Three strategies for sustainable consumption

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Introduction

The environmental objectives of sustainable consumption can be summarised in two concepts: dematerialization and detoxification. Dematerialization means reducing the amount of material required to satisfy social needs or, otherwise stated, by increasing the productiveness of the used materials (Geiser 2001, p.204). Less material used means less natural capital drawn up, less resource depletion, and less material released as waste. Practically, this can be achieved by different means:

- Recycling,
- Reusing,
- Designing products that use fewer materials;
- Substituting non-material services for material intensive services.

Detoxification means reducing the toxic characteristics of materials used in products and processes. Practically this can be achieved by:

- Reducing the volume of toxic materials used in a process or a product;
- Reducing the toxicity of materials used by changing their chemical characteristics;
- Substituting more benign substances for toxic chemicals.

Dematerialization and detoxification are the environmental requirements of intergenerational equity because they preserve the environmental basis of future human activities if not the very existence of humans in the future. They are also fundamental conditions of the preservation of biodiversity.

We have classified the different means by which dematerialization and detoxification of consumption could be achieved in three categories called "strategies": eco-efficiency, de-commoditization (or de-commodification), cultural dematerialisation and sufficiency. It should be stressed that, besides environmental considerations, sustainable consumption is also concerned with social and ethical issues, notably a fair distribution of the social product between the different economic agents or stakeholders, the reduction of illegitimate inequalities, the minimisation of risks, etc. It follows that, when coming to normative considerations, the three strategies should be assessed not only on environmental criteria but also on social and ethical ones.

We will look at them in more detail and illustrate them with examples from the transport and mobility domain.

The eco-efficiency strategy

If the three strategies have the potential of contributing to more efficiency in the use of natural resources in the wellbeing production process, we limit the extension of the eco-efficiency strategy to those actions taken (mainly by the producers) to decrease directly the intensity in materials (including the non-renewable sources of energy) of the production, use and disposal of *commodities*, all other things remaining equal. In fact, the concept of **eco-efficiency** was

coined by the World Business Council for Sustainable Development (WBCSD) in its 1992 publication "Changing Course". The WBCSD objective was (and still is) to produce and consume more goods and services while using fewer resources and creating less waste and pollution.
According to the WBCSD, eco-efficiency is achieved through the delivery of "competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing environmental impacts of goods and resource intensity throughout the entire life-cycle to a level at least in line with the Earth's estimated carrying capacity."

Eco-efficiency is what mottos such as “Factor 4”(Von Weizsäcker, Lovins and Lovins 1998) which calls for halving the use of resources whilst doubling wealth, or “Factor 10” (a 90% reduction of resources uses) are about. The fact that the eco-efficiency strategy claims to be compatible with capitalism is made clear by the choice of “Natural Capitalism”((Hawken, Lovins and Lovins 1999) as title for the book published one year after “Factor 4” by two of its authors. In “Natural Capitalism” they criticized Factor 4 for focusing too narrowly on eco-efficiency, i.e. “only a small part of a richer and more complex web of ideas and solution” (*x*). They argued that “Without a fundamental rethinking of the structure and the reward system of commerce, narrowly focused eco-efficiency could be a disaster for the environment by overwhelming resource savings with even larger growth in the production of the wrong products, produced by the wrong process, from the wrong materials, in the wrong place, at the wrong scale, and delivered using the wrong business models” (*x-xi*).

“Natural capitalism”, they said, is based on four strategies:

1. Radical resource productivity: as in former eco-efficiency but at a larger scale;
2. Biomimicry: redesigning industrial system by imitating the functioning of natural eco-systems organised as closed-loop systems where materials are constantly reused;
3. Service and flow economy: changing the relationship between producer and consumer and shifting from an economy of goods and purchases to an economy of services and flows.
4. Investing in natural capital.

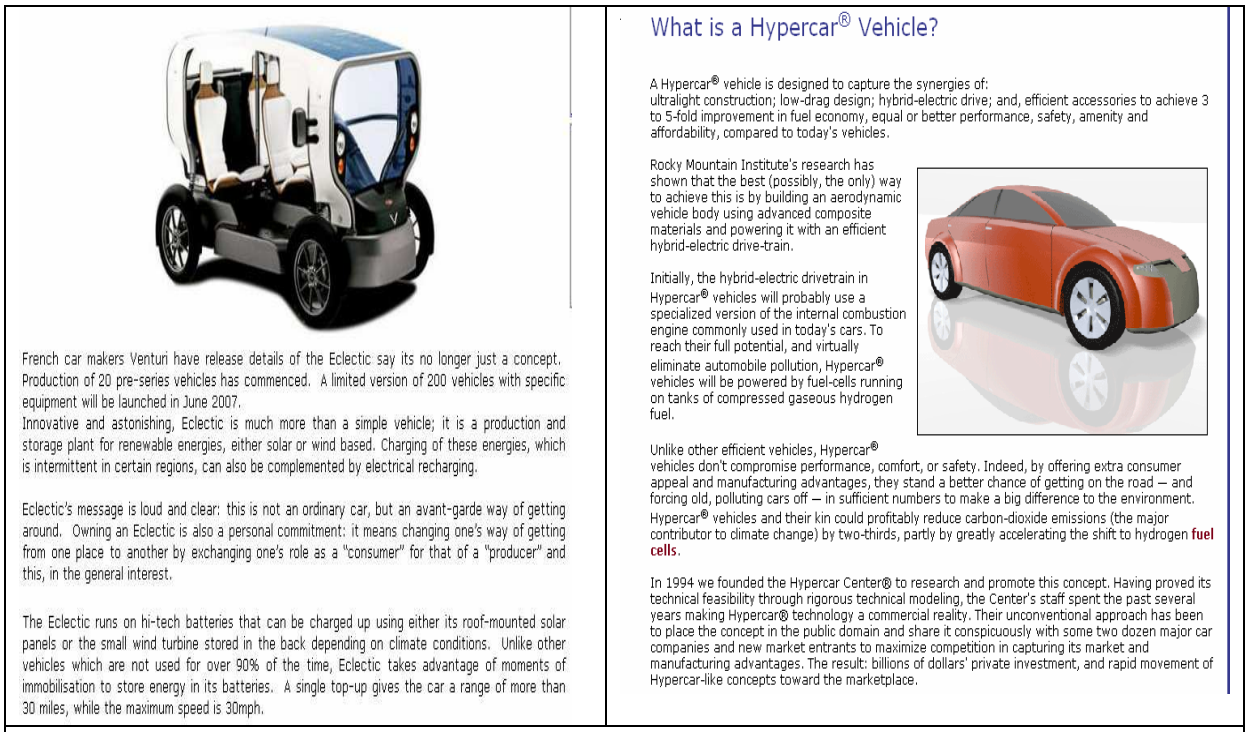
With the introduction of a strategy of “service and flow”, natural capitalism puts on the agenda an important principle which was lacking in Factor 4. In some way, this strategy can be seen as a kind of embryo of a full-fledged “de-commoditization” strategy. However, let us repeat that the proposal doesn’t constitute a departure from capitalism but its reorientation of notably by “making markets work” (title of chapter 13).

The “natural capitalism” concept has been warmly received amongst engineers and firms managers concerned with environment or with their public image. The closed-loop model of the natural eco-systems is central to the “industrial ecology” concept and the idea of biomimicry is nowadays being pushed as far as possible in “green chemistry and engineering” (Doble and Kruthiventi 2007) where former chemical process that needed high temperatures and pressures (and therefore consumed much energy) are progressively replaced with bio-transformation and catalyse occurring at ambient temperature and pressure. Still more spectacular are recent innovations in chemistry based on the imitation of the way living organisms make basic materials such as teeth, hair, skin, shells, bones, tusks, etc.

One recent and popular expression of the eco-efficiency strategy is to be found in the “cradle-to-cradle” movement which claims to go beyond eco-efficiency and…

"leave aside the old model of product-and-waste, and its dour offspring 'efficiency' and embrace the challenge of being not efficient but effective with respect to a rich mix of considerations and desires" (McDonough and Braungart, 2002, p.72).

The fundamental concept of "cradle-to-cradle- is the abolition of the very idea of "waste" by making the case that what was once a waste to dispose off in a way or another, now becomes food for some living system.



French car makers Venturi have release details of the Eclectic say its no longer just a concept. Production of 20 pre-series vehicles has commenced. A limited version of 200 vehicles with specific equipment will be launched in June 2007.
Innovative and astonishing, Eclectic is much more than a simple vehicle; it is a production and storage plant for renewable energies, either solar or wind based. Charging of these energies, which is intermittent in certain regions, can also be complemented by electrical recharging.

Eclectic's message is loud and clear: this is not an ordinary car, but an avant-garde way of getting around. Owning an Eclectic is also a personal commitment: it means changing one's way of getting from one place to another by exchanging one's role as a "consumer" for that of a "producer" and this, in the general interest.

The Eclectic runs on hi-tech batteries that can be charged up using either its roof-mounted solar panels or the small wind turbine stored in the back depending on climate conditions. Unlike other vehicles which are not used for over 90% of the time, Eclectic takes advantage of moments of immobilisation to store energy in its batteries. A single top-up gives the car a range of more than 30 miles, while the maximum speed is 30mph.

Figure 1. Eco-efficiency strategy in transport: the Venturi Eclectic car and the Rocky Mountain Institute's Hypercar. The Rocky Mountain Institute is held by A.B. and L.H. Lovins who co-authored "Factor 4" and "Natural Capitalism". The presentation text of the Hypercar Vehicle is illustrative of the fundamental technology and business orientation of the eco-efficiency strategy.

This shows that the idea of eco-efficiency has evolved since its adoption by the WBCSB. The level of demands has increased steadily going from simple end-of-pipe solutions (if not mere just "greenwashing"), to greening (eco-efficiency, product stewardship) and now beyond greening to "cradle-to-cradle", eco-effectiveness, etc. Of course, it remains to be seen if actual practices have followed tat the same pace…
The important thing is that, whatever their differences, all versions of the eco-efficiency strategy share the following characteristics:

- Confidence in technological innovation;
- Business as the principal actor of transformation. The emphasis is on firms designing new products, shifting to new production processes, investing in R&D, etc. more than on the retailer or the consumer, let alone the citizen.
- Trust in markets (if functioning well);
- "Growthphilia": there is nothing wrong with growth as such. Moreover, with "cradle-to-cradle", growth is *per se* conducive of sustainability.

No special role for the state except for making market function as they should do (removing barriers to market efficiency) and for providing the right incentives through taxes, subsidies, etc.[1]

The de-commoditization (or de-commodification) strategy

De-commoditization of consumption consists in substituting non-commercial goods for commercial ones and non-commercial services for commercial ones. Briefly, in substituting where possible non-commodity satisfiers for commodities, defined as: "goods, services and experiences which have been produced solely in order to be sold on the market to consumers…(and) produced by institutions which are not interested in need or cultural values but in profit and economic values." (Slater, 1997, p. 25).

De-commoditization is the reverse of the "commoditization" process described by Manno (2002:70) as the "tendency to preferentially develop things most suited to functioning as commodities – things with qualities that facilitates buying and selling – as the answer to each and every type of human want and need". It is also slightly equivalent to what Hirsch called the "commercial bias" or "commercialization effect" characterized by the fact that "an excessive proportion of individual activity is channelled through the market so that the commercialized sector of our lives is unduly large."(Hirsch 1977, p.84).

Manno operates a distinction between goods and services with high commodity potential (HCP) and those with low commodity potential (LCP). The commodity potential is a measure of the degree to which a good or service carries the qualities that are associated with and that define a commodity. As an example, Manno considers the need children have for playing. At the most commercial end of the scale, it can be satisfied with mass-marketed toys such as Barbie dolls which are inexpensive, marketed worldwide, whose production and distribution is energy and waste intensive. In the middle of the scale, one finds locally produced, handcrafted toys, dolls and games usually made from renewable materials and with local or culturally idiosyncratic designs. Finally, at the far-end of the commodity-potential scale are activities and games that don't necessitate commercial objects.

Table 1 shows some if the main differences between HCP and LCP goods and services as well as the negative and positive effects of commoditization.

[1] Actually, the role of the state varies according to the version of the eco-efficiency discourse. It can be as minimal as just guaranteeing optimal functioning of markets or a bit more active by engaging in "smart regulation"(Jänicke 2008). It is in the "transition management" approach to ecological modernization, that the government has the most important role but in a context of general "reflexive governance".

Table 1. Differences between HCP and LCP goods and services			
Attributes of goods and services with high commodity potential	*Attributes of goods with low commodity potential*	*Negative effects of commoditization on development*	*Positive effects of commoditization on development*
Alienable, excludable, Patentable Simpler to establish property rights and prices	Openly accessible, inalienable, difficult to establish rights, widely available, difficult to price accurately	Accelerates decline of sense of community Skills and capacity for managing "commons" decline	Release individual and corporate entrepreneurial energy Ability to manage individual property and promote personal gains improve
Standardized, universal, uniform, adaptable to many contexts	Particular, customized, decentralized, diverse, dependent on context	Reduces cultural and geographic diversity Not necessarily suited to particular ecosystems Crowding-out of locally appropriate options	Allows rationalization of production, economies of scale and transfer of skills Greatly increase (human and capital) productivity
Autonomous, depersonalized, Use independent of social relationships, primary relation between consumer and product (product oriented)	Embedded, use or practice occurs in a web of social and ecological relationships (process oriented)	Promotion of individual consumption reduces the efficiency gains made possible by sharing, increases flow of material and energy. Excessive autonomy undermines social relationships	Minimizes the complications of relationships. Advances freedom of individuals
Mobile, transferable, easy to package and transport	Rooted in local ecosystem and community	Propensity for mobility increase flow and export of energy and material	Enhance trading , foster development of markets
Contributes to production efficiency More is produced per unit of currency expended	Contributes to consumption efficiency More satisfaction per unit of material and energy expended	Neglects the potential for achieving sustainability through increased satisfaction with less material	Increased production efficiency create more wealth and greater availability of materials goods and services
High capital intensity, low energy productivity, low labour intensity, high labour productivity	Low capital intensity, high energy productivity, high labour intensity, low labour productivity	Eliminates jobs, encourages replacement of workers with fossil-fuel energy	Increased productivity fees capital to invest in new productivities activities, creating new jobs.
Economically efficient, the most exchange value for a given investment	Sufficient, optimal service for minimal expenditure of material and energy	Reduces capacity to develop low-impact lifestyles	
Contributes to GNP, GNP growth measures commoditization	Contributes little to GNP	Public policy goals become tied to growth in size of economy rather than improvement in quality of life	GNP represents accurate measure of economic activity and is closely related to improved quality of life
Source Manno (1999)			

One would add another crucial difference missing in Manno: HCP goods and services are demand-oriented. If the corresponding needs are missing they are being created through marketing and advertising. The reverse is true of LCD goods and services: they are needs-oriented, even if the demand doesn't exist because of poverty and destitution. In that case, the demand can be created by public allowance or any social program. So, the poor can be excluded from the consumption of HCP goods and services, which is less the case with LCP

ones. The process of commoditization is self-supported. Actually, the market economy acts as a "milieu" exercising selection pressures on satisfiers that are more favourable to commodities than to non-commodities, giving the latter less opportunities to survive. This doesn't mean that one cannot find localized niches for less commoditized ways to satisfy needs but these, by definition, remain marginal.
"Given the selection pressures of commoditization, however, unless public policy deliberately intervenes, HCP goods and services inevitably outcompete LCP goods and services…Commoditization pressures act over time to gradually and inexorably expand the number of commodities available, the geographic spread of their availability, and the range of needs for which commoditized satisfactions exists." (Manno 2002:72-73).

It follows that de-commoditization is more or less synonymous of de-marketisation which can be defined as a partial decoupling of consumption from demand. According to Harvey and al. (2001, p.4) :
"… a useful distinction (is) to be made between demand and consumption, process now too frequently conflated. Demand signifies the concerns of suppliers in markets and thereby focuses upon the possibilities and terms of commodity exchange. Consumption refers to a much broader set of social practices whereby people utilise services and products which are only sometimes acquired by purchase in a market and which are deployed in the context of social values which transcend the confines of instrumental and rational calculation".

Decoupling consumption from demand, limiting the influence of markets amounts to increase the influence of others systems or organisations through which we satisfy our needs and aspirations, that is, others "modes of provision". The relative importance of the different systems of provision in society in general and in the production, distribution and consumption of food in particular depends on the technology available, the environment and the cultural system of the society. As is well-known, modernity as described by Marx, Weber, Durkheim, Tönnies and de Tocqueville is characterised by the supremacy of markets and bureaucracies at the expense of communities and families.

Table 2. A typology of modes of provision. *Source: Harvey and al. (2001)*

Mode of provision	*Manner of obtaining service*	*Who does work*	*Who pays (if anyone)*	*Principle over which service is obtained*
Market	Commercial purchase	Paid employees	Consumer	Market exchange
State	Claim to entitlement	Paid employees	State (tax payer)	Citizenship right
Communal (cooperatives LET)	Personal interconnections	Neighbours or acquaintances	No money involved	Reciprocal obligations
Domestic	Household Do-it-yourself	Members if household	No money involved	Family obligation

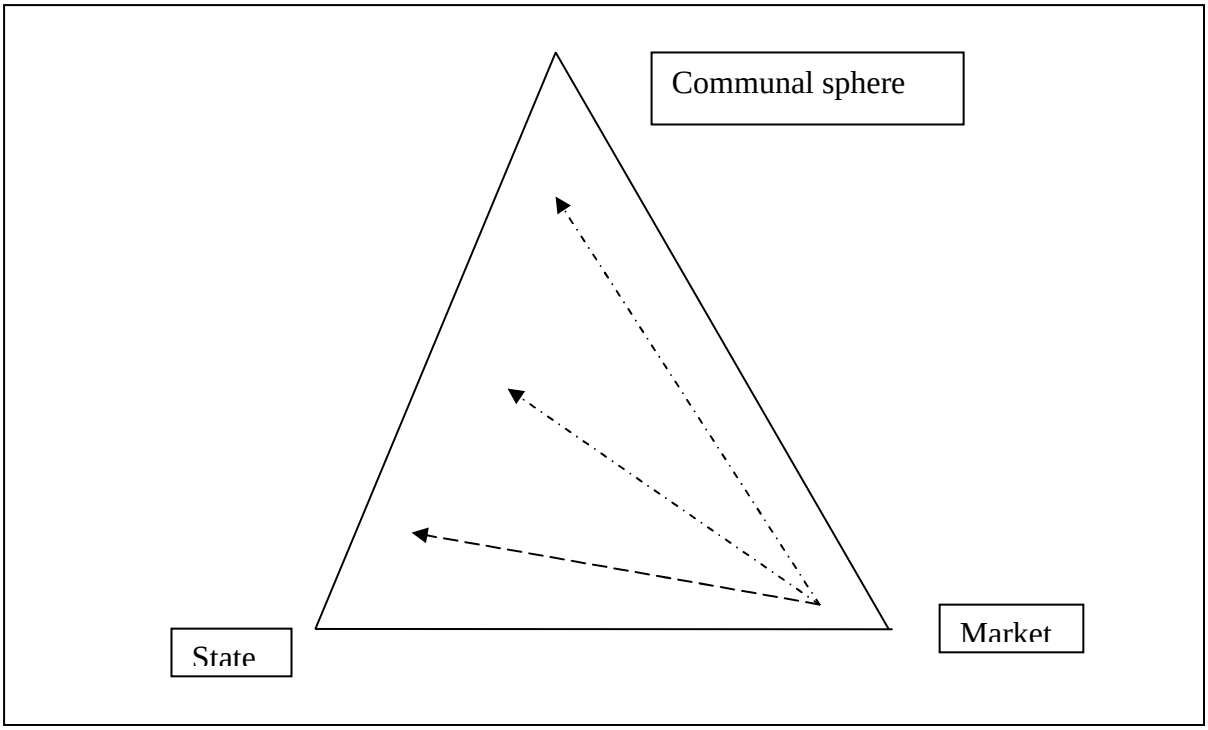


Figure 2. The modes of provision triangle

For the advocates of de-commoditization, sustainable consumption would correspond to a shift in the "modal split", the extant distribution of the different modes of provision through population. If we group together the domestic and the communal modes of provision under the general heading of "communal sphere", we may illustrate the de-marketisation (or de-commoditization) strategy with the help of an equilateral triangle as in figure 2.

Let us call "consumption pattern", the proportion of energy and materials services consumed by households (shares of households' time-and-money budgets) respectively in the form of commercial commodities, of public services and goods and of communal goods and services. Every consumption pattern could be symbolized by a point in an equilateral triangle, the distances between each point and the three sides of the triangle expressing the proportions of consumption occurring under the market, the state and the communal mode of provision[2].
Points situated at the angles are pure state, market or communal consumption patterns, all other involve, though in very different proportions market, state and a community components. One calls "modal split" the most frequent consumption pattern in a given society (Gershuny 1983). In consumer societies, the great majority of consumption (hence the modal split) concentrates in the right bottom area.

Indeed, the consumer society resulted from an historical trend (maybe still ongoing) of commoditization, i.e. of transferring the provision of services or goods from non-market systems of provisions to the commercial one. But, as Warde put it:

"The history of consumption might be written as a process whereby activities shift between spheres – from the household to the market, and sometimes back again, from the market to the state, and sometimes back again." (Warde, 1997, p154).

[2] The idea of using equilateral triangle for this kind of display comes from Kolm (1984).

De-commoditization consists in bringing some activities back to the non-market sphere, the public and communal sectors. Needless to say, this will not be an easy strategy to follow in an age of almost religious faith in the virtues of the market and of distrust in those of the state and perhaps still more, of the community. Indeed, much of the business of the European commission has consisting in taking goods and services away from the public sector and committing them to the market. However, things could have gone otherwise: from the public sector to the communal ones. For instance, "rather than providing completed final services, the state might – as for example in the care of the very young and very old people – provide the material equipment and infrastructure, building and furniture, books and toys, and medical equipment, together with 'intermediate services' in the form of professional advice, which would then be used by community groups to provide the final services themselves, using their own direct, unpaid labour." (Gershuny 1983, p.41).

Examples of (totally or partly) de-commoditized modes of provision

1. Product Service Systems: a first step towards de-commoditization ?

As explained above, the idea of substituting flows of services for stocks of goods can be considered a first step towards a de-commoditization of the production and consumption patterns. The "Product Service Systems" (PSS) program supported by the UNEP (2002) aims at fostering a shift from individual product ownership to a management arrangement of utility provision with a mix of products and services. The PSS "encourage collective activities by advocating systems of leasing, sharing and/or pooling of resources as well as alternative institutional structures that enable these kinds of arrangements. They recommend more intensive use of products and tools for consumption as well as more producer-consumer interaction."(Briceno and Stagl 2006, p.1543). PSS initiatives can be business-led or consumer-led. Not surprisingly, the latter appear to be more concerned with sustainable consumption than the former... Figure 4 refers to a particular commercial PSS in the transport sector.

So far, it doesn't seem that the PSS have been really satisfactory from the environmental point of view. Furthermore, they have also proved unsatisfactory from the human and social perspective though they are supposed to take into account the social context of consumption (UNEP 2002).

2. Local Exchange and Trade Systems: what potential ?

"Local Exchange Trading Systems (LETS) also known as LETSystem**s** are local, non-profit exchange networks in which goods and services can be traded without the need for printed currency. LETS networks use interest-free local credit so direct swaps do not need to be made. For instance, a member may earn credit by doing childcare for one person and spend it later on carpentry with another person in the same network. In LETS, unlike other local currencies no scrip is issued, but rather transactions are recorded in a central location open to all members. As credit is issued by the network members, for the benefit of the members themselves, LETS are considered mutual credit systems." (Wikipedia).

AutoShare: car sharing service

Company background
AutoShare, headquartered in Toronto, Canada, is a private corporation run by two primary shareholders. AutoShare's staff totals four people, and the organisation began operation at the end of 1998. AutoShare has a fleet of 19 cars and a membership of approximately 260 people. It is still very much in a 'growth' phase and as such, approximately half of the staff is focused on marketing and the other half on operations.

Description of Product-Service System
AutoShare, like many other car sharing systems, is a service providing an enabling platform. Cars are stationed near member's homes and accessible 24 hours a day via a telephone reservation system. Members can use the car for as little as one hour, or as long as they like. To obtain these benefits, members pay a small subscription fee to AutoShare to contribute to the fixed costs of the company, and are then charged only for the hours that they use the car. Essentially a member pays for the mobility they use (rather than needing to outlay a large amount of money for something that will spend most of its time immobile).
All AutoShare cars are stationed at, or very near, a transit stop of the public transport system of Toronto, which consists of subway trains, streetcars and buses. This also helps accommodate customers combining public transit and car trips. AutoShare currently has a partnership with a local car rental agency where it obtains nearly new cars from the agency for short-term leases, and in return, sends the agency the longer-term rental business which Autoshare cannot accommodate. Car sharing is targeted at people who will use it for major shopping expeditions, weekend trips to second homes or visits to friends / family who live at a distance.

Product-Service System development
Initially the motive for starting this service was as a means to alleviate the parking congestion in Toronto's 'downtown'. After researching the Quebec City car share (and other successful European car sharing initiatives), it became apparent that large scale car sharing could also have a positive impact on traffic congestion and air quality in the city, and at the same time add a new component to the currently available transport options. The business is now attempting to establish a Canada-wide car sharing association with cross use agreements. For example, allowing a member to fly from Toronto to Montreal and use a car from another car-sharing business. AutoShare is also involved in a joint promotion scheme with the Transport Authority in Toronto, where people who buy annual metro-passes from the Transport Authority are given a substantial discount option on their subscription to AutoShare.

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Figure 4. The De-commoditization Strategy in Transport: An example of commercial Product Services System. Source : UNEP 2002.

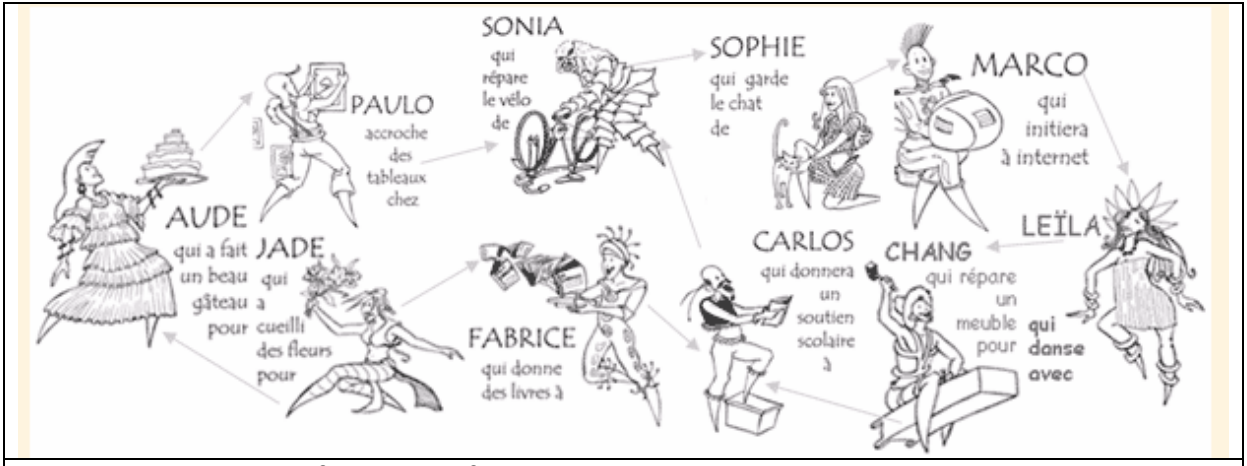


Figure 5. Illustration of the LETS functioning.

The potential of LETS (Local Exchange and Trade Systems) as systems of provision has been assessed by Briceno and Stagl (2006) through a survey of the (unfortunately very limited) empirical literature on these systems. This potential for sustainable consumption can be inferred from facts such as the following:

- For 62% of members of a surveyed LETS, more than 20% of the transactions are innovative ideas, offering new concepts and services. Examples include artwork, health services, repair work, Internet services, house-chore help, etc.

- Seyfang's (2001) survey on the Kwin LETS gave the following information: 91% of participants agreed with the fact that development should involve less consumption but greater quality of life. 77% felt that LETS was a greener economy than the mainstream economy. 40% felt their quality of life had increased with LETS and 31% felt more able to live a greener lifestyle. 23% claimed to have been more environmentally aware of their localities through LETS. 45% of the members bought recycled or second-hand equipment from within the scheme, 25% directly reduced consumption and 37% of traders got property repairs.
- From another LETS, Seyfang (2001) reports that maintenance and repair work was the third largest good or service bought, consumed by 31% of the members.
- In general (Williams 1996), there are many programmes of tools and big-equipment leasing, laundry-machine sharing, car and transport servicing and collective workshops.

To conclude, LETS encourage the localisation of the economy, decreases transportation pollution and costs and change consumption patterns. They foster sharing, pooling, reusing, recycling and repairing. Moreover "they promote and develop new skills and self reliance and are thus effective in meeting many needs of humanistic and social nature that have been neglected in the mainstream economy." (Briceno and Stagl 2006).

"VAP : Voitures A Partager - Vriendelijk Anders Pendelen

VAP offers a car-sharing system based on hitch-hiking for short trips within or around a commune, or to a railway, a metro station, or a bus-stop.

- **VAP** car-sharing is ***safe:*** all participants have to register as members of the association. Furthermore, compulsory (RC) car insurance covers all passengers, including therefore the car-sharers.
- **VAP** car-sharing is a ***sustainable solution,*** both to help reducing the number of cars in town and to make better use of those on the move. It simply requires us to ***change our habits***: opening the door of our car to a pedestrian or getting into the car of an unknown driver, even if they are **VAP** members, may seem unusual at first.
- **VAP** car-sharing is particularly suitable for once-off trips to various destinations. No former arrangements by mail or phone are needed.
- **VAP** car-sharing is an ***ideal complement to public transport*** : many users live too far away from a railway or metro station to get there readily.
  VAP car-sharing provides them with a new, easier mode of access without overcrowding the public parking space.

Friendliness among neighbours is an important part of the initiative. And the more **VAP** members there are in an area, the easier car-sharing will become for everyone!

Figure 6. The de-commoditization strategy: of mobility. Examples of "communal" modes of provision.

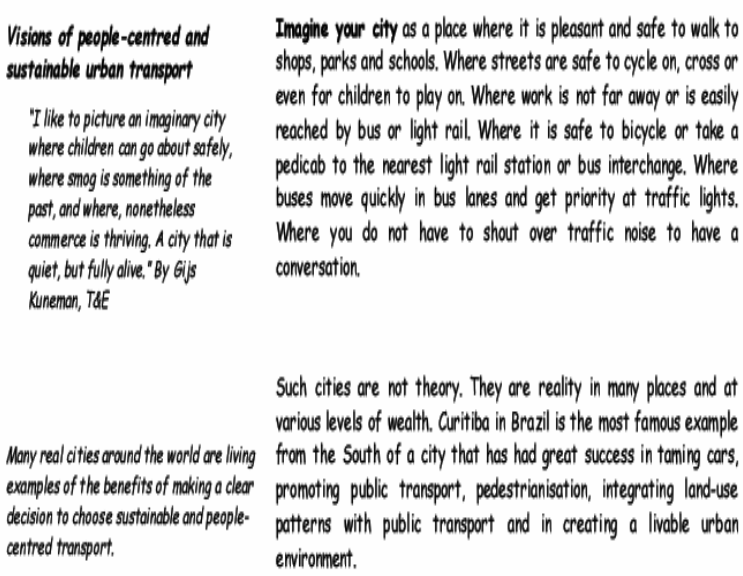
3. Public Services

Not so long time ago, an important proportion of households' consumption was provided by public services, or by state-owned or partly state-owned firms. It was the case for electricity, water, telephone, broadcasting, television, etc. Before the reign of the individual car, most if not all, travelling by train, bus, ship and airplane was provided by public enterprises.

Generally, the public services used to be organised and managed at the highest institutional level. But local authorities an also be providers of goods and services to their populations. For instance, it is often the case in cities big enough to need and afford an urban transportation system.

Many public services in Western societies have been dismantled under the pretext that they were less efficient than private, commercial services. However, there is nothing definitive in this and sustainable development might make necessary to reverse the trend, notably because it entails a redefinition of efficiency which take into account environmental concerns.
On the other hand, many goods and services which cannot be efficiently provided or managed at the state government level could be so at a lower institutional level. Notably the risk of bureaucratisation and of corporatism is more easily controlled when working at the local level. Indeed, there is a tendency to revisit the notion of public service in the perspective of a "new municipalism":

"*A new municipalism is emerging, and characterised by attempts to expand municipal sovereignty, democratise municipal governance, and strengthen the role of municipalities …(Bookchin and Biehl, 1997). Municipalities across the country are increasingly taking responsibility for public concerns abandoned by the federal and state governments, and passing local minimum wage laws, employment and housing regulations, bans of the use of pesticides and genetically modified organisms, and establishing public cable, wireless internet, and energy services."(Manski and Peck,p.166)*



"We Americans can choose between about 200 automobile brands. We can buy or rent any kind of car we want. We have infinite consumer choice. But the one choice you don't have in Los Angeles is the choice for efficient, cheap, accessible, public transportation. That choice is the result of citizens working together and making public choices. Much of what appears to be choice in America is trivial, small private choice. We're always making choices off a menu we don't get to write. Public liberty, public choice, writes the menu. This is why we This is why we have to retrieve our power as citizens, and once again begin to make public choices about public interests." (B.Barber)

Figure 7. The de-commoditization strategy in transport. To have or not to have people-centred public transport: Curitiba (Brasil) vs. Los Angeles (USA)

De-commoditization is giving more importance to the public (especially, perhaps, local authorities) and the communal sectors (families, neighbourhoods, communities) in providing for more needs and wants satisfaction, and, moreover, definition. But de-commodizitation is not a yes-or-no process. It refers to a whole range of transformations, from the less to the most radical. For instance, the re-settlements of small retailers in the city centres at the expense of big supermarkets at the periphery can already be seen as a weak de-commodization measure.

The sufficiency and cultural de-materialisation strategy

The sufficiency strategy consists in:

a) Getting the maximum well-being from each unit of material service consumed (sufficiency).
b) Minimising the role of material services in the production of our wellbeing. (cultural-dematerialization)

The extant high level of consumption in western societies (and more and more in non-western societies as well) could not stand without a socio-cultural conception of well-being and happiness that foster the pursuit of "materialistic" values ('indulgence', 'pleasure", 'comfort') more than non-materialist values of self-control, spirituality, simplicity, etc. It follows that "…interventions aimed at reducing consumption will be most effective if they bring about higher-level changes in the socio-economic-cognitive system – i.e. by changing cultural values or worldviews." (Brown and Cameron, 2000, p.34).

The kind of value system (and of cultural change) corresponding to the adoption of a sufficiency discourse might be analysed with Sorokin's typology of "mentalities". In the 4 volumes of its *magnum opus* "Social and Cultural Dynamics" published in 1937-41, the American (formerly Russian) sociologist described and analysed the manifestation through history and across countries of three fundamental "mentalities", i.e. paradigmatic conceptions of:"

a) the nature of reality;
b) the nature of human needs and ends to be satisfied;
c) the extent to which these needs and ends are to be satisfied;
d) the methods of satisfaction". (1957, p.25).

More precisely, he assumed that:

> 1) Reality can be apprehended as nothing more than what the organs of the senses can perceive or, on the contrary, as something behind (or beyond) the perceived world. In the latter case, what the senses perceive is only a misleading appearance (if not pure illusion) hiding the true reality which is immaterial and transcendent.
> 2) Needs may be viewed as purely (or mainly) sensual or mainly as spiritual "like salvation, of one's soul, the performance of sacred duty, service to God, categoric moral obligations and other spiritual demands which exist for their own sake, regardless of any social approval or disapproval" (p.26). But Sorokin considered also the possibility of a mixed conception "like the striving for superiority in scientific, artistic, moral, social and other creative achievements, partly for their own sake and partly for the sake of human fame, glory, popularity, money, physical security and comfort, and other 'earthly values' of an empirical character" (p.26).
> 3) Concerning the extent to which needs are to be satisfied, different levels are possible from the most luxurious to the barest minimum.

4) Sorokin distinguished three strategies for satisfying needs: two "pure" strategies and one mixed. The first consists in modifying the milieu in order to yield the means of satisfying needs. The second consists in modifying oneself: "one's body and mind, and their parts – organs, wishes, convictions, or the whole personality- in such a way as to become virtually free from a given need, or to sublimate it through 'readjustment of self'". The mixed strategy consists in acting both on the self and on the environment.

On this basis he distinguished two "pure" mentalities: the "sensate" and the "ideational" one and a mixed type he called "idealistic".

Table 3 ***Sorokin's theory of mentalities***

The ideational, sensate and idealistic mentalities according to Sorokine					
	Ascetic ideational	Active Ideational	Active Sensate	Passive Sensate	Idealistic
Reality	Ultimate reality, eternal transcendental	Both with emphasis on eternal non-material	Sensate, empirical, material	Sensate, narrow and shallow	Both equally represented
Main needs	Spiritual	Both with predominance of spiritual	Manifold and richly sensate	Narrow sensate	Both equally represented
Extent of satisfaction	Maximum	Great but moderate	Maximum	Maximum for narrow sensate needs	Great but balanced
Method of satisfaction	Mainly self-modification	Both with prevalence of self-modification	Mainly modification of environment	Utilisation (exploitation) of environment	Both ways

These different mentalities manifest themselves in all cultural productions of society: art, science and philosophy, law and justice, and personality. If Sorokin is right in his typology, the mentality of un-sustainable growth corresponds clearly to the passive sensate "mentality" and the sufficiency and cultural de-materialization strategy would consist in shifting to an active, if not, ascetic ideational one, perhaps after a transition phase of idealistic culture.

Benjamin Barber have coined the term "kidults" for characterizing the kind of personality this "passive sensate" mentality created or at least maintained by marketing:

"*In a never-ending effort to make consumption the centerpiece of every American's existence, marketers have succeeded in infantilizing adults ("kidults," Barber calls us). We're increasingly governed by impulse. No wonder consumer debt and personal bankruptcy have never been higher. Feeling dominates thinking, me dominates us, now dominates later, egoism dominates altruism, entitlement dominates responsibility, individualism dominates community, and private dominates public. Imagine having the ship of state guided by leaders elected by a nation of 12-year-olds. That, according to Barber, is what we've got.* (Barry Schwartz in "The Washington Post". 8 April 2007).

Having analysed with all the resources of experimental and quasi-experimental psychology, the "high price of materialism", T. Kasser, professor of psychology at Knox University gives the following advice:

"*Change your activities. …We have free will, and we can decide we no longer want to watch six hours of a television a day. We can remove activities from our lives that are low flow or that reinforce materialistic values and decrease self-esteem. Put the television in the closet. Cancel your subscription to glamour and gossip magazines. Stop wandering in the mall or shopping on the Internet. Try to take these activities out of your life for a month and observe what happens. Chances are that at first you may not know what to do with yourself and you might feel increasingly anxious and empty. The temptation will be to return to the old habits… Rather than giving in, realize that now is the perfect time to form new habits. Go for a walk. Read a book. Do volunteer work. Meditate. Play with your children. Talk with your spouse. Go dancing. Shoot baskets. Work in a garden. Cook. Paint a picture. Play a musical instrument. Go fishing… By engaging in new, intrinsically oriented behaviours, two important things are likely to happen. First, you will have more experiences that satisfy your needs. Thus your happiness and well-being should rise. Second, by having such experiences, you will probably see the value of intrinsic pursuits. As such, the healthier part of your value system will be strengthened, and the importance of materialism should begin to vane.*" (Kasser 2002, pp.103-104).

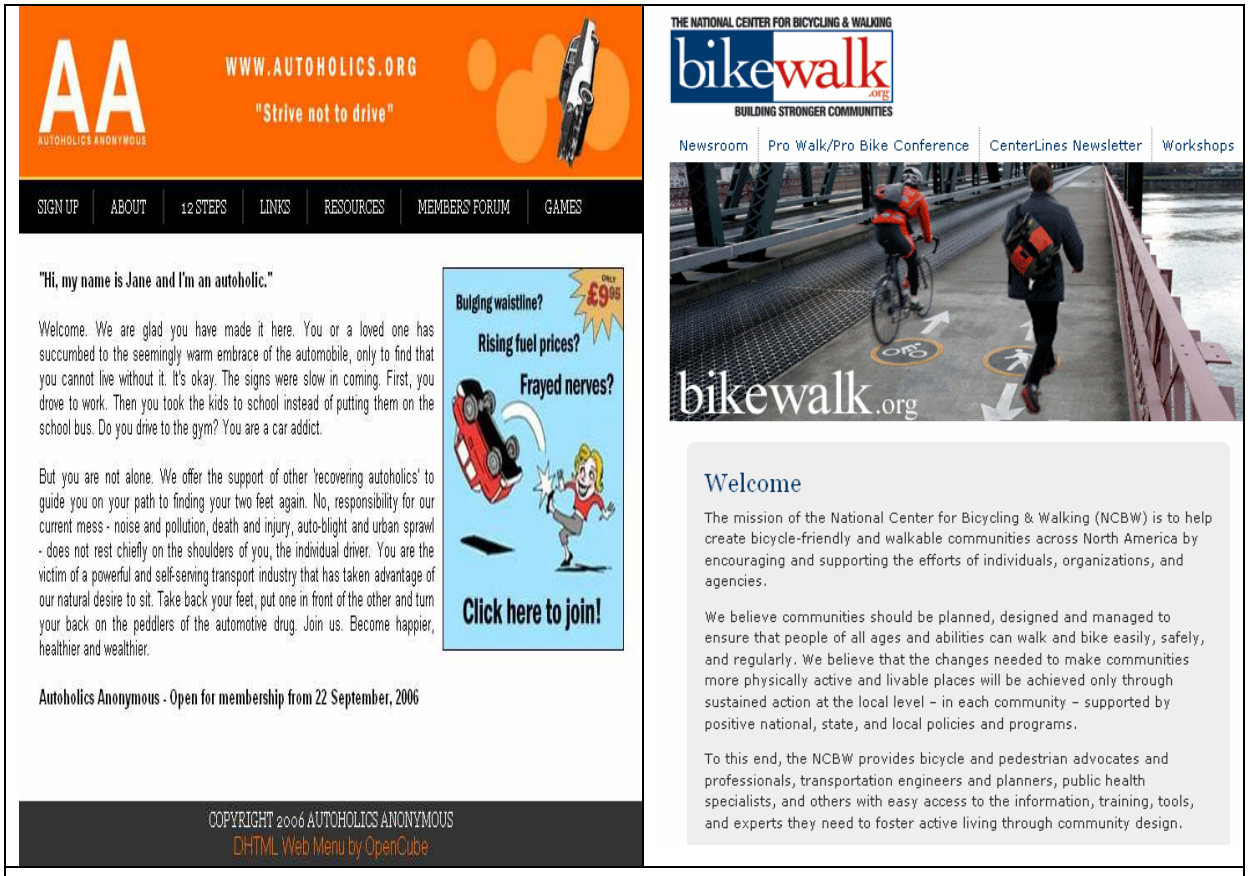


Figure 8. The sufficiency strategy for transport: Re-empowering oneself.

Currently, in current western societies, only a small minority is really endorsing the sufficiency principle. It is advocated mainly by very small (even if burgeoning) groups of activists in name of "de-growth" or of voluntary simplicity and also by a handful of scientists be they psychologists (e.g. Kasser), sociologists (A.Etzioni, amongst others), economists (e.g. F. Hirsch, T. Scitovski, R. Frank, R.E. Lane, R. Layard) or philosophers (K. Soper), etc.

But, very recently, it has become an official national strategy in at least one country in the world: Thailand. This country officially fosters what is called a "sufficiency economy philosophy". Its main principles are summarized in the following box.

"Sufficiency Economy" is a philosophy that stresses ***the middle path*** *as an overriding principle for appropriate conduct by the populace at all levels. This applies to conduct starting from the level of the families, communities, as well as the level of nation in development and administration so as to modernize in line with the forces of globalization.*
*"****Sufficiency****" means moderation, reasonableness, and the need of self-immunity mechanism for sufficient protection from impact arising from internal and external changes. To achieve this, an application of knowledge with due consideration and prudence is essential. In particular, great care is needed in the utilization of theories and methodologies for planning and implementation in every step. At the same time, it is essential to strengthen the moral fibre of the nation, so that everyone, particularly public officials, academia, businessmen at all levels, adhere first and foremost to the principle of honesty and integrity. In addition, a way of life based on patience, perseverance, diligence, wisdom and prudence is indispensable to create balance and be able to cope appropriately with critical challenges arising from extensive and rapid socioeconomic, environmental, and cultural changes in the world."*
Source:UNDP Thailand Human Development Report 2007.

Even without going that far, public authorities, and especially local ones, can make a lot in helping households to adopt the sufficiency strategy, for example to quit driving and go walking or bicycling. Urban and transport planning, in particular, is a very powerful instrument for changing consumptions patterns in housing, transportation, recreation, culture, etc.

Figure 9. Cultural de-materialization strategy in transport: How local authorities can help.

Conclusions

Effective transitions to sustainable consumption will probably be mixed strategies acting on the three ratios identified here above, the mix being different according to the consumption sector or domain (food, mobility, housing, leisure…) and the kind of society. This means that innovations cannot be restricted to technology and, more importantly, that it is certainly illusory and probably counter-productive to rely too much on market forces and technological innovation as some naïve interpretations of the ecological modernization, "market transformation" and "transition management" approaches do. Actually, there is growing scepticism about the capability of the ecological modernization approach to make sustainable development happen. Many scholars are convinced that the transition to sustainable patterns of consumption will need much wider and deeper transformations than what the advocates of ecological modernization are ready to consider. Jackson (2005:1) for example maintains that sustainable development needs lifestyles changes that are not reducible to improvements in resource efficiency: "There is an emerging realization that efficiency improvements cannot, by themselves, achieve the kind of 'deep' environmental targets demanded (for example) by the Government's climate change programme. Attention must also be focussed on the scale and pattern of consumption. This task, in its turn, involves policy-makers in the need to understand and to influence consumer attitudes, behaviours and lifestyles".
Or, as Lintott (2007, p.42) puts it "...it is not enough to improve the efficiency of production in order to achieve more consumption for less ecological damage; it is necessary to improve efficiency of consumption so as to achieve more welfare for less consumption. And it is necessary to end consumerism, and not merely to reduce the ecological impact associated with a particular level or pattern of consumption".

Likewise, the "transition management" discourse is seen as relying to heavily on technological innovations and market forces for driving modern capitalist societies on a more sustainable development path. In other words, it remains prisoner of the (primitive version of the) ecological modernization approach that many such as Jalas (2006) or York and Rosa (2003) hold fundamentally technocratic and conservative, and that according to Smith and Kern (2007) transition management has failed to "reinvigorate and radicalise". However, things are perhaps changing on the ecological modernization as well as on the transition management battlefront. E. Shove, for instance, is fully aware that: "Environmental policies that do not challenge the status quo – in terms of division of labour, resources and time, or social and cultural representations of the good life – have the perverse effect of legitimising ultimately unsustainable consumption patterns of consumption." (Shove, 2004, p.116). However, she fundamentally sticks to the transition management discourses but "reinvigorate[s] and radicalise[s]" it by introducing concerns for normative dimensions of social practices such as comfort, cleanliness and convenience. Also, Spaargaren's contribution to the ISA-RC-24 Conference "Sustainable Consumption and Society held in Madison in 2006 testifies that leading proponents of the theory are aware of some limitations of their model and are eager to widen it in the direction of the consumer, lifestyles and practices even if he doesn't challenge the fact that the market mode of provision is "the crucial and dominant axis of provision in modern societies" and assumes that no other kind of "consumption junction" is to be seriously considered. This being said, one should not be blind to the fact that they are also recent re-statements of the ecological modernizations approach that reaffirm its technological, market-driven bias (see Jänicke 2007 for an example).

Anyway, there as some indications that a kind of overlapping consensus is slowly emerging on the belief that innovations and changes will have to take place at three different levels:

- at the technological level where products and services with a lighter ecological footprint must take the place of less eco-efficient ones;
- at the institutional level where non-market based modes of provision could be promoted alongside marked-based ones;
- At the cultural level where less materialistic values and lifestyles should be developed and fostered without loss in welfare for people.

However, as already indicated, the three strategies will not have the same relevance, or salience for all and every kind of consumption. Their relative "sustainability potential" will not be the same according to whether we are dealing with food, transport, communication technologies, toys or whatever. On the other hand, the three discourses are still rather abstract and devoid of clear and detailed empirical interpretation. In order to help steering transitions policies they must be copiously fleshed out with facts, plausible hypotheses, uncertainties appraisals, economical evaluations, and so for. In so doing, it will quickly become obvious that they might leave room for quite different practical interpretations. For example, in the food consumption domain, the eco-efficiency strategy still leaves open many different – if not radically opposite – options. It is theoretically possible that GMO or cloning or any other very "hard science" techniques could be in the long run more eco-efficient than organic farming or "permaculture" when it comes to feed nine billions people or more…

The next step for Consentsus project will be to work out scenarios of alternative food consumption futures based on each of the identified discourse or strategy. So doing we expect uncovering their full potential for sustainable development as well as their internal and external limits and tensions or contradictions. Afterwards, it should be possible to build more realistic scenarios by mixing elements of the three strategies on the basis of the appraisals of the strengths and weaknesses of each strategy taken separately. More precisely, structural elements of the three images will be combined into one or several coherent narratives. The process will be expert driven combining explorative and normative elements. This approach will hopefully allow us to make valuable conclusions about how 'sustainable' these strategies actually are (or how their logic can be applied in sustainability research.)

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