUTONOMOUS VEHICLES




FROM FIXED TO ON-DEMAND INFRASTRUCTURE

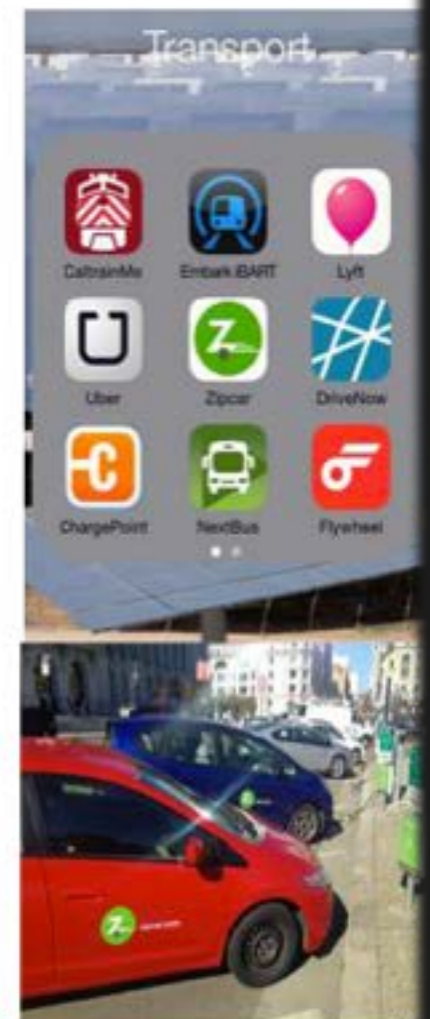


MANY DIFFERENT RIDE SHARING OPTIONS

Car-as-a-Service: The End of Car Ownership

- ▶ Mobility on Demand / Car-as-a-service:
 - ▶ **Self-Driving Cars** tech with
 - ▶ **Car/Ride Sharing** biz model
- ▶ Cars go from **parking ~90+% of time** to **driving ~90+% of time**.
- ▶ **Cost / mile ~10X cheaper** than car ownership
- ▶ We'll need **~80% fewer cars**

 80+% fewer parking spots (1)
Asset Utilization



KNOW EVERYTHING ABOUT INDIVIDUAL FOR MOBILITY SERVICES

- ▶ GPS – LOCATION
- ▶ COHORTS
- ▶ AGE, GENDER,
- ▶ OCCUPTATION
- ▶ INCOME
- ▶ RELIGION
- ▶ EDUCATION
- ▶ AFFILIATIONS



PERSONAL CONTROL OVER IDENTITY AND DATA

Every individual has their own, self-administering personal data container at the edge of the Peer-to-peer Data Common network

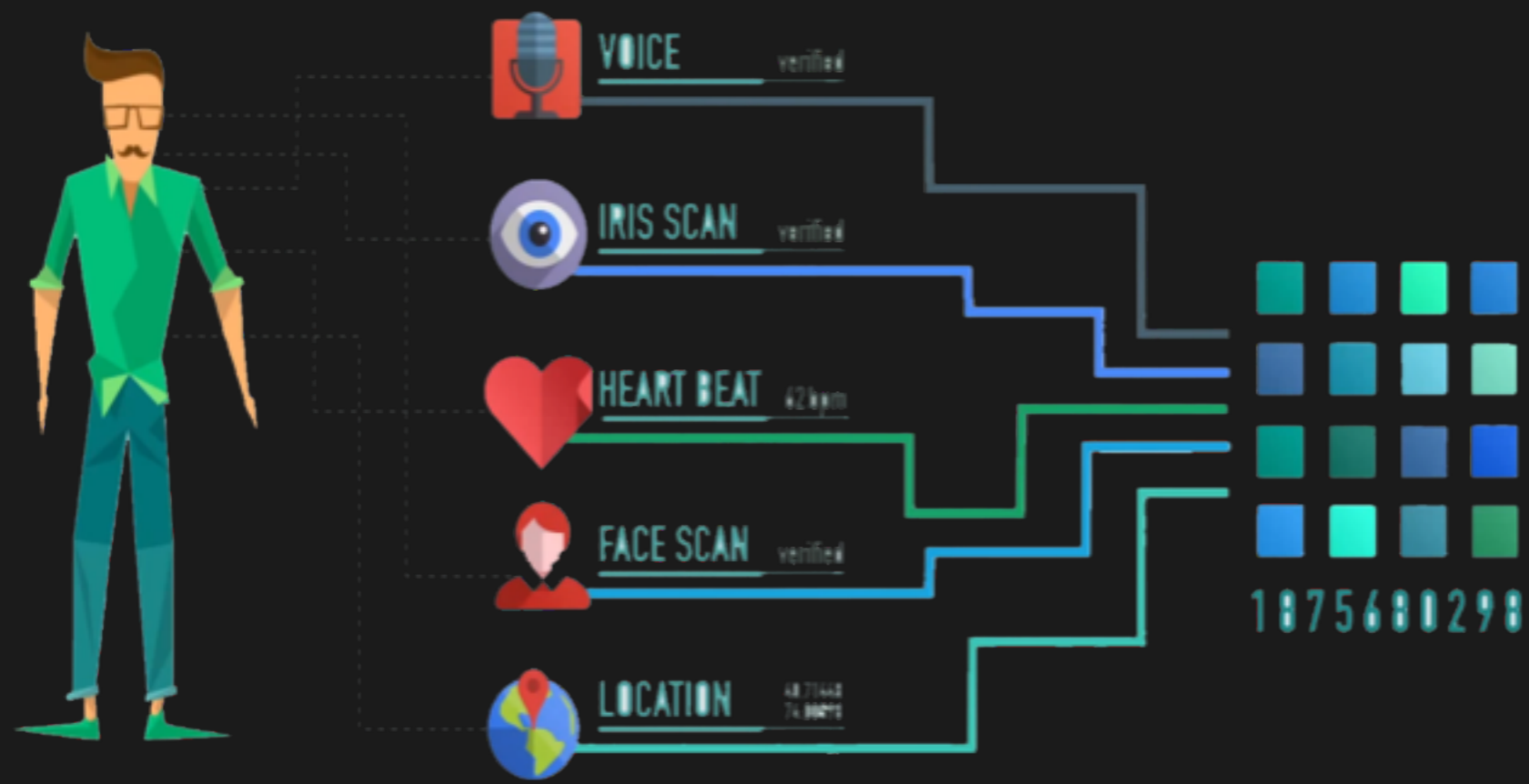
The Personal Data Container is decentralized and encrypted and in the cloud and provides a secure and verified 360 profile and history of every individual



UNIQUE - PRIVATE KEY AS A BEHAVIOR-BIOMETRIC HASH

Root Identity for Security, Privacy and Control

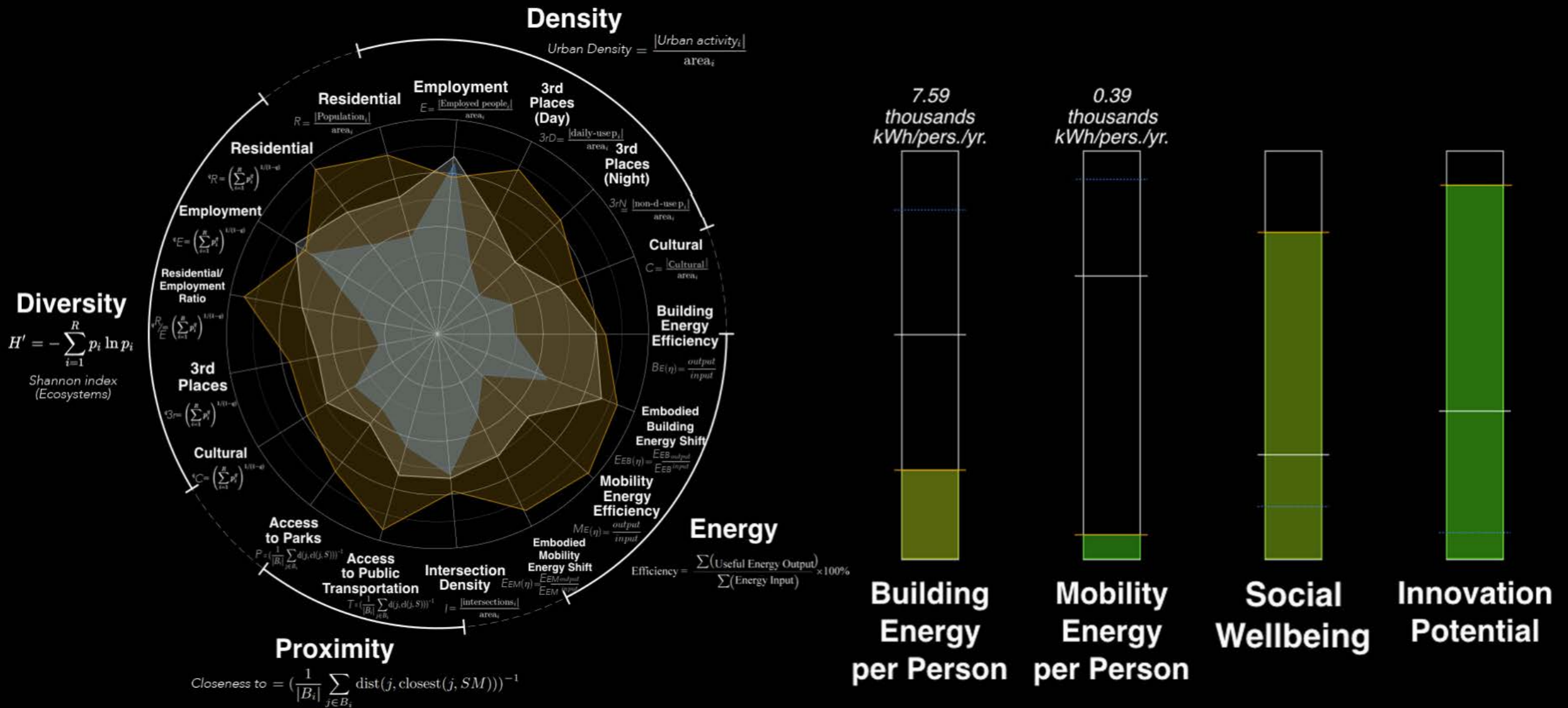
Unique personal signature from dynamic biometrics and behavior-metrics under user control



DECENTRALIZED - ADAPTIVE - NETWORKED CITY



DATA FOR HUMAN CENTRIC AND GOVERNANCE



HOW DO WE INCENTIVIZE GLOBAL INVESTMENTS IN NON-ADJACENT SUSTAINABLE ENERGY MARKETS?

- HOW DO WE CREATE A TRUSTED ASSET CLASS THAT EMBODIES THE VALUE CREATION OF CARBON REDUCTION ON A GLOBAL SCALE?
- HOW DO WE CREATE A GLOBALLY DECENTRALIZED AND ACCESSIBLE EXCHANGE NETWORK THAT INDEPENDENTLY VERIFIES PRODUCTION OF SUSTAINABLE ENERGY?

HOW DO WE INCENTIVIZE GLOBAL INVESTMENTS IN NON-ADJACENT SUSTAINABLE ENERGY MARKETS?

HOW WE MAKE MARKETS RECOGNIZE THAT CARBON REDUCTION IN NEW DELHI – NAIROBI IS GOOD FOR NEW YORK AND LONDON?

CONCLUSION

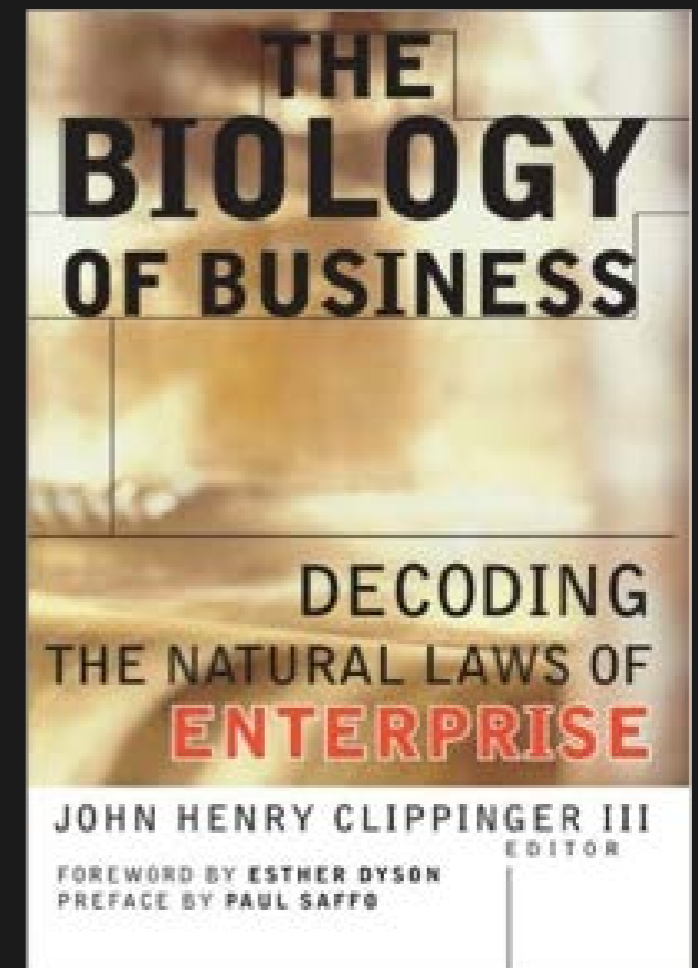
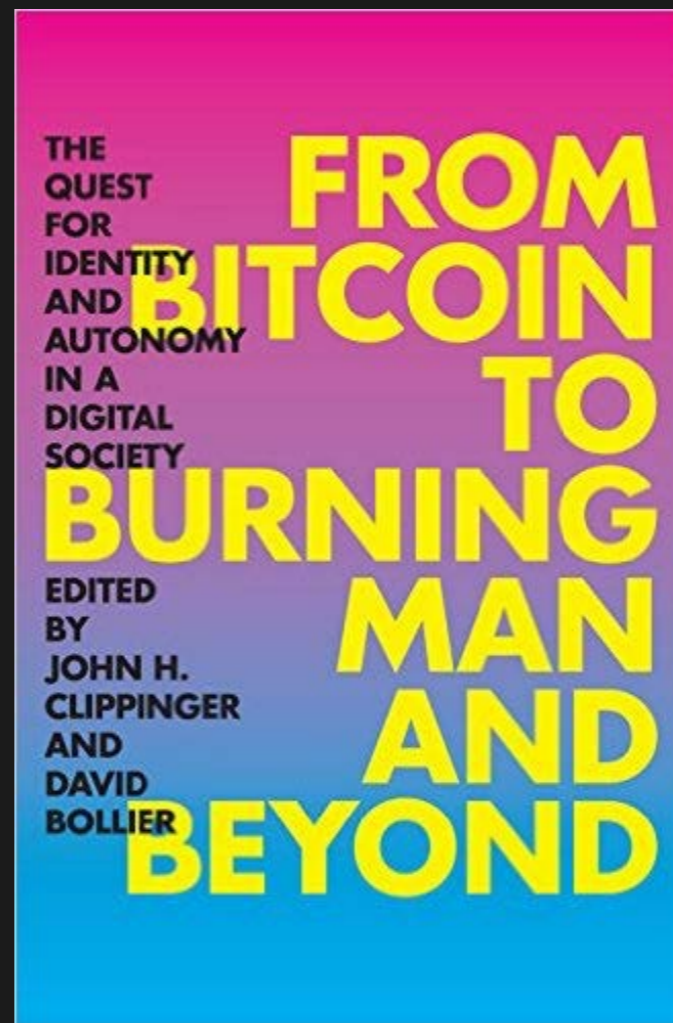
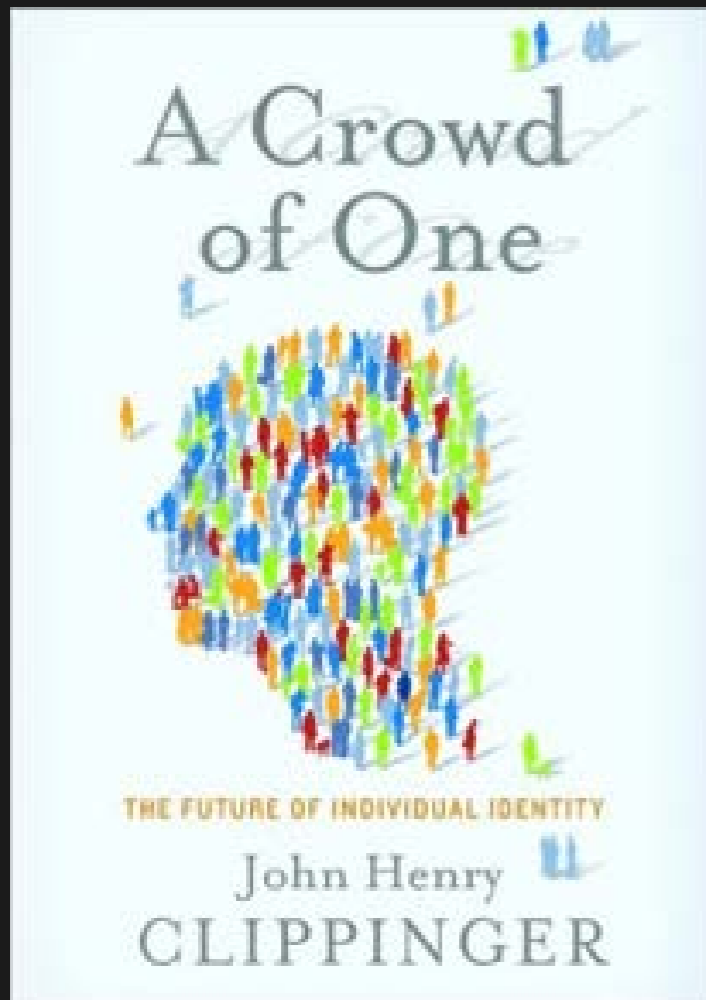
THE NEXT “REVOLUTION” IS NOT INDUSTRIAL BUT –
ECOLOGICAL

CHANGE IS PERVAISIVE AND A STEP FUNCTION

EVERYTHING WILL BE VIRTUALIZED & VERIFIED

DECENTRALIZED GOVERNANCE AND INCENTIVES
THROUGH TOKENS OF TRUST AND VALUE

RAPID TRANSITION TO SUSTAINABLE –
DECENTRALIZED ECONOMY



THANK YOU

clip@swytch.io

tokencommons.org