

Education and sustainability

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The conception of education
as a social process
and function has no
meaning until we
define the kind of society
we have in mind.

- John Dewey

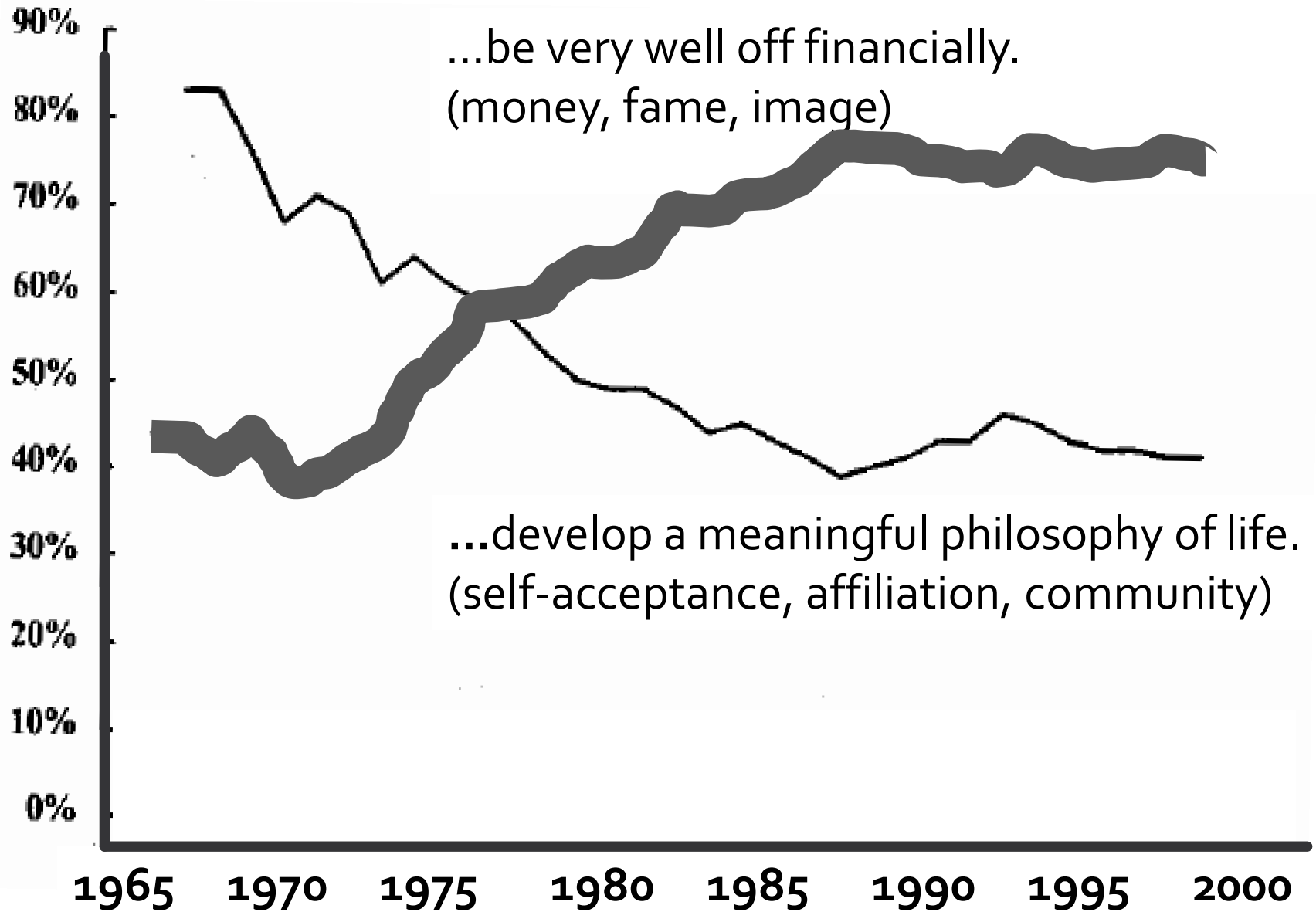
Index

1. Big questions of our time
2. Life satisfaction and meaning as a goal of life
3. Fair future for you and me
4. Full humanness as a goal of education
5. Eco-social approach to education

1

Big questions of our time

Most important in my life is to...

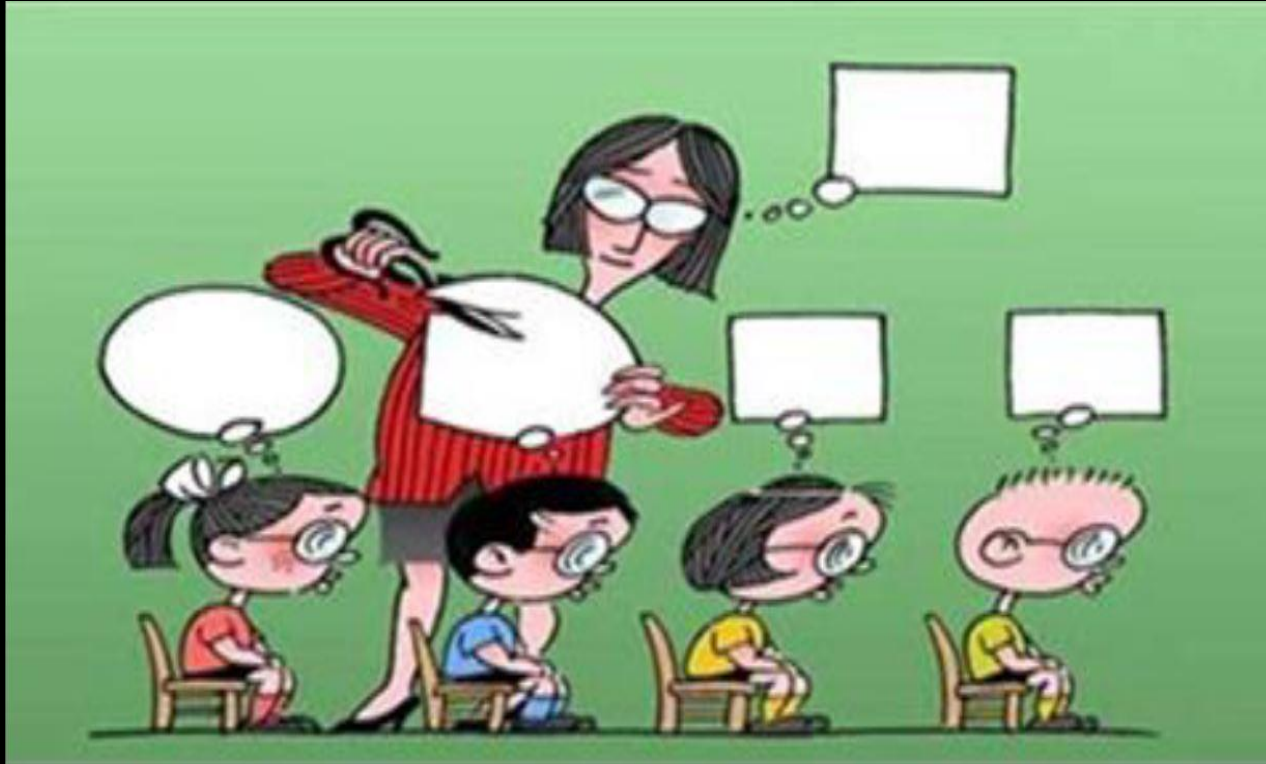


Myers, D. (2000). The funds, friends, and faith of happy people. *American Psychologist* 55(1), 56–67.

Twenge, J. & Donnelly, K. (2016). Generational differences in American students' reasons for going to college, 1971–2014: The rise of extrinsic motives. *Journal of Social Psychology*.

OUR CULTURAL PROGRAMMING

- Increasing consumption is the best way to happiness
- We need rapid economic growth at any cost



Current model of well-being,
happiness and good life?

I Economic growth

II Human rights, social justice, dignified living

III Thriving ecosystems and sustainable use of natural resources

Result #1

Depleting
natural resources

Economic progress is blocked more often

- not by a shortage of fishing boat but by a shortage of fish;
- not by poorly performing pumps but by the sinking of groundwater;
- not by a lack of chainsaw but by the disappearance of forests.

Predicted depletion of different metals and fuels, and main area of usage

Commodity	Depletion (year)	Main area of usage
Silver	2020-2030	electronics, pharmaceuticals
Zinc	2025-2035	energy storage (batteries), anticorrosives
Lead	2030	automobile industry, chemical industry
Tantalum	2030	electronics (mobile phones, automobiles), pharmaceuticals
Copper	2040-2070	energy transport, piping, electronics
Uranium	2035-2045	energy generation

Why do we
collectively
create **results**
nobody wants?

Result #2

Fast climate change

Climate change is mainly a man-made phenomenon

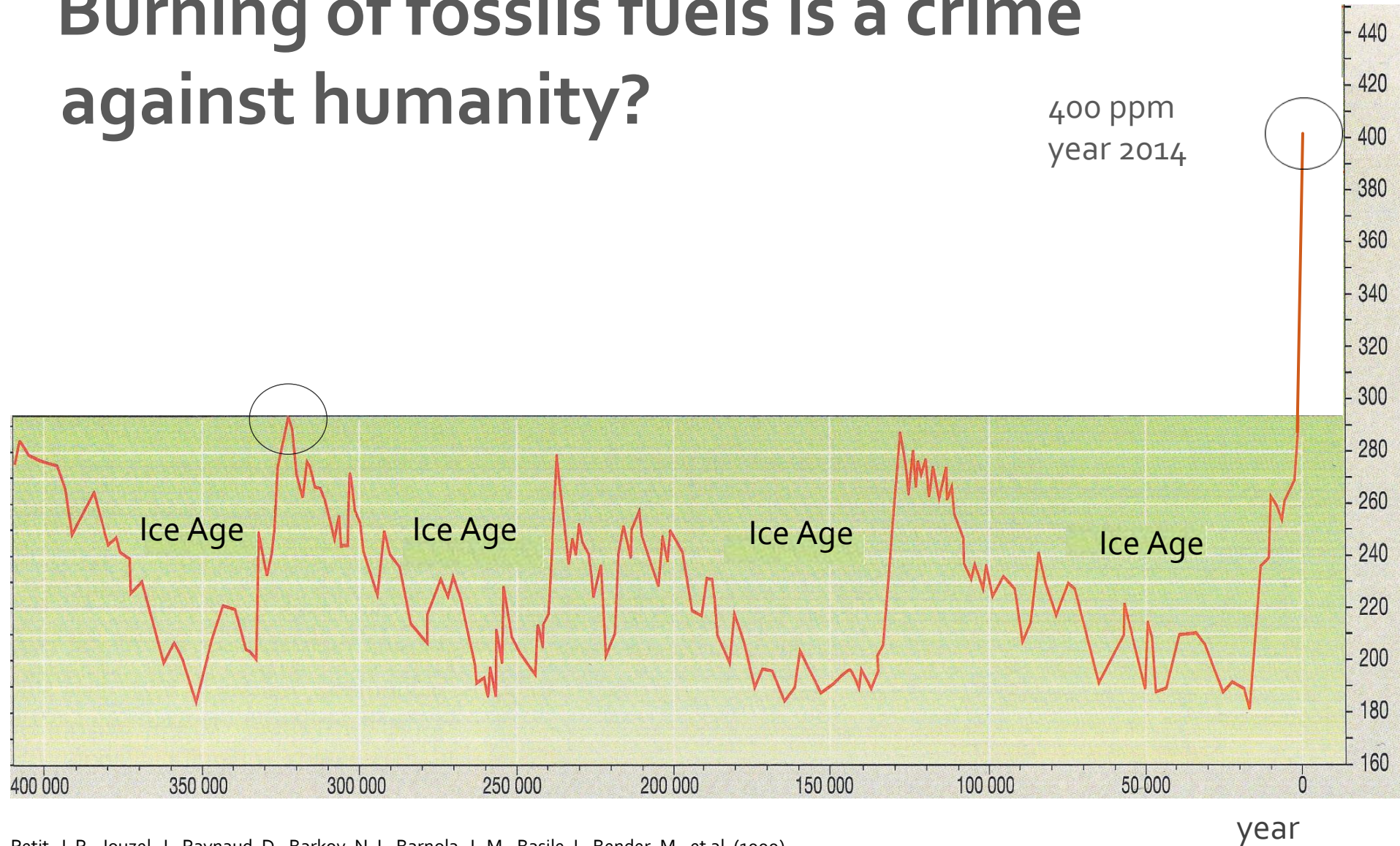
According to the analysis of **11 944** scientific papers, written by **29 083** authors and published in **1980** journals, there is a **97** percent consensus on anthropogenic global warming.

Cook, J., Oreskes, N., Doran, P., Anderegg, W., Verheggen, B., Maibach, E., Carlton, J.-S., Lewandowsky, S., Skuce, A., Green, S., (2016). Consensus on consensus: a synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters* 11(4)

Cook, J., Nuccitelli, D., Green, S., Richardson, M., Winkler, B., Painting, R., Way, R., Jacobs, P. and Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters* 8(2), 1-7.

Burning of fossils fuels is a crime against humanity?

400 ppm
year 2014



Petit, J. R., Jouzel, J., Raynaud, D., Barkov, N. I., Barnola, J.-M., Basile, I., Bender, M., et al. (1999).

Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature* 399, 429–436.

Cook, J., Nuccitelli, D., Green, S., Richardson, M., Winkler, B., Painting, R., Way, R., Jacobs, P. ja Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters* 8(2), 1-7.

Marcott, S., Shakun, J., Clark, P., Mix, A. (2013). A Reconstruction of Regional and Global Temperature for the Past 11,300 Years. *Science* 339(6124), 1198-1201

IPCC (2013). *Climate Change 2013: The Physical Science Basis*. Geneva: Intergovernmental panel of climate change.

Why do we
collectively
create **results**
nobody wants?

Result #3

Lack of transparency

Without transparency the most profitable way to produce goods and services is forced labour, child labour and ecological irresponsibility?

“Will we ever be able to buy a fair-trade smartphone?”

Negative social and ecological impacts are related to our daily used commodities.

Bureau of International Labor Affairs (2012). U.S. Department of Labor's List of Goods Produced by Child Labor or Forced Labor. Trafficking Victims Protection Reauthorization Act of 2005. Bureau of International Labor Affairs, Washington: U.S. Department of Labor. Available at <http://www.dol.gov/ILAB/programs/ocft/tvpra.htm>

Reardon, S. (2012). Will we ever be able to buy a fair-trade smartphone? New Scientist 2860, 18.

SACOM (2012). Toying with Workers' Rights. A Report on Producing Merchandise for the London 2012 Olympic Games. Play Fair.

Coninck, N. Theuws, M. & Overeem, P. (2011). Captured by Cotton. Exploited Dalit girls produce garments in India for European and US markets. Amsterdam: SOMO - Centre for Research on Multinational Corporations. Available: www.indianet.nl/pdf/CapturedByCotton.pdf

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Ferus-Comelo, Anibel & Pöyhönen, Päivi (2011). Phony Equality - Labour standards of mobile phone manufacturers in India. Finnwatch, Cividep and SOMO.

Kakuli, A. & Risberg, V. (2012). A lost revolution? Empowered but trapped in poverty. Women in the garment industry in Bangladesh want more. Swedwatch report 47. Available www.swedwatch.org/sites/www.swedwatch.org/files/a_lost_revolution_sw_o.pdf

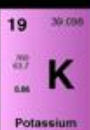
Kit Ho, Chun, Pöyhönen, Päivi & Simola, Eeva. (2009). Playing with Labour Rights: Music player and game console manufacturing in China. Helsinki: FinnWatch.

Pöyhönen, P. (2009). Fair Phones: It's Your Call – Why Finnish mobile operators should be responsible for supply chains. Helsinki: Finnwatch.

UNDP (2008). Human Development Report 2007–2008. Fighting climate change. Human solidarity in a divided world. New York: United Nations Development Programme.

Chan, Jenny, de Haan, Esther, Nordbrand, Sara & Torstensson, Annika (2010). Silenced to deliver: Mobile phone manufacturing in China and the Philippines. Stockholm: SOMO & SwedWatch

UN (2011). Guiding Principles on Business and Human Rights. Implementing the United Nations “Protect, Respect and Remedy” Framework. Geneva: United Nations. Available: www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf

GROUP
IA

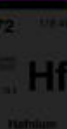
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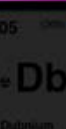
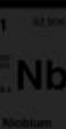
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IVB



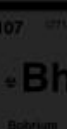
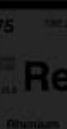
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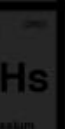
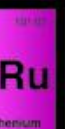
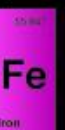
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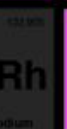
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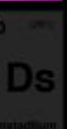
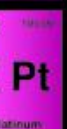
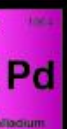
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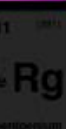
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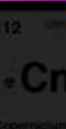
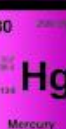
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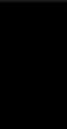
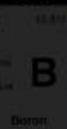
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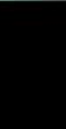
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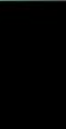
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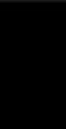
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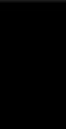
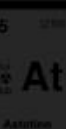
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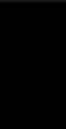
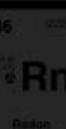
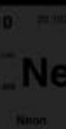
VIA



VIIA



VIIIA



Mobile Phone Composition



MOSTLY CONTAINED IN...

■ Circuit Boards
 ■ Case
 ■ Wires
 ■ Screen
 ■ Chips
 ■ Batteries

WEIGHING 100 grams CONTAINS

- 13.7 g. of copper
- 0.028 g. of gold
- 0.189 g. of silver
- 0.014 g. of palladium

4.0 Cobalt and Lithium
 4.0 Carbon
 3.0 Other
 3.0 Ferrous Metal
 2.0 Nickel
 1.0 Tin
 0.5 Zinc
 0.5 Silver
 0.5 Chromium
 0.5 Tantalum
 0.5 Cadmium
 0.5 Lead

*

**

58 140.12 Ce Cerium	59 140.907 Pr Praseodymium	60 144.24 Nd Neodymium	61 144.913 Pm Promethium	62 150.36 Sm Samarium	63 151.96 Eu Europium	64 157.25 Gd Gadolinium	65 158.925 Tb Terbium	66 158.925 Dy Dysprosium	67 158.925 Ho Holmium	68 157.25 Er Erbium	69 162.50 Tm Thulium	70 173.04 Yb Ytterbium	71 174.967 Lu Lutetium
90 232.0377 Th Thorium	91 231.036 Pa Protactinium	92 238.02891 U Uranium	93 237.04672 Np Neptunium	94 239.05216 Pu Plutonium	95 244.06422 Am Americium	96 247.07438 Cm Curium	97 247.07438 Bk Berkelium	98 247.07438 Cf Californium	99 251.07958 Es Einsteinium	100 252.08335 Fm Fermium	101 257.10371 Md Mendelevium	102 258.10510 No Nobelium	103 259.10628 Lr Lawrencium

Why do we
collectively
create **results**
nobody wants?

Result #4

Human life can no
longer be taken
for granted

There is an irresponsible
search for short-term
benefits without concerns
for long-term consequences.

*If we do not change direction we will end
up exactly where we are heading.*

-Chinese proverb

“Human activity is putting such strain on the natural functions of Earth that the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted.”

Why do we
collectively
create **results**
nobody wants?

Conclusion

Our society is
focused on speed

“If you have no idea
where you want to go,
it makes little difference
how fast you travel.”

- Italian proverb

Life satisfaction and meaning as a goal of life

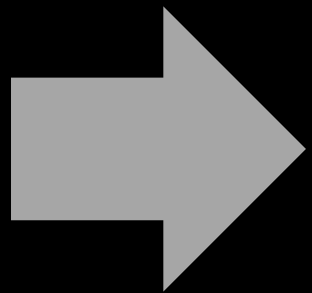
Assess your life satisfaction (scale 1-7)

1 2 3 4 5 6 7

low life satisfaction ----- high life satisfaction

Results by the groups (scale 1-7)

400 richest people in USA	5,8
Maasais from East Africa	5,7
Random sample of people from Sweden	5,6



Happiness-enhancing capacity of money is limited

Education needs
to help people to reach
their full potential and
more fulfilling lives?

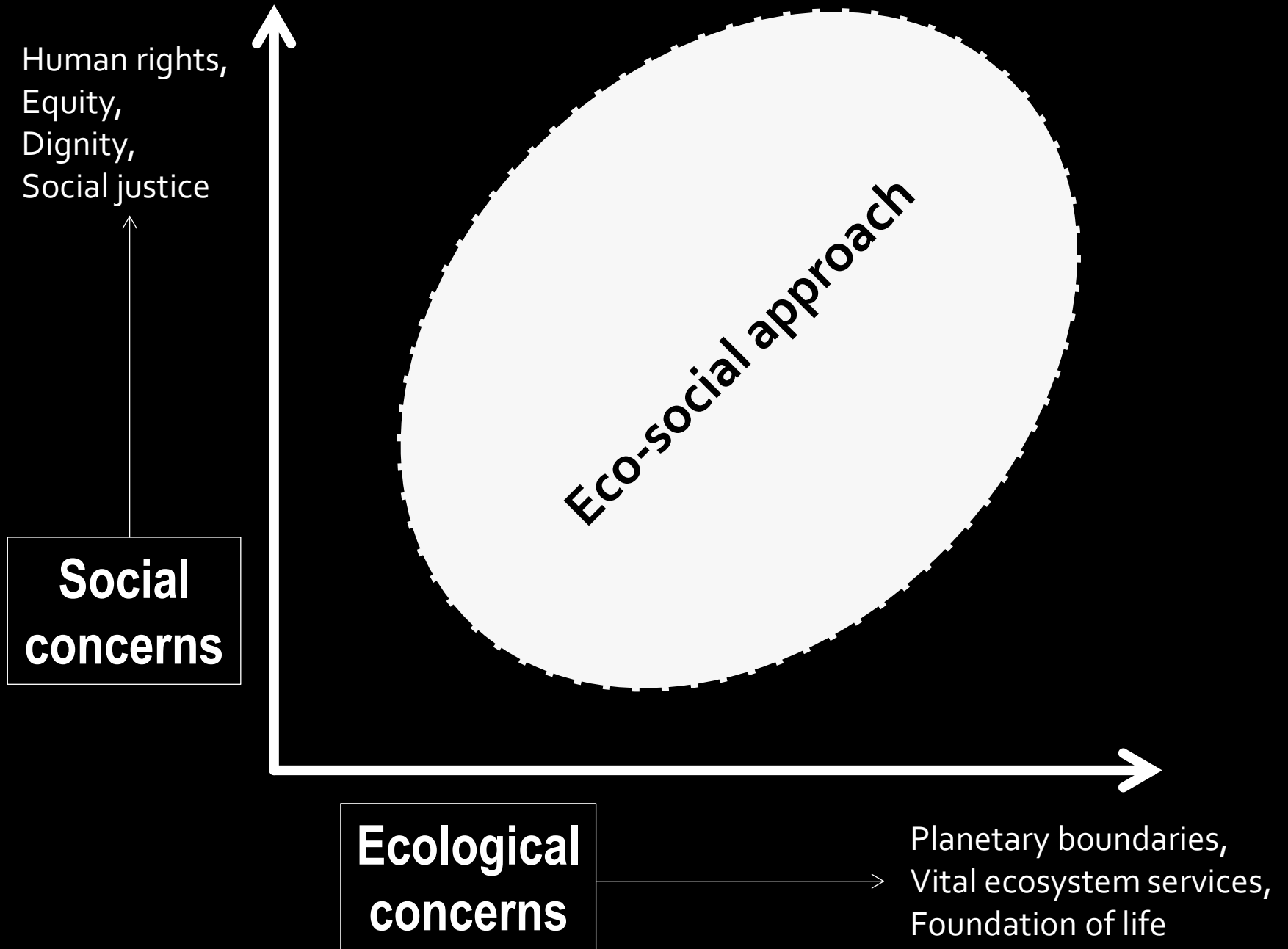
> How to be all you can be

3

**Fair future
for you and me**

Solution #1

Integrate social
and ecological
concerns



Solution #2

Identify how world
works

Fact based model of well-being, happiness and good life

I

NATURE

Without well-functioning biosphere
there can be no society
(intrinsic value)

II

SOCIETY

Without a society
there can be no societal functions,
including an economy
(intrinsic value)

III

ECONOMY

Without efficient economy
it is not possible to fulfil
basic needs of people
(instrumental value)

Max-Neef, M. (2010). The World on a Collision Course and the Need for a New Economy. *Ambio* 39(3), 200-210.

Baker, S. (2006). *Sustainable development*. London: Routledge.

Giddings, B., Hopwood, B. & O'Brien, G. (2002). Environment, economy and society: fitting them together into sustainable development. *Sustainable Development*, 10(4), 187-196.

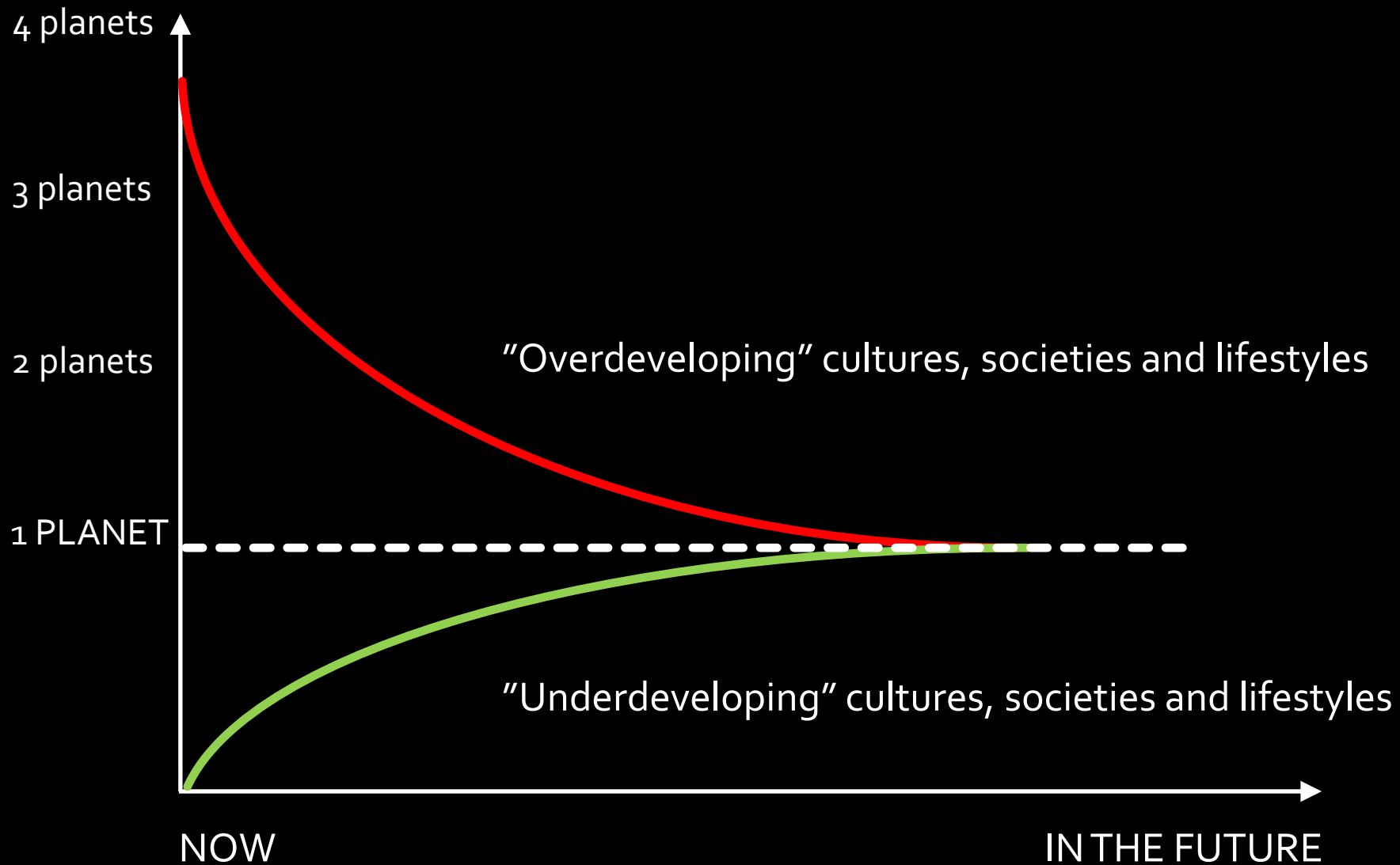
Hediger, W. (1999) Reconciling "weak" and "strong" sustainability. *International Journal of Social Economics*, 26(7/8/9), 1120-1144.

Ott, K. (2003). The Case for Strong Sustainability. In: Ott, K. & P. Thapa (eds.) *Greifswald's Environmental Ethics*. Steinbecker Verlag.

Solution #3

Identify what is
overdevelopment and
underdevelopment

Fair future for all when carrying capacity of Earth is limited



Fulfilling of basic needs can not be questioned

- food
- clothes
- shelter
- energy
- education
- health care

Solution #4

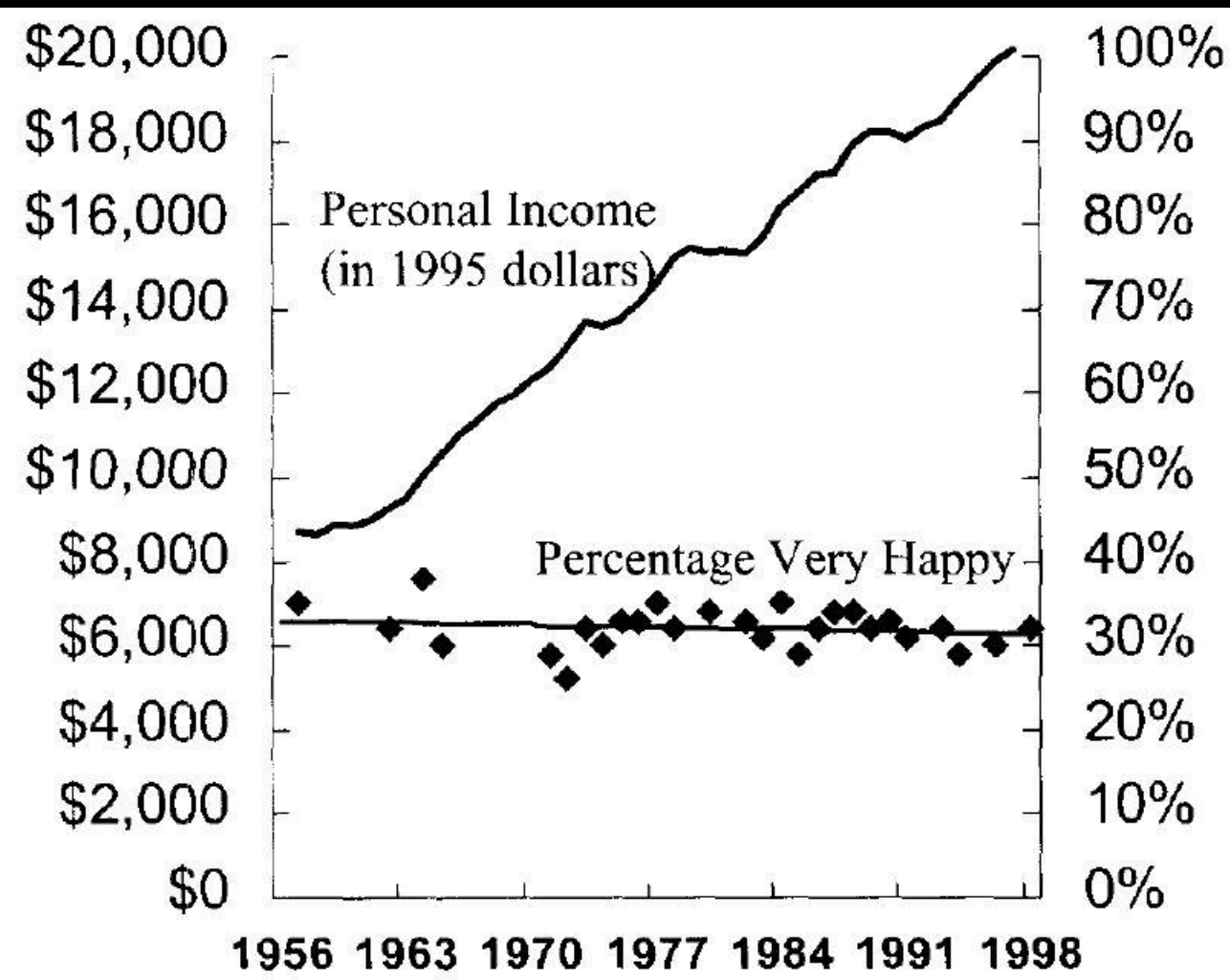
Ask big questions:

What really matters in life?

What counts as a good life?

What is human excellence?

While income has risen, self-reported happiness has not



Diener, E. & Seligman, M. (2004). Beyond Money. *Psychological Science in the Public Interest* 5(1), 1–31.
Myers, D. (2000). The funds, friends, and faith of happy people. *American Psychologist* 55(1), 56–67.

People who prioritize money, image, and status...

- experience less happiness and life satisfaction,
- have fewer pleasant emotions such as joy and contentment
- have more unpleasant emotions such as anger and anxiety
- tend to be more depressed and anxious
- report more physical problems (headaches, stomach-aches, backaches)

Kasser, T. (2014). A Values-Based Set of Solutions for the Next Generation. In: Robert Costanza and Ida Kubiszewski (eds.).. Creating a Sustainable and Desirable Future. London: World Scientific, 331–340.

Bartolini, S. (2014). Buying alone: how the decreasing American happiness turned into the current economic crisis. In: Timo Hämäläinen and Juliet Michaelson (eds.) Well-being and Beyond – Broadening the Public and Policy Discourse. Northampton: Edward Elgar Publishing. 144–181.

Pieters, R. (2013). Bidirectional dynamics of materialism and loneliness: Not just a vicious cycle. *Journal of Consumer Research*, 40, 615–631

Kasser, T. (2002). *The High Price of Materialism*. Cambridge: MIT Press.

We also need things
that are not traded in
markets and not
captured by monetary
measures.

Full humanness gives life satisfaction?

- Altruism (sharing and caring)
- Ties to other people and society
- Dedication
- Self-transcendence

Maslow, A. (1960). *Toward a Psychology of Being*. Blacksburg: Wilder Publications.

Aknin, L., Hamlin, J., & Dunn, E. (2012). Giving leads to happiness in young children. *PLoS ONE* 7(6), e39211.

Warneken, F. & Tomasello, M. (2009). The roots of human altruism. *British Journal of Psychology* 100(3), 455–471.

HOPE FOR FUTURE:

Elements of

human flourishing

are **non-material**

– they can increase forever

Great changes are possible

- We managed to stop the global ozone depletion
- We already almost doubled our life spans
- We have created universal education system and universal medical care.

4 Full humanness as a goal of education

4 ways to enhance
life satisfaction and
ensure that
future generations
will be proud of us

A PARTICIPATION

"A bundle cannot be fastened
with one hand."

- Proverb from Sierra Leone

Culture of trust is worth of it

- Trusting that your wallet would be returned if found by a neighbour (for someone who already felt they belonged in their neighbourhood) has the additional life-satisfaction equivalent of **30%** higher income
- Having a sense of belonging in one's community has a larger effect on life satisfaction than **a tripling** of household income.

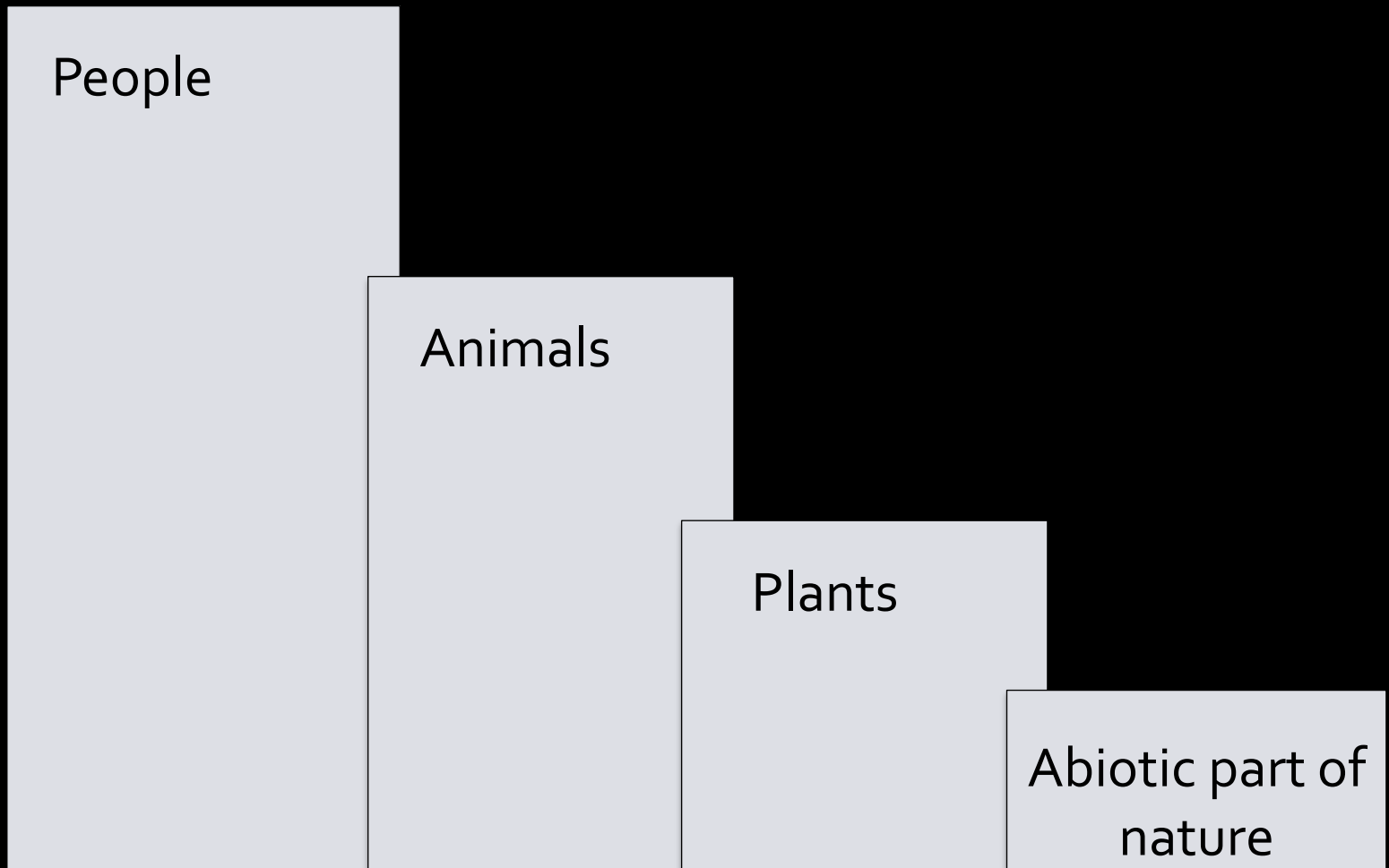
Helliwell, J. (2013). Social norms, happiness, and the environment: closing the circle. *Sustainability: Science, Practice, & Policy* 10(1), 78-84.

Helliwell, J. & Barrington-Leigh, C. (2011). How much is social capital worth? Teoksessa J. Jetten, C. Haslam, & S. Haslam (ed.), *The Social Cure*. London: Psychology Press, 55–57.

B

RESPONSIBILITY

Expand your sphere of responsibility

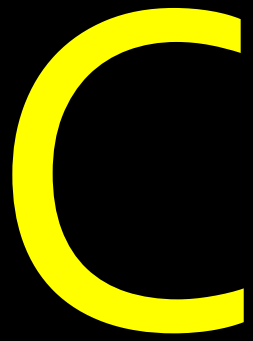


Our planet and human life is a system of interdependence

People	Animals	Plants	Abiotic part of nature

“Happiness cannot exist while others suffer, and comes only from serving others, living in harmony with nature, and realizing our innate wisdom and the true and brilliant nature of our own mind.”

- Lyonchen Thinley



SUFFICIENCY

(= an optimal state of being)

**How big should our
economy be**

- How much material wealth is enough for us?
- More is enough?

Why do we need more and more?

A shopper who shops only
to meet her or his **needs**
poses danger to the
consumer markets?

“You are rich if you know how much is enough”

NEEDS	DESIRES AND WANTS
Universal ends for good life	Personal instruments for good life
Can NOT be questioned	Can be questioned
Fulfilling of basic needs(*) is a human right	Fulfilling of desires and wants depends on ethics

*) food, water, shelter, energy, health care, education...

D Systems thinking*

Our planet is a system of the interdependence. All components support each other.

- My behaviour affects other people, nature and economy locally and globally
- The challenge is to identify what kind of systems we are linked in

* Systems thinking focus on causal relationships between elements. Systems thinking helps us to combine ecological, social and economic point of view. In East Africa they used to say “mvua ni chakula”. It refers to the systems thinking: “rain is food”.

What is behind a cup of coffee?



Global challenges in a supermarket:
Effects of everyday choices occur far away from us

The origins and pathways of a can of cola bought in London

Bauxite was mined in Australia. Ore was transferred with trucks to a chemical reduction mill. After that ore was sent to Sweden. The journey across oceans took two months. In Sweden 10 meters long aluminum rods were processed in a smelter. The rods were sent to Germany where they were heated and pressed into a thin sheet of aluminum. Coils of aluminum were shipped to England, where the aluminum sheets were punched. Cans were washed, dried and coated, and transported to a bottler. Sugar canes, farmed in French farms, were refined to sugar flower and shipped to England. Cola contains phosphoric from a mine located in the United States. This mine uses energy equivalent to 100 000 people consumption of energy because food grade phosphoric requires a high degree of processing. Cola also contains caffeine. It comes from a chemical factory nearby. Cans are packed in cartons which are made of cellulose in a paper mill. The paper mill gets trees from Siberia, Sweden and Colombia. Finally, the beverage cartons were transferred to the supermarket in which they were sold to the consumer in three days. The average consumer drinks cola in a few tens of seconds. Manufacturing of the can is more expensive than the liquid inside the can.



ALU

5

Eco-social approach to education

Eco-social approach to education

Systems thinking

- integrated world (causal relationships)
- consequentialism
- local - global

The hierarchy of ecological, social and economic aspects of well-being

- I Thriving ecosystems (intrinsic value)
- II Human rights, social justice, dignified living (intrinsic value)
- III Robust economy (instrumental value)

Responsibility

- enough for all (sharing and caring)
- planetary responsibility (human and non-human world)

Sufficiency

How much is enough?

Participation

- culture of trust
- cooperation
- value of social capital

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Salonen, A. & Rouhinen, S. (2015). Vastuullinen maailmasuhde – tulevaisuuden toivoa säilyttävän kulttuurievoluution suunnannäyttäjä. *Tiedepolitiikka* 3, 7-16.

Salonen, A. (2015). Ecosocial Approach in Education. In: Rolf Jucker ja Reiner Mathar (eds.) *Schooling for Sustainable Development: Concepts, Policies and Educational Experiences at the End of the UN Decade of Education for Sustainable Development*. Berlin-Heidelberg: Springer.

Salonen, A. & Bardy, M. (2015). Ekososiaalinen sivistys herättää luottamusta tulevaisuuteen. *Aikuiskasvatus* 35(1), 4-15.

Together we create
a just and safe operation base
for humanity on the planet Earth

Tama sugo diniabe*

*Hope is the pillar of the world.
- Nigerian proverb