Why Sustainability cannot and should not be taught: a call for deep learning in turbulent times

Arjen Wals



arjen.wals@wur.nl

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Outline

- From NCE to EE to ESD – a brief history
- Education and science in ‘postnormal’ times
- Reorienting education, teaching and learning
- Some points for discussion

arjen.wals@wur.nl



arjen.wals@wur.nl

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arjen.wals@wur.nl

Katrina



arjen.wals@wur.nl

From NCE to ESD - A Very Brief History

- Nature Conservation Education
  (≈1900 - ≈1970) green focus, primary schools, visitor centres
- Environmental Education & Communication
  (≈1970 - 1992) green and grey focus, primary & secondary, adults, EE centres, environmental campaigns
- Learning for Sustainable Development
  (≈1992 - present) sustainability focus, teacher training, vocational, higher education, life-long learning, non-formal, community-based learning, CSR)

2005 -2014 UNESCO decade for
Education for Sustainable Development

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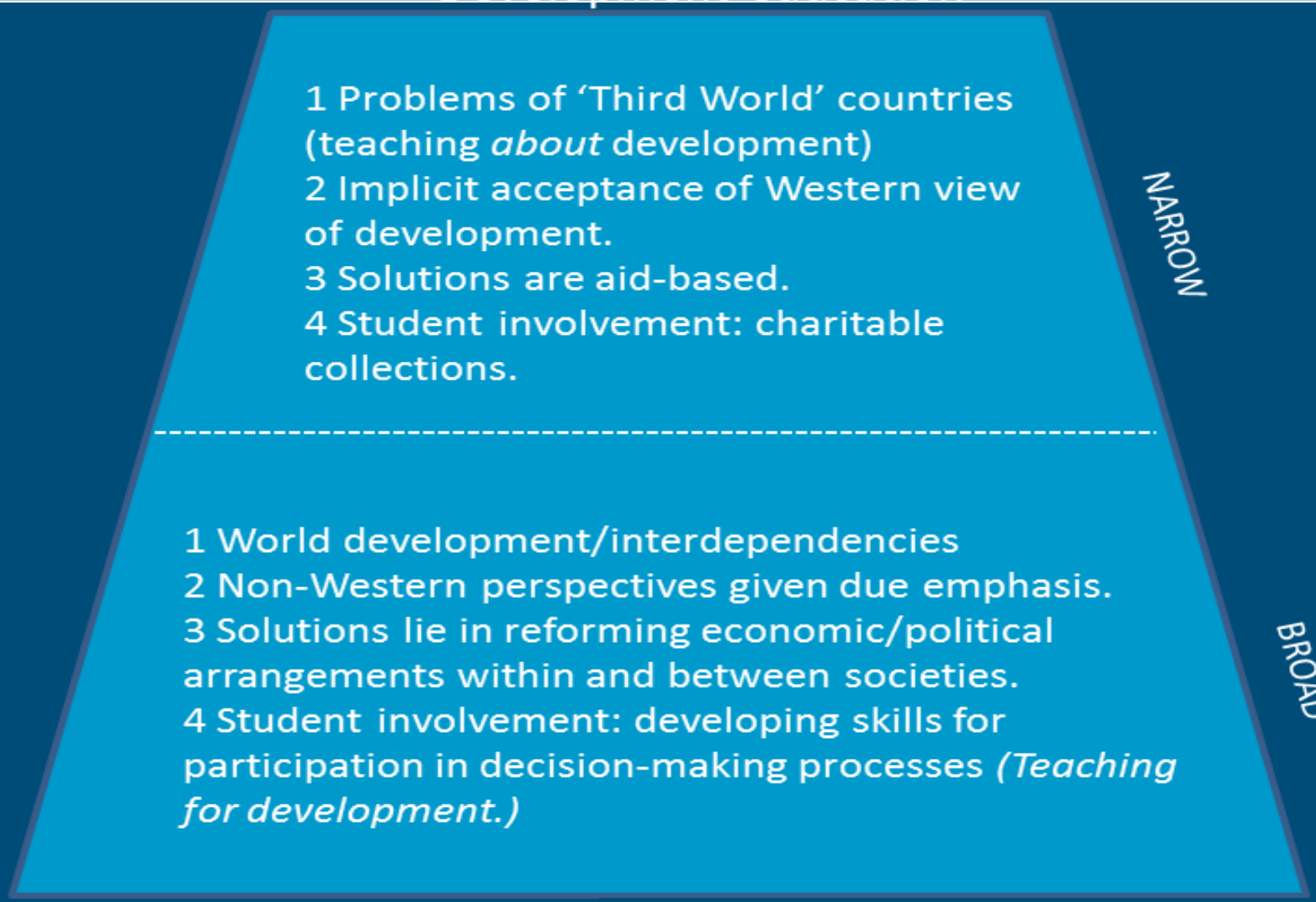
Environmental education



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Source: Wals, A.E.J. (2012) *Shaping the Education of Tomorrow: 2012 Full-length Report on the UN Decade of Education for Sustainable Development* - DESD Monitoring & Evaluation Report, UNESCO, Paris.

Development education



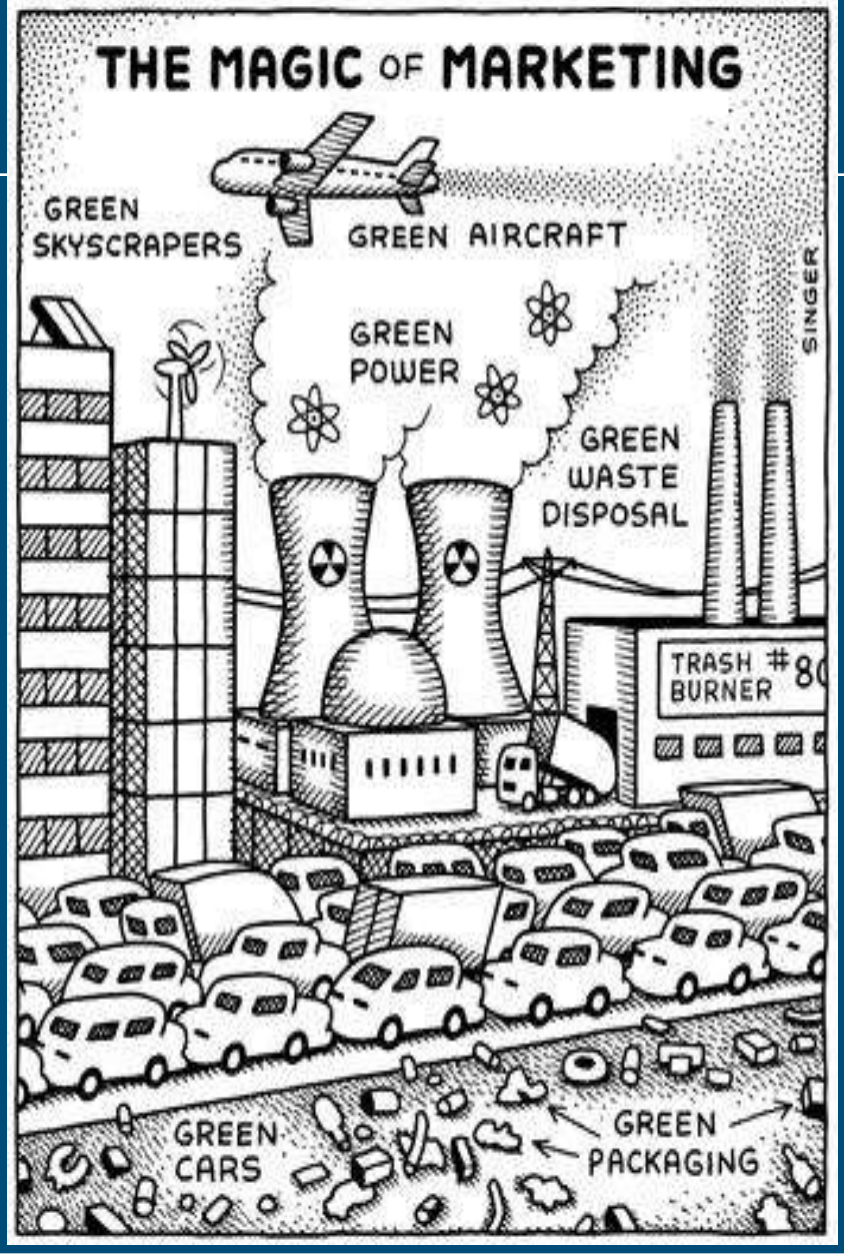
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Source: Wals, A.E.J. (2012) *Shaping the Education of Tomorrow: 2012 Full-length Report on the UN Decade of Education for Sustainable Development* - DESD Monitoring & Evaluation Report, UNESCO, Paris.



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DIT IS DUURZAAMHEID
EEN ROLLS ROYCE GAAT NIET STUK DA'S PAS DUURZAAM!
AAN EEN EEND IS ALLES VERVANGBAAR
NEE JOH, DUURZAAMHEID GAAT OVER SUMME TECHNOLOGIE!





arjen.wals@wur.nl

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GREENWASHING INDEX RATING SCALE

Check out the GWI Scoring Criteria.



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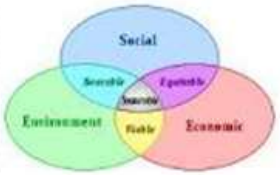
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"sustainable developm... | Copy of ESD Summer Sch... | Foodwaste - Dropbox
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Sustainable development - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/**Sustainable_development**
Sustainable development (SD) is a pattern of economic growth in which resource use aims to meet human needs while preserving the environment so that these ...
Portal - Brundtland Commission - Education - Ecologically sustainable ...

What is **Sustainable Development?**
www.iisd.org/sd/
IISD has prepared an extensive introduction and background to **sustainable development**. This section includes the **Sustainable Development** Briefcase.

Images for **"sustainable development"** - Report images




What is **Sustainable Development?** - World Bank
www.worldbank.org › DEP Home › DEPweb
There are many definitions of **sustainable development**, including this landmark one which first appeared in 1987: "Development that meets the needs of the ...

News for **"sustainable development"**


Sustainability gets UN clout
Mail & Guardian Online - 5 hours ago

Internet | Protected Mode: On
125%

Erosion of trust in science?

- GMO-foods are inevitable…
- Runaway (?) climate change…
- Calcium supplements for women…
- Should men >50 be tested for prostate cancer?
- Is organic sustainable and locally grown better?
- Are vegetables grown in cities healthy?
- ….

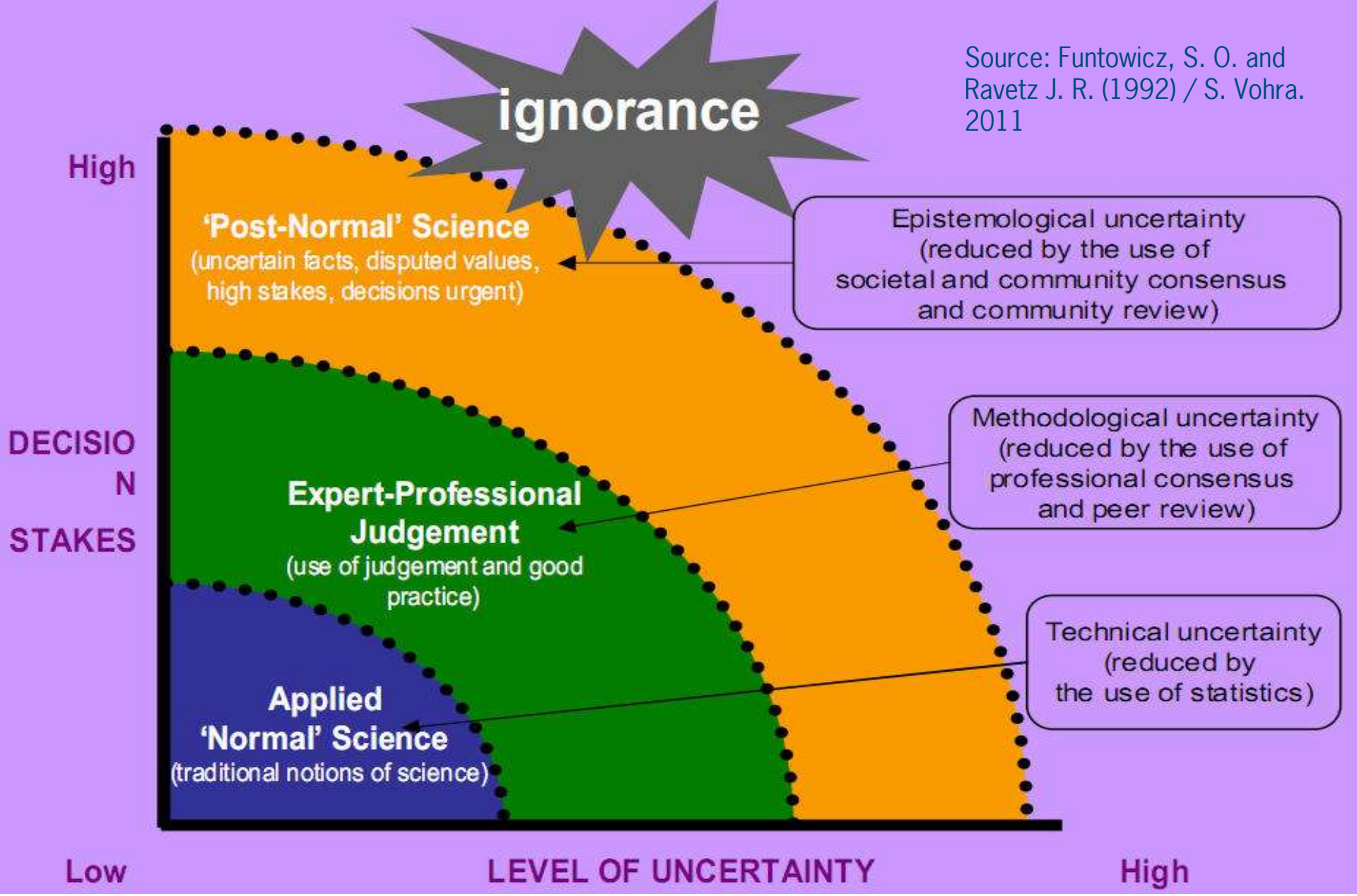
‘ We are drowning in information while starving for wisdom’ E.O. Wilson, 1998, p. 300)

arjen.wals@wur.nl

Post-normalism

- Complexity
- Uncertainty and indeterminacy
- Contestation and controversy – extinction of ‘truth’ & erosion of ‘trust” (fact free science, fact free politics, science as opinion)
- Shallowness and hyper-connectivity – erosion of meaning
- Emergence - reflexivity

arjen.wals@wur.nl



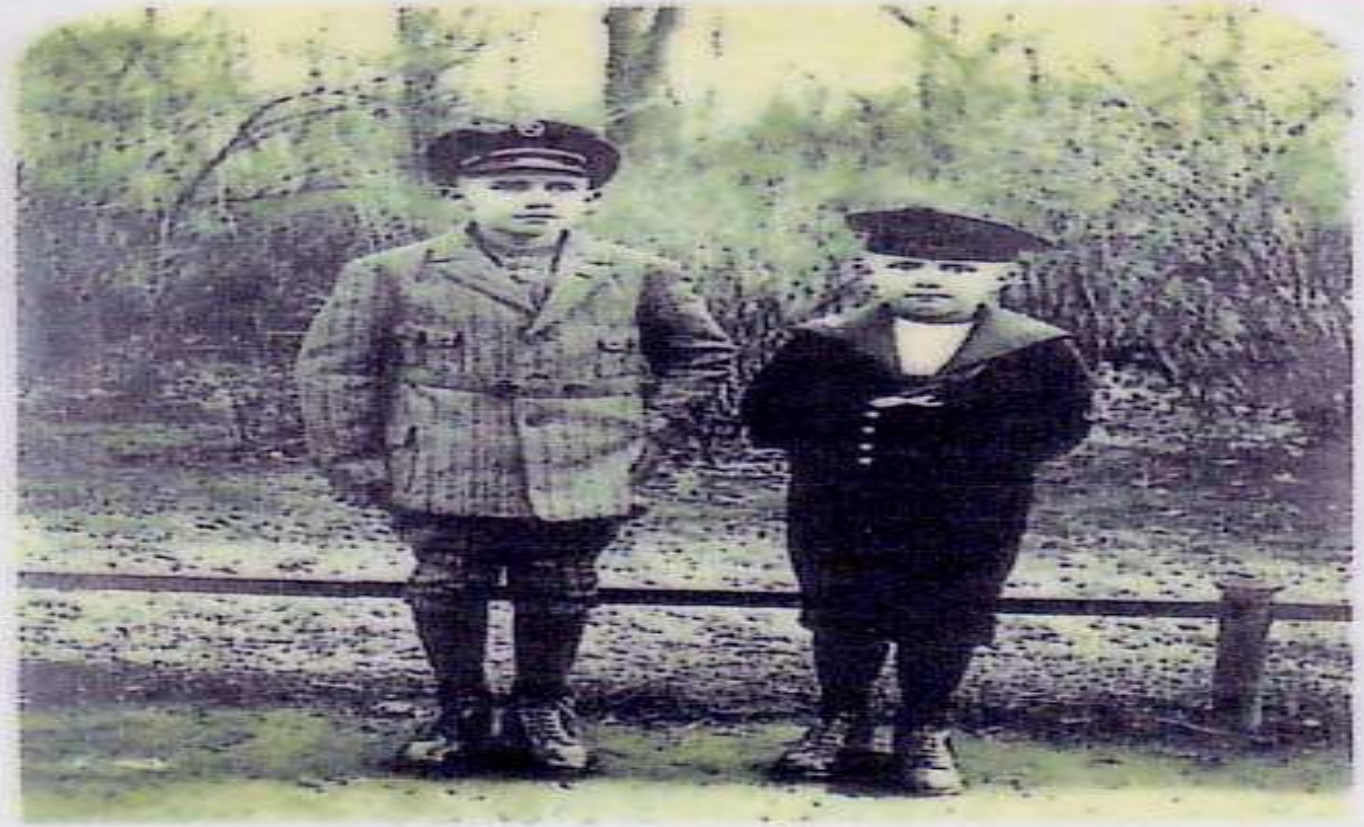
Source: Funtowicz, S. O. and Ravetz J. R. (1992) / S. Vohra. 2011

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"The conventional wisdom holds that all education [and research] is good, and the more of it one has, the better…. The truth is that without significant precautions, [it] can equip people merely to be more effective vandals of the Earth" (D. Orr).

arjen.wals@wur.nl

We are the students of today
attending the schools of yesterday
being taught by the teachers of the past-
with methods from the Middle Ages
to solve the problems of the future !



SO HOW THEN CAN WE TEACH, EDUCATE, LEARN, EMPOWER, … FOR SUSTAINABILITY OR SD?

arjen.wals@wur.nl

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Engaging Young People in Sustainability – an example

1. Relevant
2. Real
3. Re-imagining
4. Realistic

arjen.wals@wur.nl





426.000/day www.chrisjordan.com

arjen.wals@wur.nl

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What's it made of?

Where does each component come from?

How does it affect our lifes?

How does it affect the lifes of others?

Is there a future for cell phones?

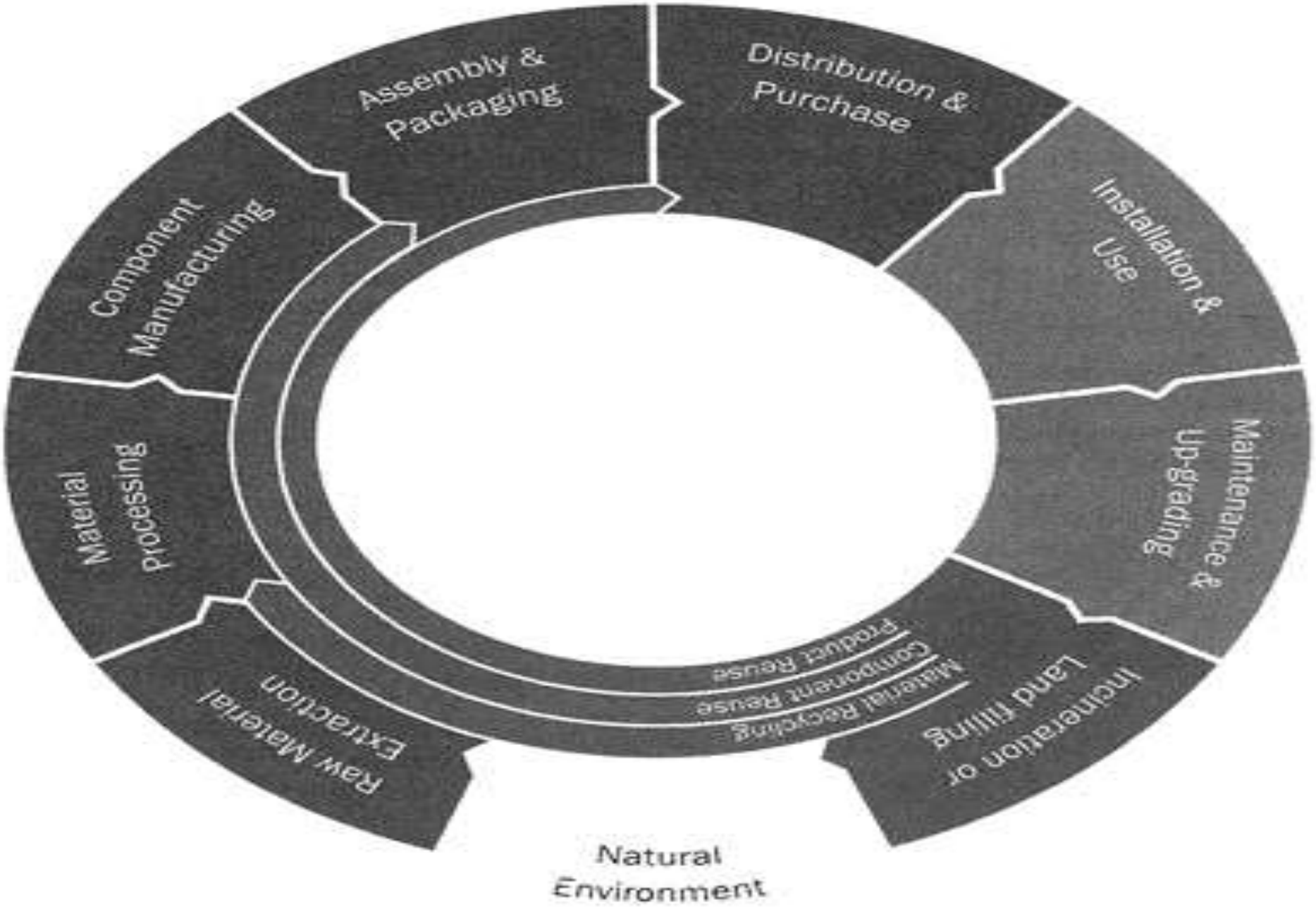


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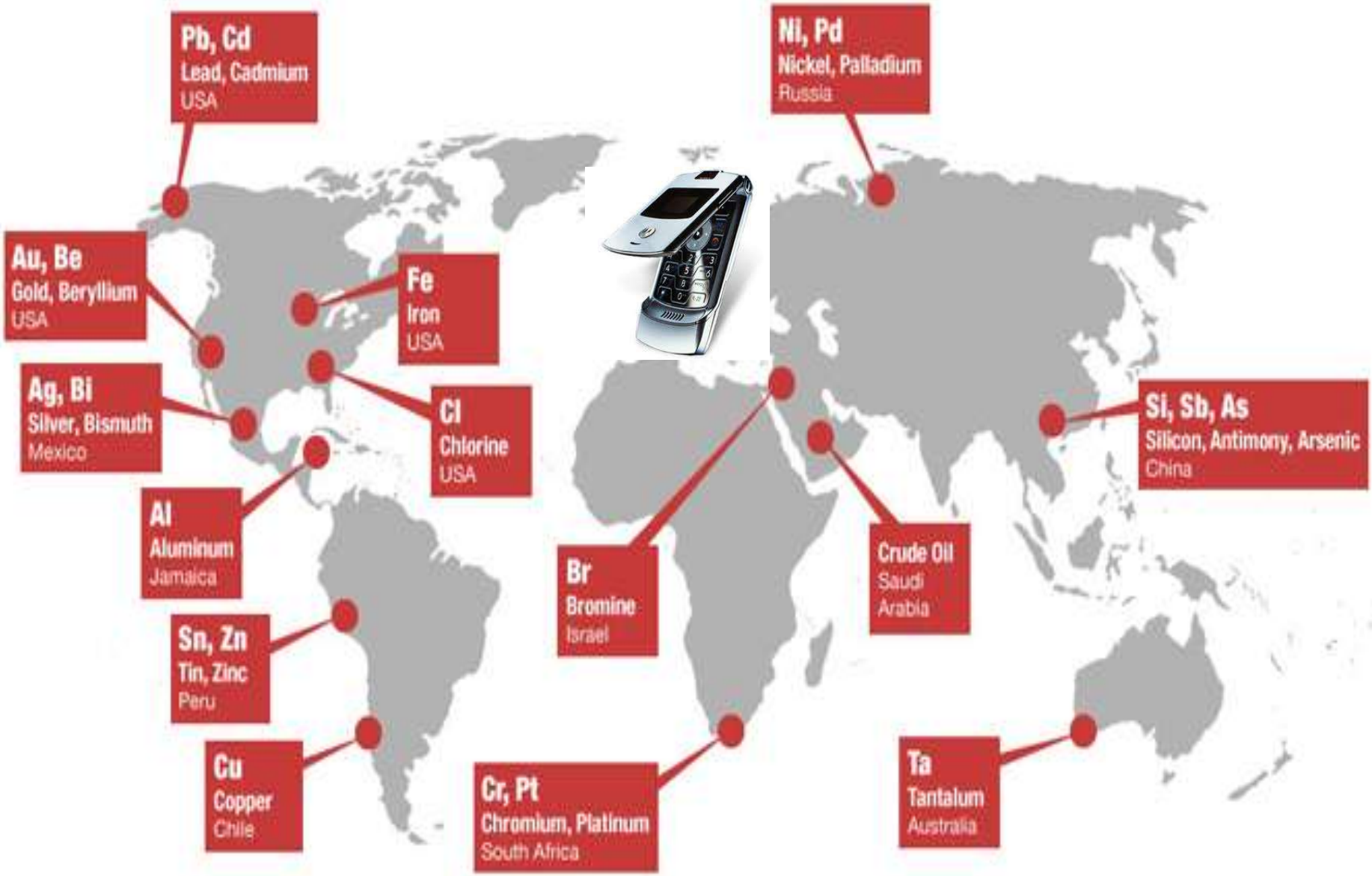
Task

- Divide in small groups, using your own cell phone and any resources you may have access to, start answering the first two questions: what is in it (or what is it made off)? And, where does everything come from (what part of the world)?
- Write down all your findings on a sheet of paper which we can display for the larger group!

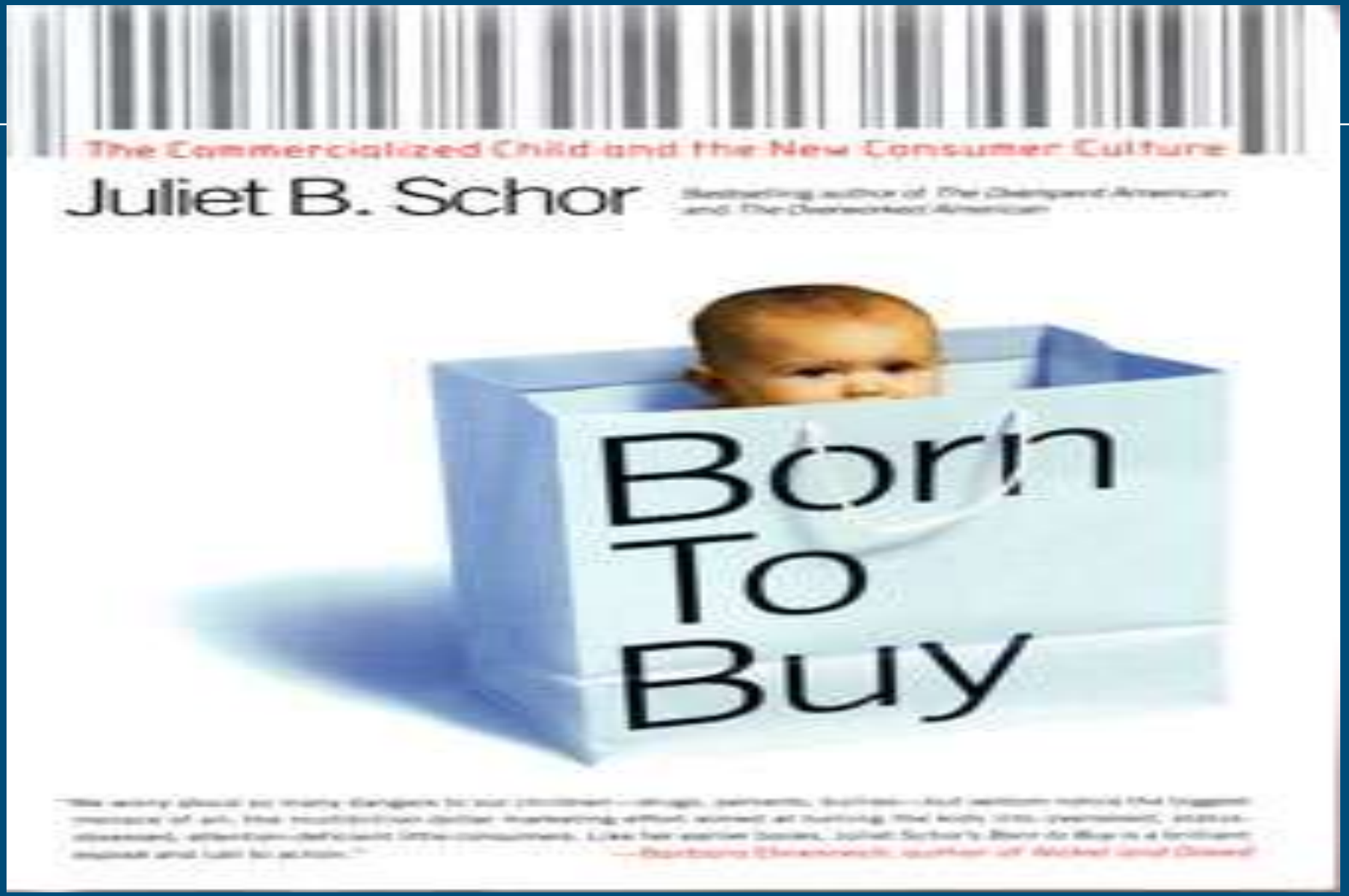
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Mireille Faist Emmenegger, et al, "Life Cycle Assessment of the Mobile Communication System UMTS: Towards Eco-Efficient Systems," International Journal of Life Cycle Assessment 11, 4, (2006): 265 – 276.



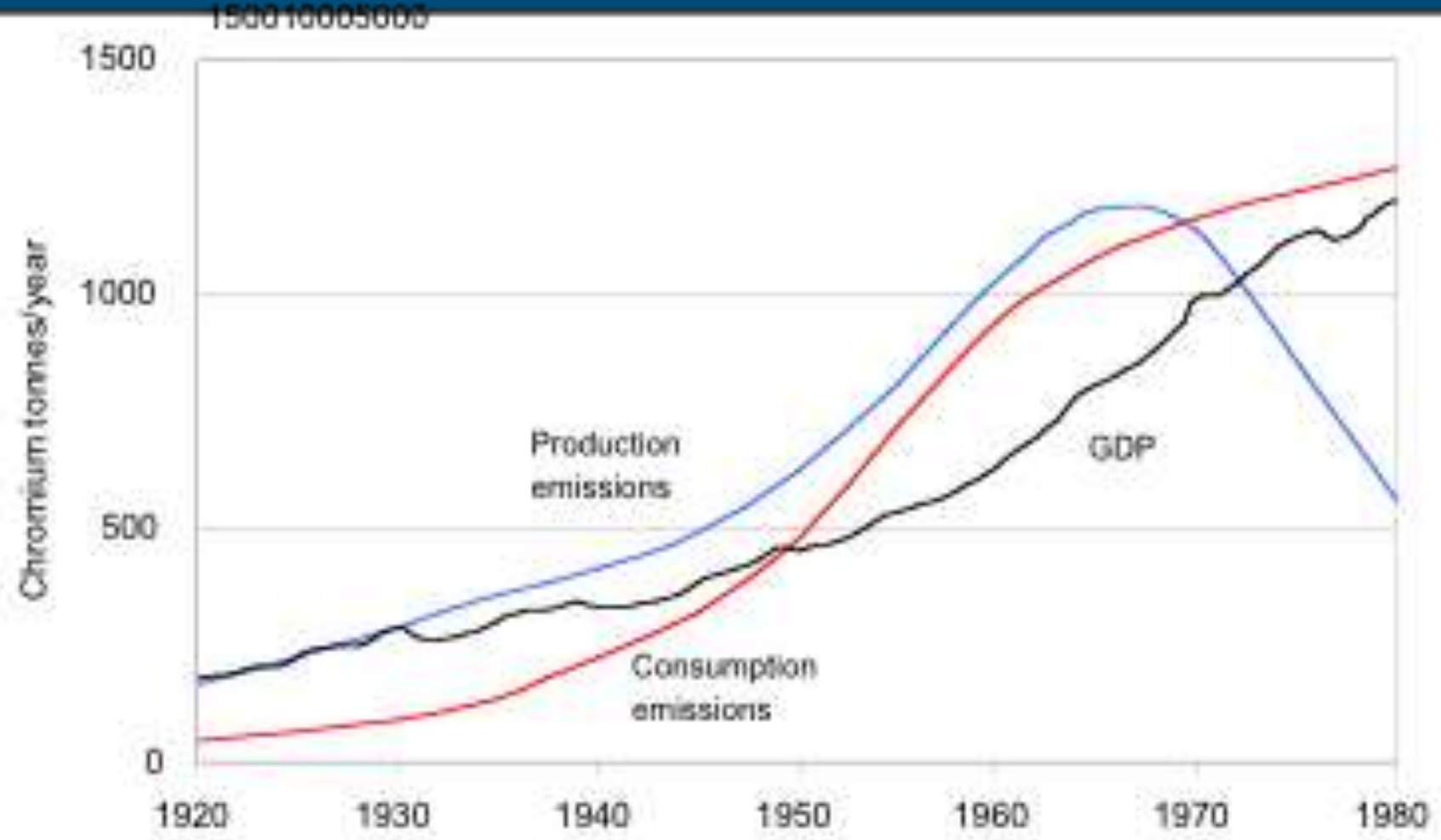
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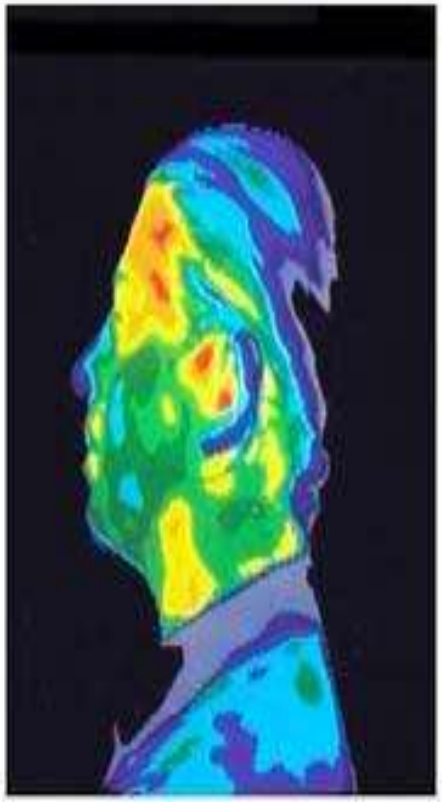
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Chromium: Production and Consumption emissions in Sweden

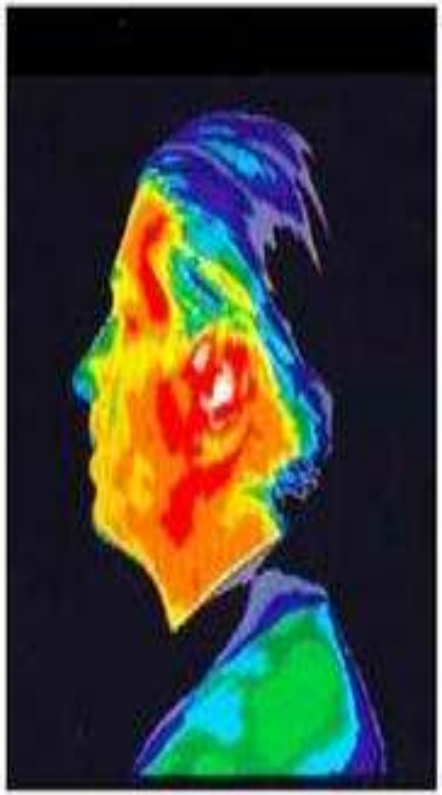


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Thermographic Image of the head with no exposure to harmful cell phone radiation.



Thermographic Image of the head after a 15-minute phone call. Yellow and red areas indicate thermal (heating) effects that can cause negative health effects.



arjen.wals@wur.nl







arjen.wals@wur.nl

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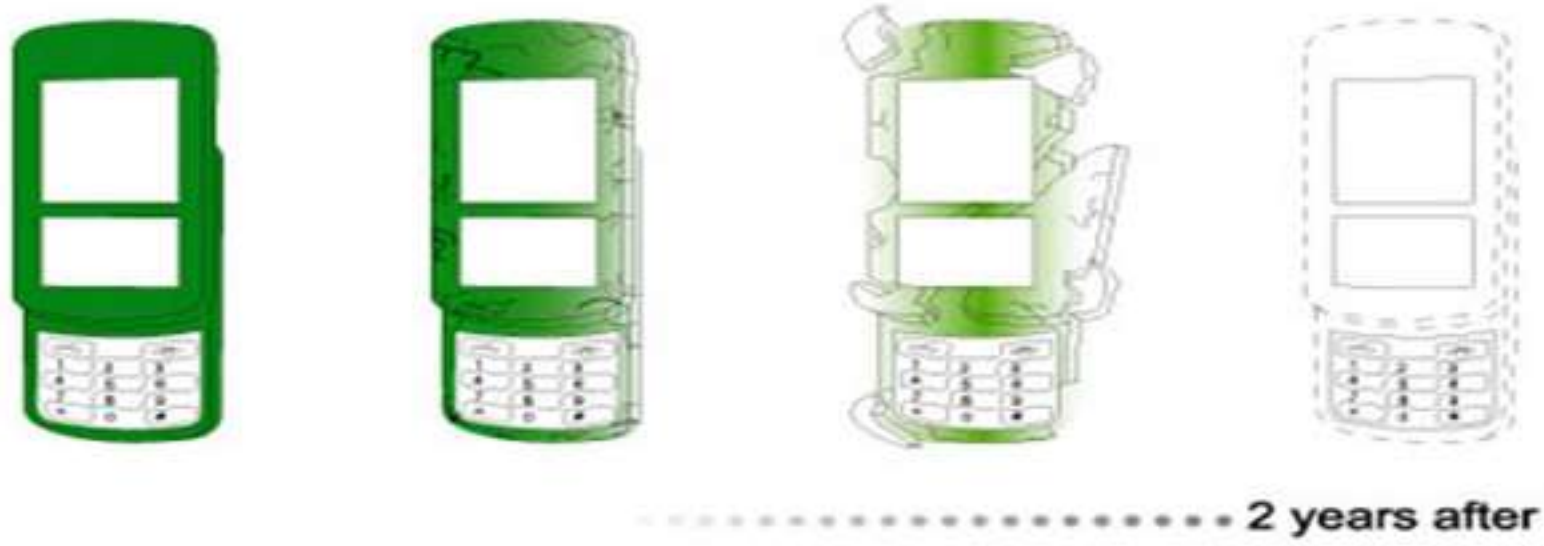
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2 years after

adical Math - Windows Internet Explorer

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Search Resources

GO!

** The search engine works best with simple, broad searches. Instead of seaching for "what is the link between education and incarceration", search under "prisons" and see if any of the results contain information about education (which some of them do).

RadicalMath is a resource for educators interested in integrating issues of social and economic justice into their math classes and curriculum. On this website you will find links to access and download over 700 lesson plans, articles, charts, graphs, data sets, maps, books, and websites to help you bring these issues into your classroom.


EPA
Apps for the Environment Challenge
http://www.epa.gov/appsfortheenvironment




What's Around
Restaurants within biking distance
Paradise Vegetarian No...
Mahek Restaurant and...
Go Thai Restaurant
Govinda's Vegetarian...
3rd Whale
Show me What's Aroun


Northeast Guide
Arctic Char
Barramundi
Catfish
Seafood WATCH
Search for Ocean-Friendly Seafood
APP OF THE DAY



Exploring a Happy Meal











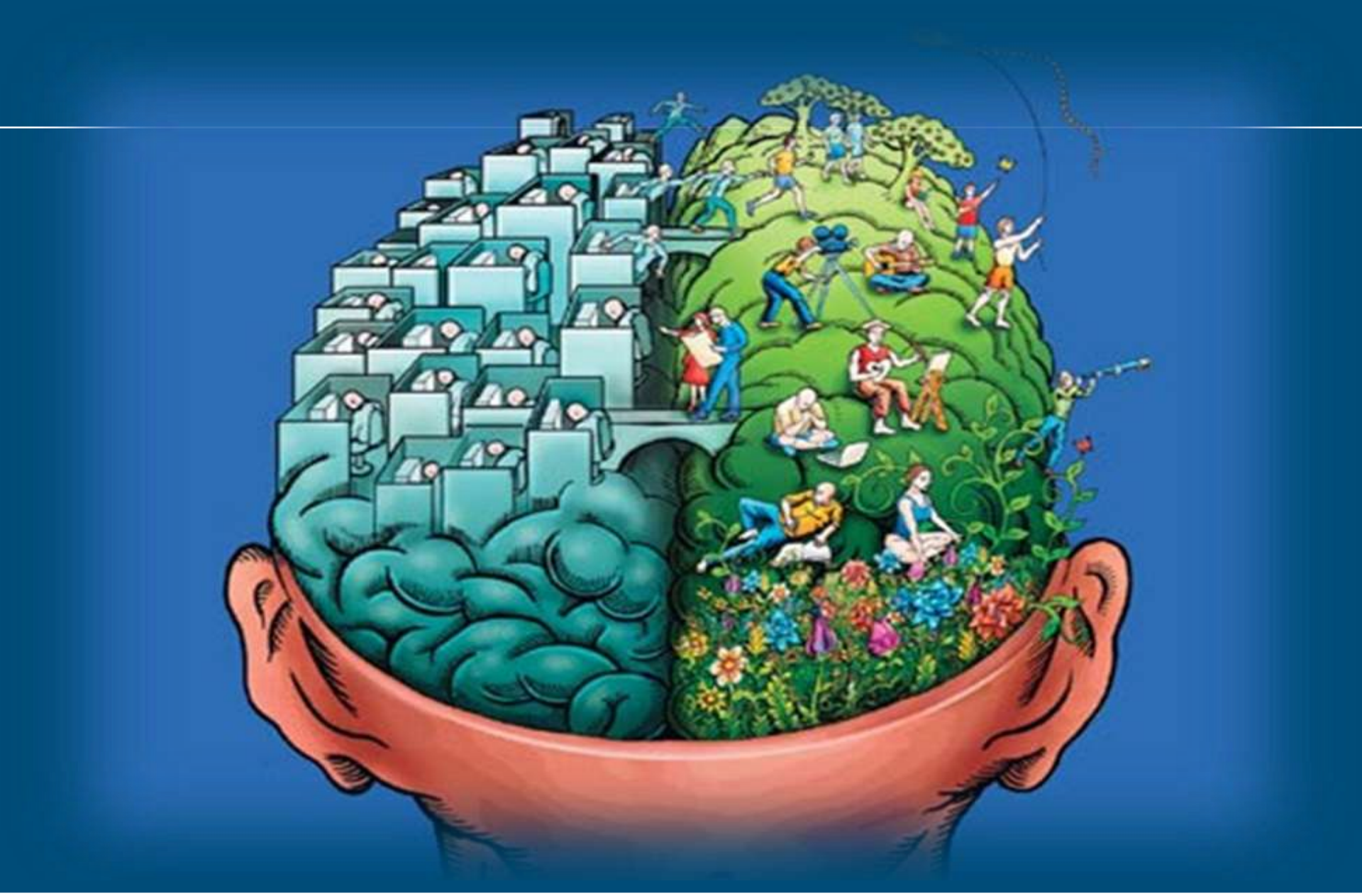


arjen.wals@wur.nl

Lessons learned & competencies developed

- Local and global issues are connected
- Information is everywhere, how to choose?
- Sustainability is multi-dimensional: ecological, economic, ethics, environment, etc.
- Becoming critical of consumption & consumerism, questioning information – is google always right?
- Alternatives *are* possible!
- Interviewing, presenting, reporting, listening, googeling, critiquing…

arjen.wals@wur.nl



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Sustainability Competence

- Understanding sustainable development
- Systems thinking
- Adopting an integral view

} Dynamics of SD

- Personal leadership and entrepreneurship
- Unlocking creativity, utilizing diversity
- Appreciating chaos & complexity
- Fostering collective change

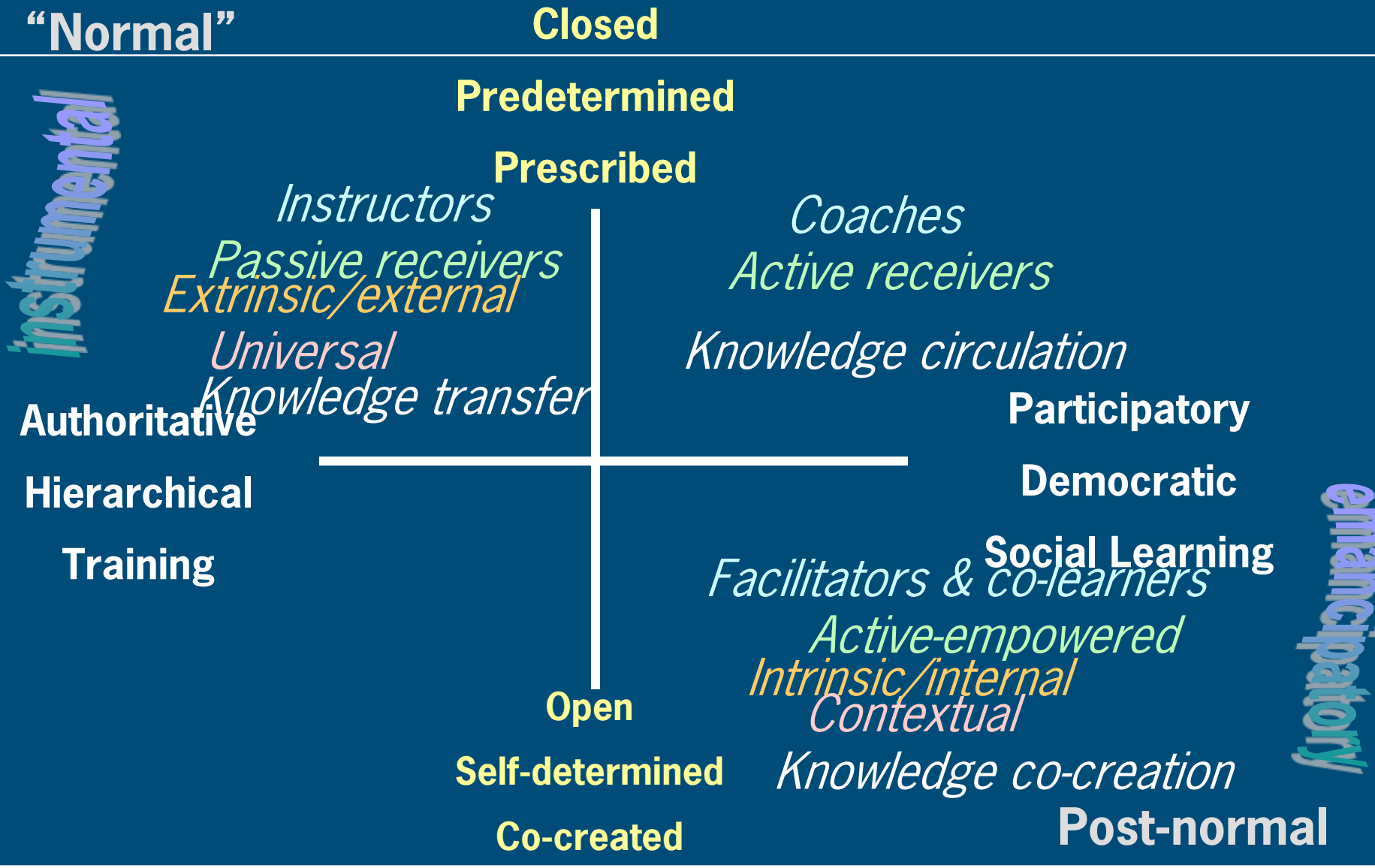
} Change & Innovation

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An Education for Sustainable Development Lens

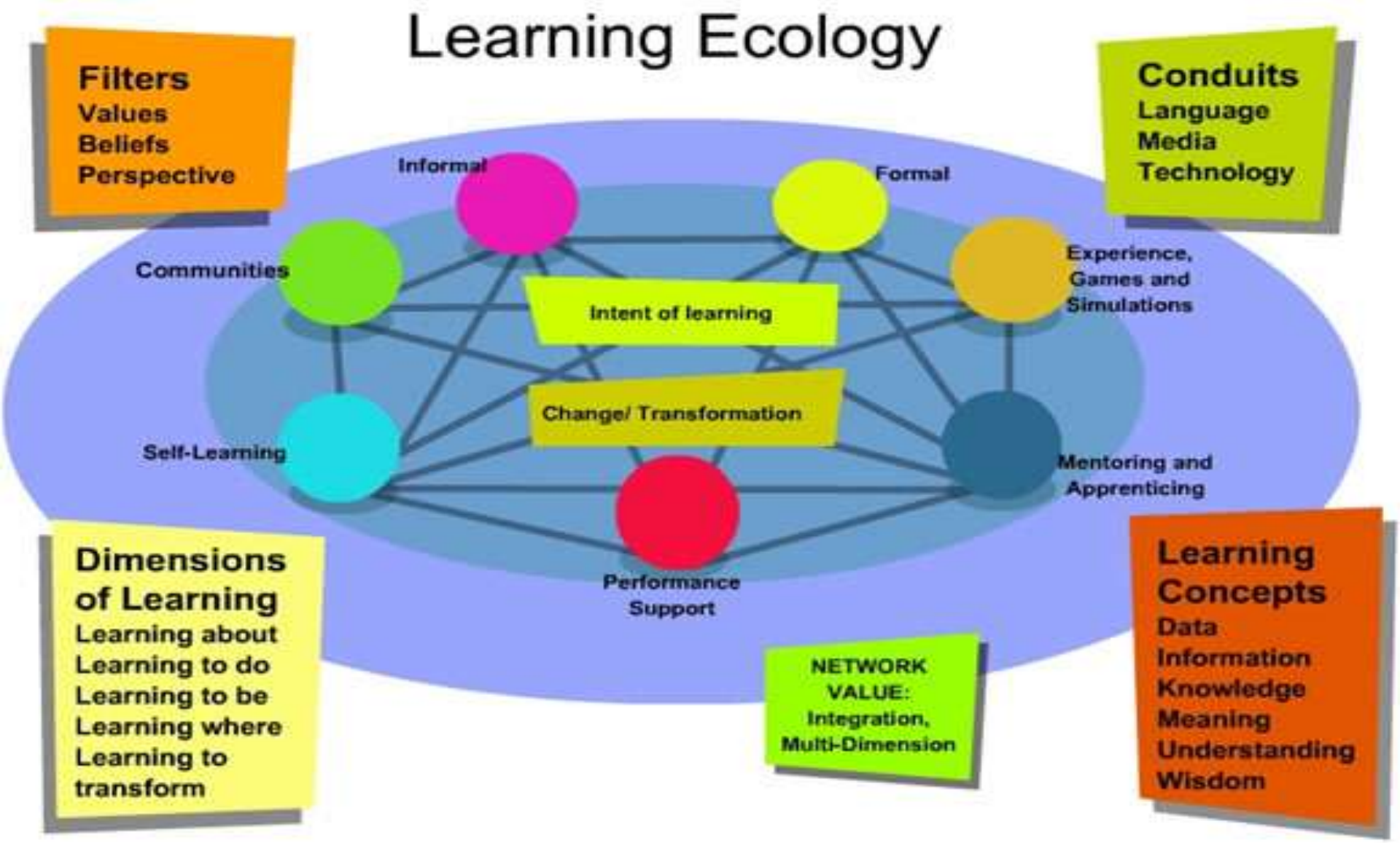
- Integrative – not only the ecological and the environmental, but also… not only the present but also…, not only the local but also…, not only the human world but also…
- Critical - questioning continuous economic growth and consumerism and associated lifestyles
- Transformative – exploration of alternative lifestyles (e.g. 'voluntary simplicity'), values and systems that break from existing ones that are inherently unsustainable

arjen.wals@wur.nl



arjen.wals@wur.nl

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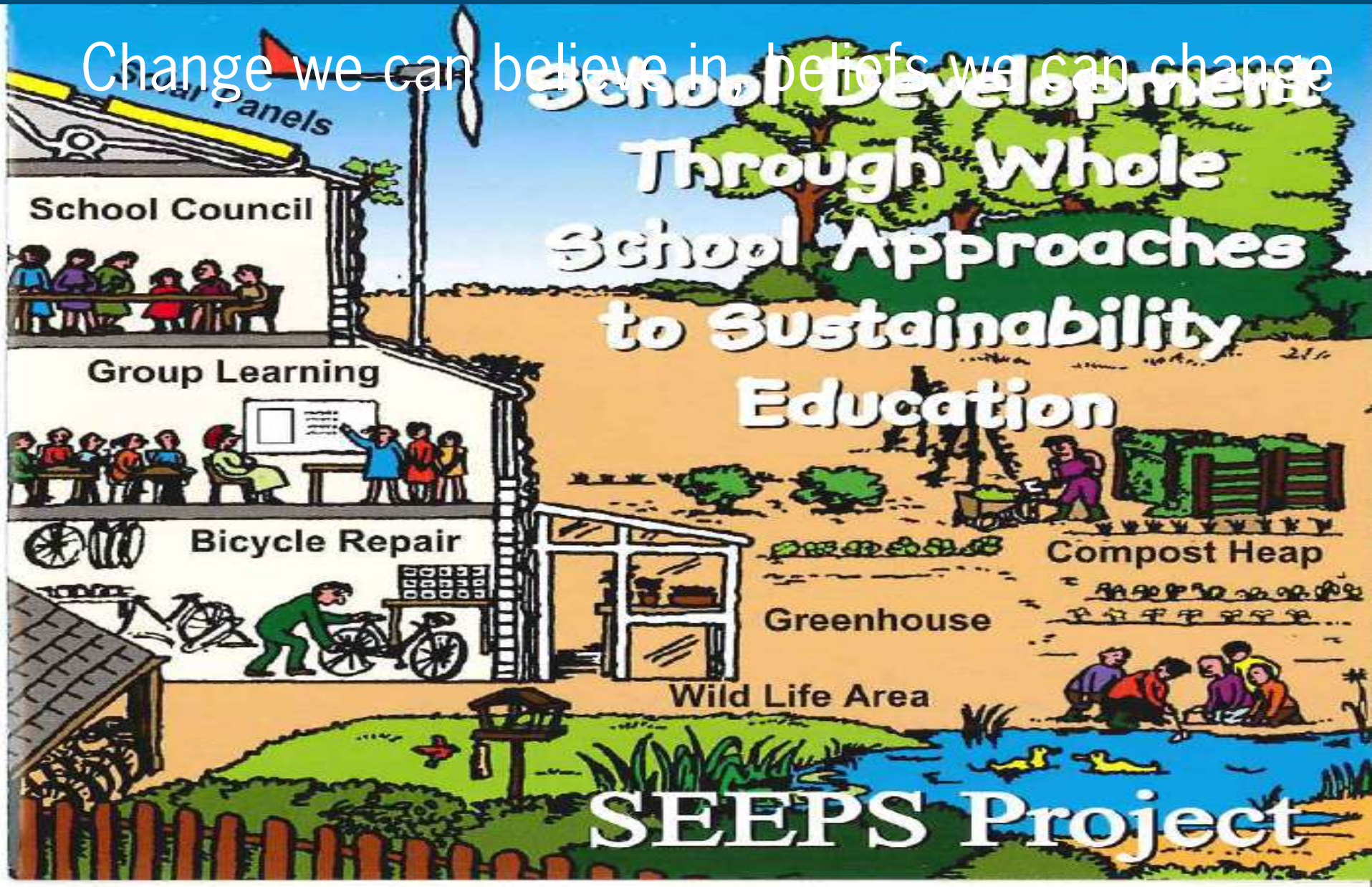
Connectivism: Process of creating network

arjen.wals@wur.nl

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Source: George Siemens, 2008

Change we can believe in, beliefs we can change



arjen.wals@wur.nl

www.transformativelearning.nl

Learning for sustainability

in times of accelerating change

edited by: Arjen E.J. Wals
and Peter Blaze Corcoran



arjen.wals@wur.nl

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