

Pushing a New Paradigm Creative Transitions to Sustainable Futures

across all the well-beings



CWEA joined up to the World
14th, 17th, 21st May, 2018

Join the conversation: <https://cwea.arlo.co/courses/288-sustainabilitycreative-transitions-to-sustainable-futures-we-need-to-change-things-but-how-come-and-help-work-on-new-ideas-and-models-for-a-sustainable-future>

Coordinated by Colin Meurk – colinmeurk02@gmail.com

Night 3 (21st) - Programme

- Blessing, Pizza and beverage **1800-1830** (name tags); Karakia (Teoti);
- Colin welcome & intro re where we are at with structure of course and where we want to be (**1825-1835** – overlap with pizza)
- Introduction to topic of the night, including questions (the **Econo-sphere**) (John Peet) **1835-1910**
- Facilitated questions & discussion & visioning around economic/business/industry goals (Nick to facilitate) **1910-1940** (Anja scribe for whiteboard; post-it sheets on walls as alternative) e.g. equity
- Group discussions – around incremental steps from BAU to the goal state (for some specific goals) **1940-2010** e.g. max ratio of 1:10 between lowest/highest income; downside – outrage from rich list; gap – genuine wealth indicators? Alternatives to money/power?
- **Purpose** (define economic/business constraints & opportunities) & **key questions** – what would a steady state economy look like? How to achieve equity (nationally, gender, expertise-wise (6BL), ethnically, internationally); what is the new business model – how to make entrepreneurs happy? Which businesses will go and which will start up? Retraining, Bots, AI???
- Wrap up/last words **2010-2030** (Nick & Colin)
 - Where to from here? Further discussions, a manifesto, research, informing hypotheses to test; do participants feel more depressed or more empowered? Feedback forms? Final chocolate!
- Thx to presenters/catalysts and participants, and to WEA (Wendy), and to
- Teoti – closing karakia

3 Economics – conventional BAU accounting to Steady State

Intro by Colin – Presentations by John Peet & Edward Mitchell

- Piketty – unravels the american dream!
- Laurence Kotlicoff - fiscal gaps in western economies & problem of fixation on growth & consumption
- Graph happiness vs material income
- Genuine Progress Indicators
- Margrit Kennedy – alternative monetary systems
- <https://charleseisenstein.net/about/>
- Natural capital - monetising ecosystem services (sceptical?) (the 4 capitals – Treasury is even talking about this now!)
- Accepting limits to growth & steady state goal
- We continually see success measures in terms of rising property values & growth in everything & yet public services (mental & physical health, education, etc) continue to decline or are under great pressure.
- Ocean rise will nibble away at real estate – compensation will be crippling?
- We invent, we sell & others capture the sustainable income!
- Intergenerational equity

Intro: We have tried to balance present reality with life-affirming future



Gloom, problems, barriers, simplistic approaches, gut feeling

Hope, tackling obstacles, solutions, holistic, intellect, long termism

Our World without Economic Growth

SCIENCE & TECHNOLOGY : Energy, Economics, Business

2010•04•14 Christopher Doll United Nations University

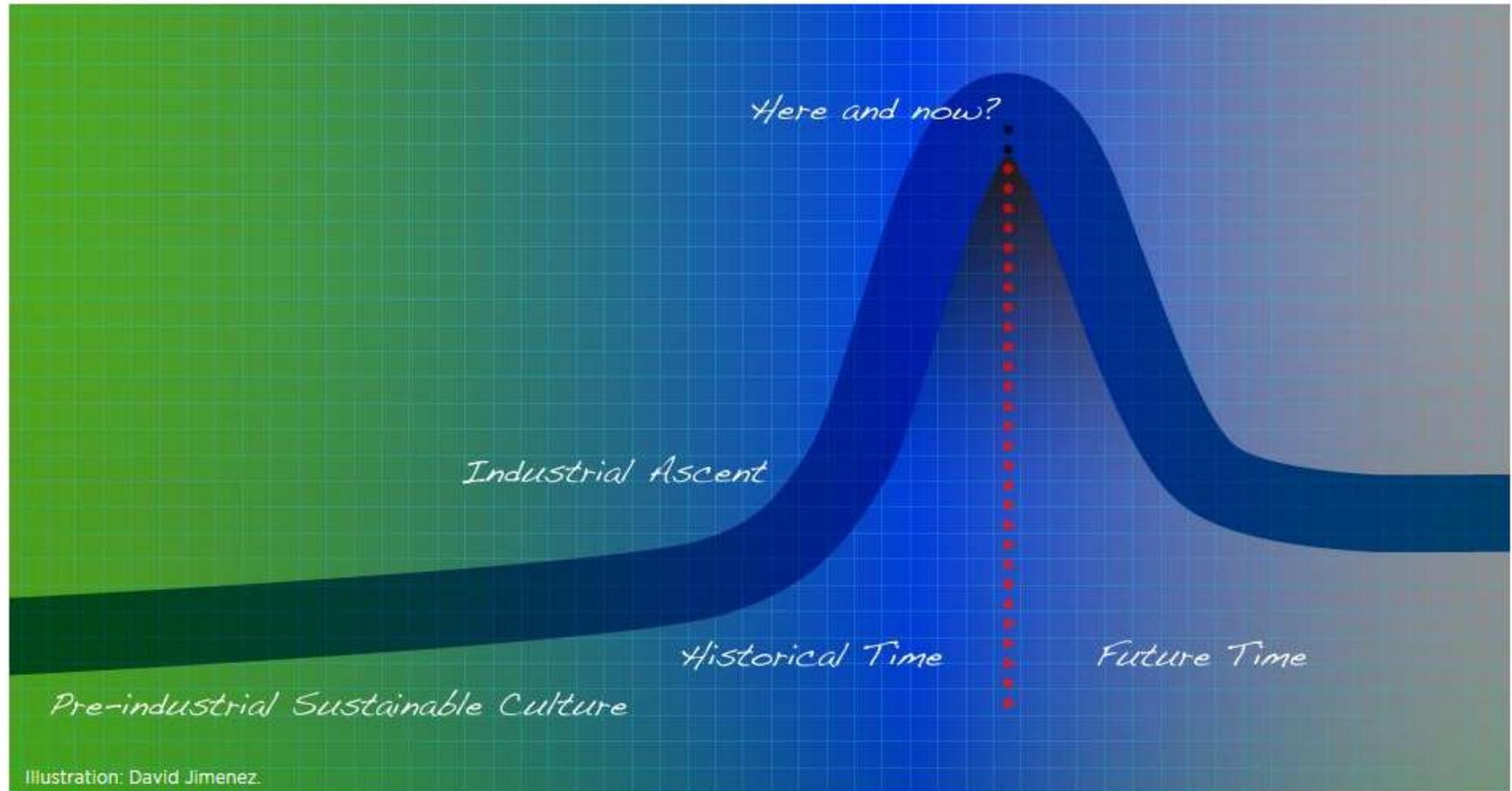
8 Comments

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**Peak oil, peak cow, peak potable water,
peak arable land, peak money
peak happiness !!??**



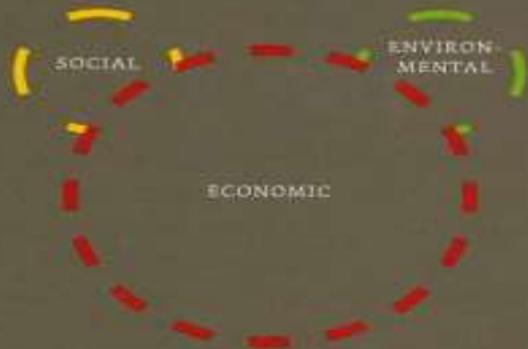
Last March, Tim Jackson put forward the idea of prosperity without growth in a report published by the United Kingdom's [Sustainable Development Commission](#) and followed up with a book of the same name released last November. The book is a best seller (ranked 1,729 on Amazon) and in it he argues convincingly that we can still prosper without adhering to the encoded mantra of expansion and growth that permeates modern market economies.

FIGURE 1 ALTERNATIVE MODELS OF THE CONCEPT OF SUSTAINABILITY

TRIPLE BOTTOM LINE MODEL



MICKEY MOUSE VERSION OF THE TRIPLE BOTTOM LINE MODEL



STRONG SUSTAINABILITY MODEL

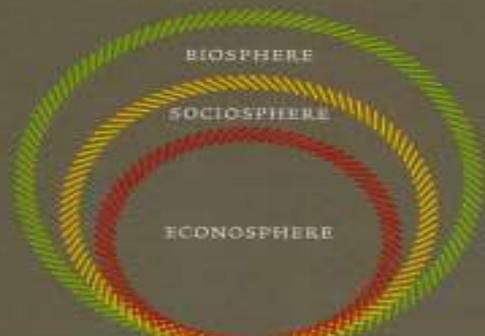
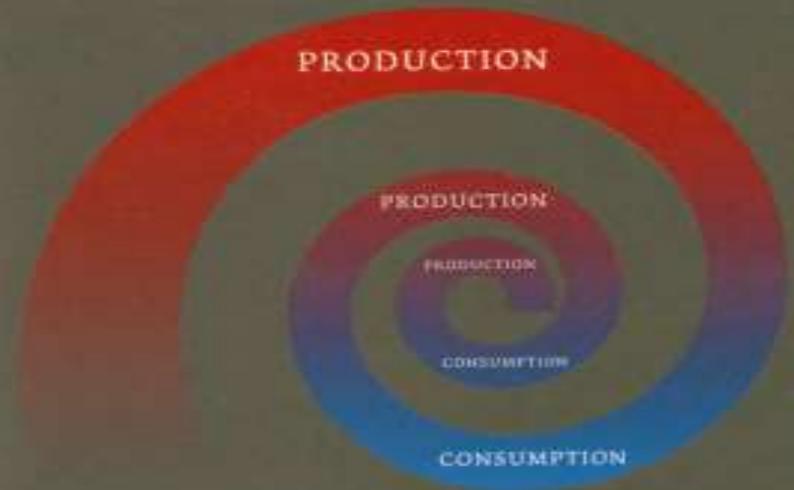
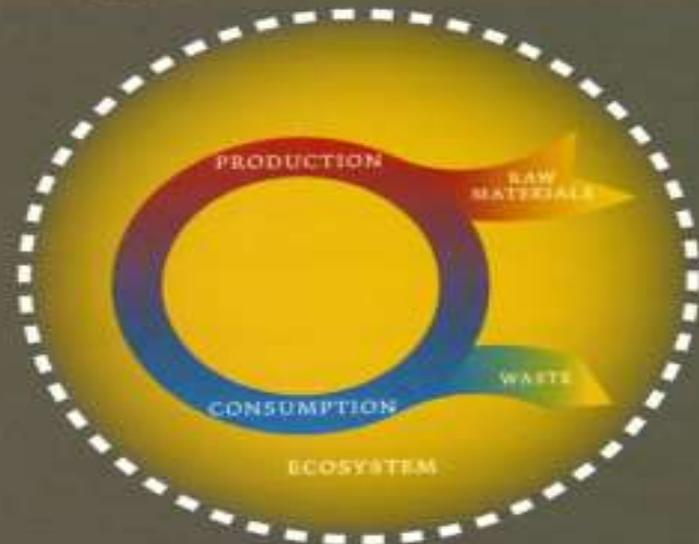


FIGURE 2 COMPARISON OF STANDARD (GROWTH) AND STEADY STATE ECONOMIES (HERMAN DALY)

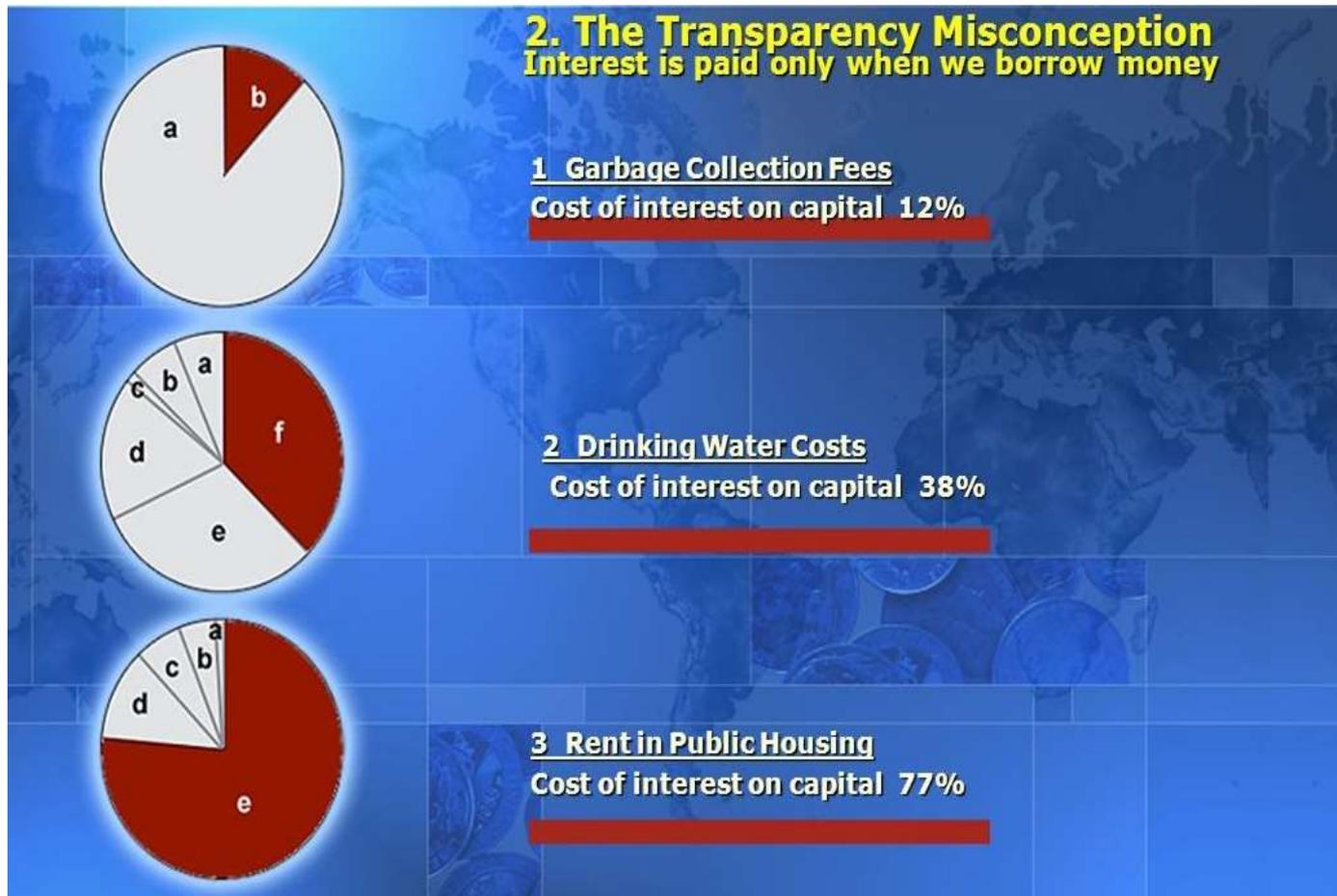
STANDARD (GROWTH) ECONOMY DIAGRAM



STEADY STATE ECONOMY DIAGRAM



Up to 70% of most people's income is spent on **hidden interest**. People borrow money to run their businesses. The interest charges are passed on to you. Without realizing you are supporting a parasitic class.



HOW MUCH DOES YOUR SALARY REALLY AFFECT YOUR HAPPINESS?

The relationship between money and happiness isn't as straightforward as you might think.

Using data from the Cabinet Office's Wellbeing and Policy Report we've plotted the salary and happiness of more than 260 occupations.

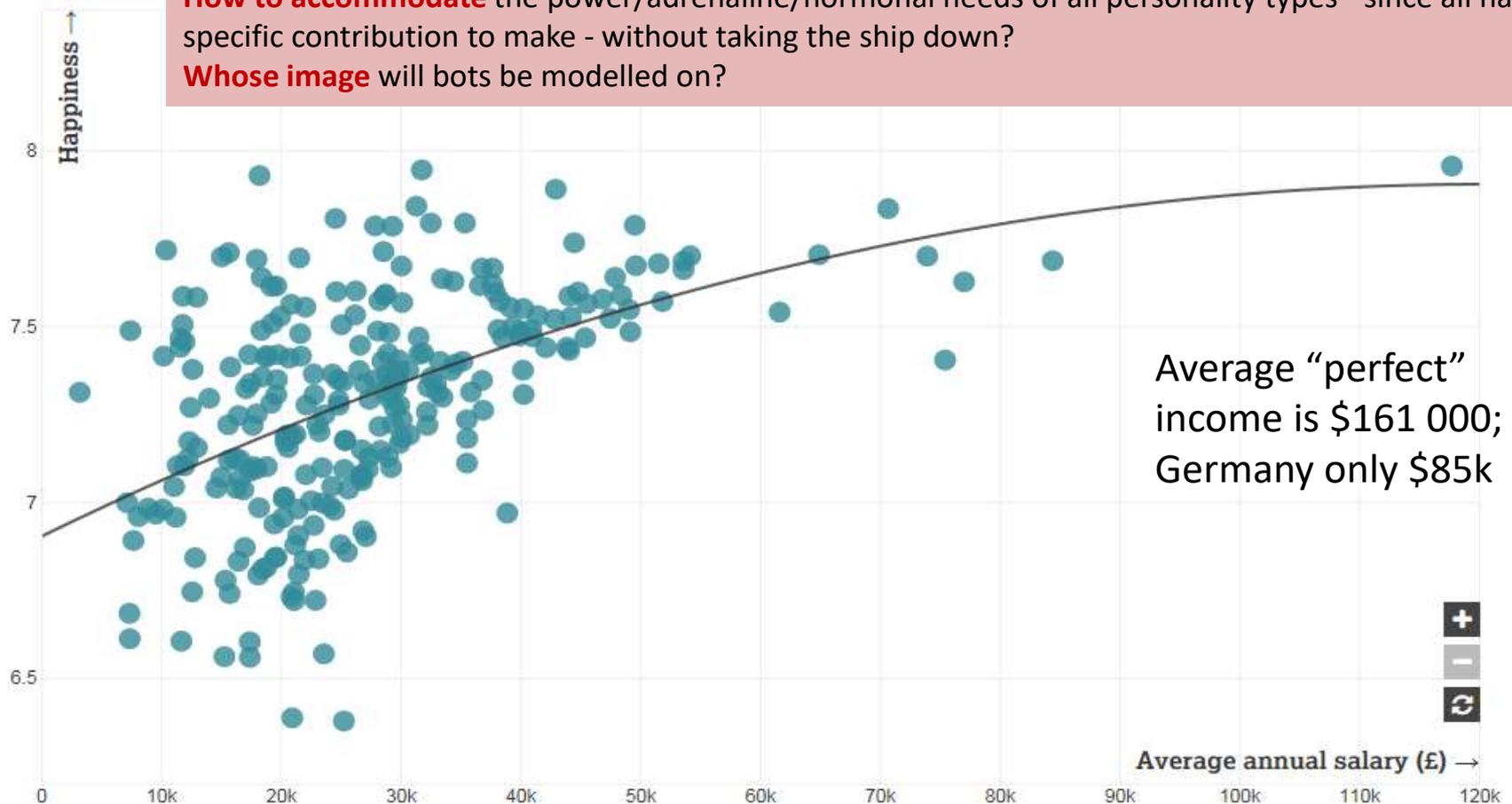
The Problem: narcissistic psychopaths end up running the world (their curve has no asymptote as power is never satiated) – appealing to 'gut-feeling', hot button issues rather than harder, reflective thinking.

How to overcome that nihilism?

Look at the way Jacinda is attacked in media!

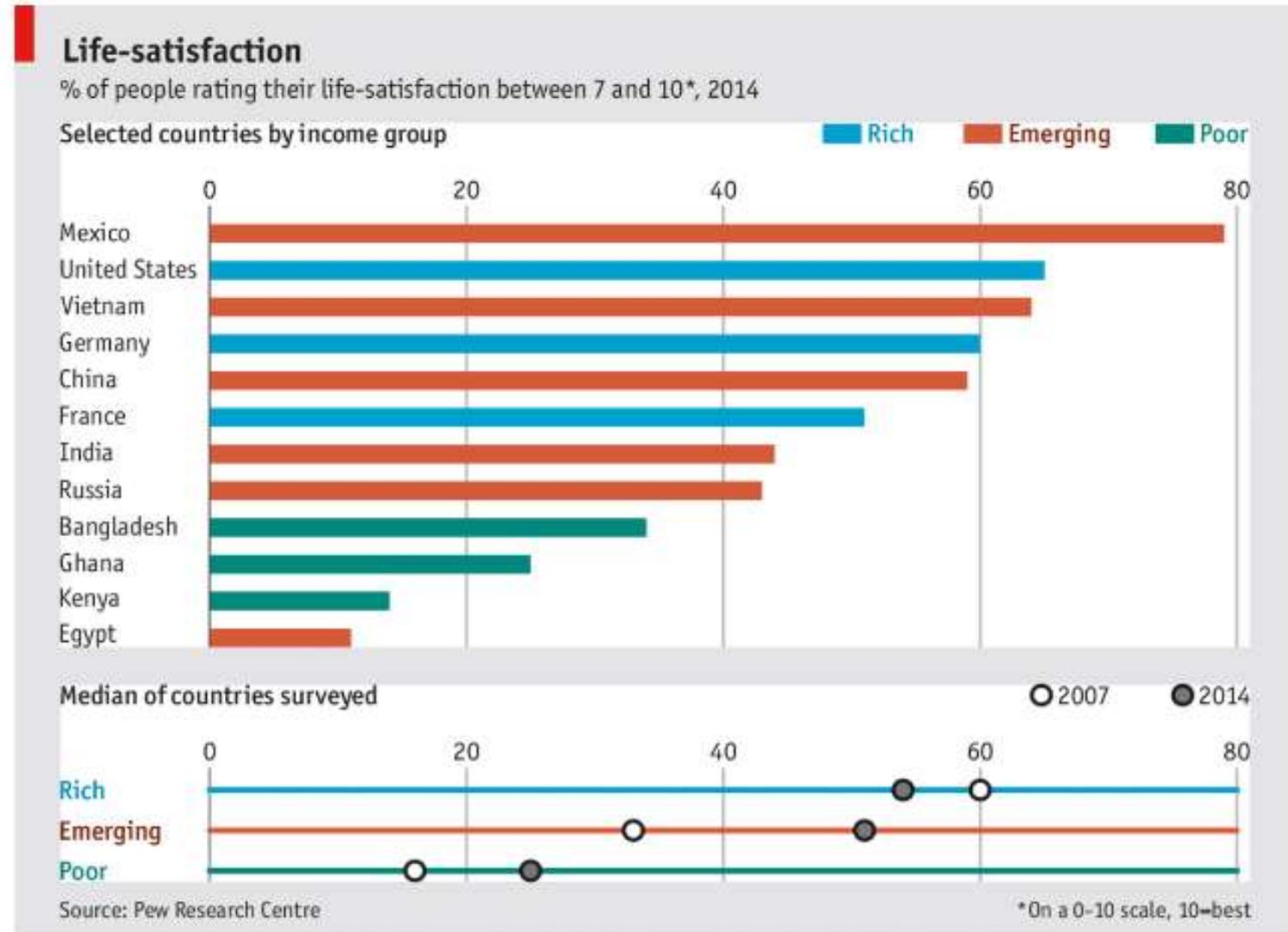
How to accommodate the power/adrenaline/hormonal needs of all personality types - since all have a specific contribution to make - without taking the ship down?

Whose image will bots be modelled on?

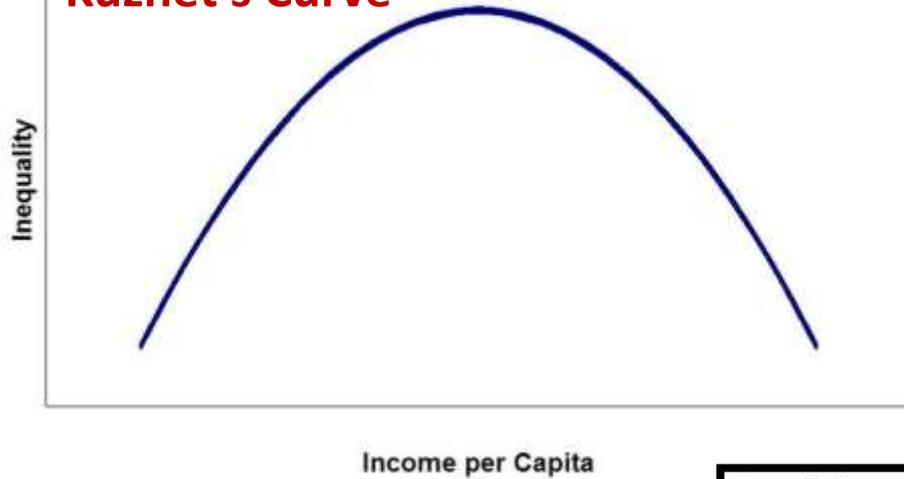


Money and happiness

The link between happiness and income is fraying



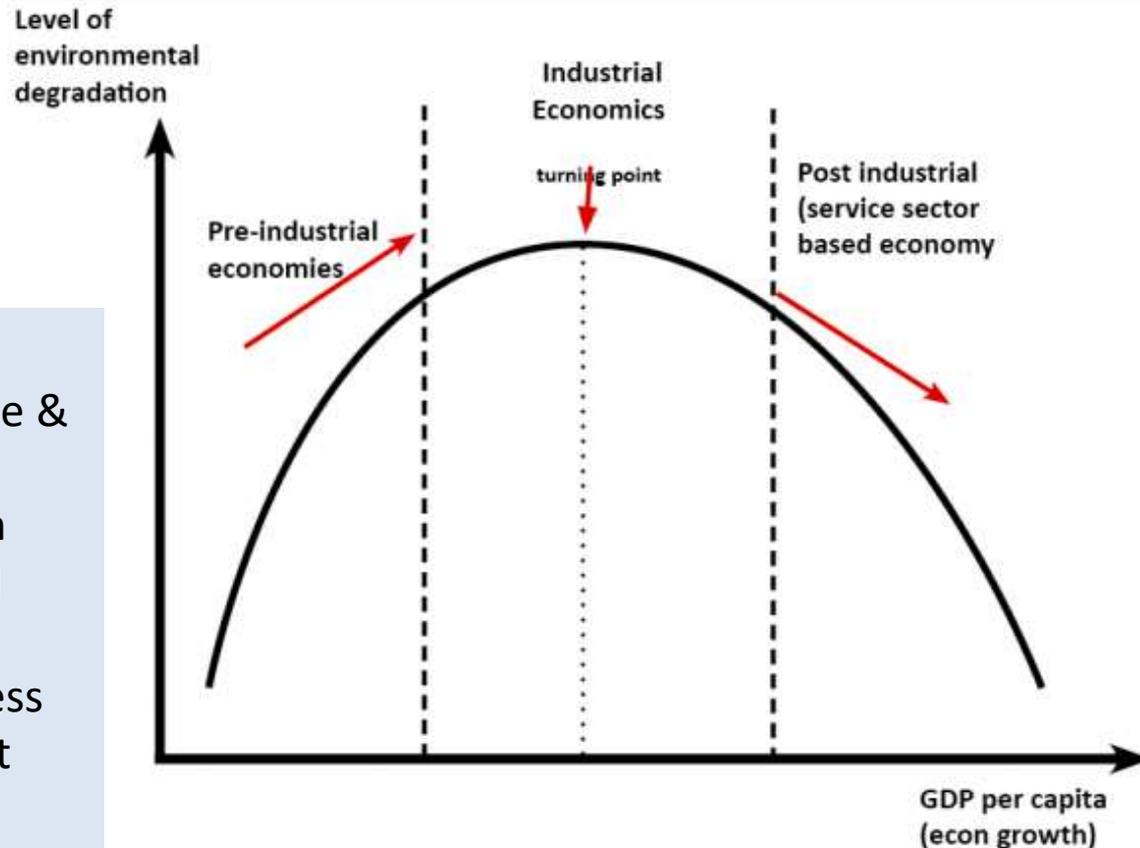
Kuznet's Curve



- Co-option & Managerialism
- Short termism/instant gratification
- Crisis management
- Kaitiakitanga for the 5th generation
- Prosperity without Growth
- Time-banking/Saving Pools
- Regenerative & Distributive Economy
- Ecology/Economics from *Oikos*
- Grass roots versus top down

Environmental Kuznet's Curve

But the link between levels of income & environmental degradation is quite weak. It is possible economic growth will be compatible with an improved environment, but it requires a very **deliberate set of policies** & willingness to produce energy & goods in a most environmentally friendly way.



There is no way the global economy can continue – there will be ‘adjustments’ like we’ve never seen!

- **Landing points**

- Redistribution of wealth within & between countries
- Nationalisation of land
- Reduce big salaries/wealth rather than believe low salaries in affluent countries have to rise up to the top. Closing the gap in the west will have to come from shaving the top rather than growing the base salaries – to a point.

- Transitions/Stepping stones/resources

- From boutiques to bicycle repair shops
- We will still need fun and fashion but how to regroom it?

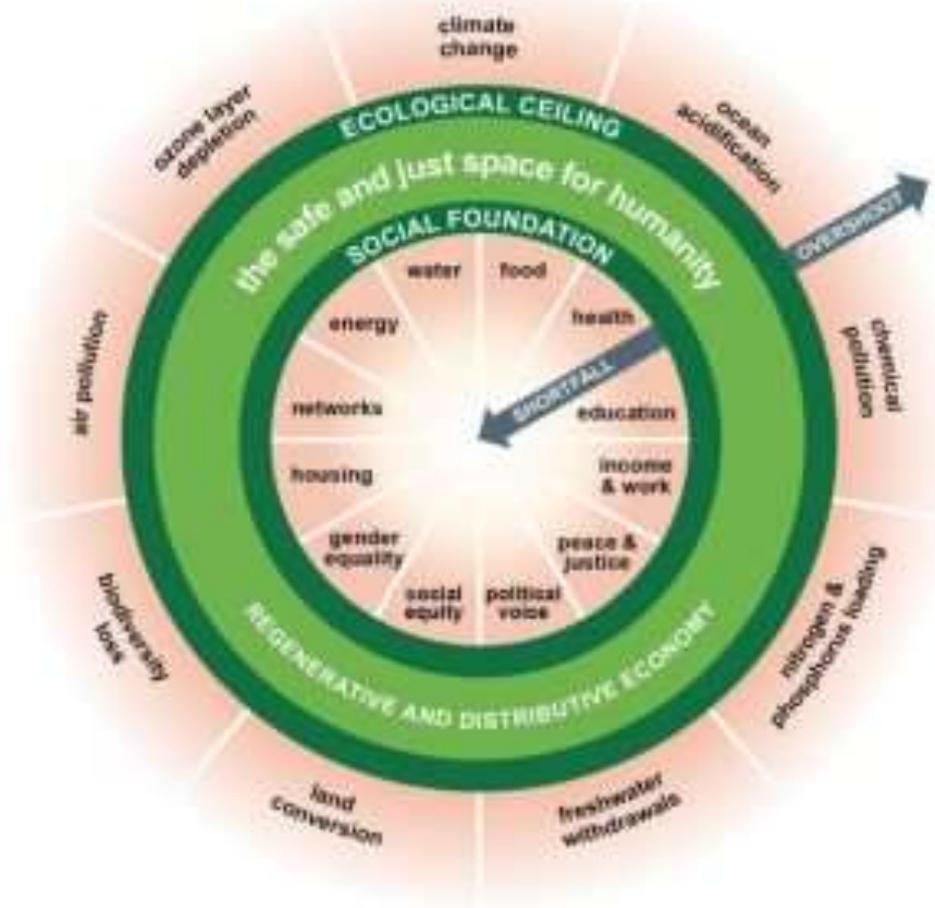
- Sten Nadolny – *The Discovery of Slowness*

- Speed is not only deadly & stressful, but it is extremely energy costly
- Can the world afford everyone in an electric driverless car (even if they are all part of an IOT and talk to each other)?

Kate Rowarth's Doughnut Economics

“economics is broken, and the planet is paying the price”

The 'sweet spot'
or the
'Goldilocks zone'



Kate Soper: A New Hedonism - A Post-Consumerism Vision

Professor Edward Mitchell

- On the *power of people* in the political-economics context
- An example from Switzerland
- Using amoeba & other little things as the symbol of diversity & beauty and of canaries in the coalmine!
- A social movement against environmental toxins

(starting) small is beautiful or how studying soil amoebae can lead to societal changes

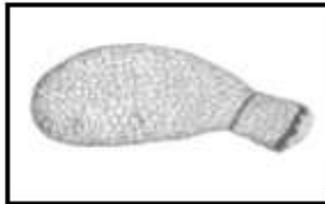
Edward Mitchell
University of Neuchâtel,
&
Neuchâtel Botanic Garden
Switzerland



Amoebae? Some good news!

A new species (or even genus) of testate amoeba from New Zealand

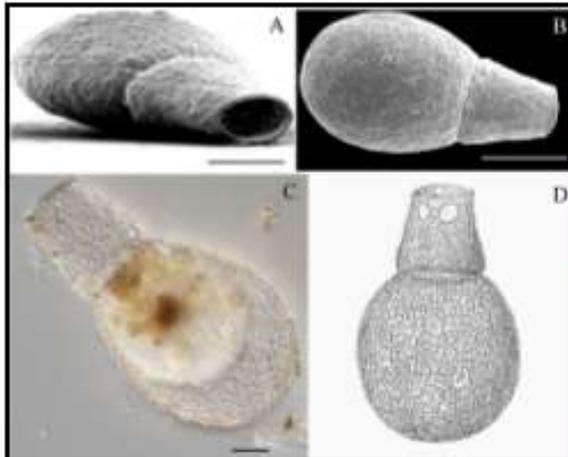
Genus *Apodera*



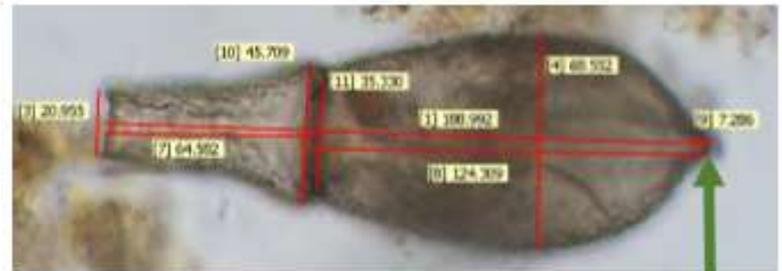
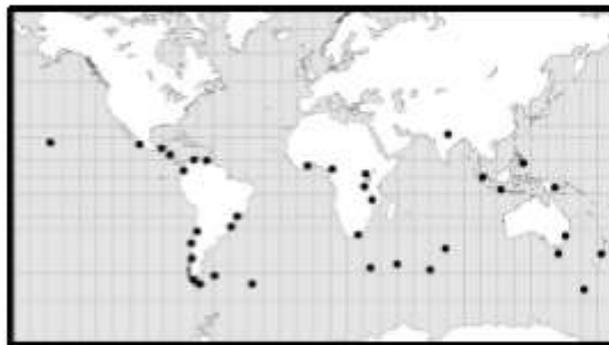
Apodera crenata



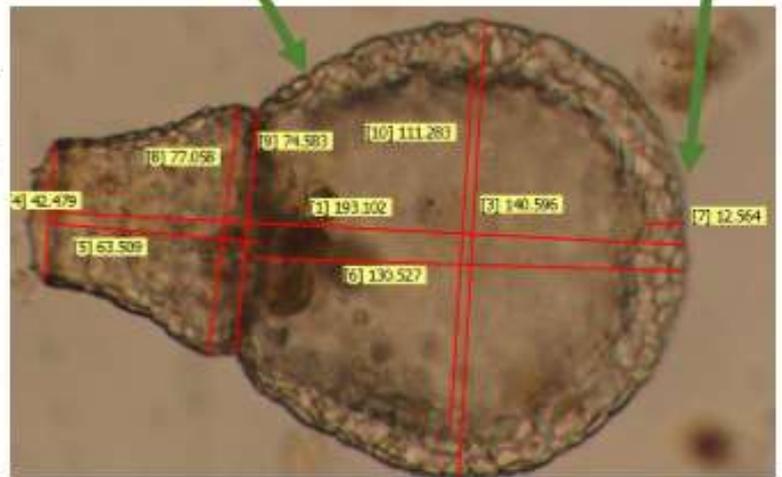
Apodera wellingtonia



Apodera vas

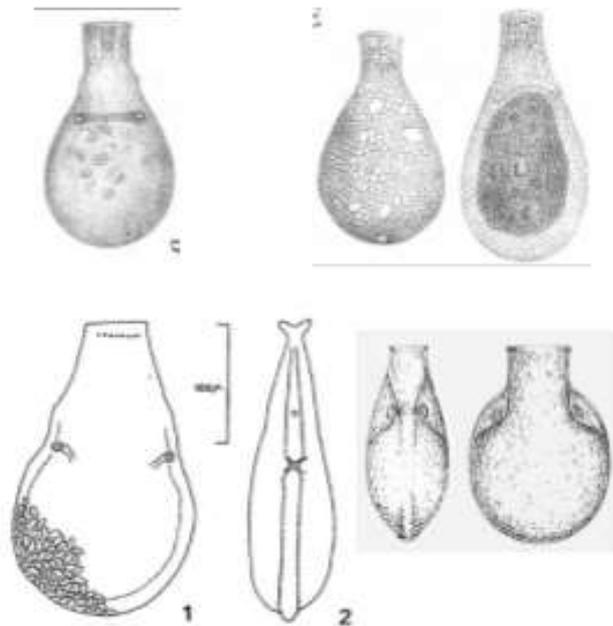


Distinctive feature: a hollow keel



Yet more new species... in genus *Certesella* => NZ needs more taxonomists!

Known species



New species



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From amoebae to pesticides - 1

- Testate (shelled) amoebae diverse and (relatively easy to identify)
- Community composition changes along environmental gradients => used as bioindicators, e.g. in peatlands for soil moisture, pH.
- Shells preserved in peat => reconstruction of long-term environmental changes (paleoecology)
- Also sensitive to pollution (heavy metals in soil and lakes, pesticides) => ecotoxicology

From amoebae to pesticides - 2

- Only a limited range of organisms are used in ecotoxicology => We don't know the impact of pollutants on the vast majority of organisms
- Development of new model organisms: testate amoebae
- International group working on neonicotinoid and other systemic pesticides needed a “soil biology expert”
- Compilation of all known publications => synthesis reports (Worldwide Integrated Assessment on systemic pesticides) => <http://www.tfsp.info/>



A few facts and questions about pesticides

- Massively used globally in agriculture, gardens and parks
 - Ca. 500 different pesticides used in agriculture globally, ca. 350 in Switzerland
- Also adjuvants (molecules mixed in with pesticides in commercial formulations – usually not specified, potentially more toxic than the “active ingredient” e.g. roundup) and metabolites

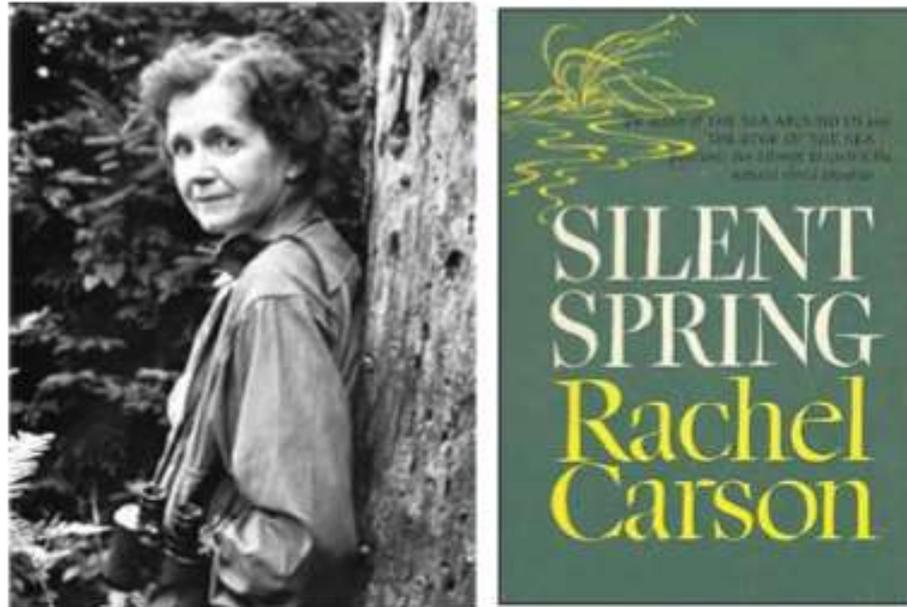
⇒ **Thousands** of different molecules!

Each with its own characteristics (toxicity for different organisms, persistence in soil and water under different conditions etc.)

- Almost unlimited combinations of pesticides and metabolites at different concentrations over space and time.

⇒ **How well do we know the short and long-term impacts of pesticides on the environment and human health?**

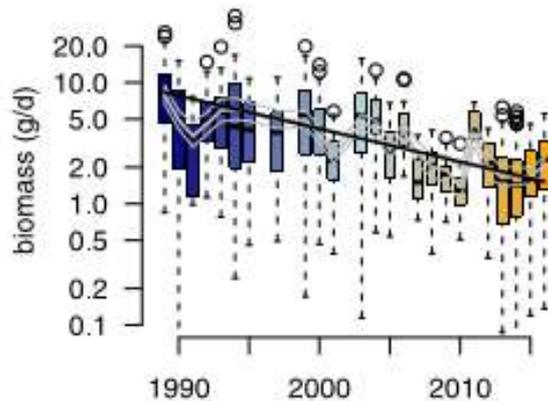
Not really a new problem...



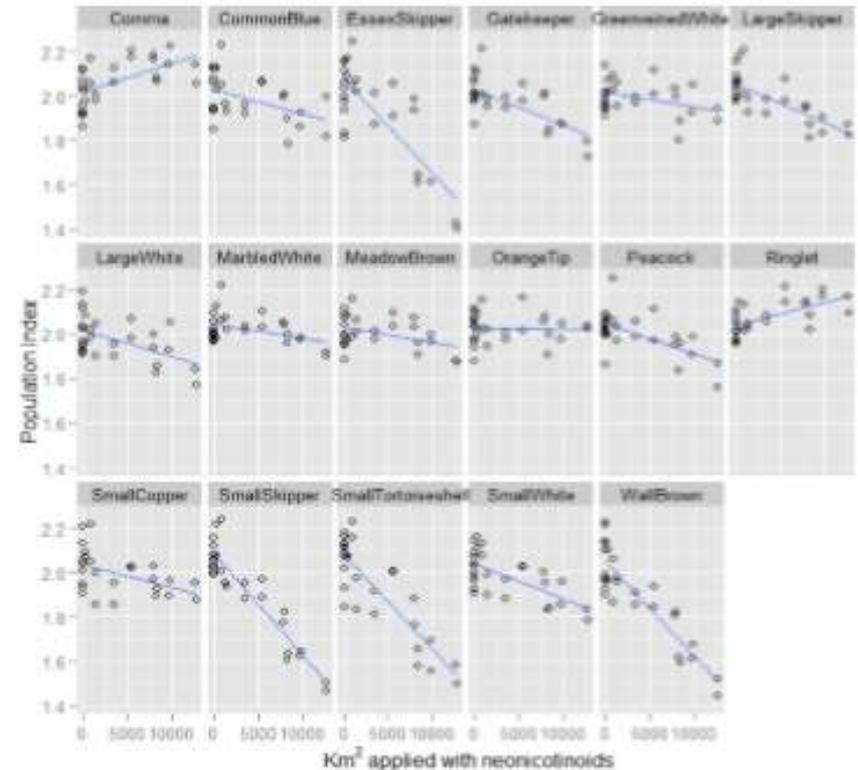
Published 1962

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The joys of the Anthropocene: Decline in insect biomass



75% decline in insect biomass
in German protected areas
over 27 years
(Hallmann et al. 2017 PLoS ONE)



58% decline in population of
UK farmland butterflies over
10 years
(Gilburn et al. 2017 PeerJ)

Impact on human health

- Acute toxicity
 - Development
 - Long-term effects of low doses
 - Hormonal effects
 - Cocktail effects
- ⇒ Which of these can be proven?

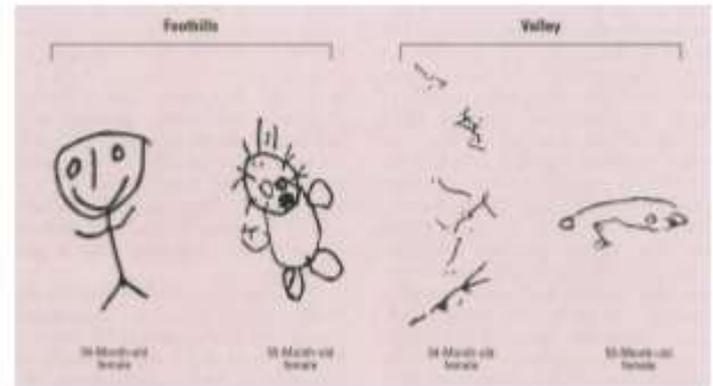


Figure 1. Representative drawings of a person by 4-year-old Yaqui children from the valley and foothills of Sonora, Mexico.

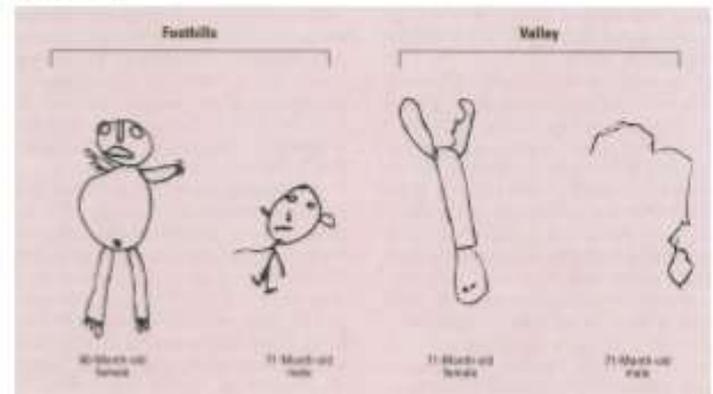


Figure 2. Representative drawings of a person by 5-year-old Yaqui children from the valley and foothills of Sonora, Mexico.

An Anthropological Approach to the Evaluation of Preschool Children Exposed to Pesticides in Mexico

Elizabeth A. Guillet,¹ Maria Mercedes Meza,² Maria Guadalupe Aquilar,² Alma Delia Soto,² and Idalia Enedina Garcia²

¹Bureau of Applied Research in Anthropology, University of Arizona, Tucson, AZ 85721 USA; ²Dirección de Investigación y Estudios de Postgrado, Instituto Tecnológico de Sonora, Oteyegón, Sonora, México

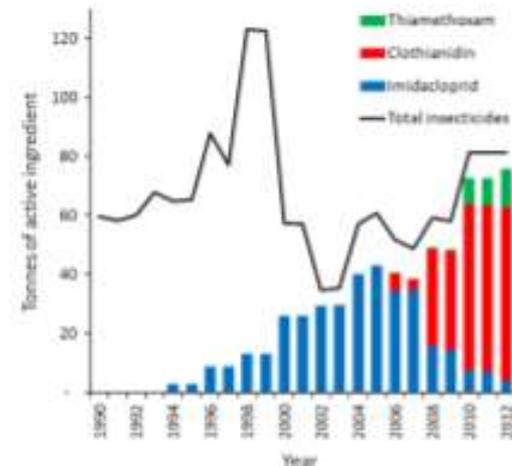
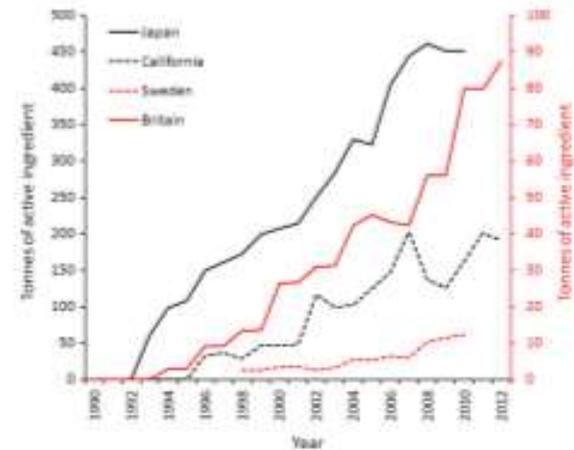
Neonicotinoids

- Broad spectrum insecticides up to $>10'000x$ more toxic than DDT
- First marketed in 1995 (Imidacloprid)
- Massively used **prophylactically** as seed coating of major crops
 - The whole plant is toxic
 - 95% remains in the soil, can accumulate, be leached, or washed downslope contaminating groundwater and aquifers

Trend in the agricultural use of neonicotinoid insecticides as seed treatments in Britain from 1990, measured in tonnes of active ingredient per year (bars). The total usage of all insecticidal seed treatments (solid line) is also shown.

Data from <http://pusstats.csl.gov.uk/index.cfm>

Simon-Delso et al. 2015 Environ Sci, Pollut Res.



Why is this a problem?

- Is it wise to apply pesticides prophylactically?
- Neonics believed to be a primary cause for pollinator (including wild bees and honeybees) and insect decline
- Difficult to obtain information on uses in each country
- No global data on environmental contamination
- Dozens of metabolites - often no or very limited data on their toxicity

The industry claims there is no problem and that bee decline is primarily due to the *Varroa* mite



Is the real cause of
bee colony collapse
staring you in the face?

Visit: www.plightofthebees.com



Bringing plant potential to life

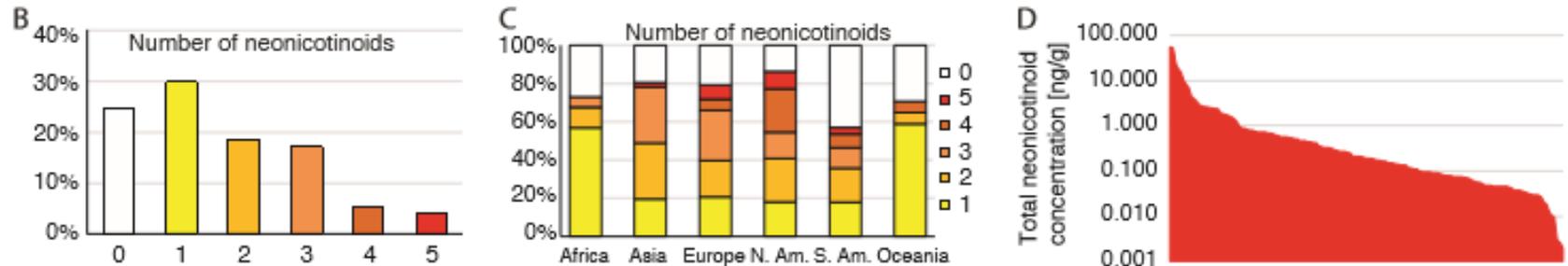
syngenta

History and aim of the global honey study



- In 2013 the botanical garden of Neuchâtel organised two events:
 - An outdoor exhibition on bees and flowers “Fleurs d’abeilles”
 - A scientific meeting on bees “Abeilles sous haute surveillance”
- We asked volunteers (>100) to bring back honey from all over the world to build a collection
- We selected samples from geographically determined areas (preferentially local production and known environment)
- Samples were analysed for 5 neonics (Acetamiprid, Clothianidin, Imidacloprid, Thiacloprid & Thiamethoxam) at the University of Neuchâtel Platform of Analytical Chemistry (NPAC).

Worldwide survey of neonicotinoids in honey - Key facts



RESEARCH

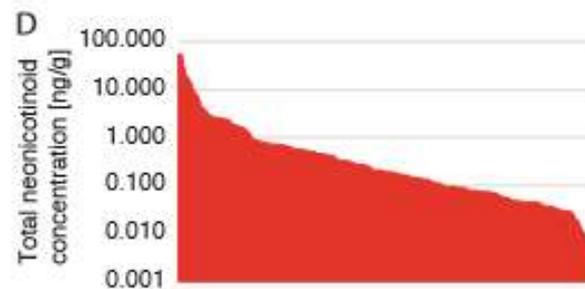
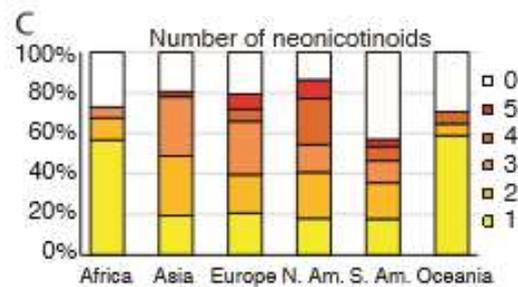
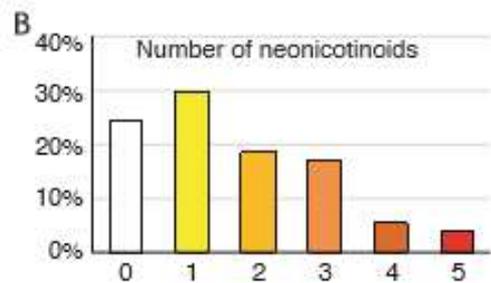
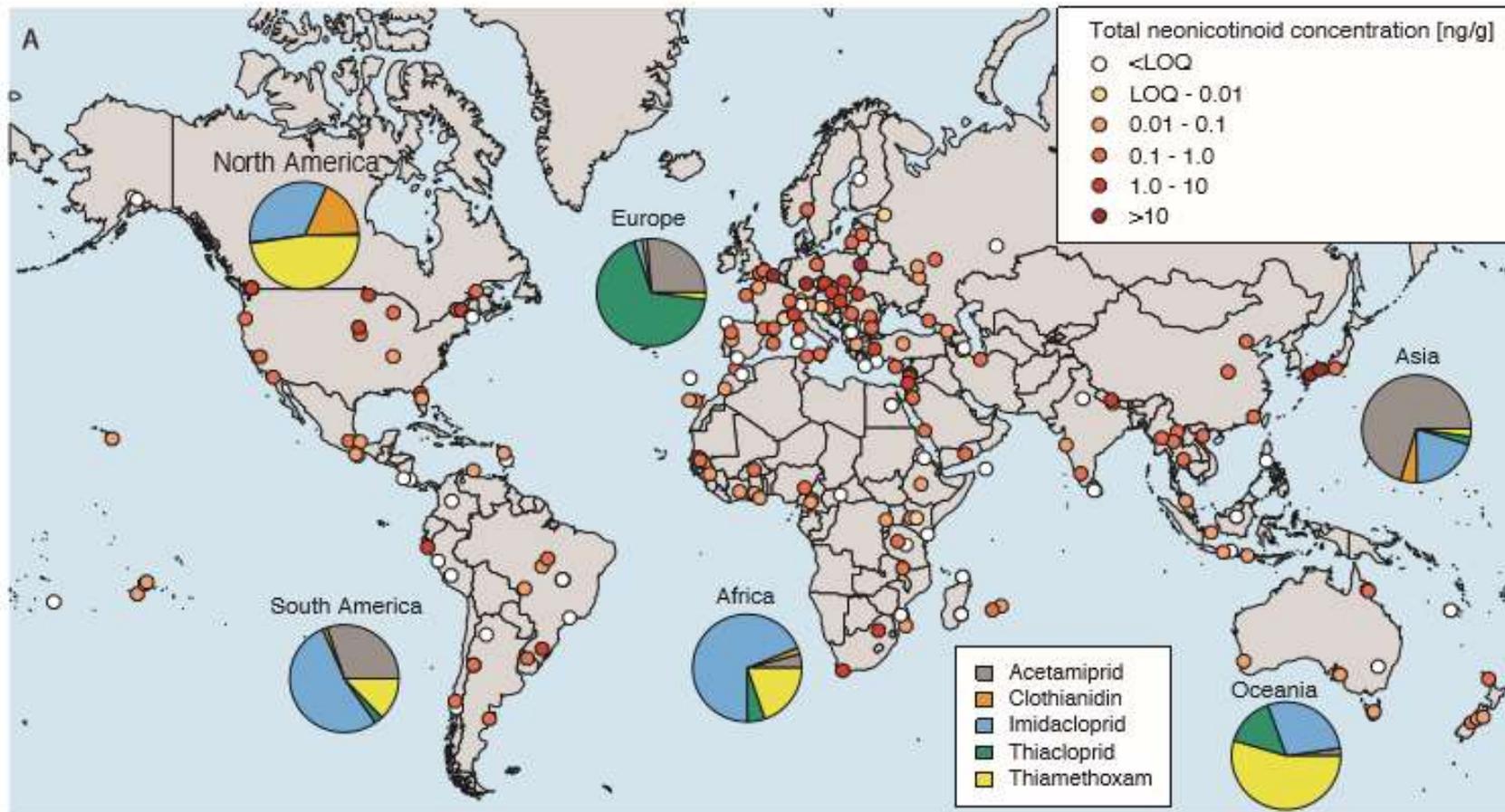
NEONICOTINOIDS

A worldwide survey of neonicotinoids in honey

E. A. D. Mitchell,^{1,2*} B. Mulhanser,³ M. Mlot,¹ A. Mutabazi,⁴ G. Glauser,⁵ A. Aebi^{1,4*}

Growing evidence for global pollinator decline is causing concern for biodiversity conservation and ecosystem services maintenance. Neonicotinoid pesticides have been identified or suspected as a key factor responsible for this decline. We assessed the global exposure of pollinators to neonicotinoids by analyzing 198 honey samples from across the world. We found at least one of five tested compounds (acetamiprid, clothianidin, imidacloprid, thiacloprid, and thiamethoxam) in 75% of all samples, 45% of samples contained two or more of these compounds, and 10% contained four or five. Our results confirm the exposure of bees to neonicotinoids in their food throughout the world. The coexistence of neonicotinoids and other pesticides may increase harm to pollinators. However, the concentrations detected are below the maximum residue level authorized for human consumption (average \pm standard error for positive samples: 1.8 ± 0.56 nanograms per gram).

- 75% of contaminated samples
- 45% of multiple contaminations (2-5 out of 5 tested)
- 48% above 0.1 ng/g = lowest concentration known to have negative effects on bees
- Geographical variation



And in NZ?

- Four samples tested, all positive
- ...including 3 “Manuka” honey samples...
- What?????
- Why?????

Study uncovers puzzling case of insecticides in New Zealand honey

GERARD HUTCHING
Last updated 10:48, October 27 2017



Honey from manuka plants showed traces of insecticide residues, even though manuka largely grows far from agricultural regions.

A global study has found traces of insecticides in New Zealand honey, surprising scientists and puzzling the industry.

Bee biology Professor Edward Mitchell led a study looking at the pervasiveness throughout the world of neonicotinoids, a class of insecticides, testing it on samples of honey sent from different regions.

Four samples of New Zealand honey, three of which were mānuka, were tested. All were found to have the insecticides.

From amoebae to pesticides - 3

- Media (Swiss radio, TV) interested in pesticides => asked for interview
- The scientist's reluctance to go public...
 - Am I competent enough?
 - Should I do this?
- Yes I can! Yes I should! Ok let's do this!
- Two TV appearances later I get a phone call...

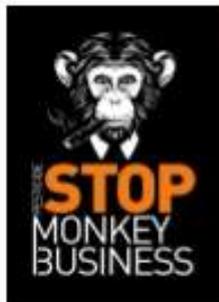
The call of the wild (hopes)

- “Hi, we’re a group of citizen with no political affiliation and we want to launch a federal initiative to ban all synthetic pesticides.”
- My first thoughts:
 - 1. These guys are totally crazy
 - 2. Wait a minute, why have we not voted on this yet? (Nb. IN Switzerland we vote 4x /yr on any topics, some quite odd)
- We met... We talked... I though...
- Ok, you only live once, this may be my best chance to make a difference... Ok deal!

18 months to collect 100'000 signatures from Swiss citizens
Deadline: 29.5.2018!

future 3.0

INITIATIVE POPULAIRE FÉDÉRALE
POUR UNE SUISSÉ LIBRE
DE PESTICIDES DE SYNTHÈSE
Initiative fédérale de Protection Naturelle n. 27 11.2016



EIDGENÖSSISCHE VOLKSINITIATIVE
FÜR EINE SCHWEIZ
OHNE **SYNTHETISCHE PESTIZIDE**
Im Bundesrat vernehmlich 7. Juli 2016



**NEHMEN WIR ERDE
IN UNSERE HÄNDE, DAMIT WIR
SIE BESSER VERSTEHEN!**

Rund 2000 Tonnen Pestizide, aufgeteilt in 350 Wirkstoffe, werden jedes Jahr in unserem Land verkauft. Diese Stoffe finden sich später in unseren Gewässern, in der Luft, in den Böden und in unserer Nahrung wieder.

Für zusätzliche Informationen, besuchen Sie unsere Website www.future3.ch
Reihen Sie sich und lassen Sie den Unterschriftensammelprozess beginnen.

future 3.0

The text (here the French version)

La Constitution est modifiée comme suit:

Art. 74, al. 2bis

2bis L'utilisation de tout pesticide de synthèse dans la production agricole, la transformation des produits agricoles et l'entretien du territoire est interdite. L'importation à des fins commerciales de denrées alimentaires contenant des pesticides de synthèse ou pour la production desquelles des pesticides de synthèse ont été utilisés est interdite.

Art. 197, ch. 12

12. Disposition transitoire ad art. 74, al. 2bis

1 La législation d'application afférente à l'art. 74, al. 2bis, entre en vigueur dans les dix ans à compter de l'acceptation de cette disposition par le peuple et les cantons.

2 Le Conseil fédéral édicte provisoirement les dispositions d'exécution nécessaires par voie d'ordonnance en veillant à assurer une mise en oeuvre progressive de l'art. 74, al. 2bis.

3 Tant que l'art. 74, al. 2bis, n'est pas totalement mis en oeuvre, le Conseil fédéral ne peut autoriser provisoirement les denrées alimentaires non transformées contenant des pesticides de synthèse ou pour la production desquelles des pesticides de synthèse ont été utilisés que si elles sont indispensables pour repousser une menace fondamentale pour les hommes ou la nature, notamment une pénurie grave ou une menace exceptionnelle pesant sur l'agriculture, la nature ou les hommes.

How was this perceived?

- Strong media interest
- Strong popular support, including many famous people (astronomer, award-winning chefs and wine producers, etc.)
- Political support across the whole spectrum (but not unanimous of course...)
- NGOs at first reluctant to support us (not their idea...)
- Mixed response from farmers (mainly worried about impact on work and income but usually acknowledging the problem as well as the fact that this initiative is *not against* them)

Where are we?

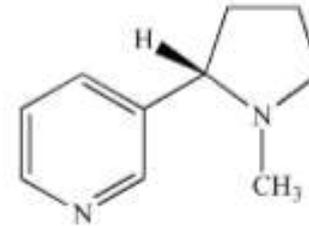
- 100'000 valid signatures reached!
- Press release sent yesterday!
- So we should vote on this within 2 years
- Stay tuned (and get ready to produce organic kiwifruit and lamb for Switzerland!)

What is the role of scientists in environmental conservation?

- Is activism tolerable?
- Should scientists refrain from voicing their opinion?
- Is silence acceptable?
- Are silence & inaction not a form of action?
- What is our moral duty?

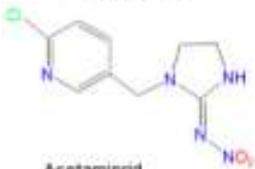
Neonicotinoids

Nicotine

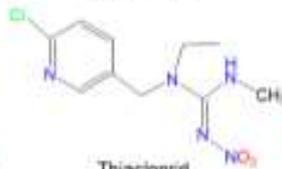


Chloropyridinyl/Trifluoropyridinyl

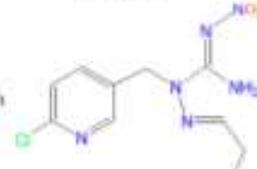
Imidacloprid



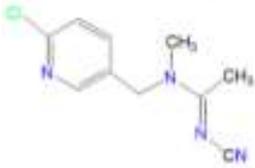
Nitenpyram



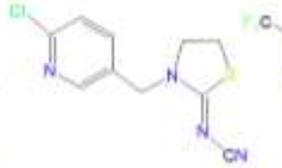
Guadpyr



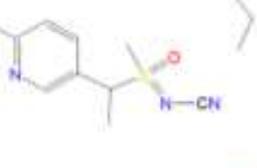
Acetamiprid



Thiacloprid

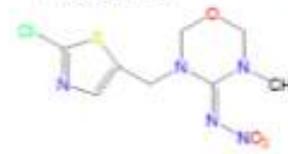


Sulfoxaflor

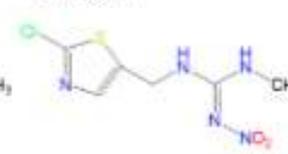


Chlorothiazolyl

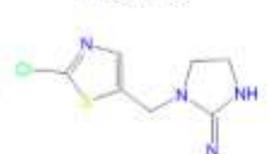
Thiamethoxam



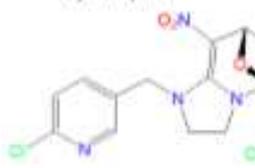
Clothianidin



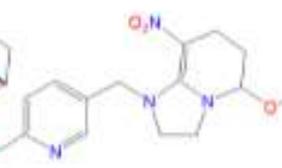
Imidaclothiz



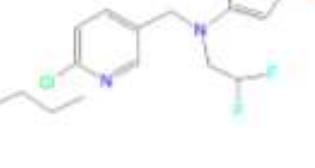
Cycloxaprid



Paichongding

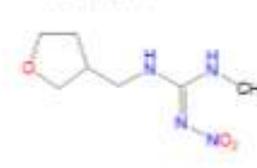


Flupyradifurone



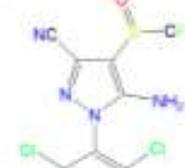
Tetrahydrofuranyl

Dinotefuran



Phenylpyrazole

Fipronil



Common names and molecular structures of neonicotinoids and fipronil, depicted by functional groups. Source: Giordo et al. 2017, Updated from Simon-Delso et al. (2015)

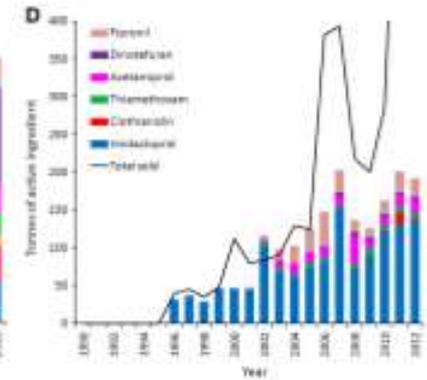
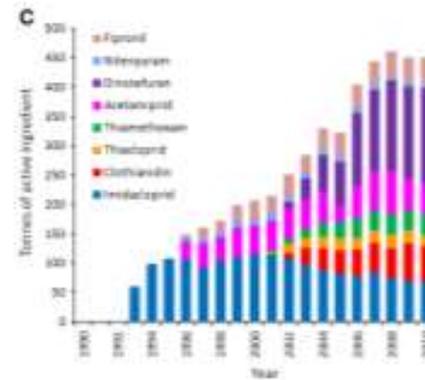
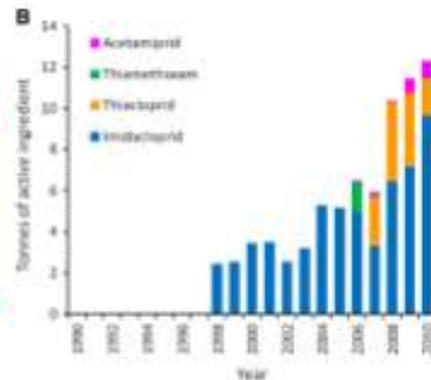
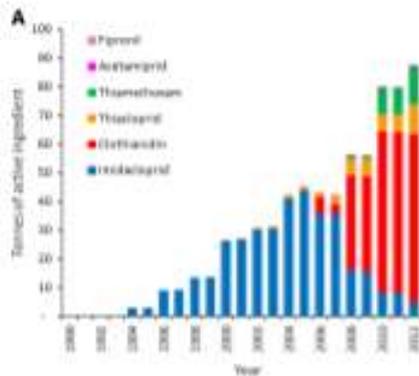
Trends of use of neonics (and fipronil)

UK

Sweden

Japan

California



Economics – the machinery of the Econo-sphere

Night 3 – 21st May, 2018

“Where are the lollipops in sustainable development?” Canadian politician 1988

Where have we got to from the Meadow’s report on **limits to growth**, the Brundtland report on **sustainable development** and the Pearce report on a *‘Blueprint for a Green Economy’*?

Take it away John !



Night 3

Pushing a New Paradigm

Creative Transitions to Sustainable Futures

The Econo-sphere

John Peet

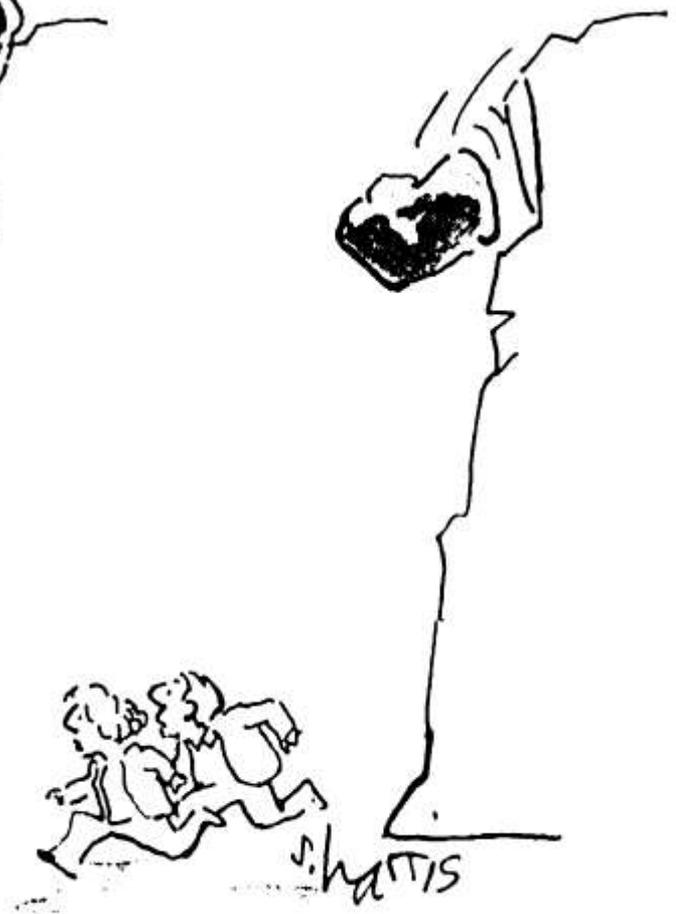
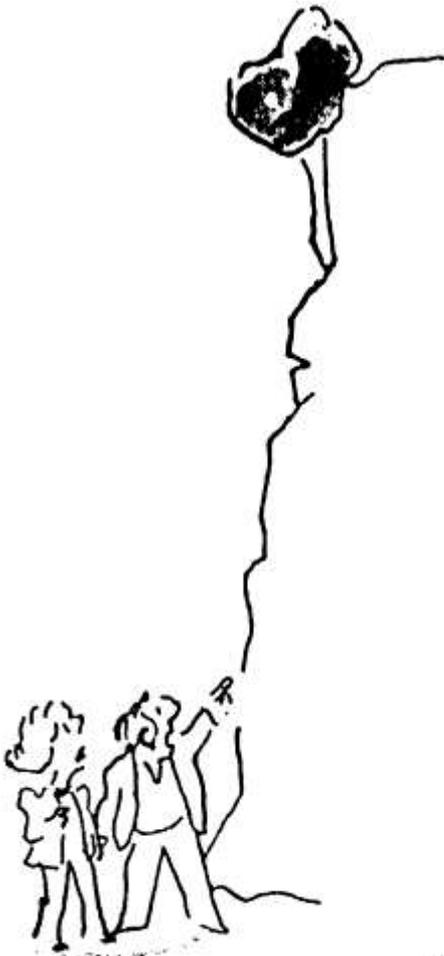
Sustainable Aotearoa New Zealand Inc.

NETWORK *Waitangi* OTAUTAHI

RISK
PERCEPTION

RISK
ASSESSMENT

RISK
MANAGEMENT



S. HATTIS

Risk Perception

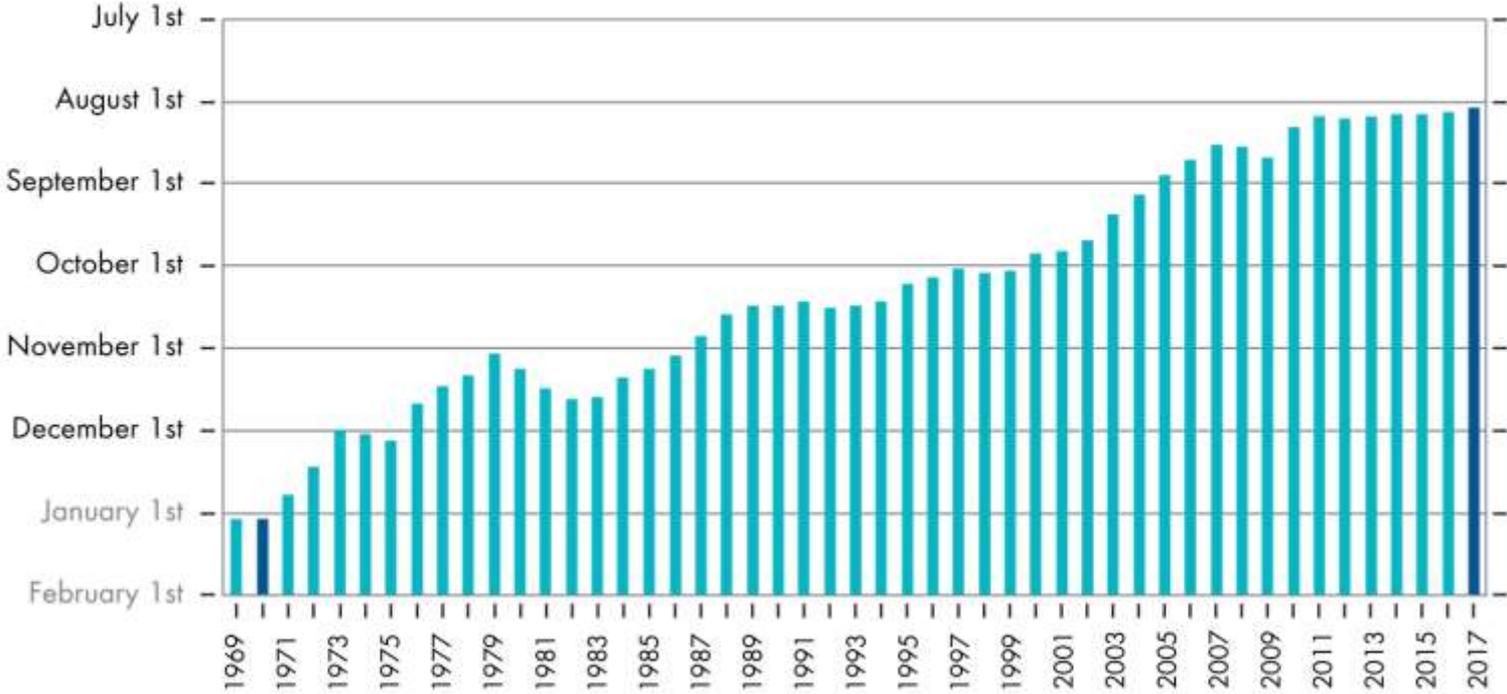


1 Earth

Earth Overshoot Day
1969-2017



1.7 Earths



Source: Global Footprint Network National Footprint Accounts 2017

“Doing good things for the environment” is not enough for us to be sustainable.

Taking steps (e.g. to mitigate climate change) will not make New Zealand sustainable.

Much more is required.

Sustaining the ecosystems on which we depend requires a system-wide approach to change that goes far beyond limiting emissions, controlling effluents, or managing solid waste.

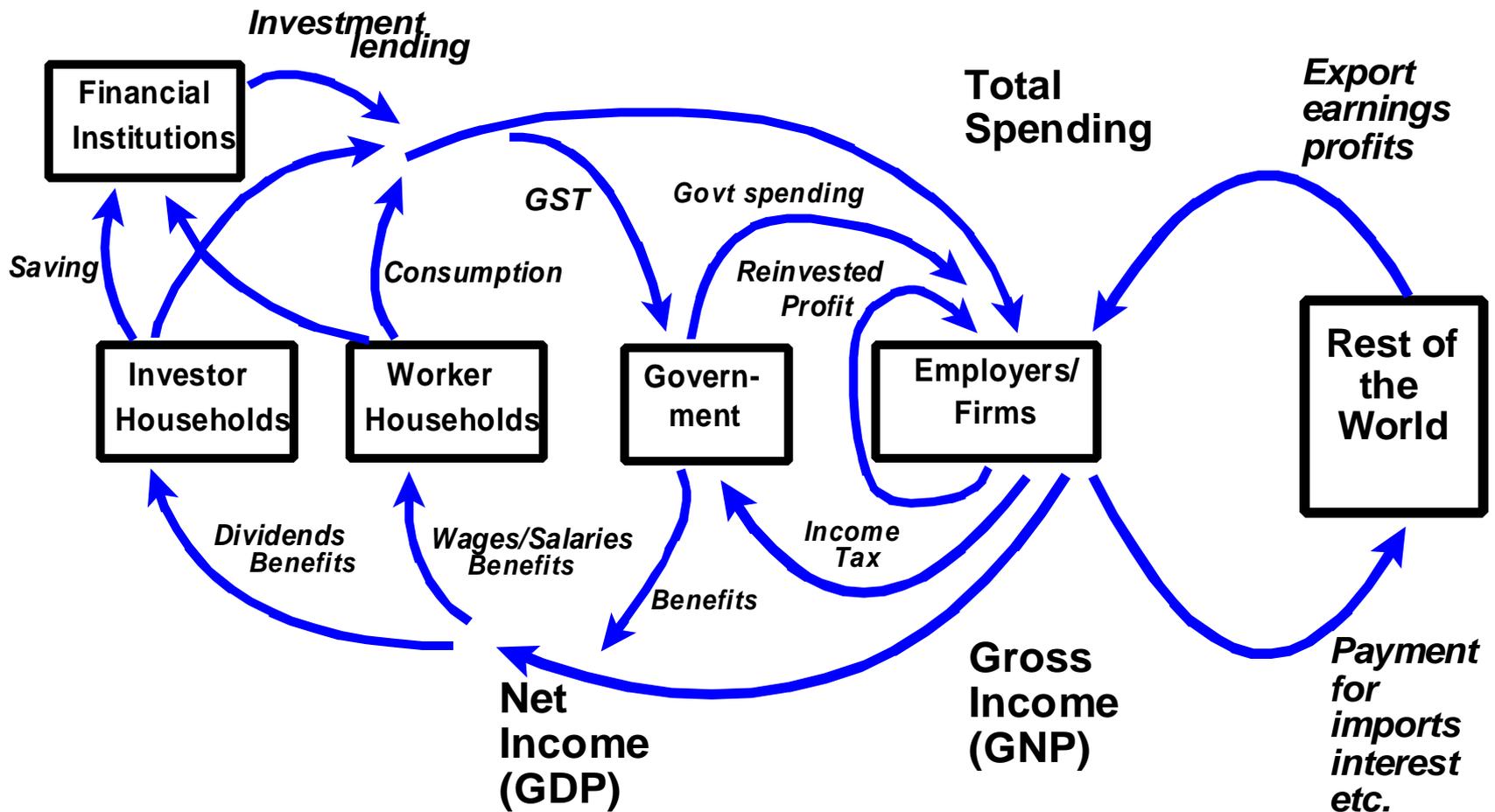
Risk Assessment

The root cause of
unsustainability – and,
incidentally, of climate
change - is our approach
to economics

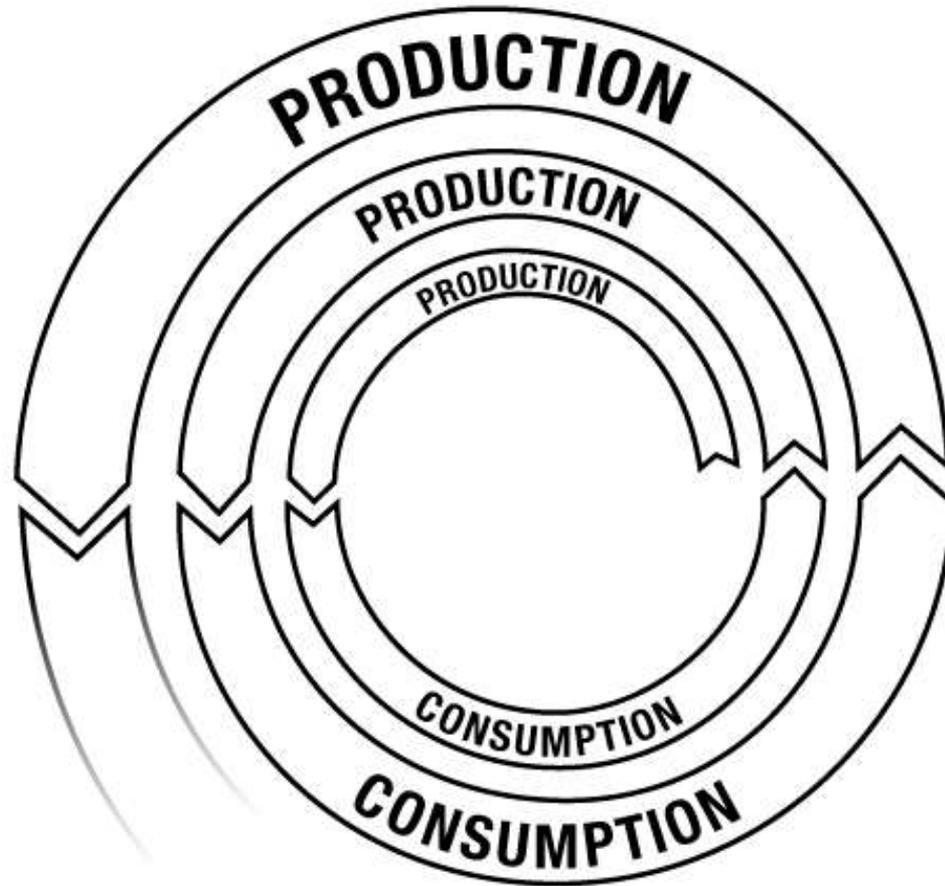
SANZ 2009

(<http://nakedize.com/strong-sustainability-for-new-zealand/>)

Circular flow economic model of the NZ economy



Standard Economics



Daly, 1986

**Economics trumps the
environment**

Yeah Right.

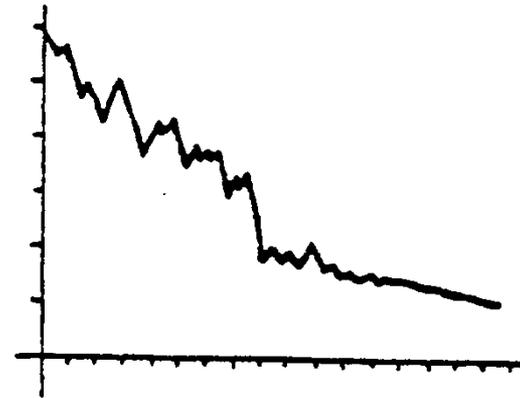


Limits to Growth?

- 1970s: There are no limits
- 1980s: There might be limits but they are far away
- 1990s: The limits might not be too far away, but the market will solve the problem
- 2000s: The markets might not function, but technology will save us
- *(2010s: Nothing can save us, let's party!)*

CHEER UP!

THINGS MAY BE
GETTING WORSE
AT A SLOWER RATE.



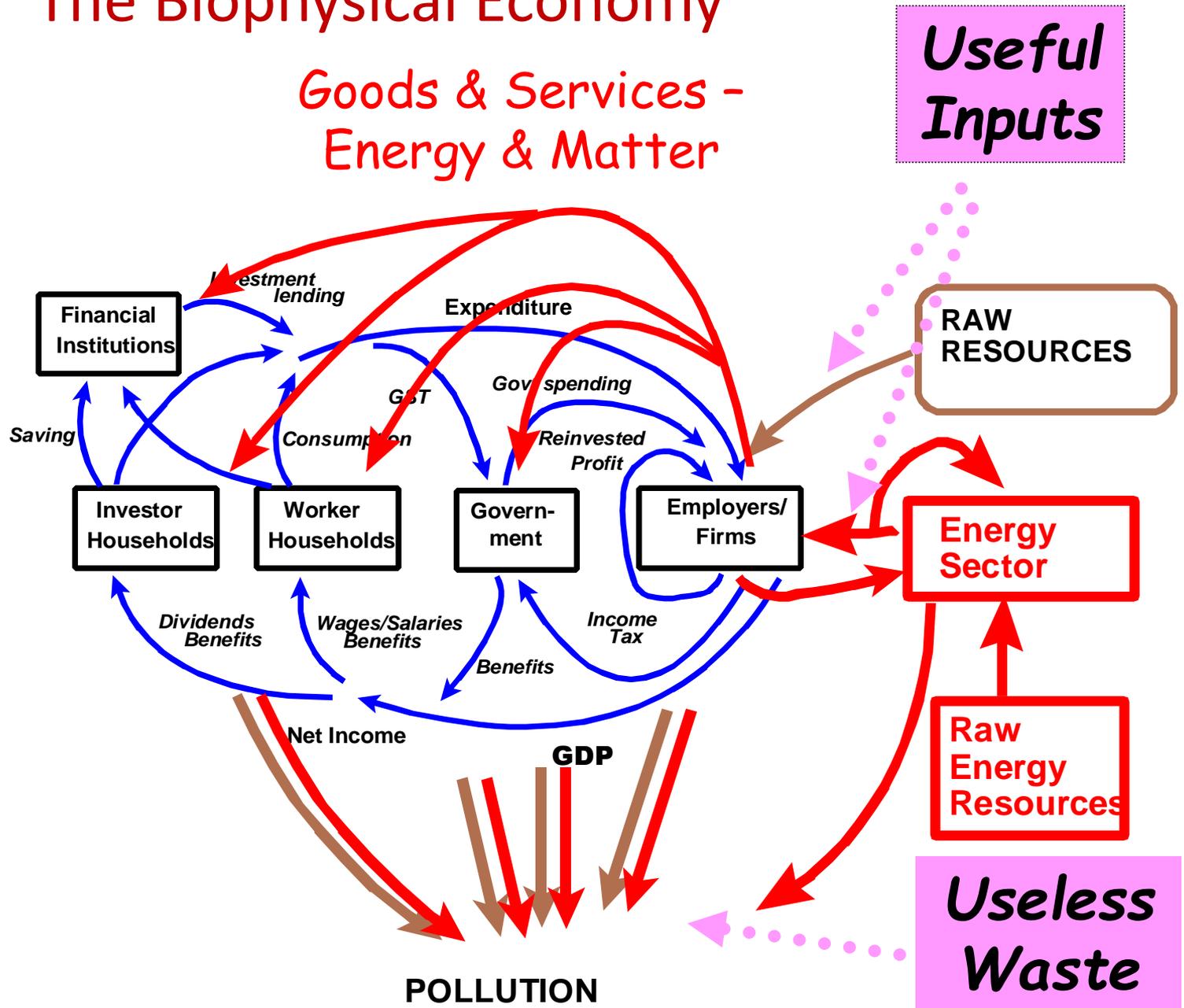
Collyer Bullant

Just what is my problem, as an engineer?

- *If* human wellbeing depends upon **Consumption** of goods and services, **and if**
- Consumption presupposes **Production** of those goods and services, **and if**
- Production requires **Transformation of Resources** taken from the Environment, (i.e. that to which value is added), **then**
- *The relationship between Resource use, Transformation, Production and Consumption is surely central to our ability to achieve Sustainable Development.*

The Biophysical Economy

Goods & Services -
Energy & Matter

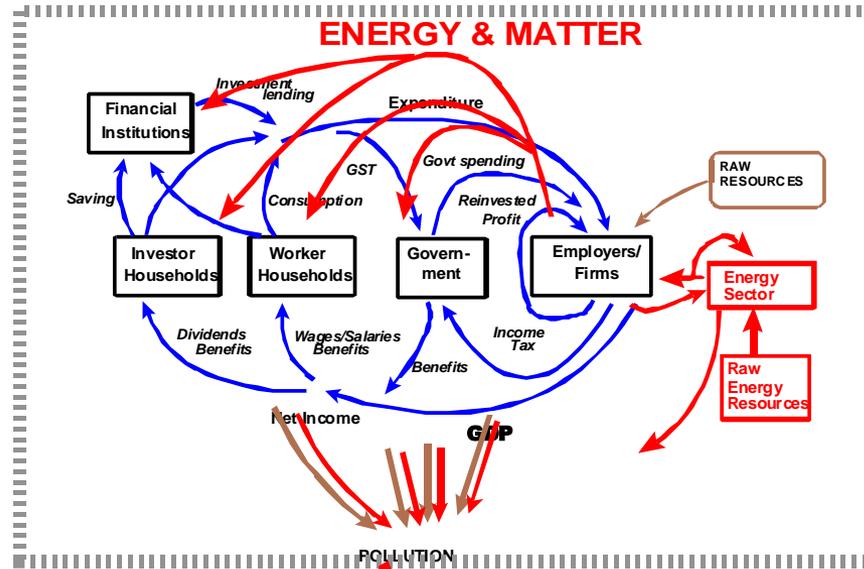




“Yes, our new screen **IS** larger, but I still don’t feel we’re getting the big picture.”

Sun

ECOSYSTEM



Ecosystem services

Outer Space

How to develop policy that is scientifically-based and addresses the whole issue of climate change and sustainable development of humanity coherently, rather than in parts, incoherently?

I start from the position enunciated by Ernest Rutherford many years ago:

“All science is either physics or stamp collecting”

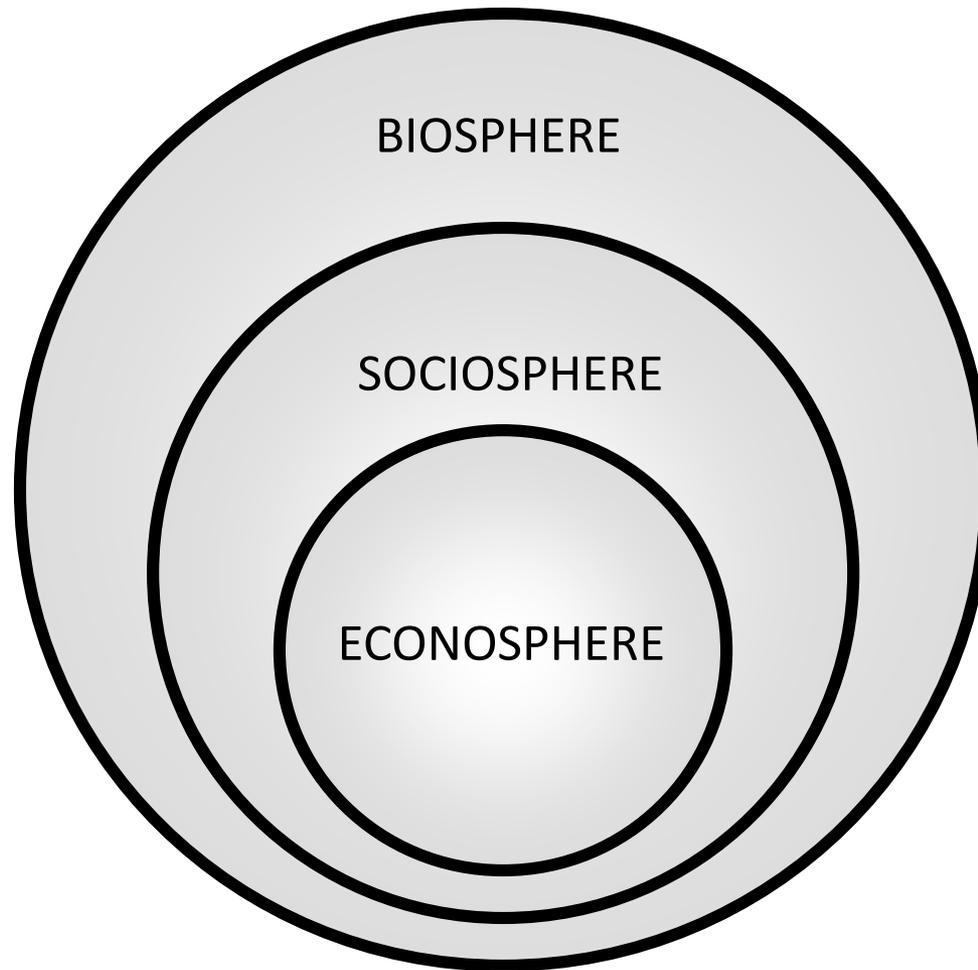
Risk Management

Our current approach to economics is based on a delusion. Ranking economic outcomes over ecosystem outcomes is a human delusion because it is the reverse of the way that Earth actually works.

The economy operates totally as part of the ecological systems of Earth.

Mainstream economic beliefs and practices have put humanity on a collision course with nature.

Strong Sustainability model



Strong sustainability requires a major shift in ethics and values

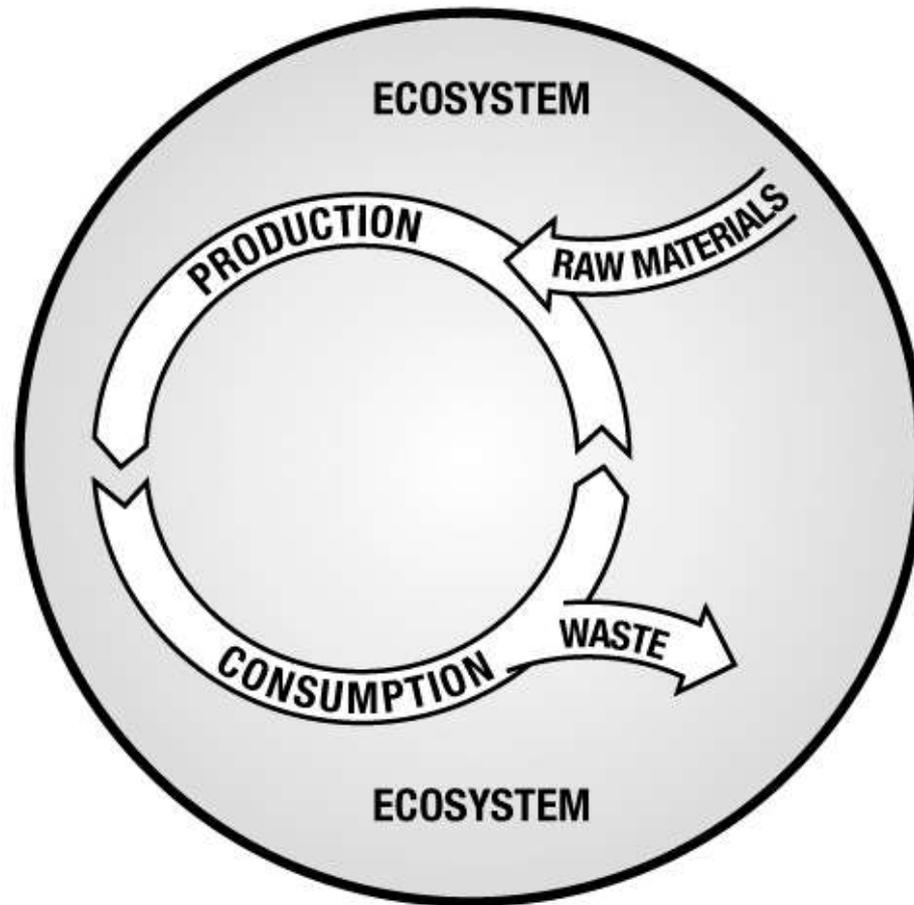
(1 of 2)

A strongly sustainable human society will live and develop as part of the Earth's ecosystems.

Although human activity will influence these ecosystems, humans will do nothing that upsets their stability, or reduces their diversity and resilience.

We have called the needed changes 'strong sustainability' to distinguish them from ineffective 'weak sustainability'.

Steady-State Economics



Daly, 1986

Strong sustainability requires a major shift in ethics and values

(2 of 2)

Because most of the ecological systems upon which humans depend are in the commons, they are ignored by market mechanisms.

Hence, markets – so long as they remain devoid of clear societal direction and scientific guidance - offer no guidance for the utilisation and maintenance of these essential ecological services, which are therefore misused by an economic system that is blind to their value to human society.

This flaw in economics threatens the survival of human society.

Shifting New Zealand from its unsustainable path

Analysis – mainly resourced by science and engineering - shows that it is possible for New Zealand to shift from its unsustainable path.

However, the period available for doing this is very short. The longer we delay the needed changes, the greater the hardship that lies in New Zealand's future.

If the delay is too long the shift will become impossible.

Where to from here?

- *'It ain't so much the things we don't know that get us into trouble. It's the things we know that just ain't so.'* Artemis Ward (Charles F Brown) late 19th Century
- *'You've got to be very careful if you don't know where you are going, because you might not get there'.* Yogi Berra

We need a new form of civilisation – a transformation to address overshoot. That is the issue to which the SANZ/UNDESD report – and these workshops - is a response.

Systems thinking guidelines:

- *“For every human problem, there is a neat, simple solution, and it is always wrong”*

H.L.Mencken

“It is better to be approximately right than precisely wrong”

Warren Buffett

“It is better to deal incompletely with the whole than wholly with the incomplete”

Herman Daly

“Pray to God, but row away from the rocks”

Hindu proverb

Visioning

- Facilitated discussion (Nick Kirk)
- Ecological/biophysical/resource goals
- Floor discussion reported on white board
- & written up on post-it notes

**Landing points – Back-casting;
defining & designing transitions to fit
people's comfort zone; Research
opportunities**

Facilitated Discussion

Floor Discussion reported on White
Board; written on post-it notes &
Group Discussions (see next)

Summary of Issues, Connections & Desired Outcomes

Issues & Outcomes	Sustainable Food	Greener Urban	11 Billion lives in limits	Sufficiency not growth	Responsive Institutions	Individual Caring	DESIRED TREND/OUTCOME +/-
Eco-sphere							
Environment							
soils	+	+	X	X			protect from sprawl
energy	-		X	X			transport
air/climate		X	X	X	X		
water	-	X	X	X			
waste	-	X	X	X			more natural, biodegradable materials
pollution	-	X	X				don't mix materials pesticides, antibiotics, effluent,
buildings/infrastructure		X	X				
food production quality/quantity	+	+	X	X			land and sea
diet - reducivarian	+	+	+	+		+	
technology	+	X	X	X	X		to reduce consumption not just to create more stuff
carrying capacity	0	X	X	X	X		
eco-footprint	-	-	-	-	-		
Reuse, Repair, Recycle		+	+	+	+		
Biodiversity							
		+			+		ecosanctuary
place-making		X	X	X	X		urban wild
spp richness	+			X			avoid monocultures
Life-affirming	+	X	X	X	X	X	
Psycho-Socio-Sphere							
Psycho-Sociology							
needs	+	X	X	X	X	X	love, kindness, appreciation, personhood from natural envt, relationships
wants/materialism		-	X	X		X	ego, addiction, debt
greed			X	X	X	X	
anti-intellectualism/fundamentalism							
power/control over nature/tidy		-					
speed, debt		X	X	X	X	X	ty cohesion, less time for community & whanau
population			-	+	+	+	
well-being		X	X		X	X	dis-satisfaction, status, envy, mental health
responsibility		X	X	X	X	X	integrity
having fun		X	X	X		X	
empowerment/sharing power			X	X	X	X	women
caring/sharing vs isolation			X			X	connect, understand, act
education/messaging	+	+	+	+	+	+	early, school gardens, self-awareness, ecological literacy, transparency, label
science	+	+	+	+	+		evidence-based; speak out
story-telling		+				+	inspiration. history. knowledge. rootedness

brainwashing		-	-	-	-		for growth, egocentric vs ecocentric
hope			+		+	+	
purpose/spiritual connectivity			+	+		+	common belief, faith communities
Culture							
biculturalism		X			X	X	
multi-culturalism			X	X	X	X	
conservatism/tradition		X	X		X	X	
inclusive/respect			X		X	X	
Governance							
collaborative	+	+	X	X	X	X	community governance
representative	+	+	X	X	X	X	>6BL can-do' attitude
regulation = sharing		+	+	+	+		
international equity/harmony			+	+	+		
Econo-sphere							
balance the books			X	X	X		
max wage rather than minimum							
export surplus	?		+	+			
equity vs poverty	+	X	X	X	X	X	progressive taxes - cut salaries not jobs
envtal/social externalities	-	X	X	X			privatise the profits and socialise the costs
neoliberal market							
private property	-	X	X	X			
individualism		-	-	-	-		& nationalism
growth	0		X	X	X		
power imbalance	-		X	X	X	X	corporate power
Steady State economy							
gift economy	+	+	X	X	X	X	
time banks	+	+	X	X	X	X	
eco-social enterprises		+					
GPI	+	+	+	+	+	+	
subsidies for green actions	+	+		+	+		polluter pays
	local self-sufficiency	medium rise					
	organics						
	permaculture						
	biodynamics						
	higher cost?						

- Measure what you treasure instead of treasuring what you measure
- One voice register
- Naomi Klein – changing everything
- International inequality of the ¼ need to have versus ¾ have enough
- Philippe van Parijs – what if anything can justify capitalism
- Cascading effect can be positive or negative (Christchurch example kick started by children)
- Eco system services: gateway but does not get stuck in/on it – great fulcrum - don't get trapped by it
- Value is on eco system
- Physics energy resources – no limit? – Rubbish – not right now
- Reusable rockets – hooray!
- Monbiot – on E. S.
- Building a strong economy (as currently conceived damages the environment)
- Stock market connected to carbon output (oil+gas harder to find, fracking bubble)
- Why NZ in better place? 'cos NZ already far along energy sustainability but it is still mainstream economics NZ can be an example
- Equality – education connection
- Gulf between BAU + doing what needs to be done
- Visualise a solution/different world-paradigm
- Sharing economy (e. g. cultivate Christchurch) how to grow those?
- They have free land and are paid via Vodafone – but hoping to be self-sufficient soon
- What are your solutions/future? John Peet
- What really matters?
- **Split into groups – group work:**
- Solution
- soft landing
- How to get there?
- How do we start the discussion?
- Current addiction – how to break the cycle?
- **After group work at 8.10pm**
- Our world without economic growth – Christopher Doll Un Library
- Preservation vs Needs
- Progress
- Harvey Locke
- NZ average 'perfect' income 161,000 Germany one only needs 85,000 to be 'happy'
- Lost generation?! How to reach teenagers? Low decile/poor?

CWEA White Board

21 May 2018

Continued white board - Notes

- Bilal Sarwary Afghani journalist
- John Peet sustainable Ōtautahi Christchurch – on hold
- Sustainable Aotearoa NZ – closed down 2017
- One voice Tē Reo Kotahi
- Network Waitangi Ōtautahi
- Economy – money
- Production – consumption – PRODUCTION – CONSUMPTION ... unsustainable
- Earth charter international
- Earthcharta.org

Small Scale Solution

Credit - Environment

Inherit - Social

1% Collective (Wellington) charity get secure funding to refurbish

Environment

Social

Village- huge sale community

Do what's necessary not what's possible

Time bank

Landing points

- Landing points
 - Redistribution of wealth within & between countries
 - Nationalisation of land
 - Reduce big salaries/wealth rather than believe low salaries in affluent countries have to rise up to the top. Closing the gap in the west will have to come from shaving the top rather than growing the base salaries – to a point.
- Transitions/Stepping stones/resources
 - From boutiques to bicycle repair shops
 - We will still need fun and fashion but how to regroom it?
- Sten Nadolny – *The Discovery of Slowness*
 - Speed is not only deadly & stressful, but it is extremely energy costly

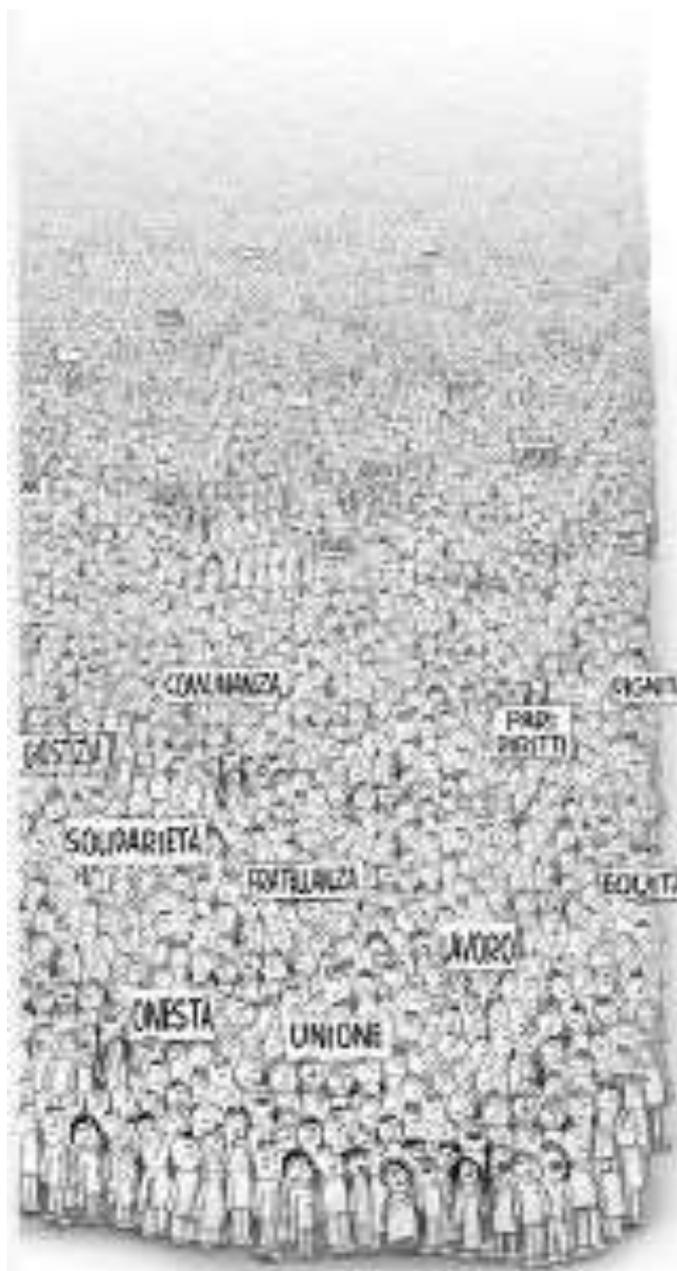
[http://www.radionz.co.nz/national/programmes/sunday/audio/2018645683/
bilal-sarwary-the-afghanistan-he-knows](http://www.radionz.co.nz/national/programmes/sunday/audio/2018645683/bilal-sarwary-the-afghanistan-he-knows)

#AfghanistanYouNeverSee on Twitter & Instagram

RNZ 0830-0900 20th May 2018

- Solution is talking with people of all backgrounds over cups of green tea!
- Show genuine Interest
- Patience
- From an equal position
- Tolerance
- Leaders have to work for the common good and above/beyond their own personal interests

Power is diffuse and dynamic – it can be created and mobilised in unexpected ways and emerge from different relations in surprising places



**Less Stress - More Serenity !
water, exercise & forest-bathing**

<https://www.radionz.co.nz/news/national/356841/native-bush-keeps-asthma-at-bay-study>

**Less Bland, Less Stuff - More Beauty
& Well-being!
More Haste, Less Speed!
More Meaning, History, Legibility &
Literacy**



Can We Evolve Beyond Money?

DEVELOPMENT & SOCIETY : Energy, Economics, Business, Finance

2011-01-10 Christopher Doll United Nations University

35 Comments

Email

Tweet

Share



"We can't solve problems by using the same kind of thinking we used when we created them."

This often quoted but infrequently practised quote from Albert Einstein tells us much about why some of society's most intractable problems remain unsolved.

For example, development had traditionally been pursued through large loans for large scale infrastructure projects until a Bangladeshi economist dared to think differently and lend small amounts directly to the untouchables of the credit sector: poor women. Nobel Laureate Mohammad Yunus's [Grameen Bank](#) has since lent billions of dollars and shown that micro finance can be an effective and direct way of helping people lift themselves out of poverty. This model has been replicated all over the world, and individuals also provide money for loans.

Solutions that come from linear thinking hold a special appeal because we know where they come from. Very often we cannot countenance that the system in which we live may be flawed; we point to all the benefits and try and tweak the system to eliminate the less desirable elements only for another problem to emerge elsewhere. The end result is a perpetual 'whack-a-mole' game where we are forced to innovate quicker than the speed at which 'unforseen' problems appear.

On the face of it, this seems like a good system; innovation is good for the economy and as humans we are attracted to the idea of progress and smooth transitions. Yet looked at another way, it that can be argued that our history is in fact defined by abrupt discontinuities coming in social, political, economic and military guises, such as the Great Depression and World Wars I and II. Once again, the partial collapse of the present economic system leads us to [chase our tails](#), whilst believing we are fixing the problems at hand.

It is a truism that all unsustainable activities, by definition, come to an end. But before we contemplate the end of our current system or any abrupt discontinuity, let us think for a moment about what life would be like if we designed

You mention twice that “GDP is built on a great lie. This lie says that markets are the only producers of wealth.” What do you consider to be true wealth?

For me, wealth is primarily found in the health of my body and the context of my ecosystem (which also include effective and social relations). As [Amartya Sen](#) argues, poverty is about unfulfilled capabilities rather than limited cash. A person without good health, isolated and living in precarious environmental conditions would be poor irrespective of the size of his/her bank account. We create wealth every day when we support our communities, educate our children and spend time together strengthening social bonds.

[quote quote="We create wealth every day when we support our communities, educate our children and spend time together strengthening social bonds." type="text"]

When we grow or cook our own food, produce our own energy and share our knowledge and expertise free of charge, we build the pillars of our economies — that is the essential difference between poverty and wealth. Markets could not even function without these important components. No growth would be possible if everything we need to function was provided at a cost. Yet, none of these fundamental spheres of ‘production’ count for GDP, which I found paradoxical.

The UNU released the Inclusive Wealth Index. Where do you see the strengths and weaknesses of this form of measure?

The Inclusive Wealth Index is a laudable attempt to quantify the contribution of natural capital to economic growth. GDP entirely neglects the natural capital fueling the growth process and, by doing so, it undervalues the economic importance of natural resources.

In an attempt at showing how significant these contributions are, economists have devised so-called genuine progress indicators, which subtract the value of natural capital used in the production process as well as the costs of negative externalities from GDP. To a certain extent, the IWI follows this tradition by incorporating the most recent advances in the field of the economics of ecosystem services and biodiversity. However, there is a big risk. All these indicators are based on the assumption that natural capital can be monetized, which is a precondition for it to be deducted from the GDP computation. The monetization of Mother Nature is very problematic and controversial and it can ultimately lead to a marketization of natural wealth, which we are seeing more and more in the field of forestation, conservation and offsets championed by the REDD+ scheme of the Kyoto Protocol. Just like in the case of GDP, we need to realize that there are powerful interests supporting such monetization efforts.

GDP is was developed in the United States. The HDI (Human Development Index) is based on the Scandinavian model. GNH (Gross National Happiness) is based on the model of Bhutan. Is the idea of a universal index invalid?

I believe that there is room for a universal index, although it may not be necessary or desirable. If what we want is a fulfilling life, then I see no reason why all countries should measure this according to one standard. We need a more mature global governance system, which favours diversity rather than homogenization. Technocrats controlled the GDP but we now need citizens to be involved in the process of defining what really matters to them. And Bhutanese people may have different views from Americans. While we can (and should) learn from one another, there is no reason why policies in Asia or in Africa should be driven by the same standards adopted in America or Europe.

You explain alternative indexes in your book. Is there one index you are in favour of and why?

No alternative to GDP will ever be perfect. What matters is not statistical efficiency but social relevance. We should measure what we want rather than wanting what we measure.

Malcolm Rands - Founder ecostore, Executive Chair Fairground Foundation

Founded by Malcolm and Melanie Rands in 1993, ecostore was set up with the intention of supplying NZ with the everyday goods they needed to live in harmony with the environment. At the same time ecostore was designed to be a cause-related business to channel resources into a not-for-profit organisation called the Fairground Foundation.

Living the Change

Sometimes it can feel like the environmental, economic and social issues the world is currently facing are too big, too overwhelming, to be dealt with by individuals. Climate change, resource limits, economic downturn, social disconnection. Surely these issues can only be properly managed by our governments?

Living the Change explores solutions to the global crises we face today – solutions any one of us can be part of – through the inspiring stories of people pioneering change in their own lives and in their communities in order to live in a sustainable and regenerative way.

Directors Jordan Osmond and Antoinette Wilson have brought together stories from their travels around New Zealand, along with interviews with experts able to explain how we come to be where we are today. From forest gardens to composting toilets, community supported agriculture to time-banking, *Living the Change* offers ways we can rethink our approach to how we live. Each and every one of us has the power to create change. *Living the Change* sets out to inspire us to do just that. There are so many exciting and important ideas and initiatives out there, so much hope



“You’ve probably had those moments of despair where you think it’s just hopeless and the world is always going to be this way and anything we do is not enough, but there’s also – and I would say that this is maybe more of a heart knowing – that understands that a more beautiful world is possible.” – Charles Eisenstein in *Living the Change*

List of transitions up for discussion during the conference. Let us know of others. One of outcomes of conference, is to create strategic action plans for achieving each of these transitions:

- 1. Animal Slavery -> Animal Liberation
 2. Deliberate Cruelty -> Compassion for all Life
 3. Religious Divisions -> Acceptance of all faiths and non-belief traditions
 4. Ego-centric -> Eco-centric
 5. Fear of Death -> Love of Life
 6. Monocultures -> Biodiversity (Food Forests)
 7. Climate Destruction -> Climate Healing
 8. Ecological Overshoot -> Ecological Thrivability
 9. Artificial Scarcity -> Natural Abundance
 10. Death-dealing -> Life-enriching
 11. Carnism and Speciesism -> Veganism
 12. Colonialism -> Decolonization
 13. Sexism and Heterosexism -> Gender Equality and Justice
 14. Racism -> Racial Equality
 15. Rising Inequity -> Radical Equality
 16. Individualistic -> Community Oriented
 17. Competition -> Collaboration
 18. Hierarchical -> Cooperative and Consensual
 19. Secrecy and Lies -> Openness and Truth
 20. Endless War -> Durable Peace
 21. Selfishness and Greed -> Selflessness and Contentment
 22. Exclusivity -> Radical Inclusion
 23. Domination/Control relating -> Partnership/Respect relating
 24. Individual Transparency / Institutional Privacy -> Individual Privacy / Institutional Transparency
 25. Normalized Violence -> Normalized Nonviolence
 26. Education for Literacy -> Education for Creativity
 27. Transaction Economy -> Gift Economy
 28. Unfettered Growth -> Development
 29. Debt Currency -> Ecological Currency
 30. Fossil Fuels -> Distributed Renewable Energy
 31. AC Grid -> DC Grid with Energy Storage
 32. Planned Obsolescence -> Robust Durability
 33. Labor based on Compulsion -> Labor based on Volunteerism
 34. Commodification of Life -> Decommodification
 35. Conspicuous Consumption -> Conscious Simplicity
 36. Toxic Products and Processes -> Non-toxic Products and Processes
 37. Reactive Medicine -> Preventive/Lifestyle Medicine
 38. Governance for Economic Growth -> Governance for Ecological Thrivability
 39. Concentration of Power -> Distribution of Power
 40. Representative Democracy -> Participatory Democracy
- Here's an example of a plan that we wrote up for the Animal Slavery -> Animal Liberation transition:
https://docs.google.com/document/d/1wsluNcw_bQYt_ax0z9B8vdlUaz11a001iMnntXXNAuE/edit
- Sailesh Krishna Rao - Climate Healers (through Great Transition Initiative forum)

This is from one of 'Great Transition Initiatives' members Sailesh Rao a vegan advocate as key to resolving both resource and spiritual crises – hence the top 2 items here

Landing points - Research opportunities - designing transitions to fit people's comfort zone

- Reuse Repair Recycle
- Transition towns; Transitions/Stepping stones/empowerment/hope/resources
- Practical tools - impact (C footprint) of changing different things in life
- Practical models (Edward Mitchell) – demonstrations; role models; political allies and champions
- Biophilic Cities - <http://biophiliccities.org/wp-content/uploads/2018/04/Coffman-Preprint.pdf>
- Veganism???
- **Harvey Locke & EO Wilson proposed 50% of planet should be wild?**
- Too many pets – 1 large dog (and 5 cats) equivalent to an SUV
- Joined-up thinking; ecology, history & culture in design (legibility)
- Sustainable Aotearoa – Strong Sustainability - <https://www.facebook.com/SANZ-Sustainable-Aotearoa-New-Zealand-1462909530621690/>
- Small is beautiful
- What can the west cut back on; what is reasonably carrying capacity that allows are us share each other and with the other creatures on the planet? What are implications for population and migration
- What technologies are there for regeneration and life-affirming global culture; relationship to kaitiakitanga
- Ecological Literacy - Messaging
 - Understanding biodiversity, material cycling, decomposition, energy flows, foodwebs, succession, trends, capacity, limits, human dominance and impact
 - Biomimicry – going with the flow, copying nature
 - The role of biodiversity in place-making and well-being (a sense of history and identity)
 - Medical Professionals are generally accepted as promoting preventative measures to maintain public health; ecology now has to advocate for the health of the planet – the stakes are high

Looming Disasters

Why citizen responsibility is essential



The Earth is vast
It is our Home

The Great Transition Initiative
www.InspiringTransition.net

This is a **Great Transition Initiative** communication tool (**Kitchen Table Conversations modules**) to quickly bring people to a sense that humanity is in an existential emergency through global warming, toxins in the food chain, threat of nuclear war... and, profoundly, citizen ignorance. Andrew Gaines - www.InspiringTransition.net

*There is no way the global economy
can continue – there will be
'adjustments' like we've never seen*



Elephants in the Room

we just can't avoid

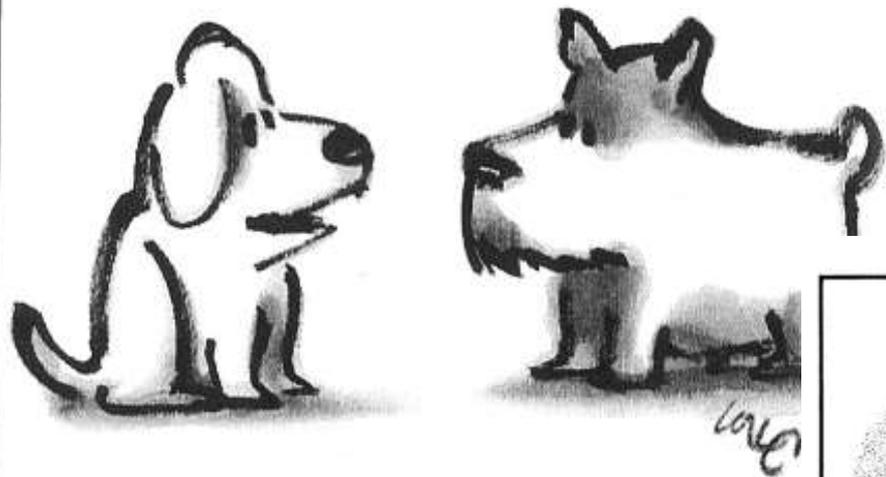


- Carrying capacity at what material standard of living
- Reduced production due to climate change, SLR, soil loss
- Engaging with the world on humane solutions
- Immigration & birth rates
- Property rights – equity, planning
- Growth economics -> steady state economics
- Is technology, driverless cars, AI & IOT more than a partial answer
- Exploring non/less- material values – place-making/identity, inclusiveness, ecological literacy
- Psychological needs created by hormones, adrenalin & desire for chocolate!
- Global conflicts

Democracy, the Deep State, Big Oil, Big Pharm, the military-industrial complex & hidden interest

- We have a financial system that supports a wealthy parasitic class that is destroying the environment. To a great degree they control governments and the media. We need to change this.





"I attribute it to human error. But then I attribute everything to human error."



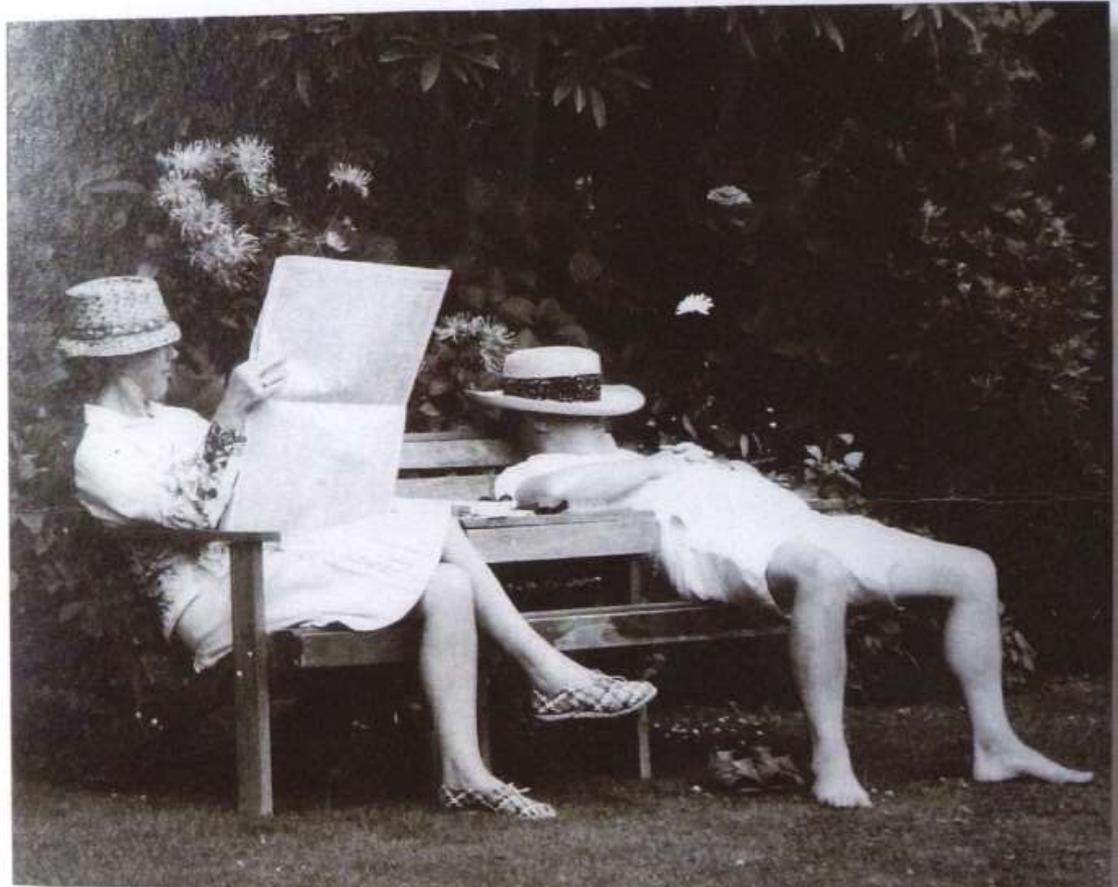
"Who are you kidding? You're all about small government until you get stuck in a tree."

And if that wasn't enough ...

Wrap Up – OK that's about it We'll be back!

**A last word before
the first word of the
beginning of infinity**
cf David Deutsch

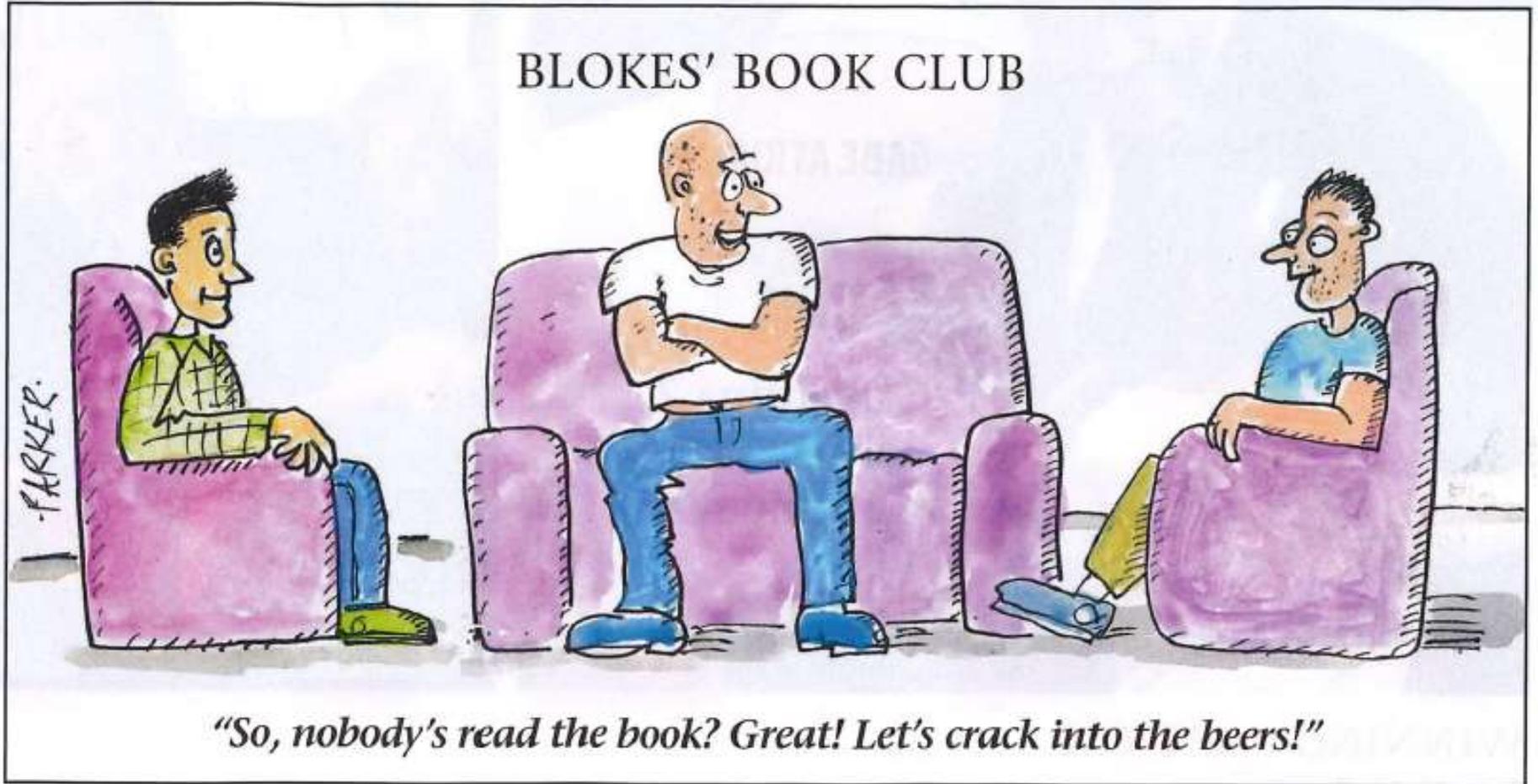
I think I've discovered the meaning of life.



You just hang around
until you get used to it.

Charles M. Schulz (1922–2000)

... or is it reading?



THIS IS THE AWNING
OF THE CAGE
OF ASPARAGUS



SkySong City

thx Diana Shand



Thanks so much to: Wendy, Nick,
Ronlyn, Anja, Thomas, John Sc,
Edward, Gwen, John P, Katherine,
Franca, Marivee & CWEA



Registrant thoughts on the CWEA Course

SUMMARY OF FEEDBACK on CWEA Course SUSTAINABILITY-Creative transitions to sustainable futures – We need to change things but HOW?

16 replies received of approximately 53 recorded enrolments*

Approximate numbers attending each session:¹

Session	Session 1: 14 May	Session 2: 17 May	Session 3: 21 May	Average attendance per session (N = 53) ²
Recorded Attendance	37	36	36	36 (68%)

*A total of 69 names were recorded on the "Course Registrants". Sixteen of these can be deleted: 12 were not recorded as attending any session (although 2 clearly did attend as evidenced by their completed course feedback forms – a nett loss of 10 course registrants); and 6, identified as facilitators and/or presenters. The final tally, according to the adjusted "Course Registrants" list is: 69-(10+6) = 53.

Age/Decade (N=17)

20-29	30-39	40-49	50-59	60-69	70-79
4	-	2	-	7	4

Age	No. (N=16)	
20's	4	80
30's	-	0
40's	2	80
50's	-	0
60's	7	420
70's	4	280
Total	17	860

Median = 50

Mean = 51

Gender (N=16)

Female 8
Male 8
Neutral 1 [would prefer doing away with gender classifications]

Occupation(s) (N=16)

- Retired (unspecified) (3)
- Retired Minister
- Retired, food research
- Food Resilience Network
- Scientist
- Environmental Scientist

¹ 12 individuals attended only one session (not necessarily the first); 16 attended only two sessions; and 24 attended all three sessions.

Occupation(s) (Cont'd)

- Environmental Geologist
- Sustainability Consultant
- Landscape/Eco-community worker
- Policy Analyst
- Policy
- Independent Research Writing
- Tutor Consultant
- Teacher

Highest educational achievement (and area of interest) (N=14 + 2 not knows)

	No.
• Unknown	2
• Level 1 NCEA	1
• St 1 Uni/Prof Cert.	1
• BA	2 (subject area(s) not specified)
• BSc	3 (one Botany, two not specified)
• MA	1 (subject area not specified)
• MSc	3 (one Water resources/rainwater harvesting; two in Geoscience)
• PhD	3 (one in chemistry, one sustainability, one unspecified)

'Average' education achievement of participants = 3.5 (between the bachelors and Masters level degrees)

Median = between the bachelors and Masters level degrees)

How did you learn about this series? (The first source recorded was counted as the primary source) (N=17)

- WEA (5) (website 2, unidentified WEA member 1, WEA email 1, WEA email and website 1, booklet/brochure 1 = picked up at Boatshed Cafe)
- Colin Meurk (5) (also a brochure)
- Green Party (3) (friend, newsletter, diary/email)
- Catherine Peet (1)
- Girlfriend (1)
- ~~ExAktion~~ group (1)

What motivated you to attend? (N=17)

- Concern about the planet and its people [14]
- Concern about the environment [5]
- Save the planet! Rampant consumerism! [6]
- Concern for the world [7]
- Wanting to hear ideas on what we can do [17]
- I want to connect people to nature again and interested in groups working towards that [2]
- Wanting to be more sustainable [8]
- Interest in Sustainability and "course" sounded quite different. [9]
- An interest in sustainable development [10]
- Interest in sustainability [11]
- Lifelong interest and concern with land, ecology, justice [12]
- Topic and themes and meet good people [13]
- This is my passion [1]
- Critically important subject [3]
- This is the stuff we need to think about and move on [4]

- Colin [15, 16]

Overall (on a scale of 1-10 where 1 = not satisfied at all and 10 = very satisfied) how satisfied were you that the series met your expectations?

Figured on the basis of the number of individuals responding with a rating score (N=16):

Rating score	No. rating (N=16)	
8	9	72
9	3	27
10	4	40
Total 16		139

Median = 8.5

Mean = 8.7

What was the most interesting/satisfying information you received? (N=17)

- Acknowledgement there is an issue. Learning what is happening towards these issues. Understanding social influence. [1]
- Research being undertaken - knowledge of effects of human activity [3]
- Insights from scientists and local experts [10]
- I thought the talk was really interesting – it's important to consider the environment in all decision making otherwise decisions won't be sustainable [11]
- Being with a wide range of like-minded people. The range of topics given by highly competent speakers - hearing hope-filled projects in action. [12]
- Presentations at the start of all three sessions. [14]
- Amoeba [2]
- Story about the amoeba/Swiss direct democracy mechanism on power is diffuse/regen agriculture/soils [7]
- Success stories, e.g. stopping pesticides in a city in Switzerland, as this answers the How. Percentage of people and domestic animals, and wild animals. [8]
- The complexity of soil ecosystems - what they do for our well-being. Dr Amoeba also gave very interesting talk about happenings in Switzerland. [9]
- Importance of soil, swiss vote on synthetic pesticides – bees [13]
- Ed Mitchell on nicotinoids and the Swiss referendum [16]
- Soils. Other people at this stage. [4]
- Soil and social scientists presentations and pesticides, steady state economy [6]
- John Peet's economic model [5]
- The economic ecosystem [15]
- John Peet's talk [17]

What kind of information would you have liked more of (or felt was missing?)

Would liked to have heard more about: (N=13)

- Case studies of success stories and similar challenges faced by places like Christchurch that could inspire people [10]
- Solutions [11]
- Specific examples of successful approaches and initiatives which have worked well elsewhere in the world and could be modified and adapted for use in Christchurch/NZ [14]
- Local actions being taken, how people can help/take part/get involved. Personal actions, community actions make it real and practical. = Mobilize!! [13]
- How to engage people from social scientist perspective [2]
- How we promote movement to a "post-economic growth" political/economic culture [3]
- How could we improve current farming practices? [17]
- Biodiversity, intrinsic value, animal rights [5]
- Might be useful to include food industry's contributions to using resources inefficiently - some perspectives on animal vs plant agriculture [9]
- Population control/lack of control. What countries, tribes, groups have smaller families and why. [8]
- Spiritual diversity communities [7]
- The political evening was great but not very tailored to 'us' and 'here' in a real or practical sense [16]
- First session interesting but not sure organic farming is the answer [17]

Would have liked some information about: (N=13)

- Initiatives we could join [10]
- Next steps [11]
- You raised interest and awareness - now what? How best to channel people's passions toward something useful [13]
- Real world solutions [15]
- Future possible tools – genetic engineering [17]
- How NZ eco systems work - ecology classes [2]
- How to enable a recovery/discovery of the meaning of life?The good news stories. [12]
- Examples of concrete initiatives in other parts of the world/NZ [14]
- 350 org – some information on what they are doing. [17]
- Advertising - its effects, how to moderate its excesses [3]
- Terms and meanings, e.g. food security and greening Christchurch. [8]
- Might be useful to include food industry's contributions to using resources inefficiently - some perspectives on animal vs plant agriculture (also recorded for in the question above) [9]
- Was sad to miss the last evening [16]

Would u be interested in attending further series of this sort?

	No. (N=17)
Yes	15
No	1
Possibly	1

How else would you like to continue to be involved? (N=13)

- Attending more of these events [9]
- Help organise (maybe!) [10]
- More interesting talks [11]
- Attendance [12]
- News updates, email circulations [13]
- To be kept informed of similar/ongoing initiatives [14]
- Field trips to organic farms [15]
- Sustainable ~~Qtautahi~~. Doing stuff not just talking about doing it. [16]
- Other groups in Christchurch! [17]
- If it is possible, I want to help. [1]
- Don't know but I would like to. [7]
- Let's all get dinner once a month [15]
- This is an interesting area for a reading group but obvious! It would have to be several such groups! [16]

What suggestions would you have for improving the series? (N=12)

- Discussion groups with more inputs better structure [3]
- Shorter sessions and more structured discussion, but you have no control over that and it got better across the sessions. If you get a second session ask people what they have done since! [10]
- Steer the discussion a bit more! [15]
- Enjoyed combination of talks (ideally short and succinct like John 's) and time for discussion. Groups were a good idea. [17]
- Longer than 3 sessions. I find the way it was organised was very good. [12]
- Following up with some focus groups and specific action plans [9]
- Run similar forums again - perhaps trying to target a younger set of participants. A one day workshop at UC. [14]
- Slightly shorter sessions [11]
- Personally: shorter evenings, 2.5 hours is too long after a long day. And three Mondays rather than three times in eight days. [16]
- More practical examples of changes. [8]
- More vegetarian pizzas, allow people to share news or activities, e.g. 'what's new" or how people can help or take part in local actions. "Announcements." [13]
- Some video content [2]

Would like to be informed of other courses/opportunities for involvement

	No. (N=17)
Yes	15
No	2

All but two of the participants indicated an interest in being kept informed about other courses/opportunities to be involved in working towards sustainability.

NB: One form (Kathleen Rushton's) had an arrow indicating she had continued on the back of the page, but no back of the page was provided, nor was there a note indicating the arrow didn't actually lead anywhere.

Thanks everyone for the feedback – we will look at following this up later in year 😊