

Obstacles and driving forces on the long march to an Ecological Civilization

生态文明征程中的阻力与推动力



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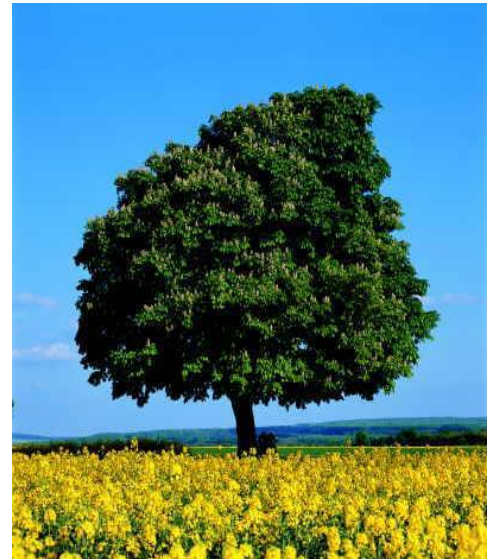
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It is exciting to come to historical territory of Shanxi province with 很高兴来到来到历史悠久的山西，它拥有：

- many **resources** and their effects 众多资源和带来的负面影响
- a long history of **trade and finance**. 悠久的商贸、金融历史
- thousands of years of **land use** and land degradation, 上千年的土地利用和土地退化
- Where **climate change** significantly can be felt, 也收到气候变化的影响
- and so essential global problems are concentrated, and the ways of **solving** them are **important also for the global level**. 集中了地球上很多的问题，而解决这些问题的方法对世界亦重要



-to come to a territory that **5 centuries before Europe was near**
比欧洲历史早了五个世纪
- **to some industrial revolution** (metal processing, use of coal)
出现过工业革命（青铜铸造
- **Coal** was central for industrial revolution in Europe (multiplication of productivity) (with the side effect of triggering climate change.
煤炭在欧洲的工业革命过程中很重要（扩大了生产但导致了气候变化的发生）
- -Coal has been central also for the recent development of China.
煤炭对中国近些年的发展一直起着重要作用
- When on September 27th 13 the **IPCC** will introduce the summary of the **Fifth Assessment Report** on climate change
2013年9月27日政府间气候变化组织发布了《第五个气候变化评估报告》
- 5 years after the Lehmann–bankruptcy and beginning of financial crisis but with a unchanged global financial architecture
莱曼公司破产引发金融危机五年了，但至今未有金融结构的变化
- When signs of **new orientation towards restructuring**, upgrading and more qualitative development can be seen just now in China
中国有迹象表明，出现了一些重组新倾向，升级换代与更强调质量的发展在中国发生。



**The NEXT Chinese dream: A Reversed ELVIN-hypothesis:
this time probably China will go ahead**

下一个中国梦：颠倒了的艾文假设：中国可能会向前进一大步

Mark Elvin: explanations why an industrial revolution happened in Europe but not in China, despite China was much earlier much more advanced: **“High equilibrium trap”**.

马克·艾文：认为尽管当时中国相当先进，而工业革命却发生在欧洲而非中国：这是一个“高水平均衡陷阱”现象

- “efficiency” was rather high, “效率”很高
- labour abundantly 劳动力丰裕
- “need” or “incentive” for a fundamental transformation rather low
根本转型的需要和刺激因素很低



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下一个中国梦：颠倒了的艾文假设：中国可能会向前进一大步

- In the next fundamental transformation - towards sustainability - probably China will be the/a leading country.
- Hardly conceivable where currently 2/3 of energy is based on coal? But this is also a pressing factor for a necessary change.
- Implications on air quality, water and health + regional and global climate change – will make high pressure to some turnaround.
- High density of population in big regions; effects of emissions are much more sensible than e. g. in the USA

The NEXT Chinese dream: A Reversed ELVIN-hypothesis: this time probably China will go ahead

下一个中国梦：颠倒了的艾文假设：中国可能会向前进一大步

- Western countries are - like China centuries ago - in some “High equilibrium trap”:
- They already reached better environmental quality. Austria for example has lucky geographical preconditions for hydro energy and biomass so more than 2/3 of electricity is based on renewable energy.
- But Indicators of total resource and energy use **per capita** or the ecological footprint are high, higher than in China.
- But so also the pressure for a socio-ecological transformation and a globally compatible system of production and consumption is low (no existential needs therefor).



“Chinese characteristics” of industrial development

“中国特色”的工业发展

•Industrialization of China under different international circumstances: resources not “at colonial terms”- prices much higher.

在不同国际视野下，中国的工业化的代价很高

•=Challenge but can stimulate higher resource efficiency.

是挑战，但也可刺激更大范围的资源节约利用

•In times of globalization countries are deeply connected and influencing each other. So the hypothesis is rather soft.

在全球化时代，国与国紧密联系、相互影响。所以这个假设缺乏说服力

•Current restructuring with big effects also to coal: indication for hypotheses.

最近发生的重整同样对煤炭会产生巨大的影响

•The economic restructuring in a coal region causes a lot of huge problems; but this is only a foretaste of the problems of a deep transformation.

煤炭地区的经济重组会产生众多问题，但这是进行深刻转型的先行先试解决问题的办法。



“Curse of resources”? – Curse of oligopolies & bad luck for big scale?

“资源诅咒”？寡头诅咒？还是大型项目的厄运？

•Bad luck of unique scale of the Chinese Economy:

对中国经济独有的规模是一种厄运

•The realization of economies of scale (mass production) and 实现规模经济（批量生产）

•economies of scope (combined production) is a “secret” of the Chinese success 规模经济（结合实际生产）是中国成功的“秘诀”

•But in the current global configuration + oligopolies in most markets:

在当今全球整合，市场大都垄断不断

•*Most resources which China buys and imports are increasing in price

•中国购买或进口的资源价格上涨

•*Most products which China sells and export are decreasing in price

中国买出与出口的商品价格却在下跌



Global coal revival 全球煤炭复兴

- With increasing costs of oil and reaching “oil peak”
由于石油价格上涨，达到了“石油峰值”
- So the Chinese energy situation with stress of the coal is not as unique as some Europeans think.
中国高度依赖煤炭的能源现状并非像欧洲国家想象的那么特殊
- The use of coal per capita in Germany or USA is even higher (in t).
德国或美国人均消费煤炭量更高
- So looking at Shanxi is looking at the world.
所以审视山西就是在审视世界



Message of the forthcoming IPCC-report: global climate change mitigation still more urgently

来自政府间气候变化组织的报告显示：全球减排的任务仍然十分紧迫

• In the last years **climate change issue** has been **downgraded** as implication of the global financial and economic crisis

过去的几年里与全球金融和经济危机相比，气候变化问题一直没有受到重视

• But climate change phenomena continued e.g. by hurricane **Sandy** for **New York 2012, heat waves or smog situations.**

但是气候变化现象一直在延续，比如2012年发生在美国的“桑迪”飓风、热浪和烟雾等现象

• But **changes until now are peanuts relative to probable changes** of the global and regional climate in the next decades of this century.

对于本世纪后几十年全球与地区的气候来讲，到目前为止的变化微乎其微

• With every year of not or only slow acting the **point of no return** and irreversible self-accelerating of climate change **comes nearer**; this probably will be the forthcoming **message of the IPCC.**

• 由于年复一年不作为或迟缓作为，没有退路或不可逆转的自我加速气候变化的结果必将来临，这将是IPCC接下来要发出的信息。



Ignorance to CBDRRC, history, and equal rights

- “Common but differentiated responsibility” (CBDR), later on enlarged by „respective capabilities“(„CBDRRC“) would be a clear solution
- but the superficial acceptance in industrial countries and fundamental lack of historical understanding of the principle of CBDR, obviously is a main obstacle for progress in global climate change mitigation.
- not acknowledging CBDRRC means violation of the most fundamental principle of equal rights.



Fundamental and comprehensive solutions are more effective

- Generally the relatively low (felt) degree of climate changes until now - is a first explanation for slow acting in most countries.
- **With every year** of not or only slow acting the necessary changes will have to be **more fundamental**
- Definitely we need **comprehensive solutions**; some incremental measures can show the way but are not sufficient.
- **Particular unique measures are often blocked** by lobbies because of alleged unfair one-sidedness.
- → Comprehensive measures: more effective.



Correlation of increasing ecological crisis and growing inequalities?

如何矫正日益加大的生态危机和不平等现象呢？

•Is it only by chance that in the period of increasing environmental crisis we also see growing inequalities within and between the countries?

在环境危机快速加大的过程中，我们也看到了由于增加资本积累而引起的世界各国之间与国与国之间的不平等现象，这仅仅是一次巧合吗？

•From experimental game theory: only fair solutions perform as stable.

•从环境博弈理论看：总有公平的解决方案才能稳扎稳打

•→We need not only fair global solutions but also fair solutions on country and regional levels.

我们需要的不仅是公平的全球解决方案，还需要有国家和区域层面上的公平解决方案。

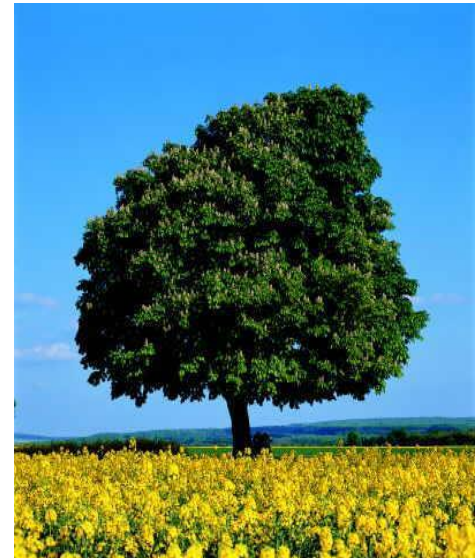
•Law is predestined to construct and implement such fair solutions; the "markets" do not aim at fairness and equity because they are based on (different) purchasing power,法注定要构建和实施这样公平的解决方案，“市场”并不着眼于公平和公正，因为它们是基于不同购买力的，所以必须用法律进行补偿并确保公正。

•Practically →tackle “energy poverty” by progressive tariffs (higher tariffs for higher consumption)实际上可通过累进式关税解决“能源贫困”问题（高消费缴纳高关税）。



DEADlines changed the rule of the game

- Essential new factor in environmental crises : by climate change there are **DEAD**lines. There are irreversible tipping points and they change the rules of the game
- Until now distributional conflicts often have been solved also at the cost of the environment or at the costs of future generations.
- With climate change this is not possible any more: not to consider future harms will increasingly hurt short and mid term assets.
- Probably this will be more perceivable in China.



Dominance of short time thinking短期思维展主导地位

- =equivalent to a lack of reasonable planning, is an enormous obstacle for sustainability.短期思维的主导地位（等同于缺乏合理规划）是可持续发展的巨大障碍。

- Is connected with depreciation of future when discount rates (usually as high as profit rates in OECD-countries)当贴现率假设接近平均利润率时（不幸的是，通常在经合组织国家司空见惯），会出现未来值大幅贬值。

- By high discount rates in cost-benefit analyses future values e. g. of good water, biodiversity or climate stability are evaluated in small “net present values” (NPV); →disregard of services by nature.

成本效益分析后收益率相等时，未来值，比如，好水，生物多样性或气候稳定以“贴现率”进行估算，得出“净现值”（NPV）。

- But discount rates near zero →small devaluation of futures values.当贴现率接近零时，未来值价值贬值较小。



The strange solar case –why no socio-ecological approach?

奇怪的太阳能案件——为什么不用社会生态方法呢？

- EU competition case against Chinese PV producers. (now eased).
- 欧盟竞争案件与中国PV生产商想抗衡
- For decades we waited for cheaper production of energy by the sun. In the last years finally there was a breakthrough in the costs but also a sharp competition because of many new competitors (in China).
几十年来，我们等待通过利用太阳能降低产生成本
- The EU did not look at the problems at Chinese companies similar to the EU. Are subsidies negative from an necessary overriding importance of climate change mitigation and promotion of renewable energy?
• 欧盟并未看到与其相类似的中国企业的问题。就气候变化减缓和推进可再生能源而言，补贴会产生负面效应吗？
- IEA (International Energy Agency) discloses global subsidies of about \$ 540 billion for fossil energy and only \$ 90 billion for renewables.
• 国际能源机构披露显示，全球化石能源的补贴达到5400亿美元，而对于可再生能源的补贴仅达900亿美元。
- “Over- capacities” of the solar industry in the age of climate change?
• Why not solved by public procurement programmes?
在气候变化时代光伏产业能过剩了吗？
为什么我们不通过公共采购方案来解决上述问题呢？



Advertising and the socio-ecologic transformation

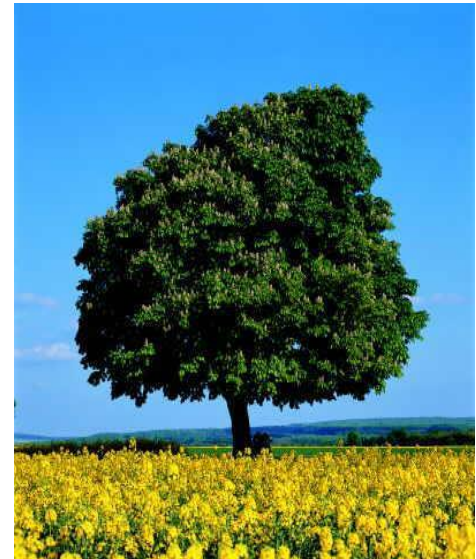
广告宣传与社会生态转型

- Highly imprinting the individual in western societies, beginning with children
在西方国家对个体的早期教育十分重视，从儿童做起
- Interaction of “big corporate” and “big media”. Media increasingly financed by advertising. New media like Google aggravate this phenomenon.
大公司与大媒体的融合，媒体越来越得到广告的资助
- Form of advertising is blockading the transformation towards sustainability
广告形式封锁了迈向可持续发展的转型
- Advertising important in the globalisation of unsustainable consumer styles
广告在非可持续的全球化消费方式中起着重要作用
- by strongly influencing the preferences,
通过极大地影响偏好
- wasting of resources
浪费资源
- for protection of market power and so decreasing possibilities for fundamental innovations “lock-ins”.
保护市场支配力与降低掣肘根本性改革的可能性。



Advertising广告

- Commercial advertising is a result of oligopolisation. Because products often do not differentiate marketing by constructing brand images is made
商业广告即是垄断的结果，因为产品为了树立产品形象而无法进行有差别区别营销
- At the same time this strengthens oligopolisation in establishing by “entry barriers” and outkicking small and medium enterprises (SME).
同时，这些优势垄断寡头设立了“门槛”，将中小型企业拒之门外
- The consequence is the reduction of the role of consumer sovereignty
结果是消费者的权威作用被降低
- China could avoid still undesirable developments by regulation
•中国可以通过规制避免这些不理想的发展路径



Advertisingsolutions 广告缺陷的矫正方法

- The ban of commercial advertisement would be optimal.

禁止商业广告是首选

- But also step by step measures of strong regulations. See the successes in the advertisement for cigarettes in USA and EU.

但是，要逐步建立强有力的规制措施。可参考美国和欧盟推销烟草的成功经验

- Stopovers can be the *Ban of advertising in public spaces,*

- 中途截留可用于对在公众场合禁止做广告

- The control of advertising on the Internet,*

- 对网络广告进行控制

- The end the commercialization of childhood.*

杜绝儿童商业化

- In the neoliberal era taxes on advertising had been abolished or reduced -

They could/SHOULD be AGAIN a relevant source for public budgets.

- 在新自由时代，广告税收已被取消或被降低



Some special points: **More Binding impact assessment of laws**

一些特殊建议：使影响评价法律更具有拘束力

- Prices currently only partly reflect social and ecological needs, and do not cover many costs → Harms are “externalized”.

当前价格仅部分地反映了社会和生态需求，没有包括很多方面的成本，损害被“外在化”了

- For the **internalization of costs**, for “right” prices some regulation is necessary, at least taxes, e. g. **carbon taxes**.

为了是策划年根本内在化，对价格进行合理规范是必要的

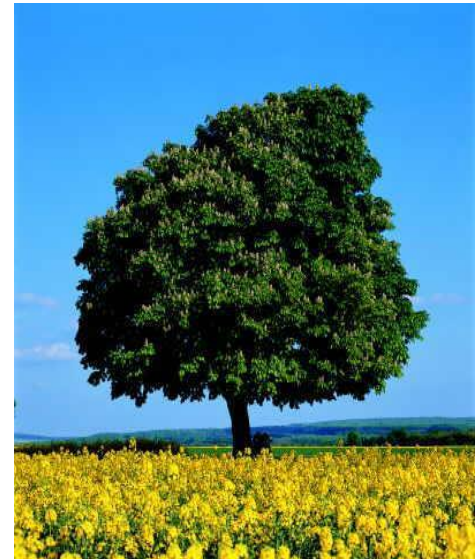
- → Law drafts (and laws) should be subjected more to a comprehensive economic, social and ecological **impact assessment** to consider future values, benefits and harms.

- 法律法规应当进行更全面的经济、社会和生态影响评价，兼顾未来值、利益和损害后果。



Indicators like EROI

- Alternative calculations on energy efficiency in the energy production:
- $EROI = \frac{\text{energy return}}{\text{investment}} =$
- =all energy input / all energy output in a specific energy production
- a non monetary measure for efficiency. → unconventional fossil fuels (gas by fracking, tar sands) from a total energy view have poor performance.
- In this sense high value coal has a good performance (relatively small input of energy to get energy)(BUT emissions!)



Conclusion

It is well-known that Confucius mentioned three methods to learn (wisdom): by reflection, imitation, and experience, the last one would be the bitterest.

Environmental laws and their implementation could be assigned to the first ones. 结论：总所周知，孔子说，学习分为三种境界：知之、好之、乐之。最后一种境界是最难的。环境法律及其实施可以归于前两种境界。

