Belief in Social Software

Jan van Eijck[1],[2]

[1]Centrum Wiskunde & Informatica (CWI)
Amsterdam

[2]Institute for Logic, Language and Computation (ILLC)
Amsterdam

Dec 1, 2016 — Games, Logic & Society, NYC

Workshop in Honour of Rohit Parikh

Outline

Social Software

Outline

Social Software

Rational Beliefs

Outline

Social Software

Rational Beliefs

Let's Get Real

Outline

Social Software

Rational Beliefs

Let's Get Real

Irrational Beliefs

Outline

Social Software

Rational Beliefs

Let's Get Real

Irrational Beliefs

Money

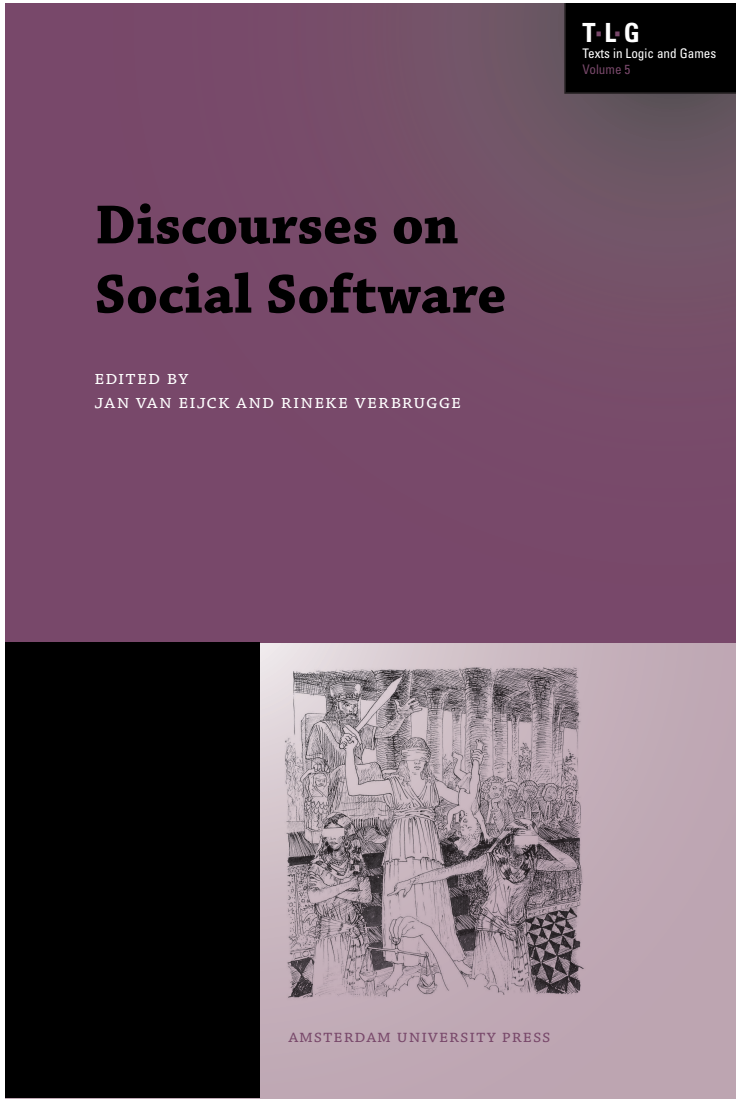
Social Software

T·L·G
Texts in Logic and Games
Volume 5

Discourses on Social Software

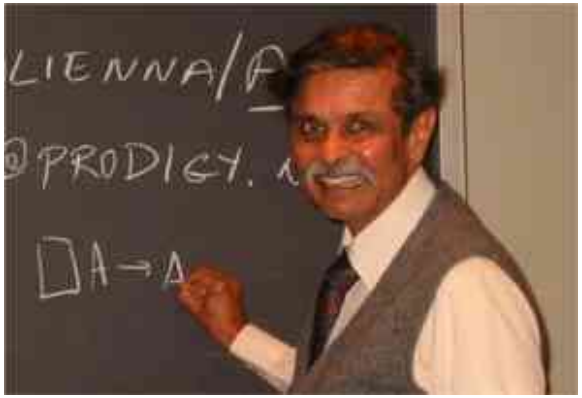
EDITED BY
JAN VAN EIJCK AND RINEKE VERBRUGGE

AMSTERDAM UNIVERSITY PRESS

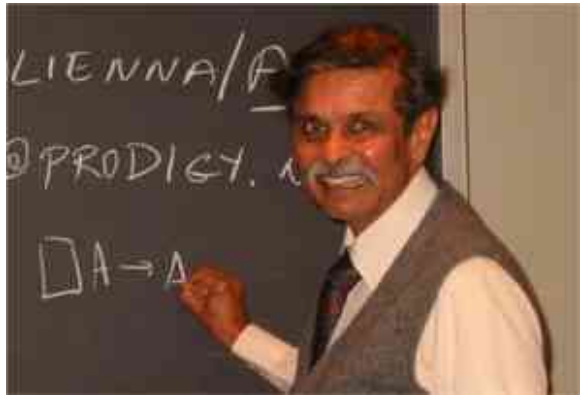


http://homepages.cwi.nl/~jve/books/pdfs/discourses.pdf

Rohit Parikh on Social Software

- Prominent role of Rohit in NIAS Social Software Project, 2006/2007. Author/co-author of three chapters.
- 

Rohit Parikh on Social Software

- Prominent role of Rohit in NIAS Social Software Project, 2006/2007. Author/co-author of three chapters.
- 

"Knowledge implies Truth"
- [..] we would be asking too much of social software to expect it to be more precise than an umbrella concept. But umbrella concepts can also be very useful and one *can* loosely define social software as, *thinking of social procedures as analogous to computer algorithms – both for a single computer and for a system of computers – and to study these algorithms using techniques from mathematics and logic.* [EV09, p. 30]

Social Software and Impact on Life

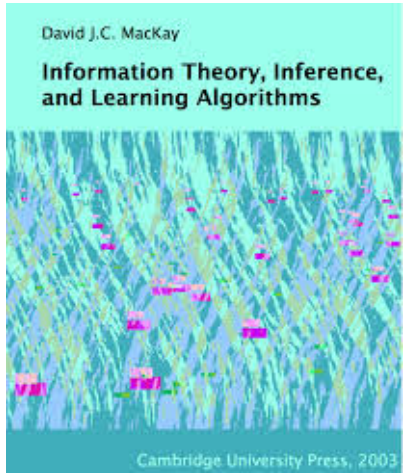
- “My point is that much of the literature in economics takes buying and selling as its model for social activity, but social activity is much more varied and rich.” Rohit Parikh in [EV09].
- “[..] if an analysis of what happens in society is to be carried out at a level where it can have an impact on *life* beyond mere trading, then tools from computer science are likely to come out to be useful. This is part of the reason why the word ‘software’ occurs in ‘social software.’ ” Rohit Parikh in [EV09].

The Judgement of Salomon

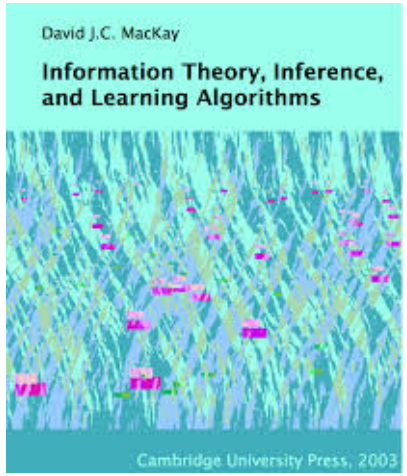
drawing by Marco Swaen

Rational Beliefs

Rational Crime Scene Investigation



Rational Crime Scene Investigation



Denote the proposition 'the suspect and one unknown person were present' by S. The alternative, $\bar{S}$, states 'two unknown people from the population were present'. The prior in this problem is the prior probability ratio between the propositions S and $\bar{S}$. This quantity is important to the final verdict and would be based on all other available information in the case. Our task here is just to evaluate the contribution made by the data D, that is, the likelihood ratio, $P(D|S,H)/P(D|\bar{S},H)$. In my view, a jury's task should generally be to multiply together carefully evaluated likelihood ratios from each independent piece of admissible evidence with an equally carefully reasoned prior probability. [Mac03]

Core Principles of Rational Belief

- Suppose Bernie Sanders had won the Democratic nomination.
- Who would then be the president-elect of the USA now?
- No idea, for I *know* that Sanders did not win.
- Suppose ϕ (not in contradiction with anything you know).
- Would you then believe ψ?
- If the world would turn out to be ϕ, would you still believe ψ?
- $B_a(\phi, \psi)$.

- Inspiration: Bayesian update
- Belief as willingness to bet on ψ, given information ϕ.

Conditional Neighbourhood Functions

- Joint work with François Schwarzentruber, Brian Renne, Kai Li [ES14, ER16, EL16].
- $N : A \to W \to \mathcal{P}W \to \mathcal{P}\mathcal{P}W$
- Maps from agents to states to state sets to families of state sets.
- $N_a^w(X)$ is the set of neighbourhoods that agent a assigns to state set X in world w.
- $Y \in N_a^w(X)$: if the world is confined to be in X, then a believes Y.

Conditions on Conditional Neighbourhood Functions

- Use $[w]_a$ for the current knowledge state of a.
- [(c)] $\forall Y \in N_a^w(X) : Y \subseteq X \cap [w]_a$.
  What is conditionally known is also conditionally believed.
- [(m)] $\forall Y \subseteq Z \subseteq X \cap [w]_a$: if $Y \in N_a^w(X)$ then $Z \in N_a^w(X)$.
- [(ec)] $\forall Y \subseteq W$: if $X \cap [w]_a = Y \cap [w_a]$, then $N_a^w(X) = N_a^w(Y)$.
  What is conditionally believed is known to be conditionally believed.
- [(d)] $\forall Y \in N_a^w(X), X \cap [w]_a - Y \notin N_a^w(X)$.
  If something is conditionally believed then its complement is not.
- [($\emptyset$)] If $X \cap [w]_a = \emptyset$, then $N_a^w(X) = \emptyset$.
  After conditioning on something incompatible with what is known nothing is believed anymore.

Slightly Irrational Beliefs: Lottery Example

- Alice knows there are 1000 lottery tickets.
- Alice does believe ticket t is winning and therefore she buys it.
- Let n represent the world where ticket n is winning.
- Alice's belief is given by a conditional neighbourhood model with $N_a^w(X) = \{Y \subseteq \{1, \ldots, 1000\} \mid t \in Y\}$ if $t \in X$, and $N_a^w(X) = \{Y \subseteq X \mid |Y| > \frac{1}{2}|X|\}$ if $t \notin X$.
- Now Alice receives the information that $v \neq t$ is the winning ticket.
- Now comes the rational part ...
- Then $v = w$, and Alice updates to N'_a with $N'^v_a(\{v\}) = \{\{v\}\}$.

Slightly More Rational: Lottery Example Again

- Alice knows there are 1000 lottery tickets.
- Alice does not really believe ticket t is winning (still, she buys it).
- Let n represent the world where ticket n is winning.
- Alice's belief is given by a conditional neighbourhood model with $N_a^w(X) = \{Y \subseteq X \mid |Y| > \frac{1}{2}|X|\}$.
- Now Alice receives the information that $v \neq t$ is the winning ticket.
- Then $v = w$, and Alice updates to N'_a with $N'^v_a(\{v\}) = \{\{v\}\}$.

Conditional Neighbourhood Models, Language, Truth

A **Conditional Neighbourhood Model** $\mathcal{M}$ is a tuple (W, N, V) where

- W is a non-empty set of worlds.
- N_a is a function that assigns to every world $w \in W$ and set of worlds $X \subseteq W$ a collection $N_a^w(X)$ of sets of worlds–each such set called a *neighbourhood* of X–subject to a set of conditions (given above), where $[w]_a = \{v \in W \mid \forall X \subseteq W, N_a^w(X) = N_a^v(X)\}$.
- V is a valuation function that assigns to every $w \in W$ a subset of *Prop*.
- $$\phi ::= \top \mid p \mid \neg\phi \mid (\phi \wedge \phi) \mid B_a(\phi, \phi)$$
- Knowledge: $K_a\phi$ is defined as $\neg B_a(\neg\phi, \top)$
- $\mathcal{M}, w \models B_a(\phi, \psi)$ iff for some $Y \in N_a^w([\![\phi]\!]_{\mathcal{M}})$ it holds that $Y \subseteq [\![\psi]\!]_{\mathcal{M}}$.

CNL Calculus for Conditional Neighbourhood Logic

(Taut)	All instances of propositional tautologies
(Def-K)	$K_a\phi \leftrightarrow \neg B_a(\neg\phi, \top)$
(Dist-K)	$K_a(\phi \to \psi) \to K_a\phi \to K_a\psi$
(T)	$K_a\phi \to \phi$
(PI-KB)	$B_a(\phi, \psi) \to K_a B_a(\phi, \psi)$
(NI-KB)	$\neg B_a(\phi, \psi) \to K_a \neg B_a(\phi, \psi)$
(M)	$K_a(\phi \to \psi) \to B_a(\chi, \phi) \to B_a(\chi, \psi)$
(EC)	$K_a(\phi \leftrightarrow \psi) \to B_a(\phi, \chi) \to B_a(\psi, \chi)$.
(D)	$B_a(\phi, \psi) \to \neg B_a(\phi, \neg\psi)$
(N)	$B_a(\phi, \psi) \to B_a(\phi, \phi \wedge \psi)$

$$\frac{\phi \to \psi \quad \phi}{\psi}\ \text{(MP)} \qquad \frac{\phi}{K_a\phi}\ \text{(Nec-K)}$$

CNL Calculus for Conditional Neighbourhood Logic

(Taut)	All instances of propositional tautologies
(Def-K)	$K_a\phi \leftrightarrow \neg B_a(\neg\phi, \top)$
(Dist-K)	$K_a(\phi \to \psi) \to K_a\phi \to K_a\psi$
(T)	$K_a\phi \to \phi$
(PI-KB)	$B_a(\phi, \psi) \to K_a B_a(\phi, \psi)$
(NI-KB)	$\neg B_a(\phi, \psi) \to K_a \neg B_a(\phi, \psi)$
(M)	$K_a(\phi \to \psi) \to B_a(\chi, \phi) \to B_a(\chi, \psi)$
(EC)	$K_a(\phi \leftrightarrow \psi) \to B_a(\phi, \chi) \to B_a(\psi, \chi)$.
(D)	$B_a(\phi, \psi) \to \neg B_a(\phi, \neg\psi)$
(N)	$B_a(\phi, \psi) \to B_a(\phi, \phi \wedge \psi)$

$$\frac{\phi \to \psi \quad \phi}{\psi}\ \text{(MP)} \qquad \frac{\phi}{K_a\phi}\ \text{(Nec-K)}$$

Theorem

This calculus is sound and complete for conditional neighbourhood models [EL16].

Interpretation in Weight Models

An **epistemic weight model** for agents Ag and basic propositions P is a tuple $\mathcal{M} = (W, R, L, V)$ where

- W is a non-empty countable set of worlds,
- R assigns to every agent $a \in Ag$ an equivalence relation $\sim_a$ on W,
- L assigns to every $a \in Ag$ a function $\mathbb{L}_a$ from W to $\mathbb{Q}^+$ (the positive rationals), subject to the following boundedness condition (*).

$$\forall a \in Ag \, \forall w \in W \sum_{u \in [w]_a} \mathbb{L}_a(u) < \infty. \qquad (*)$$

  where $[w]_i$ is the cell of w in the partition induced by $\sim_a$.
- V assigns to every $w \in W$ a subset of P.

Agreement, Incompleteness

- **Definition (Agreement)**

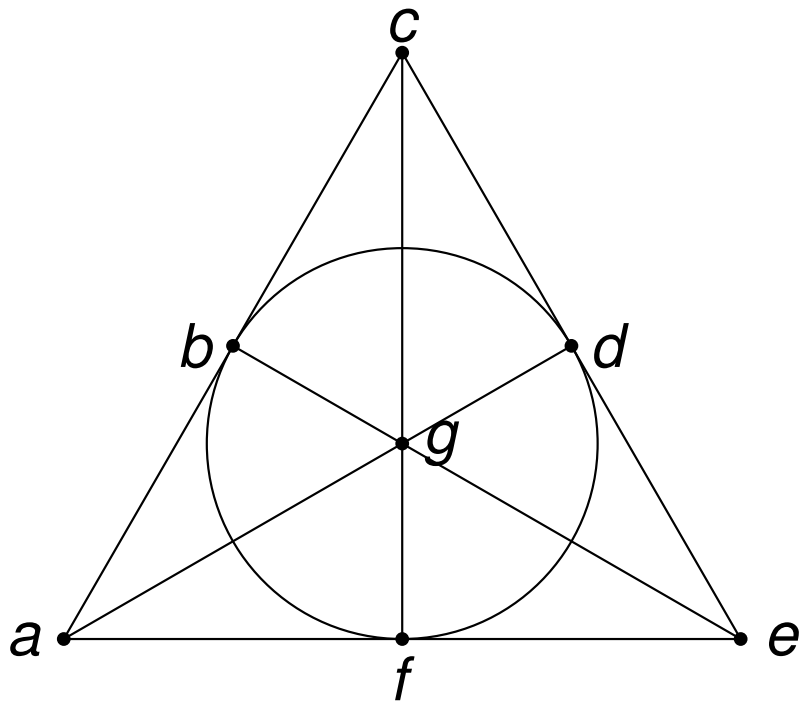
  Let $\mathcal{M} = (W, R, N, V)$ be a neighbourhood model and let L be a weight function for $\mathcal{M}$. Then L *agrees with* $\mathcal{M}$ if it holds for all agents a, for all $w \in W$, and for all $X, Y \subseteq W$ that

  $$Y \in N_a^w(X) \text{ iff } Y \subseteq [w]_a \text{ and } \mathbb{L}_a(Y) > \mathbb{L}_a((X \cap [w]_a) - Y).$$

- **Theorem**

  There exists an epistemic neighbourhood model $\mathcal{M}$ that has no agreeing weight function.

Incompleteness



- Let $Prop := \{a, b, c, d, e, f, g\}$. Let $\mathcal{X} = \{abc, cde, afe, agd, cgf, egb, bdf\}$ (the set of lines in the Fano plane)
- No complement of a line contains a line.
- If one extends the complement of a line with another point, the result will contain a line.

Incompleteness (ctd)

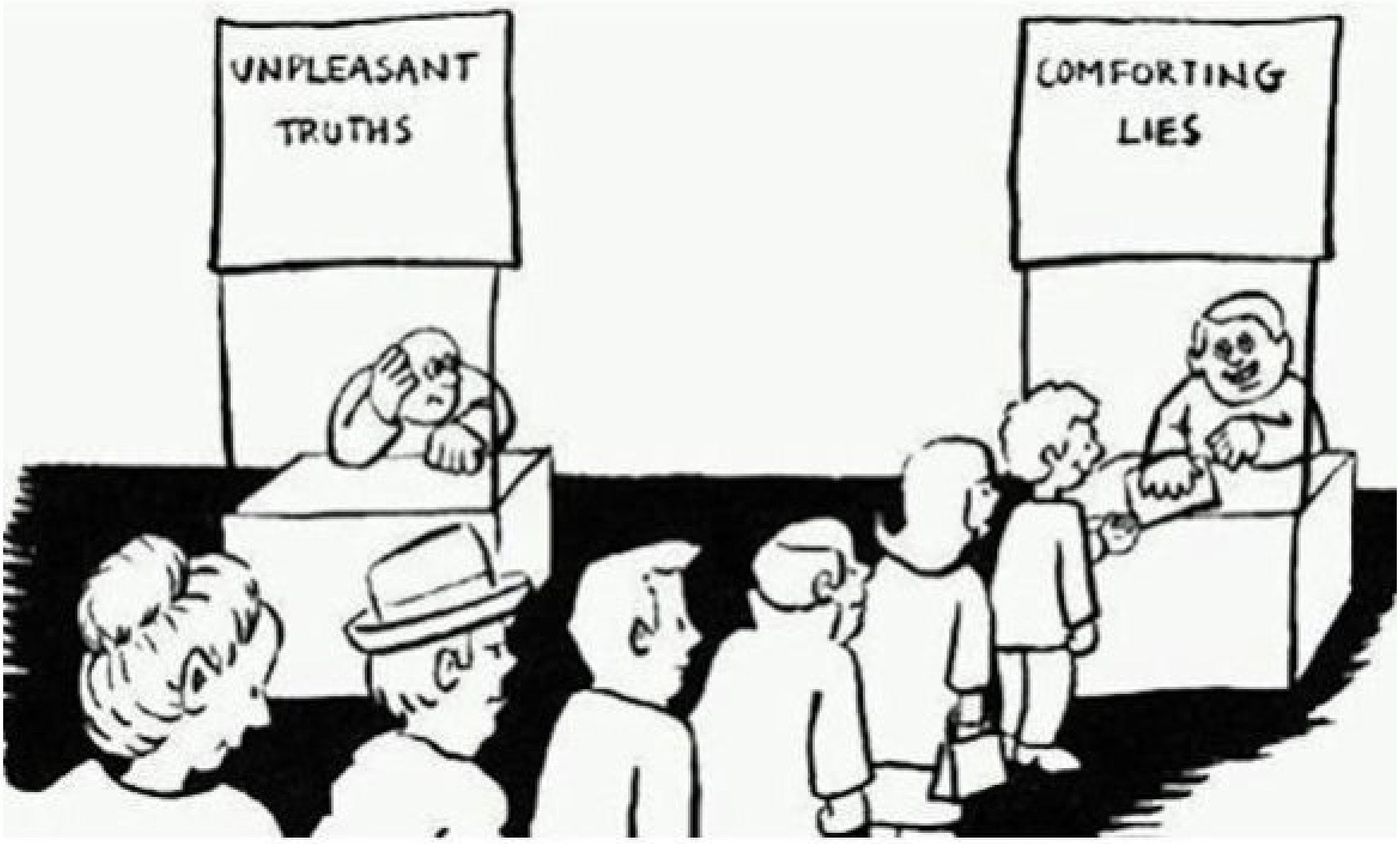
- Let ϕ be an exhaustive description of the Fano example, that is: ϕ is true of this example, false in all other models.
- Since the Fano example cannot be extended to a weight model, we have $\models \neg\phi$ for the class of weight models.
- On the other hand, the Fano example shows that $\not\models \neg\phi$ for the class of neighbourhood models. By the completeness of the CNL calculus for neighbourhood models it follows that $\not\vdash_{CNL} \neg\phi$.
- So $\neg\phi$ is valid for weight models, but $\neg\phi$ cannot be proved in the CNL calculus.

Let’s Get Real

WELCOME TO
REALITY

Social Software and the Ills of Society

- Final Dialogue in [EV09] . . .
- “I believe that a scientist looking at nonscientific problems is just as dumb as the next guy—and when he talks about a nonscientific matter, he will sound as naive as anyone untrained in the matter.”
  Richard Feynman, [Fey99, page 141]
- “If one of the most eminent physicists of the twentieth century believes that he is as dumb as the next guy when it comes to curing the ills of society, who are we to think that we are smarter?”
- “[. . .] my spouse has started to complain, telling me I should stop reading books on issues that I cannot do anything about, as it is bound to make me depressed. That’s probably right. So what should I do?”


UNPLEASANT
TRUTHS
COMFORTING
LIES

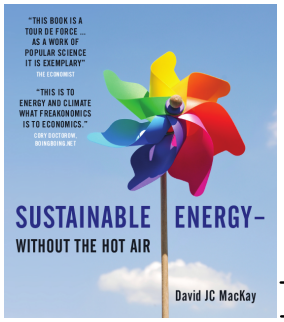
Hannah Arendt on Truth

It has frequently been noted that the surest result of brainwashing in the long run is a peculiar kind of cynicism, the absolute refusal to believe in the truth of anything, no matter how well it may be established. In other words, the result of a consistent and total substitution of lies for factual truth is not that the lie will now be accepted as truth, and truth be defamed as lie, but that the sense by which we take our bearings in the real world – and the category of truth versus falsehood is among the mental means to this end – is being destroyed.
Hannah Arendt, Truth and Politics, 1967 [Are06]

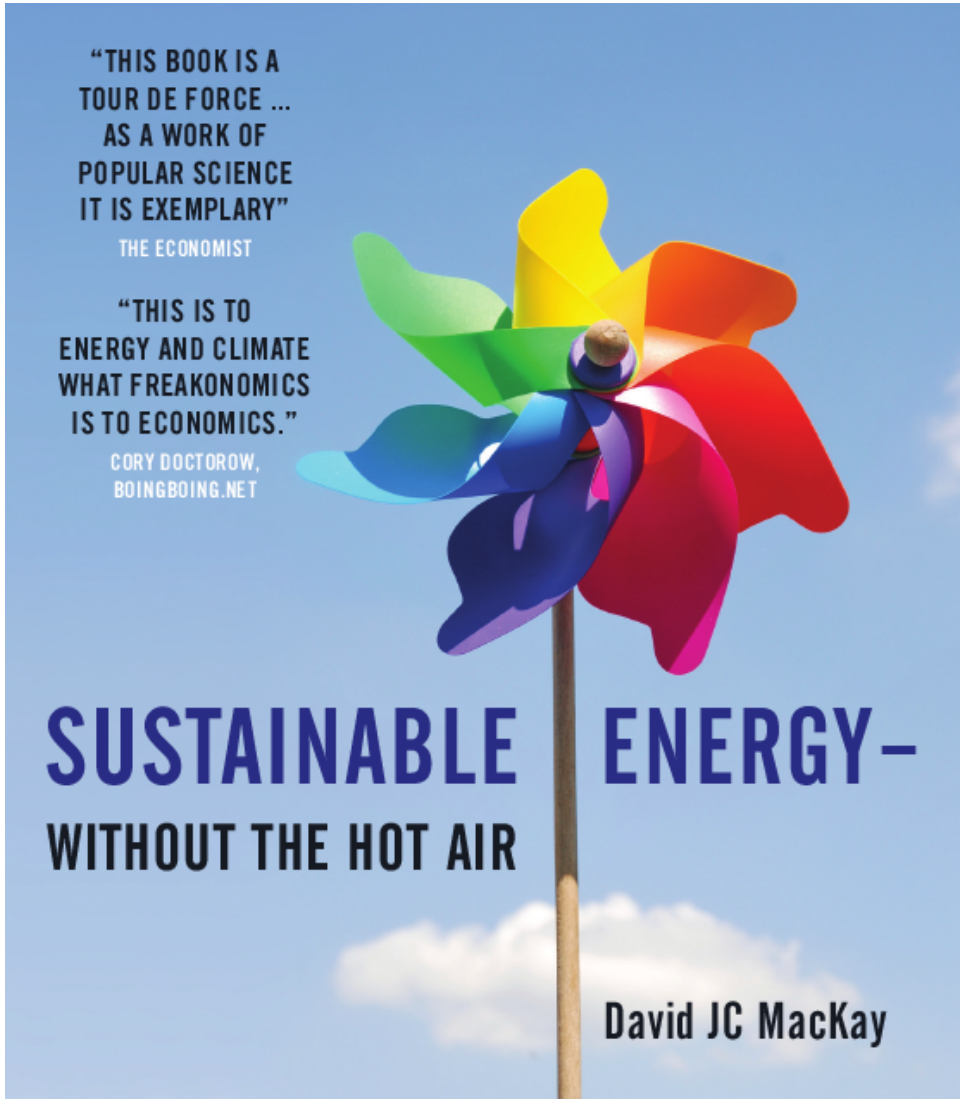
Boosting Our Climate and Energy Literacy

David MacKay, physicist, mathematician, engineer
(1967 – 2016)

David MacKay: How Many Lightbulbs?

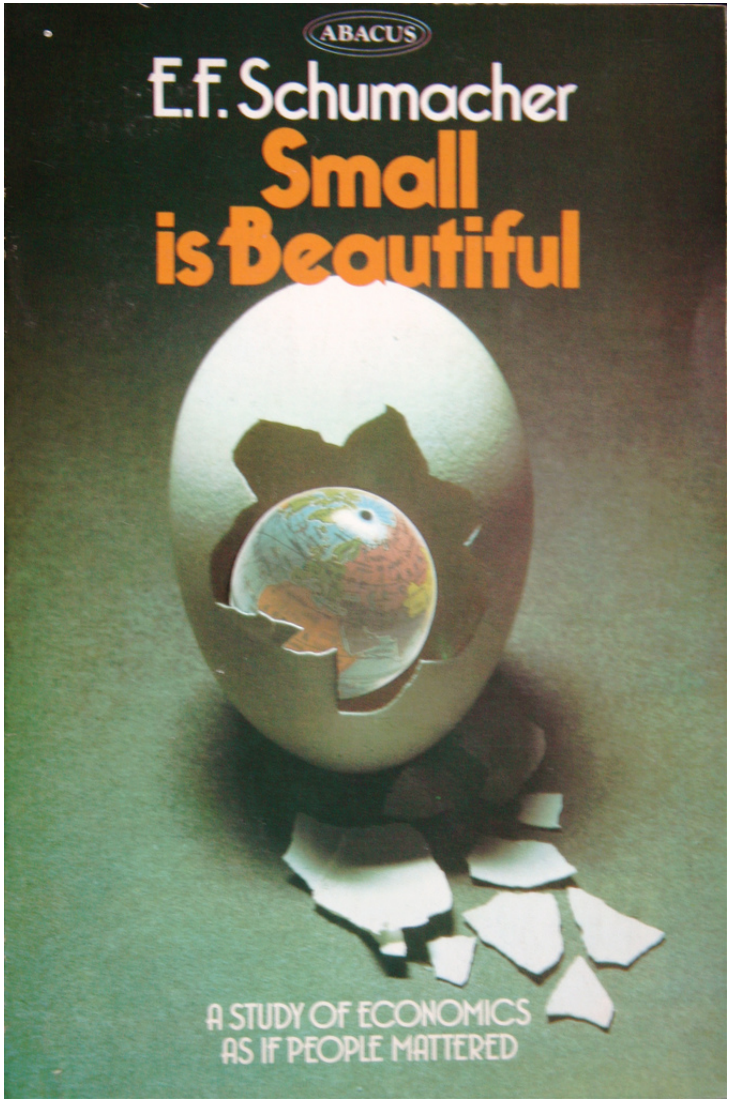


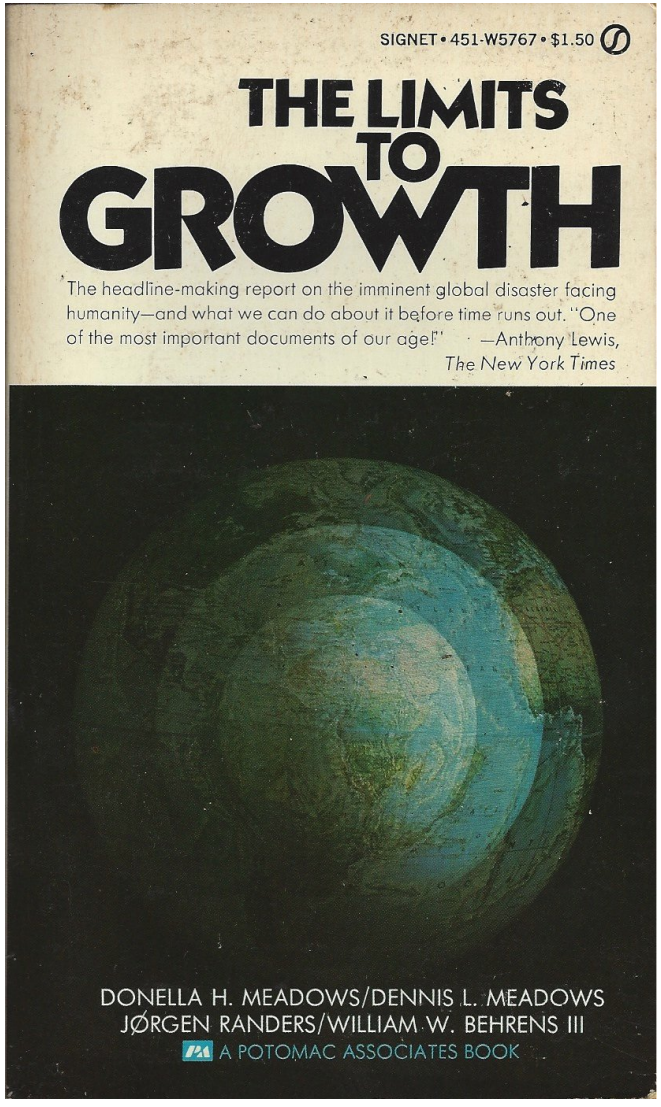
- https://www.withouthotair.com/
- Dedicated "to those who will not have the benefit of two billion years' accumulated energy reserves".
- https://www.youtube.com/watch?v=UR8wRSp2IXs
- https://www.youtube.com/watch?v=-5bVbfWuq-Q
- "I am a great advocate of having grown up conversations that are based on numbers and facts."
- "I am not anti renewables – I love renewables – but I am also pro arithmetic."
- "We need a plan that adds up – we need to stop shouting and start talking."



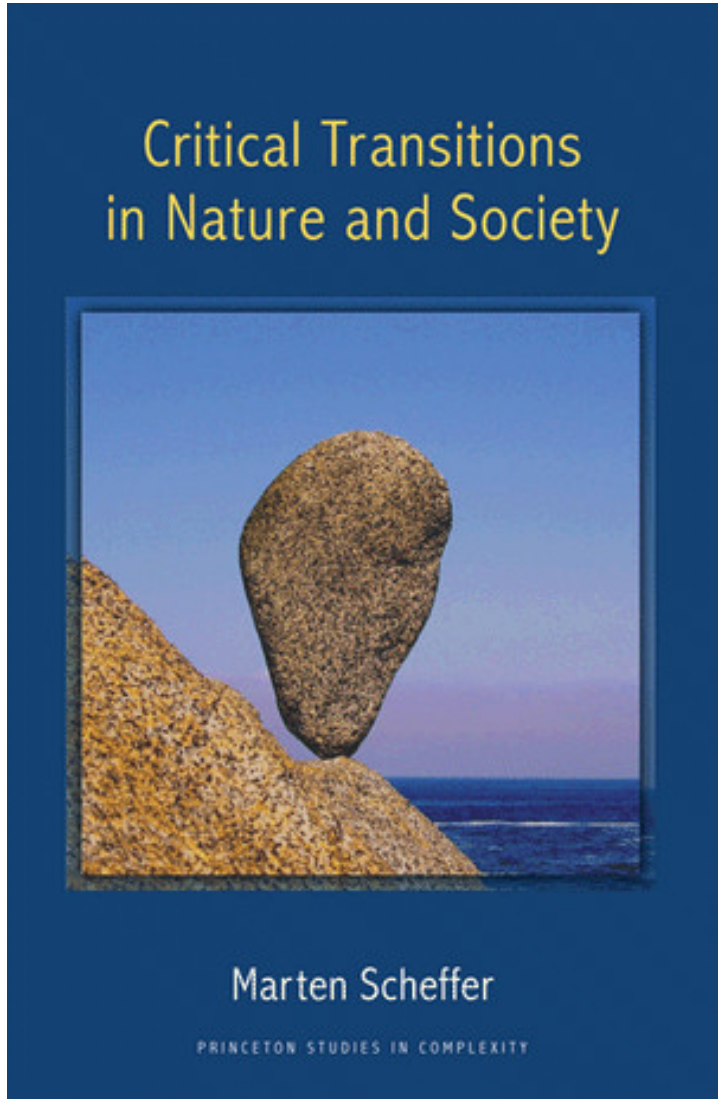
https://www.withouthotair.com/

Literature from my Student's Days



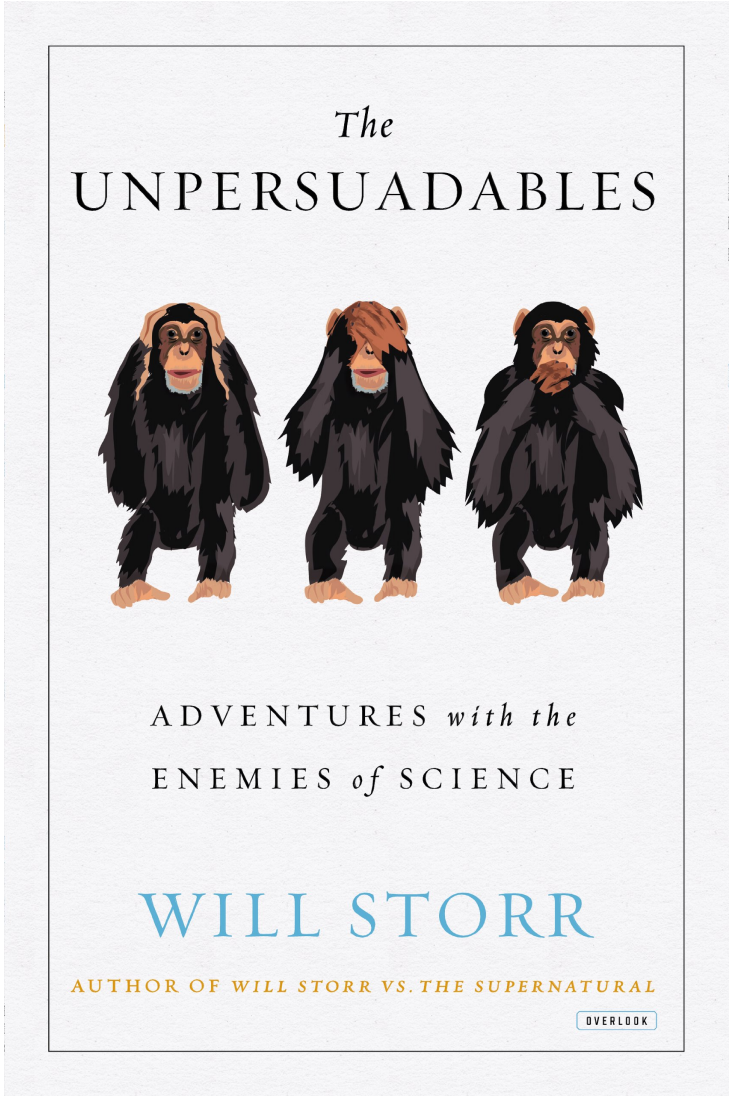


Exponential Growth in a Finite World



http://press.princeton.edu/titles/8950.html

Irrational Beliefs

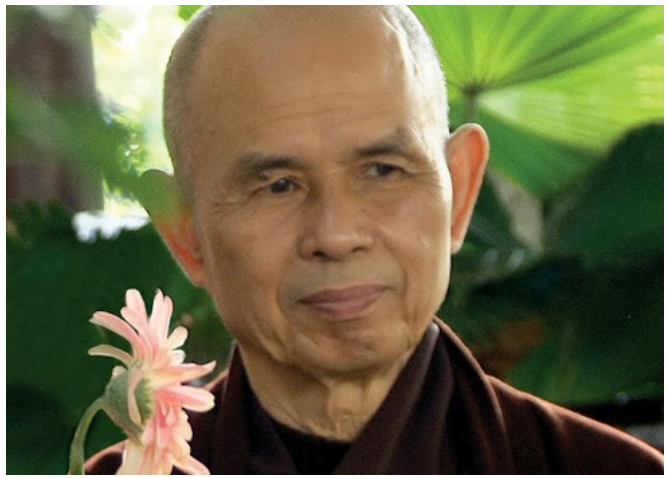

The
UNPERSUADABLES
ADVENTURES with the
ENEMIES of SCIENCE
WILL STORR
AUTHOR OF WILL STORR VS. THE SUPERNATURAL
OVERLOOK

Adventures with the Enemies of Science . . .

- Creationists (John Mackay)
  http://www.creationresearch.net/
- Alien Abduction (John E. Mack)
  http://johnemackinstitute.org/,
  http://www.abduct.com/
- Divya Yog Trust (Swami Ramdev)
  http://www.divyayoga.com/
- Past Life Regression (Vered Kilstein)
  http://www.pastliferegression.net.au/
- Vipassana Meditation (S.N. Goenka)
  https://www.dhamma.org/
- Homoeopathic Medicine (Gemma Hoefkens) http://www.homoeopathysuttoncoldfield.co.uk/
  versus Skeptics (James Randi)
  http://www.skeptic.com/
- Morgellons disease
  http://www.morgellonsmedicalcenter.com/

- Hearing Voices Network (Ron Coleman, Marius Romme)
  `http://www.hearing-voices.org/`
- Recovered Memory Therapy (Fleur Fisher, Carol Felstead)
  `http://www.justiceforcarol.com/`
- Self delusion in moral reasoning (Jonathan Haidt)
  `http://righteousmind.com/`
- Climate Change Deniers (Lord Monckton)
  `http://www.lordmoncktonfoundation.com/`
- Holocaust Deniers (David Irving)
  `http://www.fpp.co.uk/`
- Extra-sensory perception (Rupert Sheldrake vs Richard Wiseman)
  `http://www.sheldrake.org/`,
  `https://richardwiseman.wordpress.com/`
- The Skeptics and James Randi
  `http://web.randi.org/`.

A Personal Journey

-  Thich Nhat Hanh
- My immersion in Buddhism, in the style of Will Storr

Inter-relationship

You are me and I am you.
Isn't it obvious that we inter-are?
You cultivate the flower in yourself
so that I will be beautiful.
I transform the garbage in myself
so that you do not have to suffer.
I support you you support me.
I am here to bring you peace
you are here to bring me joy.

Inter-relationship

You are me and I am you.
Isn't it obvious that we inter-are?
You cultivate the flower in yourself
so that I will be beautiful.
I transform the garbage in myself
so that you do not have to suffer.
I support you you support me.
I am here to bring you peace
you are here to bring me joy.

From *Call Me By My True Names – The Collected Poems of Thich Nhat Hanh*

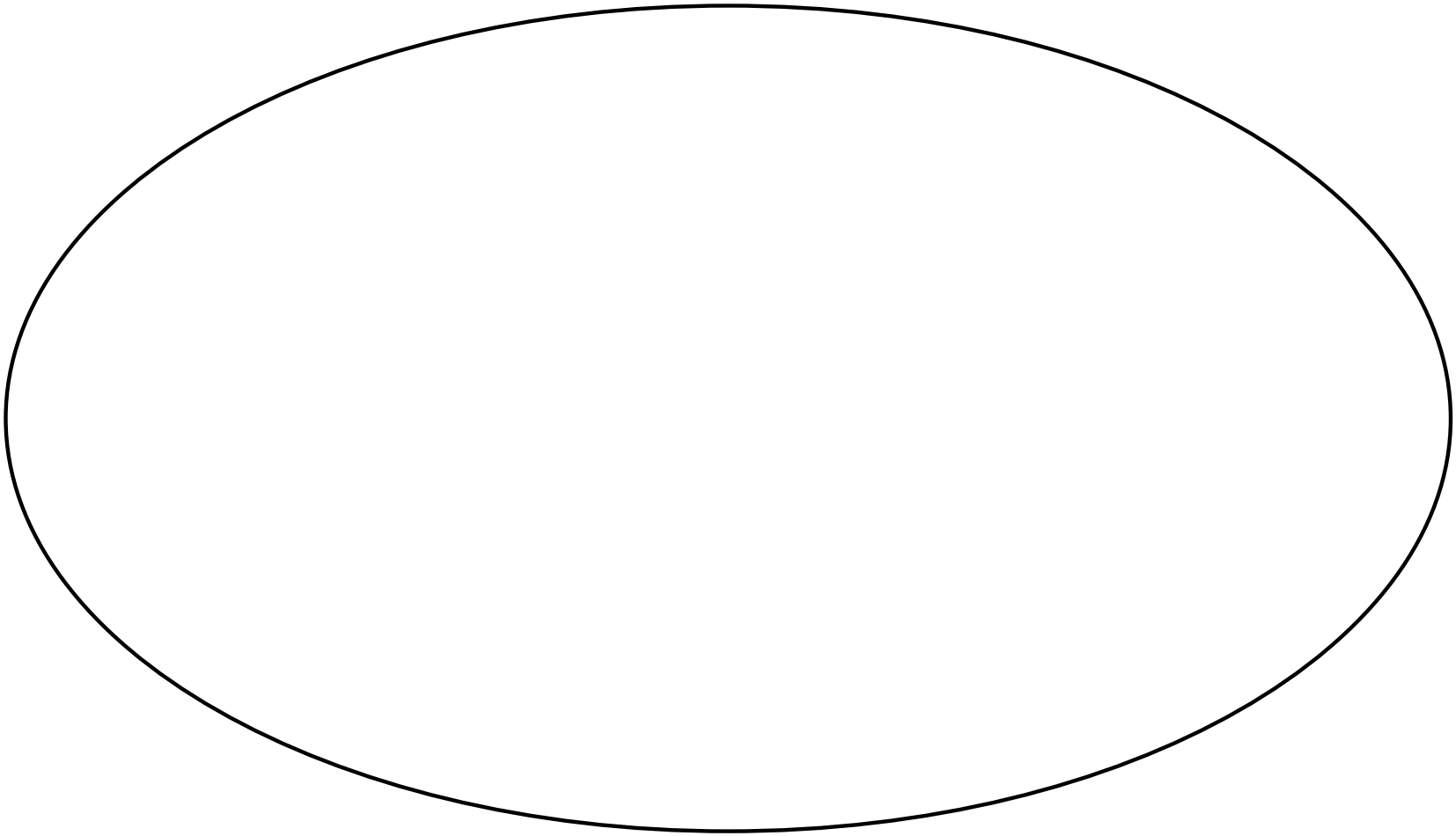
Message from Thich Nhat Hanh

To bring about real change, our efforts must be collective and harmonious, based on love and respect for ourselves and each other, our ancestors and future generations. If anger at injustice is what we use as the source of our energy, we may do something harmful, something we will later regret. According to Buddhism, compassion is the only source of energy that is useful and safe. That is why love must always go together with understanding. Understanding and insight show us how to act.

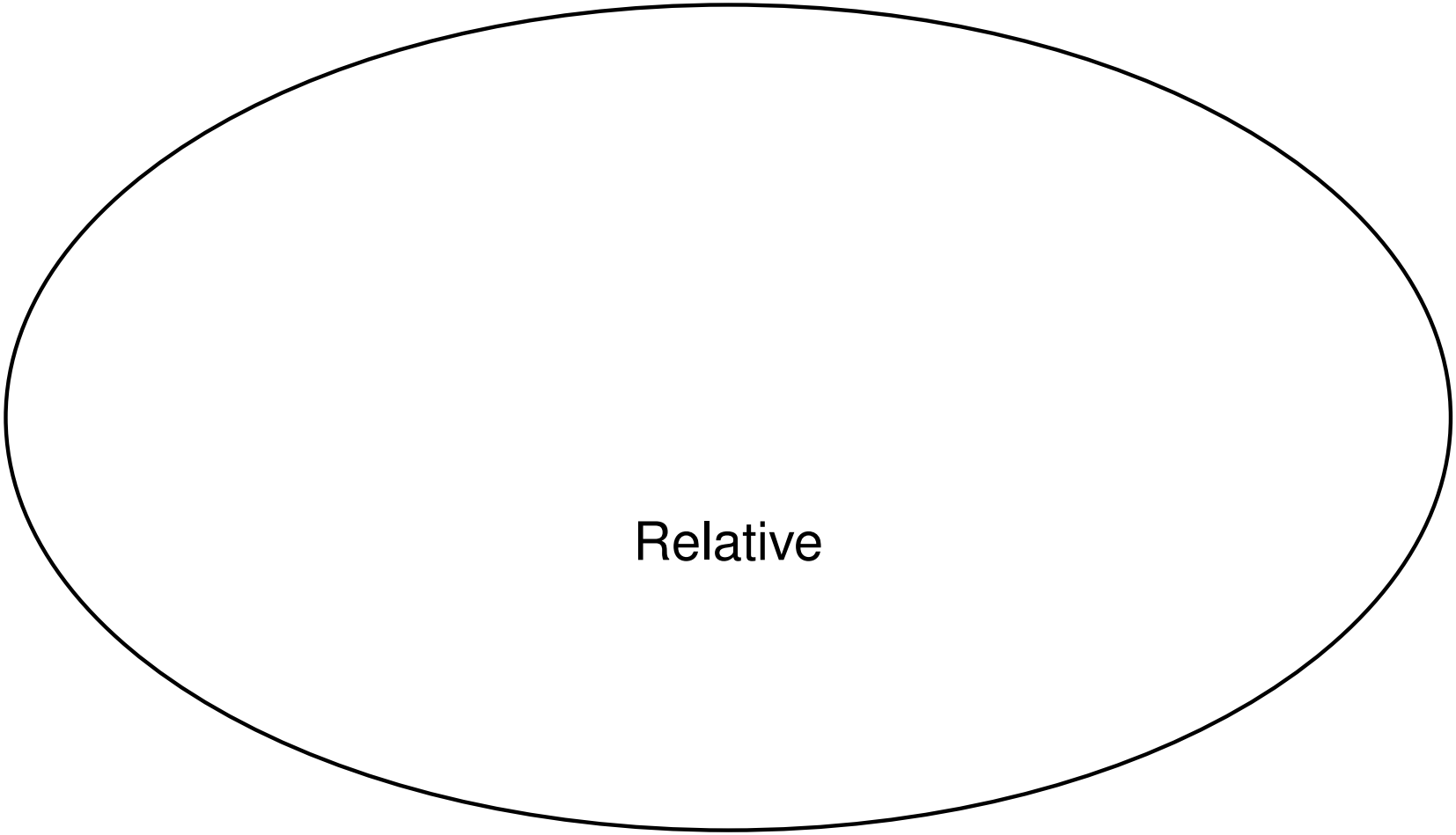
Thich Nhat Hanh on Facebook, 13 Nov 2016

What Happens When You Meditate?

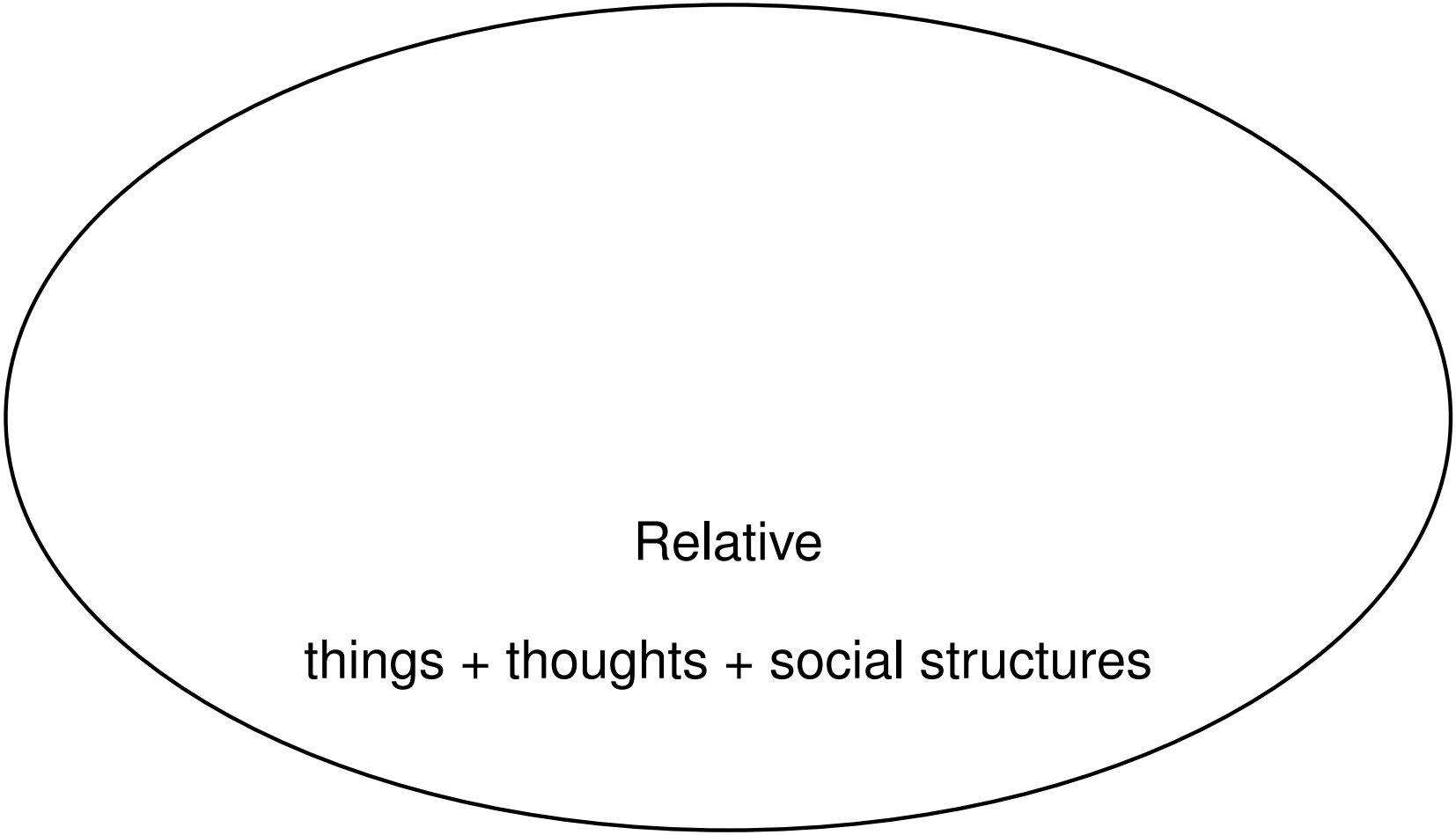
What Happens When You Meditate?



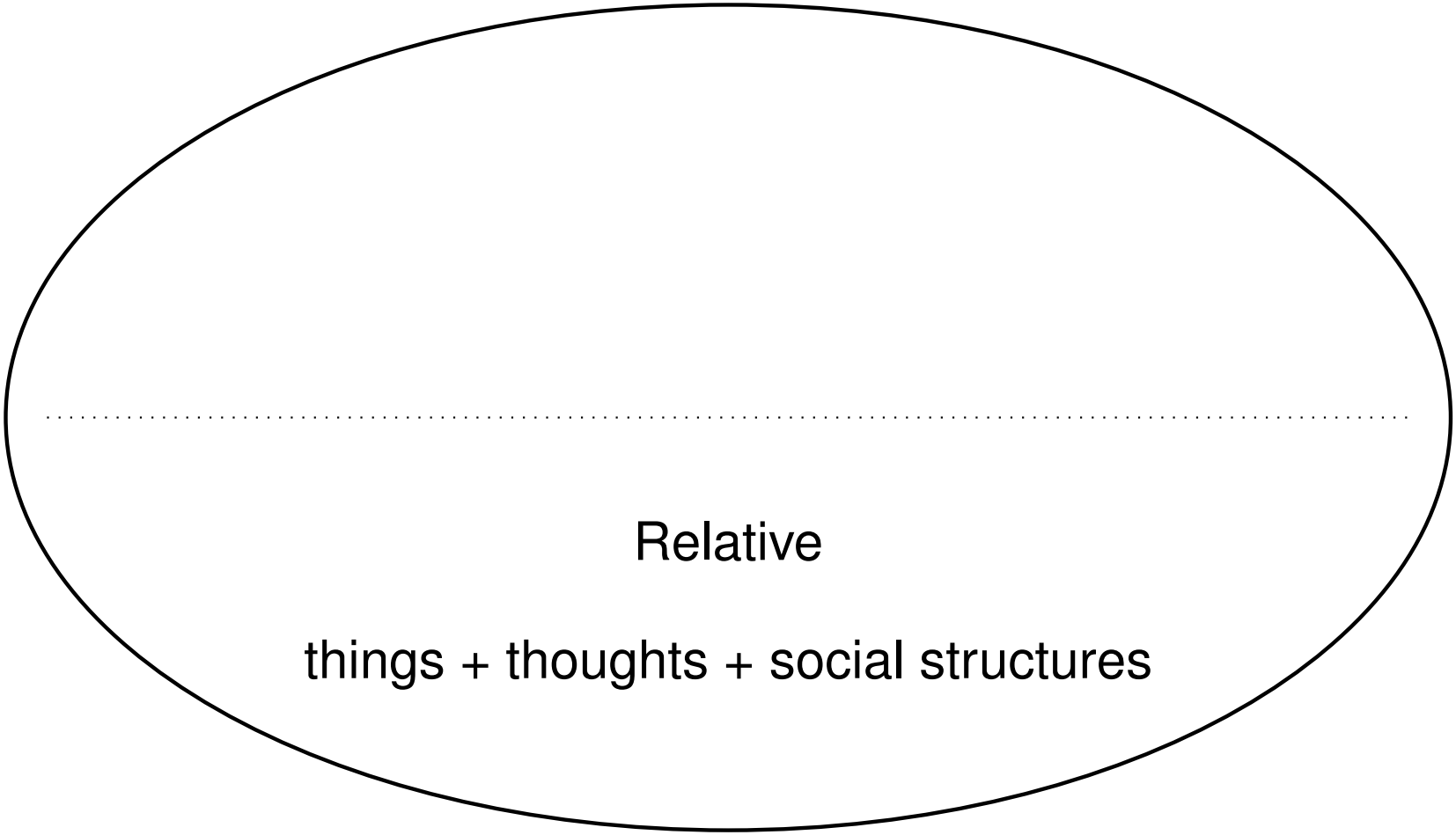
What Happens When You Meditate?



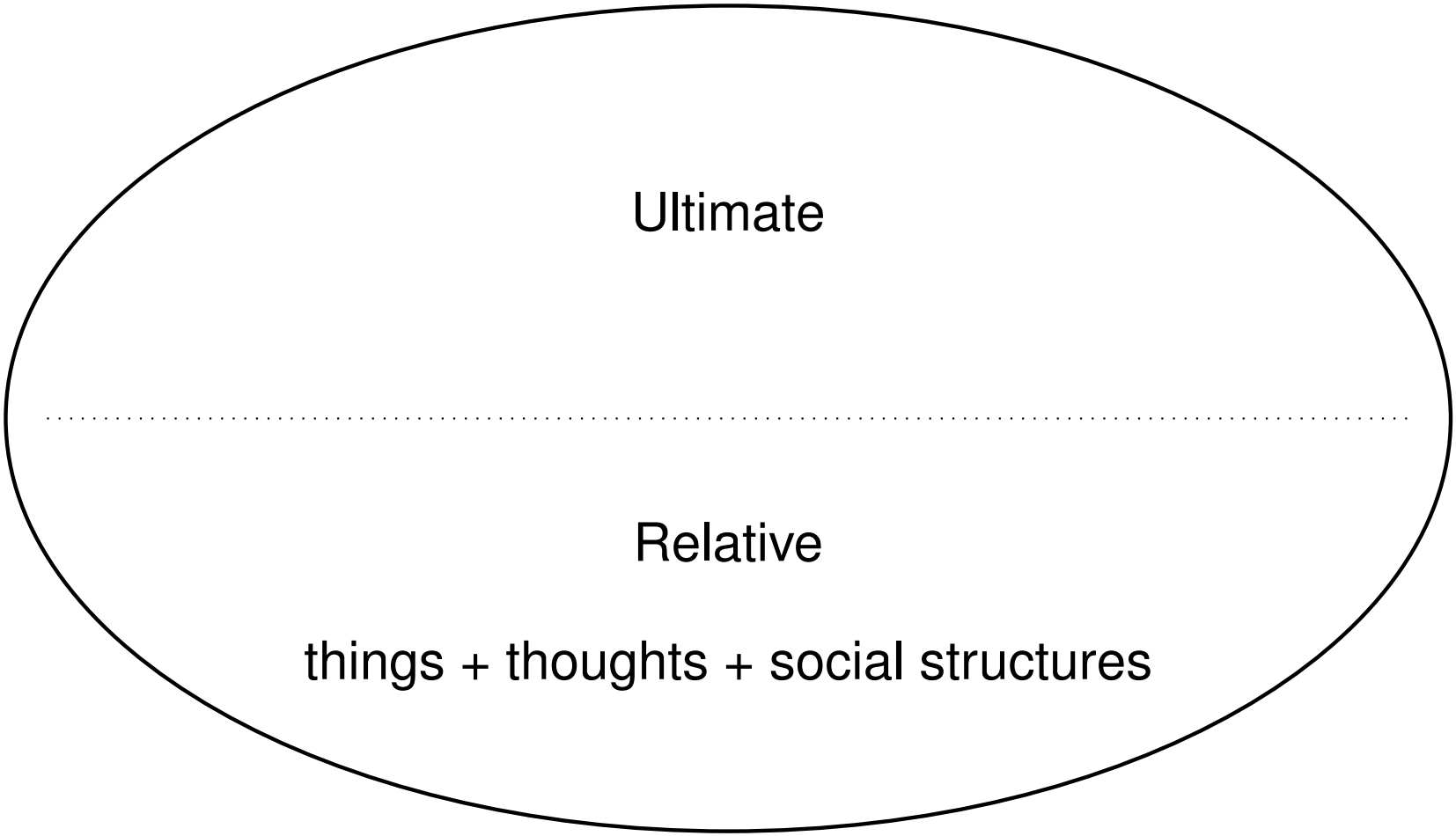
What Happens When You Meditate?



What Happens When You Meditate?



What Happens When You Meditate?



Money

What is Money?

- Dialogue in the *Rohit Parikh on Logic, Language and Society* [EE16] (together with Philip Elsas)
- Money is . . .

What is Money?

- Dialogue in the *Rohit Parikh on Logic, Language and Society* [EE16] (together with Philip Elsas)
- Money is . . . paper stating promises
- Making money with money is . . .

What is Money?

- Dialogue in the *Rohit Parikh on Logic, Language and Society* [EE16] (together with Philip Elsas)
- Money is . . . paper stating promises
- Making money with money is . . . creating more paper, making more promises
- Connection to the real world . . .

What is Money?

- Dialogue in the *Rohit Parikh on Logic, Language and Society* [EE16] (together with Philip Elsas)
- Money is . . . paper stating promises
- Making money with money is . . . creating more paper, making more promises
- Connection to the real world . . . exists as long as people trust the promises
- The real commodities are: Energy, Food, Shelter, Water.
- Money system collapses have occurred on numerous occasions in the past
- . . . , Weimar Germany, Great Depression 1930s, Collapse of Soviet Union, ruble collapse (1994-1998), Argentine crisis (1999-2002), Greek debt crisis, . . .

148 E 048486
Reichsbanknote
Eintausend
Mark
zahlt die Reichsbankhauptkasse in Berlin
gegen diese Banknote dem Einlieferer
Berlin, den 15. Dezember 1922
Reichsbankdirektorium
1000
Eine Million Mark

Some Essential Distinctions (E.F. Schumacher)

- Primary Goods

Some Essential Distinctions (E.F. Schumacher)

- Primary Goods : Goods Produced/Given by Nature
  - Renewable
  - Non-Renewable
- Secondary Goods

Some Essential Distinctions (E.F. Schumacher)

- Primary Goods : Goods Produced/Given by Nature
  - Renewable
  - Non-Renewable
- Secondary Goods : Goods Produced by Human Labour
  - Manufactures: the ‘real world’ of economics
  - Services: the ‘virtual world’ of economics, the world of money.
- Physics, Chemistry, Geology, Biology, Ecology are about primary goods
- Economics is about the efficient production of manufactures
- Monetary theories are about the fit between the real and the virtual. Theories of social software would belong here too.

Coll. IISG

AN

INQUIRY

INTO THE

NATURE AND CAUSES

OF THE

WEALTH OF NATIONS.

By ADAM SMITH, LL. D. AND F. R. S.

Formerly Professor of Moral Philosophy in the University of Glasgow.

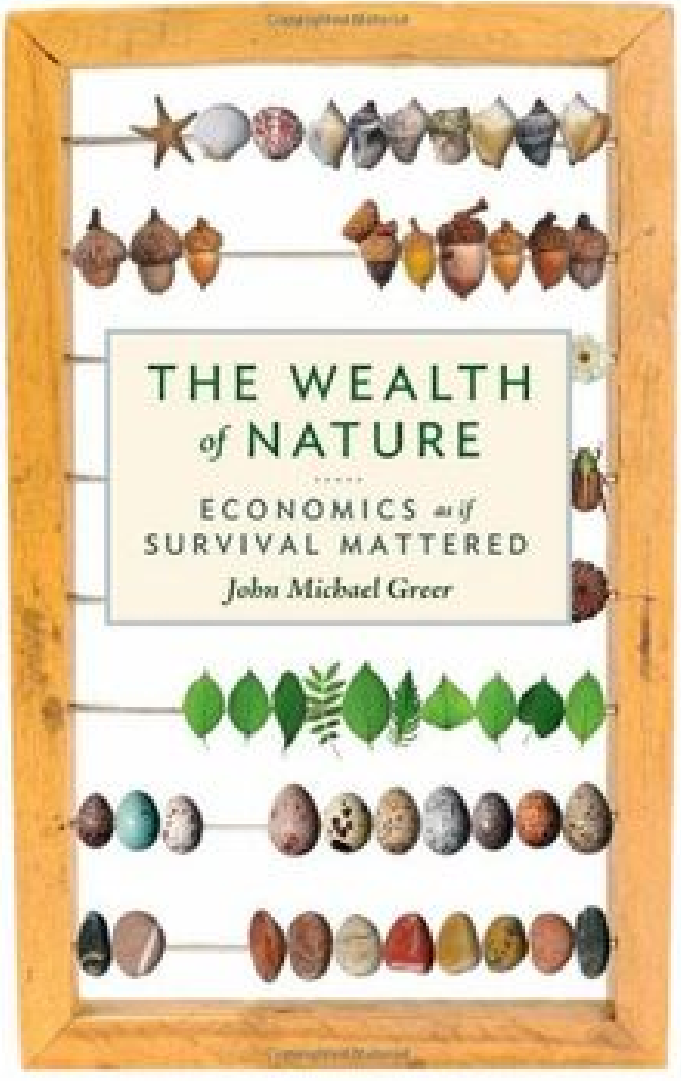
IN THREE VOLUMES.

VOL. I.

DUBLIN:

Printed for Messrs. WHITESTONE, CHAMBERLAINE, W. WATSON, POTTS, S. WATSON, HOEY, WILLIAMS, W. COLLES, WILSON, ARMITAGE, WALKER, MONCRIEFFE, JENKIN, GILBERT, CROSS, MILLS, HALLHEAD, FAULKNER, HILLARY, and J. COLLES.

MDCCLXXVI.



The Wealth of Nature

- John Michael Greer
  `http://thearchdruidreport.blogspot.com/`
- Inspiration: E.F. Schumacher
- “The point that has to be grasped, in this as in so many other contexts, is that the three economies, and the three kinds of wealth they produce, are not interchangeable.

The Wealth of Nature

- John Michael Greer
  `http://thearchdruidreport.blogspot.com/`
- Inspiration: E.F. Schumacher
- “The point that has to be grasped, in this as in so many other contexts, is that the three economies, and the three kinds of wealth they produce, are not interchangeable. Trillions of dollars in credit swaps and derivatives will not keep people from starving in the streets if there’s no food being grown and no housing being built, or maintained or offered for sale or rent.

The Wealth of Nature

- John Michael Greer
  `http://thearchdruidreport.blogspot.com/`
- Inspiration: E.F. Schumacher
- “The point that has to be grasped, in this as in so many other contexts, is that the three economies, and the three kinds of wealth they produce, are not interchangeable. Trillions of dollars in credit swaps and derivatives will not keep people from starving in the streets if there’s no food being grown and no housing being built, or maintained or offered for sale or rent. The primary economy is fundamental to survival; the secondary economy is the source of all real wealth that doesn’t come directly from Nature; the tertiary economy is simply a way of measuring wealth and managing its distribution; and treating these three very different things as though they are one and the same makes rank economic folly almost impossible to avoid.” [Gre11, p 68]

Most Money is Ghost Money

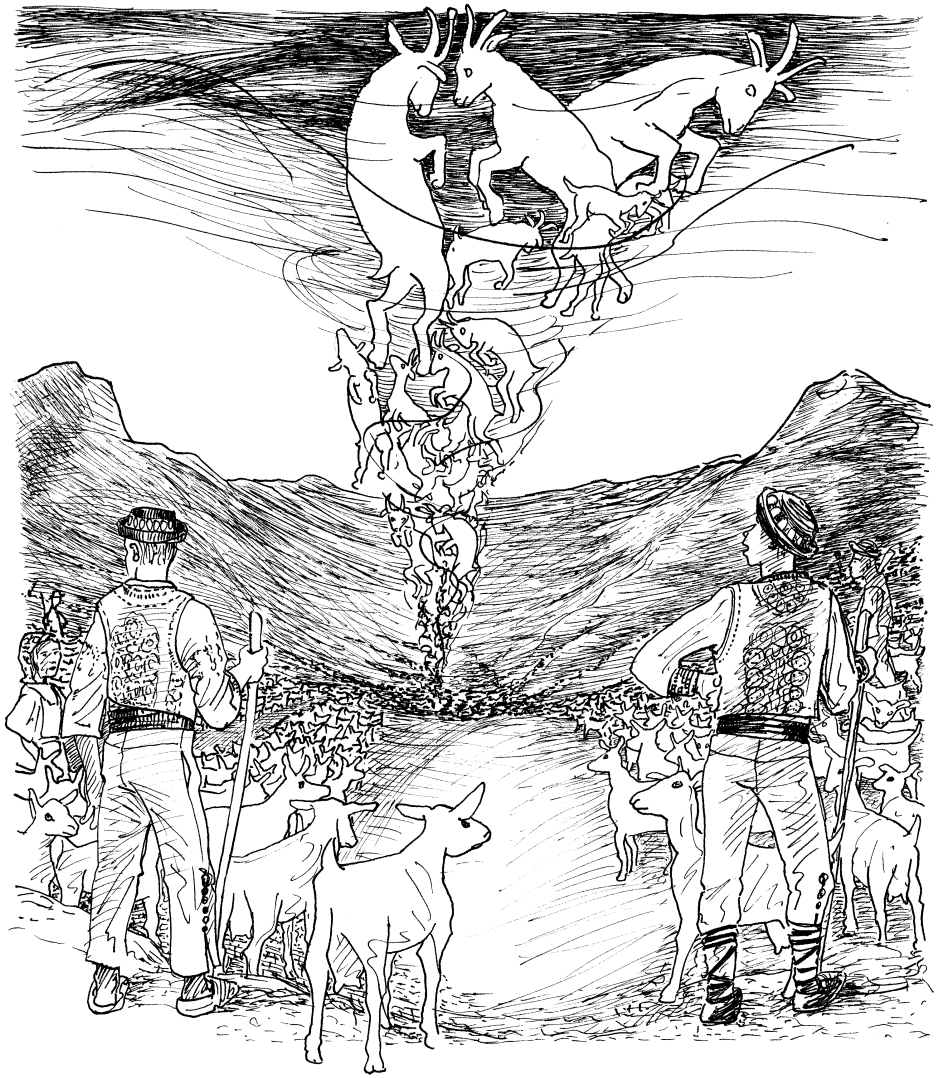
- Wealth is the sum total of what nature gives and humans produce for society
- Money is the ‘modern’ way to measure wealth
- Theoretical value of paper wealth $>>>$ current value of real wealth
- Should we believe in limits?
- Should we believe abundance of cheap energy was temporary?
- Should we believe the creation of more and more ghost money is a Ponzi scheme?

Native American Perspective on Land and Ownership

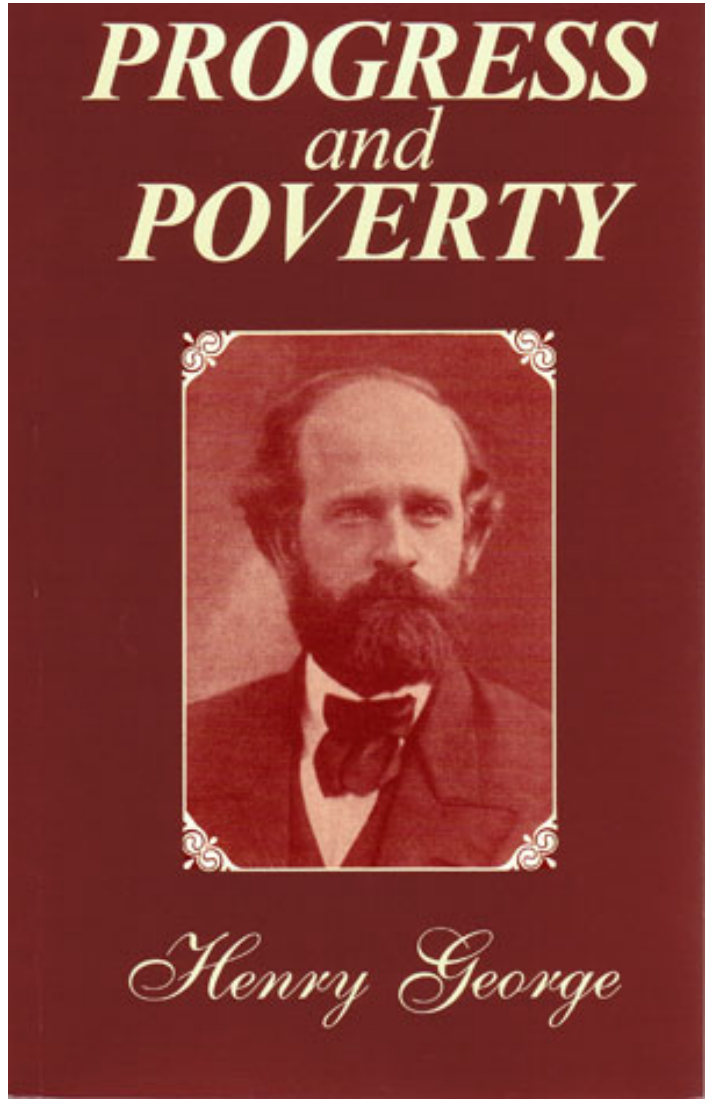
"How can you buy or sell the sky, the warmth of the land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them? Every part of the earth is sacred to my people."

– attributed to Chief Seattle, 1854

The Tragedy of the Commons [Har68]



drawing by Marco Swaen



https://mises.org/sites/default/files/ProgressandPoverty_3.pdf

Henry George

- American political economist, 1839–1897
- economic value derived from land and natural resources should belong equally to all members of society
- people should own the value they produce themselves
- *Progress and Poverty* (1879) sold millions of copies worldwide
- Land value tax, or: natural resources value tax
- Google for *Georgism*, *Henry George Theorem*, *single tax movement*.
- Read his book!

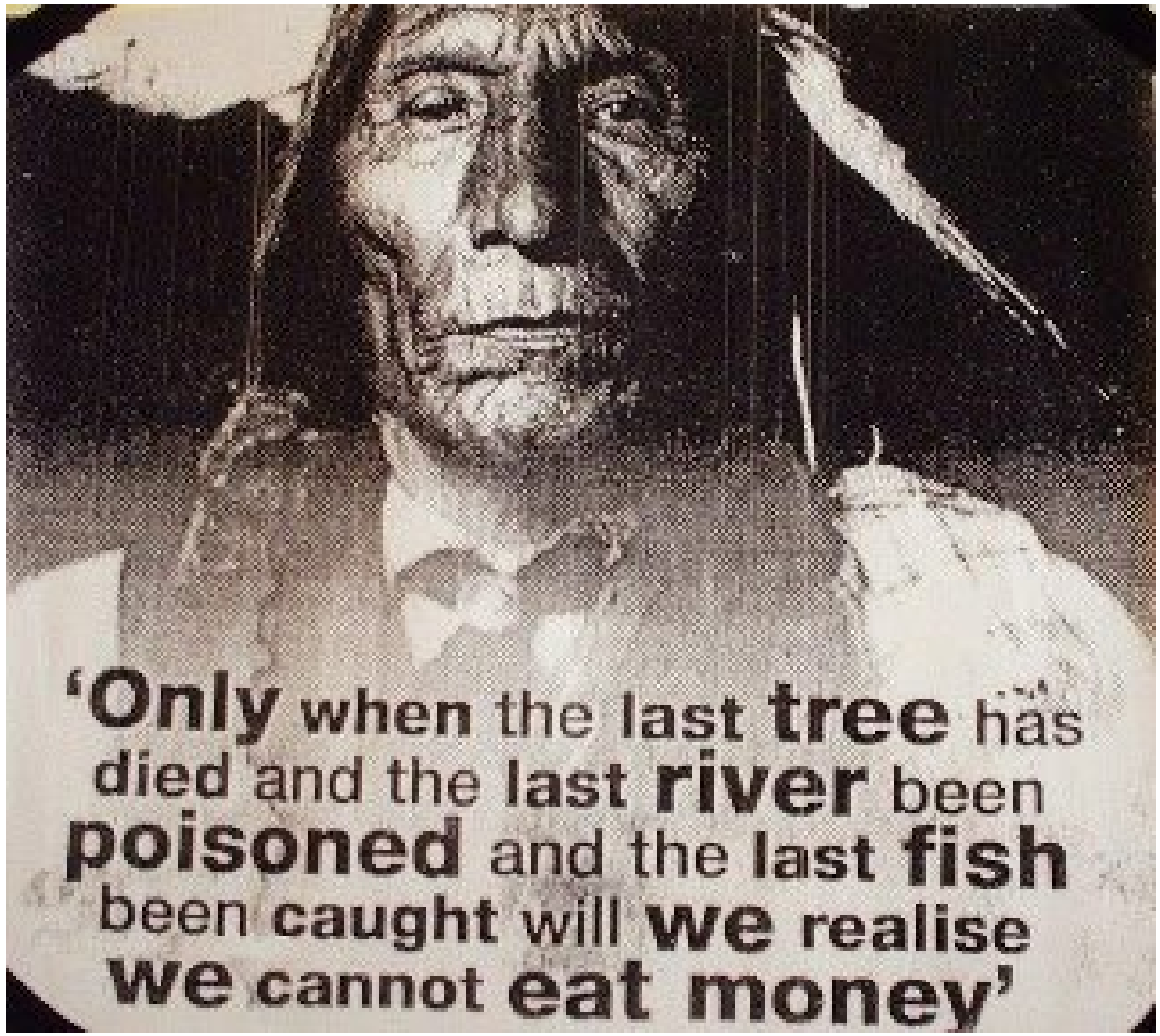
Some Serious Questions

- Do I *want to know* the truth about what's going on in my society?
- Is it *possible* for me to know the truth about what's going on in my society?
- Do I *find it conceivable* that my government lies to me (about important issues in foreign policy, e.g.) ?
- Where should I hang out to *find the truth*, and to separate truth from falsehood?
- How do I *protect myself* when confronted with unpleasant truths (truths that I do not like) ?
- If I find out important, worrying things about my society, *how should I act on it* ?

Hang Out With These Folks

- Dakota Access Pipeline Protests
  `https://www.theguardian.com/us-news/dakota-access-pipeline`
  "Horrific scenes have been coming out of North Dakota these last several days . . . "
- `https://secure.foodandwaterwatch.org/`
- From the Petition: "The Dakota Access pipeline would increase our fossil fuel consumption and threaten our air, water, land, property rights and climate. It is proposed to go through tribal lands that belong to the Standing Rock Sioux Nation as stated in a treaty with the United States. The U.S. has no right to hand over this land to a private oil company for private profit."
- Earthworks `https://www.earthworksaction.org/`
- Sacred Stone Camp `http://sacredstonecamp.org/`
- `http://standwithstandingrock.net/`
- Dave Archambault II: "Justice Looks Different in Indian Country"

The Cree Prophecy



A FULL HOUSE OF
WATER PROTECTORS

PROTEST TEGEN OLIEPIJPLEIDING

Sioux wijken niet voor winter

De Sioux die in North Dakota protesteren tegen een oliepijpleiding staan tegenover formidabele tegenstanders - zoals olie-investeerder Trump.

Door onze redacteur
Maartje Somers

LICHTERVELDE. „Ze denken dat de winter ons weg zal jagen", zegt Lakota-Sioux medicijnvrouw Marilyn Black Elk (63) verontwaardigd. „Maar wij wónen daar. Het is niet alsof wij de winters van Dakota niet kennen."

Black Elk is op maandagmiddag in het Vlaamse dorpje Lichtervelde, waar ze workshops geeft over rituelen. Maar haar gedachten zijn steeds in North Dakota, waar Sioux zich al maanden verzetten tegen de aanleg van de Dakota Access Pipeline, een bijna 1.900 kilometer lange pijpleiding die olie uit de schalievelden van North Dakota door vier staten naar Illinois moet vervoeren. De autoriteiten willen dat de demonstranten hun grootste protestkamp, Oceti Sakowin, maandag ontruimen.

Al sinds april bivakkeren duizenden leden van inheemse groepen uit de gehele VS, gesteund door milieu- en andere activisten, bij het Oahe-reservoir in North Dakota. Hier moet de pijpleiding onder de rivier de Missouri door. De Sioux van het Standing Rock-reservaat, waar ongeveer 8.000 mensen wonen, claimen dat de leiding door gebied loopt waar hun voorvaderen begraven liggen. Ook vrezen ze vervuiling van hun grond- en drinkwater. De kans daarop is niet denkbeeldig; sinds 2010 zijn meer dan 3.000 lekkages uit oliepijpleidingen gemeld.

Het Army Corps of Engineers, de federale instantie die de pijpleiding aanvankelijk goedkeurde, onderzoekt momenteel of de rechten van de Sioux bij het verstrekken van de vergunning inderdaad zijn geschonden. Energy Transfer Partners (ETP), het bedrijf dat de leiding bouwt, stapte naar de rechter. Die doet waarschijnlijk pas in januari uitspraak. Ondertussen bouwt het bedrijf verder. Volgens ETP schampt de leiding, die 3,7 miljard dollar kost, het Sioux-reservaat alleen. Bestuursvoorzitter Kelcy Warren zegt dat de Sioux vooraf voldoende zijn geconsulteerd, zoals de wet vereist.

„De pijpleiding is volkomen illegaal", betoogt daarentegen Marilyn Black Elk. „Alleen in 2014 was er een ontmoeting tussen ETP en de Sioux, zonder dat duidelijk was waar de leiding precies zou komen. De Native American Graves Repatriation Act bepaalt daarnaast dat land beschermd is als er graven van onze voorvaders liggen. We hebben graven gevonden direct in de route. In september gingen de bulldozers er dwars doorheen."

Gewijzigde route

Volgens ETP is het niet mogelijk de route van de pijpleiding te verleggen. Die langs het reservaat is al de tweede optie; eerst zou de leiding ten noorden van Bismarck lopen, de nabijgelegen hoofdstad van North Dakota. Volgens Black Elk is ETP van dat plan afgestapt „omdat het niet veilig zou zijn voor de watervoorziening in Bismarck. Maar 90 procent van de bevolking daar is blank. Logisch dat hun drinkwater niet in gevaar komt."

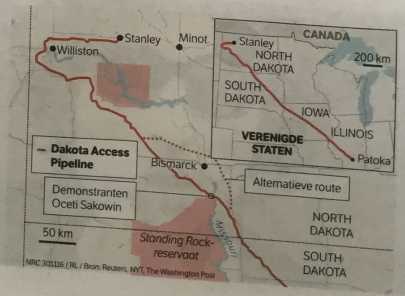
FOTO STEPHANIE KEITH/REUTERS

Vrouwen demonstreren tegen de aanleg van de Dakota Access Pipeline nabij Cannon Ball, North Dakota, op zondag

Bankwijzer
Rol Nederlandse banken gelaakt

De Eerlijke Bankwijzer, een groep die banken aanspreekt op verantwoord ondernemerschap, wil dat de Nederlandse banken ING en ABN Amro zich terugtrekken uit de Dakota Access Pipeline. ING zegt dat het 'bezorgd' is, maar dat afblazen van een lening van 248 miljoen dollar niet kan. ABN Amro zegt niet betrokken te zijn; het leende 45 miljoen aan het moederbedrijf van bouwer van de leiding ETP.

Omstreden pijpleiding doorkruist vier staten



Medicijnvrouw
Marilyn Black Elk

Black Elk komt uit een bekende familie van Lakota-Sioux. Haar grootvader Wallace Black Elk geldt als een icoon van Sioux-cultuur.

De strijd over een piepkl
ment van de vrijwel complet
is inmiddels geen lokale kwes
'Standing Rock' is op weg een
tionale *cause célèbre* te worde
wood-acteurs verklaarden hu
riteit, medestanders checker
ding Rock in op Facebook en
milieugroepen organiseren
steunprotesten bij Amerikaa
bassades. „Wij Sioux krijgen
hoop aanloop", zegt Black Elk
seerd. „In het kamp moeten v
uitleggen dat dit geen festival
bittere ernst. Dit gaat over mili
ten, én over de rechten van in
volkeren. Dit is een confronta
sen machtige spelers van het la
Oil en Big Finance, en een gro
wie de rechten nooit geteld het

Een internationaal consorti
17 banken, waaronder Citigr
Wells Fargo en ING, staken ge
Dakota Acess Pipeline. ING ver
een lening van 248 miljoen dol
bank heeft „zijn bezorgdheid
over het project, aldus een verk
op de website. Terugtrekking is
mogelijk, aldus de bank. De No
bank DNB, eveneens een investeer
zei onlangs dit wel te overwegen a
geen bevredigende oplossing komt

Gewelddadige confrontaties

Maar misschien wel de machtigste s
keholder is aanstaand president D
nald Trump. Hij investeerde tussen
half miljoen en een miljoen dollar
ETP. ETP-baas Kelcy Warren gaf rui
een ton aan Trumps campagn
Trump wil de winning van fossie
brandstoffen ruim baan geven.

In oktober richtten de Sioux Oc
Sakowin in, op een stuk land iets b
ten het reservaat. Ze claimen dat
land sinds 1851 aan hen toebehoort,
later aan hen is onttrokken.

Hier kwam het afgelopen wek
verschillende keren tot gewelddadi
confrontaties. De oproerpolitie ze
traangas, rubberkogels en honden
tegen betogers, en gebruikte waterk
nonnen bij temperaturen onder n
Sommige demonstranten belandd
met onderkoeling en hondenbeten
het ziekenhuis. Sinds augustus z
meer dan 525 mensen gearreste
De Verenigde Naties hebben het „
cessieve geweld" veroordeeld.

Marilyn Black Elk had haar hoop
vestigd op President Obama.
haalde ook een streep door een and
omstreden leiding, Keystone
Obama zei dat het mogelijk moest
een route te bedenken die de rech
van inheemse volkeren respecte
Maar hij beval niet de bouw tijdelij
stoppen, en onlangs zei hij dat hij d
tuatie nog enige weken wil aankijk

Black Elk smaalt: „Als Obama een
oux-naam zou krijgen, zou ik die
weten: *Cheap Talk* Obama." Ieder
wacht nu tot Donald Trump in
Witte Huis zit, zegt ze. „ETP denkt
januari verder te kunnen."

Maar de Sioux zullen niet wijk
zegt ze. „Al vijfhonderd jaar probe
ze ons van ons land te jagen. Het i
nooit gelukt. En het gaat ze ook dit k
niet lukken."

Bibliography

Hannah Arendt.

Truth and politics.
In *Between Past and Future — Six Exercises in Political Thought*. Viking Press, 1967 (Penguin Classics Edition, 2006).

Jan van Eijck and Philip Elsas.

What is money?
In C. Başkent et al., editor, *Rohit Parikh on Logic, Language and Society*, number 11 in Outstanding Contributions to Logic. Springer, 2016.

Jan van Eijck and Kai Li.

Conditional belief, knowledge and probability.
manuscript, CWI, 2016.

Jan van Eijck and Bryan Renne.

Update, probability, knowledge and belief.
In Lev Belkemishev, Stéphane Demri, and András Máté, editors, *Advances in Modal Logic, Volume 11*, pages 551–570. College Publications, 2016.

Jan van Eijck and François Schwarzentruber.

Epistemic probability logic simplified.
In Rajeev Goré, Barteld Kooi, and Agi Kurucz, editors, *Advances in Modal Logic, Volume 10*, pages 158–177, 2014.

J. van Eijck and R. Verbrugge, editors.

Discourses on Social Software, volume 5 of *Texts in Logic and Games*.
Amsterdam University Press, Amsterdam, 2009.

Richard P. Feynman.

The Pleasure of Finding Things Out.
Perseus Books, 1999.
First Penguin Edition: 2000.

John Michael Greer.

The Wealth of Nature.

New Society Publishers, 2011.

Garrett Hardin.

The tragedy of the commons.
Science, 162:1243–48, 1968.

David J.C. MacKay.

Information Theory, Inference, and Learning Algorithms.
Cambridge University Press, 2003.
Available from `http://www.inference.phy.cam.ac.uk/mackay/itila/`.

Rohit Parikh.

Social software.
Synthese, 132:187–211, 2002.

Martin Scheffer.

Critical Transitions in Nature and Society.
Princeton Studies in Complexity. Princeton University Press, 2009.

Will Storr.

The Unpersuadables: Adventures with the Enemies of Science.
Overlook, 2014.