

Lecture 11

Block II: Options for the future Which path into sustainability?

Moral-Ethics-Earth Care: Sustainability and human nature? (22.5);

The way down from the mountain: Ideas for an uncertain future (29.5)

- In a sustainable future, do we have to accept shorter life expectancy?
Quote (Wikipedia longevity(“typical length of life”)): *“Twin studies have estimated that approximately 20-30% of an individuals lifespan is related to genetics, the rest is due to individual behaviors and environmental factors which can be modified.*
- *“It seems we know what to do (Moral-Ethics-Earth Care), but why are (still) not doing it?”* Sustainability and human nature?

A Physicist talking about human nature?

How to study the “tiger nature?” Would a physicist will go to a zoo? May be!

The nature of tigers and humans depends on the surrounding “environment”!



Ok, we are neither living healthy nor sustainable still we are always living longer (0)

the probability to die at the age of x years?

It is a common belief that we are always living longer.. but: Some arguments from <http://scienceblogs.com/gregladen/2011/05/01/falsehood-if-this-was-the-ston/>
Falsehood: “If this was the Stone Age, Id be dead by now”

Quotes: *“Humans do not live on a one-way street with two addresses: Then (not so good) and Now (improved in all ways) and life expectancy is not a variable that maps our movement from a nasty brutish and short-lived past to an all round better present with no stops or turns along the way.*

- People often confuse life expectancy with lifespan (typical length of life);
- people often underestimate the life expectancy of many past populations;
- people think of the past compared to the present as **the present being one way, the past being the other way, failing to recognise diversity and variation in life history variables across our species and across time.**
- The Industrial revolution in the US was not an improvement, overall, for anybody or anything except those who got rich off it.

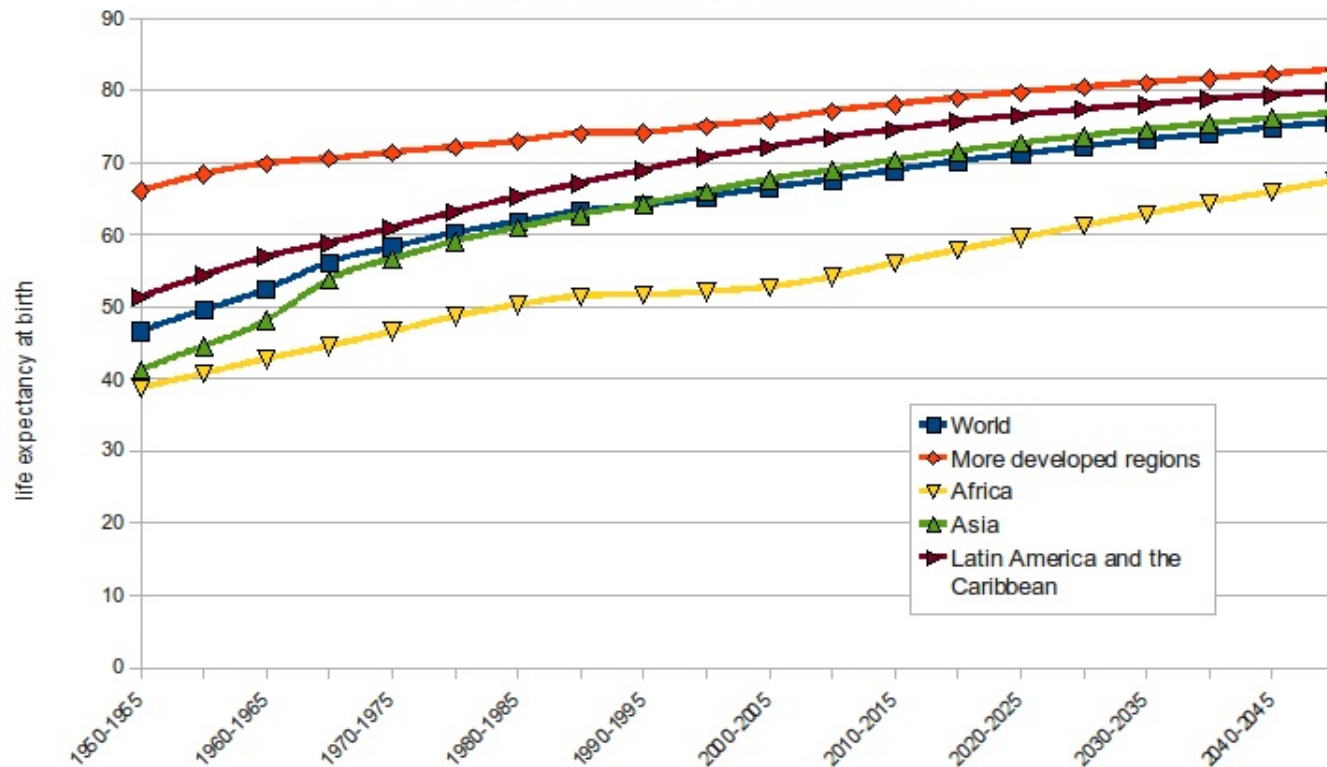
Ok, we are neither living healthy nor sustainable still we are always living longer (1)

“It is important to note that life expectancy is an average. In many cultures, particularly before modern medicine was widely available, the combination of high infant mortality and deaths in young adulthood from accidents, epidemics, plagues, wars, and childbirth, significantly lowers the overall life expectancy. But for someone who survived past these early hazards, living into their sixties or seventies would not be uncommon.”

http://en.wikipedia.org/wiki/Life_expectancy

Life Expectancy at Birth by Region, 1950-2050.

Source: UN World Population Prospects, 2008.

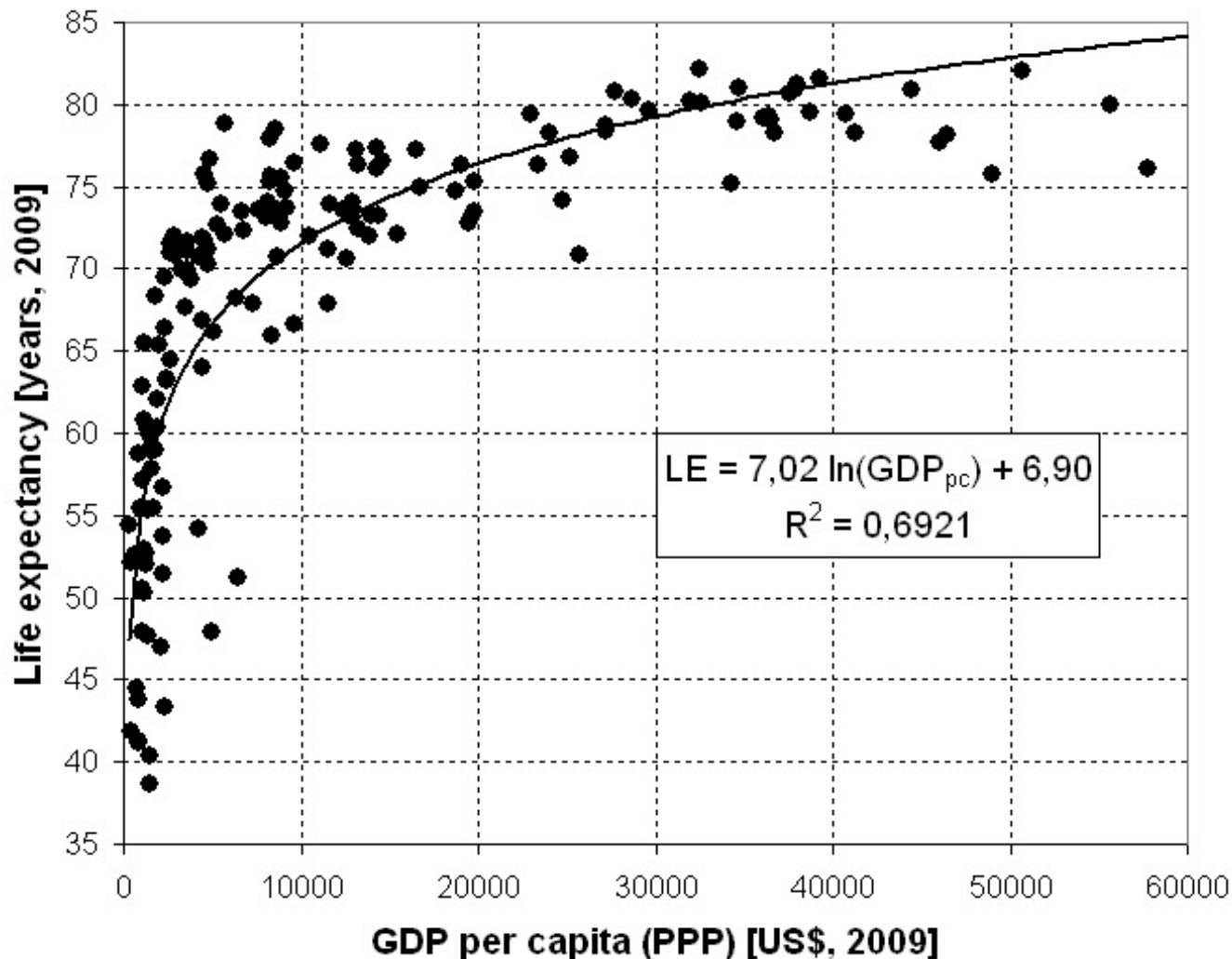


But (Netherlands) the “Life expectancy without “chronic diseases” decreased between 1981 and 2007 from 55 years to 48 years (males) and 42 years (women).

<http://tinyurl.com/mpyo9tz> and http://ec.europa.eu/health/indicators/indicators/index_en.htm

Ok, we are neither living healthy nor sustainable still we are always living longer (2)

Life expectancy and the GDP per capita (average)
roughly constant once for countries above 20 000 US(dollar)/capita,
human life expectancy as a function of the social status and within a country?
Equal “rights” for a healthy life within a country and for all?



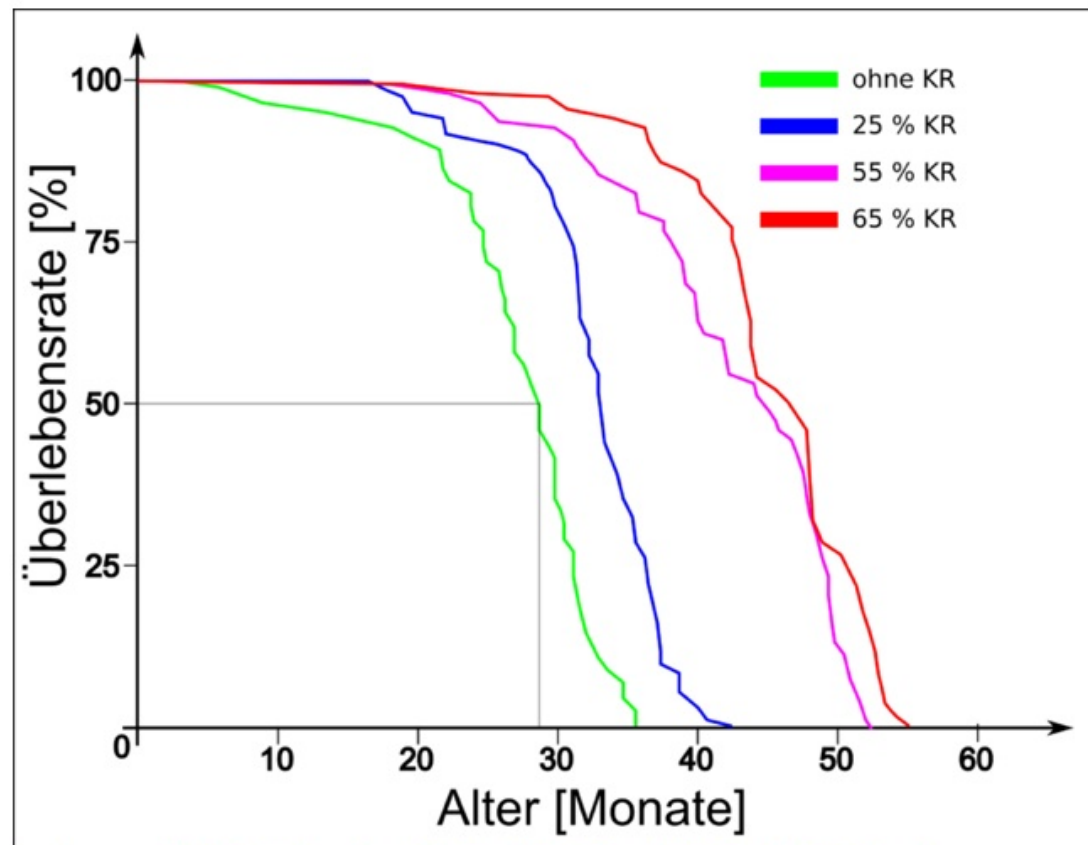
Ok, we are neither living healthy nor sustainable still we are always living longer (3)

Probability to die in x years from today?

- Statistical Bundesamt Deutschland <http://de.wikipedia.org/wiki/Lebenserwartung>:
Average life expectancy at birth in the year 2010:
boys 77.4 years (2007: 77.2 years), girls 82.6 years (2007: 82.5 years)
- Quote: "Die so berechnete durchschnittliche Lebenserwartung ist allerdings eine höchst fiktive Zahl, weil bei ihrer Berechnung Kriege, Seuchen und andere Faktoren, die den Lebensdurchschnitt dieser kommenden Generation beeinflussen können, noch nicht bekannt sind."
- Maximum Life span: "In animal studies, maximum life span is often taken to be the mean life span of the most long-lived 10% of a given cohort."
- Why do males die earlier: "In the year 1871 the difference between the sexes (Germany) was just three years. **Back then on average: males lived 35,6 years and women 38,5 years.** <http://www.pharmazeutische-zeitung.de/index.php?id=2807&type=0>
Quote: "*Luy untersuchte die Lebensdaten von insgesamt 11.600 Mönchen und Nonnen aus zwölf bayerischen Klöstern und kam zu einem erstaunlichen Ergebnis: Nonnen haben dieselbe Lebenserwartung wie Frauen, die nicht im Kloster leben. Mönche werden fast genauso alt, sie sterben im Schnitt nur ein Jahr früher.*"
If this is really true: all males should move to monasteries!

Ok, we are neither living healthy nor sustainable still we are always living longer (4)

the probability to die at age X.. Calorie restriction for rats and mice:



<http://de.wikipedia.org/wiki/Kalorienrestriktion>

Quote: *“Zuverlässige Daten über einen lebensverlängernden Effekt durch Kalorienrestriktion beim Menschen liegen nicht vor. Während der Effekt im Tiermodell allgemein anerkannt wird, werden die vorhandenen Ergebnisse beim Menschen kontrovers diskutiert.”*

The english Wikipedia article is more critical http://en.wikipedia.org/wiki/Calorie_restriction.
Check yourself!

Ok, we are neither living healthy nor sustainable still we are always living longer (5)

the probability to die at an age of x years

**Lifetime in the “Upper Paleolithic” longer than in classical Greece and Rome?
Are the numbers correct? How can we know all this?**

Life expectancy variation over time

[\[edit\]](#)

The following information is derived from *Encyclopædia Britannica*, 1961. and other sources, some with a questionable accuracy. Unless otherwise stated, it represents estimates of the life expectancies of the *population* as a whole. In many instances life expectancy varied considerably according to class and gender.

Life expectancy at birth takes account of infant mortality but not pre-natal mortality.

Era	Life Expectancy at Birth (years)	Life Expectancy at Older Age
Upper Paleolithic	33	At age 15, life expectancy an additional 39 years (total age 54). ^{[11][12]}
Neolithic ^[13]	20	
Bronze Age and Iron Age ^[14]	26	
Classical Greece ^[15]	28	
Classical Rome ^[15]	28	At age 15, life expectancy an additional 37 years (total age 52).
Pre-Columbian North America ^[16]	25–30	
Medieval Islamic Caliphate ^[17]	35+	
Medieval Britain ^{[18][19]}	30	At age 21, life expectancy an additional 43 years (total age 64). ^[20]
Early Modern Britain ^[14]	25–40	
Early 20th Century ^{[21][22]}	31	
2010 world average ^[23]	67.2	

Life expectancy increases with age as the individual survives the higher mortality rates associated with childhood. For instance, the table above listed life expectancy at birth in Medieval Britain at 30. A male member of the English aristocracy at the same period could expect to live, having survived until the age of 21.^[20]

- 1200-1300 C.E.: 43 years (to age 64)
- 1300-1400 C.E.: 34 years (to age 55) (due to the impact of the [Black Death](#))
- 1400-1500 C.E.: 48 years (to age 69)
- 1500-1550 C.E.: 50 years (to age 71).

Table from http://en.wikipedia.org/wiki/Life_expectancy

Ok, we are neither living healthy nor sustainable still we are always living longer (6)

the probability to die at the age of x years?

It is a common belief that we are always living longer.. but:

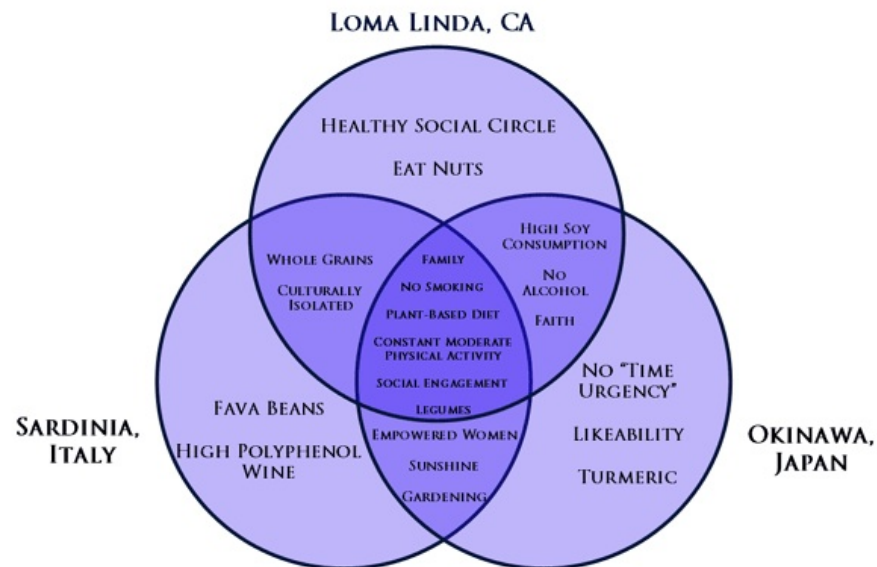
“Official life expectancy” (yesterday, today and tomorrow)

- Assumption: half the population dies during the birth year and all others at the age of 70 years.
The life expectancy at birth is about 35 years.
- Probability for women to die when they have a baby (perhaps 0.1%?)...
If women have 10 children, the life expectancy for women decreases drastically! → women without children will live longer?
A population with few children has on average a higher life expectancy!
- Living like the few remaining isolated tribal people and with a life expectancy of only 30-35 years **NO THANKS!**
Perhaps this “short life expectancy” is just a myth:
Water and the environment were much cleaner, women are no birth machines and perhaps knowledge about contraceptives existed!
Buschmen in the Kalahari desert: Healthy food and little stress!

Ok, we are neither living healthy nor sustainable still we are always living longer (7)

the probability to die at the age of x years?

living a healthy very long life? http://en.wikipedia.org/wiki/Blue_Zone



more at <http://www.bluezones.com> and

<http://blogs.scientificamerican.com/food-matters/blue-zones-what-the-longest-lived-people-eat-hint->

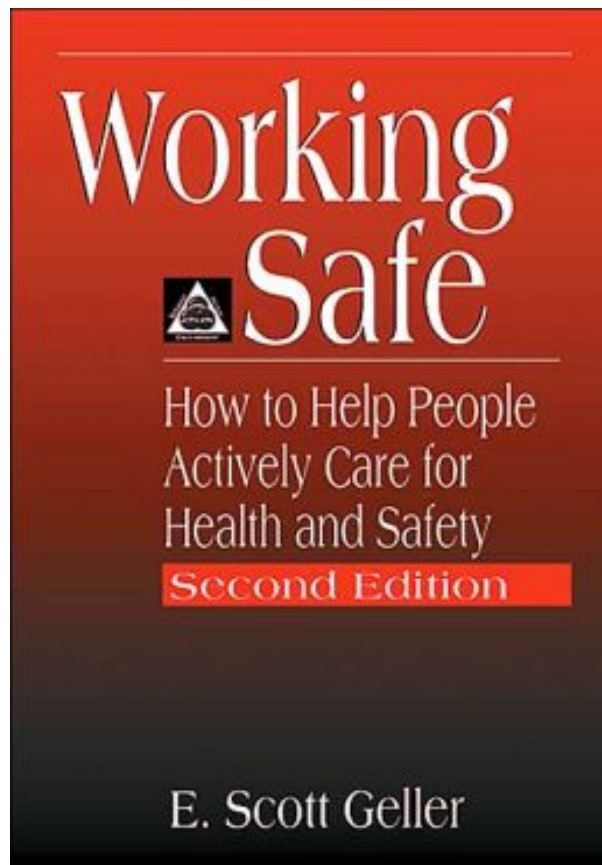
ok.. lets just watch this video:

“Greek Island a Fountain of Youth” <https://www.youtube.com/watch?v=2S0RukNAI0o> and

Blue Zone Ikaria Greece Day 10 https://www.youtube.com/watch?v=r__a7ZfztCo

Sustainability and Human Nature?

- Cognitive bias and cognitive dissonance
- Ideas from “Working Safe” (towards a total safety culture) applied to a rational “Development towards Sustainability”
- If sustainability is the goal and if we got used to our comfort zones:
(“also false gold glitters”)
active research for “alternatives” and without prejudices!



Cognitive bias (1)

http://en.wikipedia.org/wiki/Cognitive_bias, some examples:

Quote “A cognitive bias is a pattern of deviation in judgment, whereby inferences about other people and situations may be drawn in an illogical fashion. Individuals create their own ”subjective social reality” from their perception of the input. **An individual’s construction of social reality, not the objective input, may dictate their behaviour in the social world.**”



Cognitive bias (2)



Cognitive bias (3)

74

Psychology of safety handbook

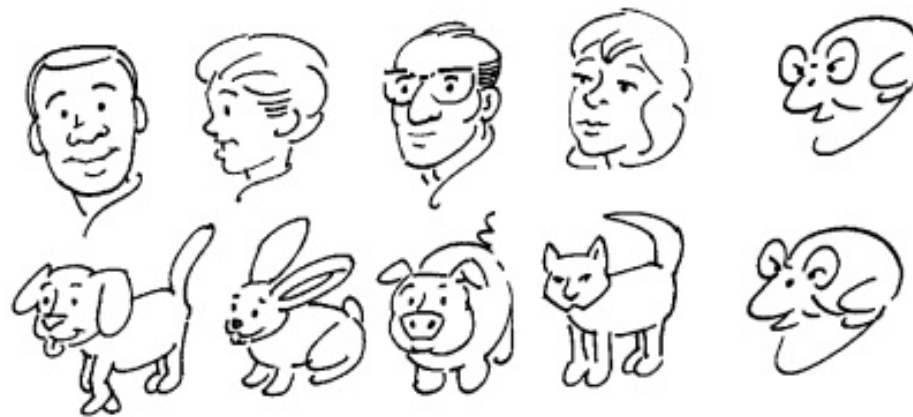


Figure 5.5 Prior perceptual experience influences current perception. Adapted from Bugelski and Alimpay (1961). With permission.

Cognitive bias (4)



Cognitive bias (5)



Cognitive bias (6)



Figure 6.7 Even the most obvious top-down situation allows for perceptions of bottom-up control.

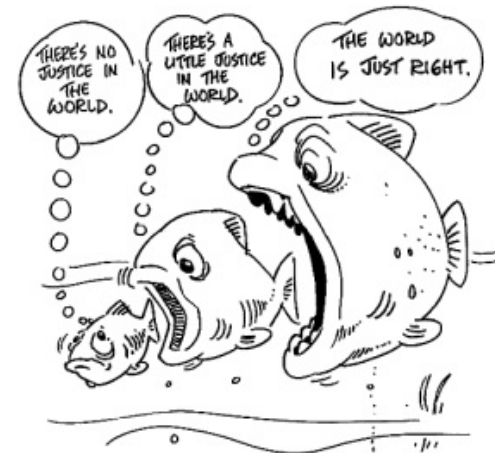


Figure 5.10 Justice is a matter of personal perspective.

Cognitive bias (7)

for a list of cognitive biases see http://en.wikipedia.org/wiki/List_of_cognitive_biases

- The **clustering illusion**: The tendency to overestimate the importance of small runs, streaks, or clusters in large samples of random data (that is, seeing phantom patterns).
(Because of the past growth in “energy consumption” it will also grow in the future.)
- **confirmation bias**: “The tendency to search for, interpret, focus on and remember information in a way that confirms one’s preconceptions.”
- **Illusion of control**: “The tendency to overestimate one’s degree of influence over other external events.”
- **Just-world hypothesis**: “The tendency for people to want to believe that the world is fundamentally just, causing them to rationalize an otherwise inexplicable injustice as deserved by the victim(s).”
“Observers may feel responsible, or guilty, for a victim’s suffering if they themselves are involved in the situation or experiment. In order to reduce the guilt, they may devalue the victim.”
- **System justification theory**: existing social, economic, and political arrangements tend to be preferred, alternatives to the status quo are disparaged, and inequality may be indirectly perpetuated.

Cognitive dissonance (1)

“Cognitive dissonance is the mental stress or discomfort experienced by an individual who holds two or more contradictory beliefs, ideas, or values at the same time, or is confronted by new information that conflicts with existing beliefs, ideas, or values.”

more at http://en.wikipedia.org/wiki/Cognitive_dissonance cognitive dissonance might happen:

- if one makes a decision, even though the alternative was also attractive;
- if one made a decision and finds out that it was a wrong decision;
- when one realises that the project was more difficult or less comfortable than expected;
- if one made a huge effort only to realise that the result was far below the expectations;
- if one acts in contrary to ones moral convictions without an external justification (without reward or punishment).

Cognitive dissonance (2)

NIMBY (not in my backyard)

Zement importieren statt attraktive Landschaften zerstören!



Beitrag von Alex Schneider, Berner Zeitung

Jura Cement in Wildegg AG: Zement importieren statt attraktive Landschaften zerstören!

In der dicht besiedelten Schweiz sind attraktive Landschaften ein besonders wertvolles Gut. Es ist nicht einzusehen, warum der Betrieb von Zementwerken und der damit verbundene Materialabbau in solchen Landschaften unbedingt aufrechterhalten werden muss. Der Zement könnte problemlos aus Ländern importiert werden, die auf den Export von Basisgütern angewiesen und weniger dicht besiedelt sind, z. B. aus Osteuropa. Der Import kann per Bahn erfolgen; er generiert höchst willkommene Devisen für den Kauf von Schweizer Hochtechnologiegütern.

Stimmen Sie dem Artikel zu?



Ja



Nein

Mehr A

» Volkswirtschaft

» Wohnwirtschaft

» Zuzug

Mehr z



Why not just doing it in another Kanton or in the neighbours garden?

Cognitive dissonance (3)

How to Reduce Cognitive Dissonance

<http://psychology.about.com/od/cognitivepsychology/f/dissonance.htm>

“According to Festinger’s theory of cognitive dissonance, people try to seek consistency in their thoughts, beliefs, and opinions. So when there are conflicts between cognitions, people will take steps to reduce the dissonance and feelings of discomfort. They can go about doing this a few different ways.

There are three key strategies to reduce or minimise cognitive dissonance:

- Focus on more supportive beliefs that outweigh the dissonant belief or behaviour.
Like: “my behaviour can’t be so bad” and very selective (ignoring) collection of new information.
- Reduce the importance of the conflicting belief.
The behaviour will be constructed as being forced: “I did not have a choice”.
(drugs and alcohol might also “help” to reduce tensions.
- Change the conflicting belief so that it is consistent with other beliefs or behaviours.
Particularly in the case of deeply held values and beliefs, change can be exceedingly difficult.

Apparently, more tolerant and more open people have less problems to accept new ideas and new informations.

It also seems that some humans (adventurers and “successful” scientists) look for dissonances (“problems”) just in order to “solve” them.

Recognise problems or ignore them?

“It is not so bad as it appears on a first look” and “you searched for it”

62

Working Safe: How to Help People Actively Care for Health and Safety



Figure 5.7 The perceived consequences of at-risk behavior can vary widely from one person to another.

Finding solutions for problems and finding the responsible people.

Top-Down-Methods to discover and to solve some problems.

Working Safe: How to Help People Actively Care for Health and Safety

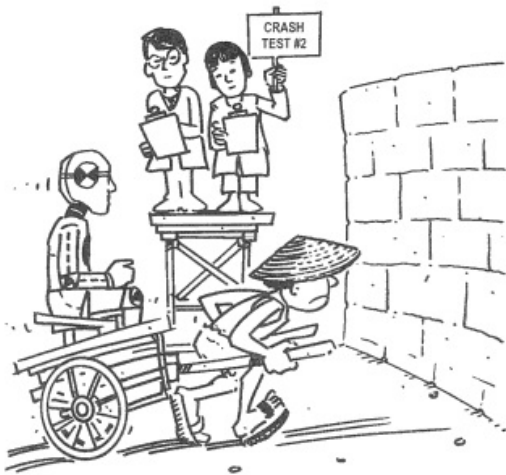
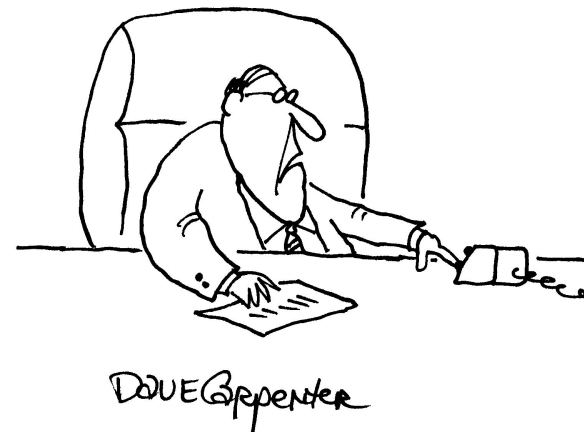


Figure 1.1 Some research is not worth considering.



"MISS WILCOX, SEND IN SOMEONE TO BLAME."

source "Working Safe"

Ideas from “Working Safe” (towards a total safety culture) applied to a rational “Development towards Sustainability”

*“It all starts with theory... Principles that summarise the psychology of safety (sustainability) and lay the groundwork for building a **Total Safety Culture**”*

- Safety should be internally -not externally- driven.
- Culture change requires people to understand the principles and how to use them.
- Champions of a “Total Safety Culture” will emanate from those who teach the principles and procedures.
- Leadership can be developed by teaching and demonstrating the characteristics of effective leaders.
- Focus recognition, education, and training on people reluctant but willing, rather than on those resisting.
- Give people opportunities for choice can increase commitment, ownership, and involvement.
- “A Total Safety Culture” requires continuous attention to factors in three domains: environment, behaviour, and person.
- Do not count on common sense for safety improvements.

source from “Working Safe: Reviewing the (50) principles

Moral-Ethics-Earth Care and Development towards sustainability

“We” are capable to repair a lot of damage (Loess Plateau <http://whatifwechange.org/index.php#/stories/159>), but why are we still destroying our own life support system?

Bertrand Russell’s scientific rational view:

*“All who are not lunatics are agreed about certain things. That it is better to be alive than dead, better to be adequately fed than starved, better to be free than a slave. Many people desire those things only for themselves and their friends; they are quite content that their enemies should suffer. **These people can only be refuted by science: Humankind has become so much one family that we cannot insure our own prosperity except by insuring that of everyone else. If you wish to be happy yourself, you must resign yourself to seeing others also happy.**”*

from “Strangers to Ourselves” (The Adaptive Unconscious)

“What makes us feel good depends on our culture and our level of self-esteem, but the desire to feel good, and the ability to meet this desire with non conscious thought, are probably universal.”

Active Earth-Care and Peoples care or Top-down Military Leadership?

Table 1. Follower types

High	Alienated Followers	Effective Followers
Critical Thinking		
Low	Sheep	Yes People
	Passive	Participation Active

Adapted from Robert E. Kelley, "In Praise of Followers," in *Military Leadership: In Pursuit of Excellence*, 3rd ed., ed. Robert L. Taylor and William E. Rosenbach (Boulder, CO: Westview Press, 1998), 137.

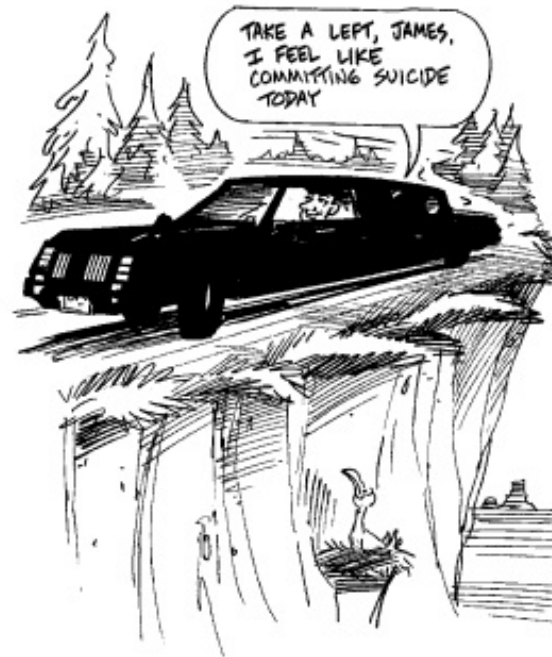


Figure 4.5 Authority can be taken too far.

“We can do way, way better!”

Do active research for new alternative comfort zones without bias!

Will You Leave Your Comfort Zone? Ask Yourself This Question
(April 25, 2013) <http://tinyurl.com/a9bntch>

“Those people will be standing there at least an hour waiting for a taxi to get them to their hotels. In the meantime, they’ll get cranky and hot (most were wearing black and it’s in the mid 70s today), and will arrive at their hotels far later than they would if they crossed the street and jumped on a tram...

If you start asking questions, you’ll find that there are fabulous resources. You’ll find that there are (probably) better ways to do whatever it is that you need to do. And if you are lucky enough to find out that you’re doing it the best possible way, you can go forward with confidence.

If those people waiting for the taxis were able to step outside their comfort zone just a little and walk to the information booth, they’d undoubtedly discover that there was information available in a language they speak, their hotel was less than a block away from the tram stop, and that a tram ticket will cost about five francs instead of the 40 to 50 they’ll have to pay for a taxi.

What will you find out if you step outside your comfort zone and ask?” more here: <http://www.lifewithoutpants.com/dont-walk-run-out-of-your-comfort-zone/>

and nice video examples for the weekend bike tour:

Bike Friendly Cities: Copenhagen <https://www.youtube.com/watch?v=NAr5sB6aivk>,

Cycling Copenhagen, Through North American Eyes <https://www.youtube.com/watch?v=vyrTx9SXkVI>

(some stress) Bicycle Rush Hour in Copenhagen https://www.youtube.com/watch?v=FXw_t172BKY