Disrupting the normalisation of unsustainability: rethinking education and research in times of global systemic dysfunction

Arjen Wals
Outline

- Systemic Global Dysfunction – The Anthropocene
- Science in the ‘post-truth’ era
- The SDGs
- T-learning in and for transitions
- Education & Science for Planet & People
It’s official: scientists say we're entering Earth's sixth mass extinction

And humans may struggle to survive it.

FIONA MACDONALD  22 JUN 2015
The Trash Vortex

The journey of trash

6 months  2 years  4 years  6 years

Kilometer
CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY

From a presentation on "Climate Change 2014: Impacts, Adaptation, and Vulnerability, Volume I."
Image Credit: IPCC Working Group 2, AR5.
Doubt over climate science is a product with an industry behind it

With its roots in the tobacco industry, climate science denial talking points can be seen as manufactured doubt.

Source: The Guardian
plantbottle™

up to 30% plant-based
100% recyclable bottle

redesigned plastic, recyclable as ever.

WAGENINGEN UR
For quality of life

UNIVERSITY OF GOTHENBURG
DO SOMETHING, YOU BUNCH OF MANIACS!

WELL! IT'S EASY TO JUST CRITICIZE, YOUNG LADY...

AND I SUPPOSE YOU'VE GOT AN ALTERNATIVE ALL WORKED OUT, HAVE YOU?

HYSTERICAL ECO-FANATICS! ALWAYS TELLING PEOPLE HOW TO LIVE...

GET YOURSELF A PROPER JOB!

'STEADY AS SHE GOES'
ICT-driven Psychic Numbing
‘We are drowning in information while starving for wisdom.’

E.O. Wilson, 1998, p. 300
Wicked problems in unusual times...

- Complexity and uncertainty
- Confusion, ambiguity, extinction of ‘truth,’ lack of ‘trust’ in science and in government
- Hyper-connectivity – erosion of meaning, short attention spans – loss of ‘place’ – ‘viral nonsense’
- Dominant neo-liberal economic forces accelerate inequity and material values that normalize and breathe unsustainability
- Need for continuous learning in a ‘reflexive’ society
“While we marvel at Nasa’s discoveries, we destroy our irreplaceable natural resources – so we can buy pre-peeled bananas and smartphones for dogs”

Key area’s for sustainability science & education

- Understanding change, complexity and transitions
- Boundary crossing, systems thinking and connectivism
- Building agency and transformative capacity
- Utilizing diversity, uncertainty and dissonance
- Dealing with values, ethics and moral dilemmas
Understanding Change, Complexity & Transitions
Based on Kropff, 2012
Doing what we do better vs doing better things...

Societal developments

- Transition
- Incremental

Technological developments

- Transition
- Incremental

GMO
- Closed-cycle design
- Blue revolution

Metropolitan agriculture
- Cradle-to-cradle

> Food literacy
- > Resource efficiency
- < Food waste

Circular economy
- Protein alternatives
- Food justice

Wageningen UR
For quality of life

University of Gothenburg
To address sustainability we need to transgress the ‘walls of our minds’

What makes 1.5 degrees seem nigh impossible?

- the ongoing nature-culture dualism of modernisation logic
- colonial / narrow mindsets and cultures - including modern neo-colonialism and market logic
- those processes and logics that hold inequality in place

what and how we learn is important for transitions to sustainability
Boundary crossing & Seeing Connections
Building Agency and Transformative Capacity
Ocean, Water, Marine & Terrestrial

**mPING**

Meteorological Phenomena Identification Near the Ground (mPING) is a project to collect weather information from the public through their smartphone or mobile device. The free mPING mobile app was developed through a partnership between NSSL, The University of Oklahoma and the Cooperative Institute for Mesoscale Meteorological Studies.

**Lake Observer mobile app**

The Lake Observer mobile app was designed by members of the Global Lake Ecological Observatory Network (GLEON) for both research scientists and citizen scientists to record lake and water quality observations. Lake Observer is part of a crowd-sourcing platform to facilitate the collection and sharing of lake- and water-related information across the globe.

**CITiZAN (Coastal and Intertidal Zone Archaeological Network)**

CITiZAN is a national community-led project to tackle the alarming threat to England's coastal and intertidal heritage from tides, storms and rising sea levels.

**GLOBE: El Nino**

Join professional and community scientists in collecting and sharing important data and learn more about your local environment in the process. There are two ways to participate: 1) sign up and contribute as an individual; 2) join as a host-site ambassador to facilitate participation through your community-based organization.
Making Meaning of Ocean Pollution

Sun 18 Sep 2016, 9am - 5pm / Free event / Past event
Arts Ark, Tower Bridge Moorings - 31 Mill Street, London SE1 2AX

To increase awareness of plastic pollution in oceans around the world The Thames Estuary Partnership & the #OneLess campaign are supporting a creative art programme for young people; Making Meaning of Ocean Pollution, developed by From the Bow Seat and The Whale Company.
Boyan Slat (1994) is a Dutch inventor and entrepreneur who creates technologies to solve societal problems.

He is the founder and CEO of The Ocean Cleanup, which develops advanced technologies to rid world's oceans of plastic.

Instead of going after the plastic, Boyan devised a system though which, driven by the ocean currents, the plastic would concentrate itself, reducing the theoretical cleanup time from millennia to mere years. In February 2013 he dropped out of his Aerospace Engineering study to start The Ocean Cleanup. The first prototype system was deployed in June 2016, and The Ocean Cleanup now prepares to launch the first working pilot system in late 2017.

Boyan Slat has been recognized as one of the 20 Most Promising Young Entrepreneurs Worldwide (Intel EYE50), and is the youngest-ever recipient of the UN's highest environmental accolade: Champion of the Earth. In 2015, HM King Harald of Norway awarded Boyan the maritime industry's Young Entrepreneur Award. Foreign Policy included Boyan in their 2015 list of Global Thinkers, and Forbes included him in their 30 under 30 edition in 2016.

The Ocean Cleanup has been recognized as one of the Designs of the Year by the London Design Museum, is recipient of the 2015 INDEX Award, won Fast Company's 2015 Innovation by Design award, and has been chosen by TIME magazine as one of the 25 best inventions of 2015.

Visit TheOceanCleanup.com
Spiral of POWERLESSNESS

PREMISE — LACK
Not enough goods and goodness

Human nature is selfish, competitive, & materialistic, so ...

Fear, depression, & violence spread ...

competition & consumerism intensify & our ecology collapses — all reinforcing the limiting premise.

we're incapable of deliberating to achieve common good, and ...

we must distrust government & trust an impersonal, fixed law — the market — to decide social outcomes.

power inequities worsen, generating scarcity from abundance & with it needless suffering & destruction of the natural world.

Concentrated wealth then infects & warps political decision-making, so ...

wealth inexorably concentrates.

But markets only work if driven by highest return to existing wealth, so ...
Within human nature are deep needs for fairness, cooperation, & effectiveness, so...

we're capable of learning the skills of deliberative problem-solving, and...

democracy becomes no longer a fixed structure but an evolving, values-driven culture we can create.

Political decision-making is freed from the influence of wealth...

so markets remain open, competitive, & life-serving as guided by democratic polities.

Rules, set democratically, keep wealth widely dispersed...
Creating Vital Coalitions Utilising Diversity

Scott E. Page

THE DIFFERENCE
HOW THE POWER OF DIVERSITY CREATES BETTER GROUPS, FIRMS, SCHOOLS, AND SOCIETIES

WAGENINGEN UR
For quality of life

UNIVERSITY OF GOTHENBURG
Participatory village Mapping (Male participants)

Source: Mathews Tsirizeni & Sosten Chiotha, Malawi PGIS study
Participatory village mapping (Female participants)

Source: Mathews Tsirizeni & Sosten Chiotha, Malawi PGIS study
Co-creating ‘sustainability’

- Research
- Education
- Societal organisations
- Private sector
- Governance
trans transformative
transgressive
transdisciplinary
A range of intersectional concerns being addressed through T-learning: Environmental inequalities, gender, poverty, food security, water access, educational inequality, youth opportunity, cultural erosion, cognitive and epistemic justice, fossil fuel and climate change issues.
#Not Yet Uhuru: An expression of young people looking for more socially just, sustainable futures that include them ... What kinds of teaching and research are needed to transform structural dysfunction and exclusion?
Initial scoping and expansive learning responses in one site...

South Africa:

**Inequalities:**
- Political historical
- Land
- Cultural
- Economic
- Educational
- Social (gender)
- Health
- Youth
Learning Network Activities: Sharing Knowledge, Individual and Institutional Change Projects, Shared Productive Demonstration Sites
Indicators of T-learning?
• Expressions of collective action and ‘small changes’ that are situated within larger change trajectories
• Resistance, disruption and re-framing as expressions of agency
• Invisible silences, tensions, contradictions or challenges surfacing

• Problem solving and development of new skills
• Transgressing boundaries, norms or that which has been normalised
• Reframed narratives and social movement for the common good – at multiple levels (intersecting)
Indicators showing people are creating a world that is easier ‘to love and live in together’

- Signs of crossing boundaries
- Signs of conflict/tension
- Signs of conviction
- Signs of empathy
- Signs of attentiveness
- Signs of listening/attentiveness
- Signs of creativity, innovation, imagination
- Signs of intuitive action
- Signs of new friendships
- Signs of a sense of purpose

How can we create a world that is easier to love?
Education & Science for Planet & People

- Look for boundary crossing opportunities
- Adopt a systems approach – e.g. by linking with SDGs
- Utilize diversity and multiple perspectives – looking for synergy but also for contestation and conflict
- Move beyond increasing awareness and understanding
- Ask: what am I/are we strengthening in society, what am I/are we ignoring or weakening? What needs sustaining? What needs disrupting?
- Science for societal impact with people and planet in mind – rather than science for impact factors with continuous growth in mind
Sustainability is not just something to learn, it’s something to live!

Students should learn about sustainable development and global citizenship to help them understand the world they live in.

School garden programmes can teach healthy eating and help build an emotional connection with the natural world.

Education is the best tool for climate change awareness.

Schools should build relationships and engage with community issues.

Students, parents, teachers, principals, school management and the community should be involved in school decisions.

The whole school approach to sustainability brings together what is taught, how it’s taught, extracurricular activities, teacher training, decision-making processes, the physical buildings, the environment, and the wider community.

School buildings should be safe and sustainable, conserving water and energy and reducing waste.

The whole school approach addresses the needs of all learners.
Education for people and planet:
CREATING SUSTAINABLE FUTURES FOR ALL
Thank you for listening!

Twitter: @arjenwals
Email: arjen.wals@wur.nl
Blog: www.transformativelearning.nl

Source: Banksy
Publish AND Perish…?

Time to read/review

n-publications

What’s your h-factor?
Science for society – counter trend