

Research article

Growth vs. Spoil: Knowledge Sceneries

Rinaldo C. Micheleni and Roberto P. Razzoli

DIME, University of Genova, Via Opera Pia 15/a - 16145 - Genova, ITALY

Tel. /fax: +39 010 3532844

E-mail: micheleni@dimec.unige.it, razzoli@dimec.unige.it



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Abstract

The growth is impending concern, face to «ecology» musts of over-depletion/pollution. The technology-driven key is in «robot age» implements, by «to de-materialise» and «to re-materialise» goals. The paper draws on topics outlined in recent investigation of the authors, with the guess that progress is *artificial* man conquest, whose consistency cooks up transcendental (God benignity) or immanent (Nature selection) reasons. The analysis moves from extant issues, at known (economic) *global* and (ecologic) *no-global* ideas, to outline the traits of the *post-global* robot age issues, consistent with the sustainable growth, hopefully, enjoying worldwide stability, based on *global village* «altruism».

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Introduction

Why men's civilisation exists? Because the connected organisation is gainful. The view shows economic features so obvious, to be overlooked. It develops due the «relational intelligence» singularity, extricating the mankind to develop interpersonal *inventions*, such as «language» and «trade», by the *culture* and *ethics* artefacts. The progress is question of organisation, thus, of «collective orders», which create *communities*, *companies* and *countries*, to support civic settings. The analyses dwell on governments and technologies; yet, the primary *relational* prospects deserve

attention at the diverse ranges, namely:

- the <structured society>, which fosters the people's collaboration;
- the <trade enterprise>, which undertakes business project running;
- the <nation-state>, which enacts lawful rights/duties regulations.

Today, the growth is questioned, as the over-depletion/pollution of natural sources occurs, at higher paces than the actual recovery. An eco-sustainable progress is challenge to accept, if we aim at assuring wellness to the future generations. The prosperity, however, needs value added processes, ending in less spoils and clean effluences, i.e., *discovering* <collective order> organisations, which ripen the alternative viability chances of the *global village*.

The selected substitutes come from transversal sources, and develop fit across economy and ecology conditions [1,2,3,4,5,6,7,8], to motivate the eventual solving outcomes, sketched on the *global village* hypothesis. The investigation arranges over three sections:

- the *global* outlook: economy-driven procedures, maybe, aiming at the *hyper-market* setting;
- the *no-global* outlook: ecology-driven attitudes, mostly, looking at *caution headway* paths;
- the *post-global* outlook: civic lines, once recognising the *global/no-global* inconsistencies.

Each section provides introductory comments on well assessed questions. The incoherence of the first two styles suggests reconsidering the extant organisations, inventing the *altruism* path, with linked *hyper-democracy* vision. In fact, the three choices differ on many aspects. The first leads to vanishing national authorities: the power is transferred to interstate agreements and multi-national companies, with possible build-up of biased fortunes of individuals and related personally ruled businesses. The second aims, on the contrary, at preserving the existing peculiarities: it retrenches into thrifty neighbourhoods, risking, if successful, the aggressive envy of the surrounding peoples. The last is, perhaps, utopia, looking after the worldwide natural capital sharing through the transparent resource allocation and bookkeeping, grounded on supply chain synergies and net concern expediences.

The change in paradigms, however, is grounded on modified opinions about the <collective order> set-ups. Until today, the people cohesion is entrusted to governments: a lawful behaviour certifies the rights and duties of the communal conscience. The business fairness is a resultant obligation; the public spirit is a consequent commitment. The overall establishment follows top-down hierarchies, namely:

- the *political* administration, conferring the <nation-state> officialdom;
- the *economic* management, ensuring the <trade company> efficiency;
- the *civic* cross-connecting, bestowing apt <big society> inner appeal.

The recourse to outer motivations provide strong *political* cohesion framework. If the progress has to promise improved life-quality, we needs looking at *economic* figures, and combine those attainments with outer reliability outcomes. The ensuing hierarchies are consistent with the claims: <king by grace of God> or <uniformity by Nature selection>. The scientific worth of these is debatable, but factual relevance of the <collective orders> cannot be forgotten. The line is dire, risking to totally misinterpreting the autonomy of the intangible culture and ethics developments. As a general canon, it shall be alleged that citizens enjoy personal freedom, not due to pre-existing laws, but if they establish *real* cross-linked rights/duties, forcing leaders and individuals, to be ruled under the passed regulations. Lawfulness does not rest on judges; it is specified by the citizens' rational choices, to protect private benefits and to enhance public welfares.

In lieu of top-down hierarchies, bottom-up dependability permits fostering further progress, in the <big society> reading. The sustainable growth has, possibly, stability on condition of starting steady civic ties. The sustainability policies concern [9]:

- the *economy* frame, to assure business balance on the planned spans, at stakeholders' approval;
- the *ecology* frame, to control spending-up and contamination over suitably long term horizons;
- the *social* frame, to keep harmonic deployment by protecting the individuals and communities.

The citizens' behaviours do not spontaneously respect the sustainability, since the selfish pragmatism addresses personal short term advantage [10,11].

Only the rational legality can show the benefit of long term planning. The idea to just utilise gains, and not to draw from capital or to raise mortgages and loans, faces to the <virtual wealth> growth and related unfitness, yielding the recent financial bubble. The utopia *altruism*, however, is difficult to envisage in the parliamentary democracies, where governments respond to actual voters, while future generation's pursuit is, at least, debatable guess; it is even more difficult to conceive by the competitive corporations, in which managers are forced to grant real-time affluence, within directly interfaced stakeholders.

The overall situation might be thought hopeless. A plain engineering discussion may be help showing that the robot technology (up to the *cognitive* revolution) offers a <sustainability> prospect. Actually, the indications here

collected provide that suggestion; at least, this is in the authors' expectation.

Forecasts by Finance Means

The industrial revolution promoted the dramatic increasing of wealth, through the manufacture efficiency, transforming raw materials into useful goods. The affluent society needs widespread availability of cheap products, ceaselessly replaced by up-dated pieces, later moved to landfills. The transformation efficiency, highly supported by artificial energy, is winning trait, with the drawback of withdrawing resources from the earth stocks, eventually disposed as waste and pollution, at rates exceeding the natural recovery and remediation capabilities. The challenge of unbroken growth comes out from the aptitude to discover new natural resources and industrial processes, to diversify the manufacture flows if an option dries up, and to implement appropriate anti-pollution and reclaiming procedures, for the environment safeguard.

The conformist global approach is accustomed to trust in innovation; in the recent times, this is never betrayed, as the industrial revolution paradigms could always find out substitute stocks and processes, to feed further development. The growth promise, thereafter, might focusing on finance organisation and trade regulation details, to foster the productivity return, or to enhance the supply chain successfulness. The Washington Consensus [12] is foremost example of policy reform objectives, to be followed in view of encouraging expansion and lowering local inefficiencies. The recipe has proved to be misleading in several contexts, as each political surroundings happen to require more tangled measures.

Even so, the global policies have upholders [13,14,15], with suggestions on how to update and to improve the expected issues. Looking at the agreed political surroundings, mainly three sceneries seem to grant noteworthy backing [16]:

- the expansion of the economic global market, basically ruled under the USA hegemonic power;
- the setting of multi-polar markets, with competing nation-states, supplying complementary goods;
- the deployment of the hyper-market, where the trans-national corporations are dominant players.

The first aims at furthering the global market, along with the known schemes of the *long* global assent, ruled for a century by the British Empire after defeating Napoleon up to the First World War, and of the *short* global assent, ruled by the USA after the URSS collapse during the XX century last quarter. The restoration of global hegemony, though, meets the new world order of the XXI century beginning, mostly having foreign manufacture power (in China, India, etc.) outside the chief military power (USA). Even the joint USA and EU ruling runs into significant weakness, face to the fierce competition of lower wages countries. The military hegemony alone is poor and disputed help, showing interim feats, destabilised by perilous retaliations and terrorism acts [17,18].

The second scenery comes up again with known schemes, when the power is shared by a number of nation-states. During the XX century, the European countries played into the multi-polar market, leading to instable settings, eventually broken by deadly wars, to try widening the national influence areas. The lesson, actually acknowledged, induced the EU build-up, once the world supremacy lost, to reach the sub-continent size position. The multi-polar market, today, deals with the powerful Asia entries (China, India, etc., adding to Japan), engaging outsized competitors, relative to each single European country [19,20,21]. The past experience is mostly deceiving. Once nuisances and troubles take place, the principal parts' egoism will foster the particular advantage to the detriment of the others, soon to turn competition into war [22].

The last scenery is prettily imaginative option, sometimes devised as desirable solution. It deserves the short comments, below summarised, to discuss the novelty.

Multinational Companies and Hyper-Market

The multinational companies are known reality, aiming at optimising efficacy and return on investment by removing the local inadequacy and wastefulness, instead organising their activity on productive break-through and out-sourcing. The set-ups lead to oppose the interests of the trans-national organisations, face to clerical burdens of local bureaucracies and to fiscal charges paid for national government functions. In the known *global assent* settings, the dominant country up-now played central roles, in league with the domestic firms. The *hyper-market* idea aims at getting rid of every governmental authority, so that the companies are free to optimise their organisation, allotting activities and facilities for highest return.

Consequently, the worldwide market supremacy outruns the national laws. When local restrictions oppose, the trans-national business, simply, marginalises the area, with dramatic penalty of the related citizens. In parliamentary

democracy, this means that the elector's interest would turn in favour of the multinational companies assuring progress and better life quality. If successful, the *hyper-market* allows enhanced elasticity, to drive away the war risk, carrying over trade agreements and clearing steadiness, directly ruled on trans-national objectives, according to multinational profit, devoid of nation-state bias. At least, this is an interpretation, not without appeal and supporters.

The *hyper-market* (not tied to a single imperialism) is, maybe, looking back to the trade polycentrism (the *mercantilism* of the European *renaissance* period, before the promotion of strong nation-states). The multinational company, free from government rules, enhances the financial returns by manufacturing break-up, with activity where the production is more efficient [23,24]. That approach is important, aiming at privatisation efficiency, dismantling authorities' ruled or protected services, replaced by communication, transport, instruction, health, etc., enterprises, suited to compete for the citizens' satisfaction, without unproductive governance charges.

A higher number of civil servants (bureaucrats, and, as well, teachers, doctors, etc., and, in prospect, judges, policemen, etc.) will become employees, with office-work organised on clerical responsiveness, into hierarchic reliance under the pertinent trans-national service companies (replacing the administrative functions done by governments, to manage every requested citizens' provision). The *hyper-market*, freed from local ties and charges, turns to *self-watching* practices, ideally, with two objectives:

- *transparency* of delivered functions, to achieve company-wide quality, at customers' satisfaction and third people's safeguard;
- *market-share* broadening, to improve corporation's business by acquisition of new clients and increased operation backgrounds.

Looking back at the capitalism history, the *mercantilism* already developed into weak political frames (empire, church, etc.); the bottom-up sway of the venture companies, ruled by partners, has to accomplish government's surrogating roles, by means of highly committed front-end citizens, due to the deficiency of well-structured national authorities. The differences are now more impressive than the analogies, with the present multinational corporations rooted in the industrial work-styles. The raw-materials' transformation efficiency is conditioning stage of the value cycle, holding established trade-unions and related protection bylaws. The extant industrial businesses enjoy strong backing by the national contexts, with cross-linked gains in local political frames, in symbiosis with financial steering (e.g., by rating agencies connivance). The course is difficult to figure out; most likely, it could be a top-down process, entailing the co-optation of additional trans-national (administrative) organisations.

The switch from nation-state, to worldwide *hyper-market* capitalism is a gamble, in which the wealth creation effectiveness ought to play the main role. Right now, the *hyper-market* solution enjoys the *global* vision preferences, but its inherent instability (even if following pace-wise fruition of the economic *global* market) suggests that it may be passing scenario with temporary benefits [25,26]. The transfer to public companies of many clerical and administrative tasks, in the past typical domain of political concerns, is not without serious ends in the employment market and in the taxation systems. The welfarism aims at fees in proportion to the income, to help the less fortunate. The *hyper-market* approach alleges, based on the actually delivered service, avoiding poverty shelter aids. Any diverse rule clashes against efficiency, if somebody receives utility, without paying for it (because given by the community). Moreover, the eco-protection becomes rather entangled engagement, requiring charges to be deferred for the future generations safeguard: the civil rights are permanent obligation [27] towards the full humanity, not just towards the actually enjoying powerful leadership.

Global Contest and Self-Administration

Even if, as said, the *hyper-market* approach suggests, at most, partial solutions, further hints are useful starting points to devise better suited propositions. The most striking innovation traits are given by two facts:

- the *global contest* polycentrism by net facilities and functions, in an *interactive market*;
- the *self-administration* prospects by desirable/weary *knowledge entrepreneurship* feats.

The first is noteworthy *global* feature. As the *agriculture* revolution, which knew sets of prehistory onsets in different earth regions, the recent *industry* revolution might follow new paths. The conventional western world start is based on the *scientific* work organisation *reductionism* (the Taylor/Ford paradigm). The today setting moves across the *intelligent* work organisation, based on the robotic *complexity* (the Taguchi/Toyota paradigm): *scope* economy, driven by the buyers' satisfaction replaces mass production exploiting *scale* opportunities. The breaks are enabled by the *information technologies*, which make easy dealing with diversified product properties, and complying with changeful market requests.

The *scope* economy obliges tackling with product lifecycle, figuring out its on-duty features as, inside, the shop

faces only costs, while profit comes from satisfied customers. The goal needs three steps:

- the *product-process* blending, to run intelligent automation by simultaneous engineering;
- the *product-process-environment* addition, to design (and retuning) by eco-defence mind;
- the *product-process-environment-enterprise* merging, to adapt supply chain and company.

The last brings to the *extended* enterprise, firms' alliance, aiming at co-designing, co-producing, co-selling, co-supporting provision, and getting buyers' approval and eco-protection. The facilities/functions integration adapts according to the supply chain changeable requirements. Such industrial organisation is a technology-driven set-up, based on *net-concerns*, where the nodes are the facilities each time grouped, to fulfil the tasks, needed by the product-service delivery. The array is the factual answer to manufacturers' *extended* responsibility, which states that, to lawfully put in the market new items, the producers need to obey the enacted eco-targets, adding on-duty running with end-of-life recovery. The net-structure, from technology-driven option, turns to be enabler of the supply chain, under legal eco-regulations.

The *information technologies* (specifically, by the net-infrastructures) promote the changeover of the manufacture business; moreover, they open the industrial branches of the *knowledge* entrepreneurship [28,29,30]. They take profit of *internet* and *world-wide-web* options, expanding to embrace cultural, educational, entertainment, etc. domains, adding to the many administrative, financial, governmental, etc. jobs, highly up-graded by computer engineering ways. The *hyper-market* approach is critically dependent on communication and information tools. The ensuing net-concern includes nodes, with specialised tasks (along with the established classes: suppliers, transformers, dealers, clients, certifiers, controllers, etc.) and duty functions (production, handling, management, etc.), detailed by legal guidelines and indenture agreements.

The <new economy> starts a phase, characterised by the struggle between the technical and the human capital. The technology-driven entrepreneurship reaches its success riding the innovation, to offer items in advance of competitors. The front-end financial capital ceases to be critical, because considerably lower investments are required, and venture companies are profitably pushed, when appealing business projects are devised. The human capital role is much more entangled. The innovation is linked to the discoveries, accomplished by specialised operators. The separation of the firm's knowledge and know-how, from the inventor's intellectual doings is further complicated by the information pervasiveness, allowing infinite duplication. The question is only mentioned; the existing settling is still requesting apt up-grading.

The *self-administration* prospects appear more tangled affair. The *hyper-market*, to become efficient, needs to marginalise the local governments, to be free from the unproductive charges. The management principles provide suited rules to face the enterprise risks, within known legal frames. In the future, the self-ruling outlooks require considering effective managerial functions, which simultaneously shape the trans-national corporations and all the operation administrative surroundings. The political duties collide with the organisational leanness, at least each time the *public* interest has to safeguarded, independently of the entrepreneurial return. The point is, apparently, little studied by the *hyper-market* defenders. This question is also mentioned, to point out that relevant deepening is necessary. Reliable solutions are still to be found, unless addressing the *global village* self-ruling chances.

Projections by Wary Undertakings

The *global* approach knows the antagonism of several *no-global* movements, claiming that the suggested recipes are deceptive, even fatal for the man destiny. These analyses oppose the *ecology* to the *economy*, showing that the build-up of spendable riches for today, squandering earth resources and contaminating the environment, is irresponsible and cheating behaviour. The *no-global* position is diversified, making multifarious proposals focusing *alternative* issues, as an all, describing the damages of economic *global* sceneries, according to the watchful <better safe than sorrow> philosophy.

The *no-global* views are prised by many upholders [31,32,33,34], with general discussions on how protecting the environment, from the strict conservatism (not to alter the present equilibriums), to *cautious headway* changes, to explore limited corrections. Looking at the political constructs, basically two sceneries appear:

- the severe ecology protection by *no-global* conservative *autarchy*, devoid of outer intrusions;
- the setting of *multi-polar* markets, aiming at balanced *archipelagos*, with self-consistent hubs.

The fragmentation into self-sufficient happy community hypothesis follows a recurrent arcadia appeal, as if the natural order around the human beings is enjoying suited fabulous reliability, providing *sufficient* resources to everyone. The opinions are full of evocations. The eco-protection by imagined *biologic* drills is emphasised as universal answer, with satisfactory reward to the wise people. The conservative scruples look after regulations that

forbid (because of the <precaution principle>), and do not permit innovation in view of an ecology *presumptive* invariability.

The *autarchy* (resource managing at local self-sufficiency) is not, in general, unbecoming. It is the first step, however, of the community castling against foreign exchanges. As such, it supports ethnic, political, religious, etc. divisions, to foster local affinities, opposed to outer ones. The district/nation ambitions or homeland/confined hopes are gluing options to create solidarity for *vital* advances and conquests. The *no-global* movements present, by now, latent mixing of conservatism (not *artificial* interferences) and active backing to local virtues (*self-sufficiency*). The *no-global* rage against the *global* market culture pervades the countries, through cross-border actions, already, organised into pirate's fights and privateer's larceny, thus, without specific connection with given realities. The political evolution is hard exercise.

The archipelago's view is somehow sophisticated frame, to adapt *multi-polar* markets and competing nation-states, according to a (hybrid) *glocal* description. The *autarchy*, here, refer to clusters of entities, which merge prettily wide political bodies, at continent range. The idea is to split the globe into balanced clusters, with twofold issue: to respect the community's identity; to create mediation authorities, assuring balanced equilibriums. This way, the *autarchy's* potential aggressiveness is dispersed into the belonging membership. Worldwide exchanges might arrange suited trade agreements, with simplified contracts, due to the split between the archipelago's intensive inner-flow, and the sketchy outer-flow.

The *no-global* sceneries remain fuzzy, because based on *negative* logics, sketching choices opposed to the *global* settings, which classify at the *hyper-market* rank of abstraction, while the ecology constraints are real threats, not to be forgotten. They shall deserve few noteworthy comments, hereafter summarised. The people's opinions are, still, highly biased by local sovereignty principles; the extant crisis drawbacks are ascribed to the split <nation-state> range, without which the authority does not enjoy <authenticity>.

Cautious Headway and Cutbacks

The theoretic limits of growth are well stated in physics by the entropy law, showing the single direction trend, towards undifferentiated chaos. The industry options ignore reversibility wants, as if depletion and pollution are parts of transform processes, without regeneration and reclamation musts. The industrialism is pervaded by such nonsense; the ceaseless progress is claptrap; the eco-consistency is necessary remedy. The *cautious headway* looks at careful actions, enhancing preservation of resources. The rationale arrives from the *precaution principle* <when in doubt, do nothing>, leading to the *8r*-warnings:

- to *redefine*, turning the value scale towards cautious headway scopes;
- to *revalue*, fixing priority benchmarks heading to thrifty behaviours;
- to *reassign*, modifying the riches' allocation to charge actual consumers;
- to *relocate*, prising local products/services, namely, fostering autarchy;
- to *reinstate*, poisoning the production facilities at their maximal leanness;
- to *reduce*, lowering the bio-sphere footprint under mandatory targets;
- to *reuse*, expanding items' lifecycle through second-hand efficiency;
- to *recover*, widening recycle/remediation to the supply chain totality.

The first *4r* aim at modifying the people's targets by *parsimony* mind, specifying the eco-consistency imperatives: conservative scale value, thriftiness priority, consumption taxes, local trade. The subsequent *4r* suggest shifts in the manufacture flow: process focus, minimal impact, conscious market, backwards track support. The all aims at business by *service* mind: the *8r*-warnings are suited practice, noteworthy to face the *over-pollution*. The *over-consumption* profits by reverse logistics. The *over-population* remains open demand, worsening, if the today less than 7 billion population rises, in 2050, to over than 9 billion.

The *4r*-warnings with *parsimony* mind move off the affluence facets of the *industry* patterns, to come back to better mindful thriftiness practices. They are especially relevant: the first two, by their educational spirit, help orienting towards eco-conscious behaviours; the third modifies the tax systems: from wealth redistribution towards less fortunate, to consumers' charging in proportion to resources spoil; the fourth looks at resetting autonomous local economic frames, around a provision self-sufficiency.

The *4r*-warnings with *service* mind look at creating specific conservative businesses. The first two are general scopes to lower waste and pollution avoiding useless duty and enacting compulsory targets in the bio-sphere impact. The other two address reverse logistics. The four together foreshadow new ways in the material supply chains, in which the items' provision embeds the linked information flow, allowing suited resources' bookkeeping. The

tangibles' *productivity* is enhanced by general *servicing*, further to standard *manufacturing*, [35].

The *8r*-warnings, surely, are general precepts, helpful to spare resources; they are side aims, to boost the eco-consistency; they are questionable on their capabilities to grant the prosperity continuance.

Ecology and Caged Self-Sufficiency

The *no-global* sceneries come out as opposition to the *global* pictures; in fact, they follow such attitude, with, nonetheless, some exclusion. The contrasts, chiefly, involve:

- the focus on *local* realities, aiming at fitting *autarchy* self-sufficient districts;
- the *parsimony* planning, leading to thrifty societies, opposed to affluent ones.

The contrasts directly deal with lower squanders, avoiding most disposables and use-and-dump habits. The exclusions are a bit entangled, achieving factually similar outcomes, by dissimilar philosophies:

- the servicing planning, assuring centrality to the knowledge relational provisions;
- the monolithic (here, *global*) matching, to exploit net concern, in duty linking.

The contrasts are clearly acknowledged. The connections need further cues. The service provision is intangible value added qualifying option. The networked structures allow modifying the cross-personal links, enabling peripheries in touch with authorities, and assuring throughout information spreading. The *global/no-global* bonds, thus, are basically technology-steered issues, another way shaped depending on the socio-political preferences, e.g.: an option to enhancing *self-watching* operations; or a way to support bottom-up *self-sufficiency*; and so on. Indeed, the business, administrative, education, entertainment, etc. relational allotments are information technology issues, obviously, shared by up-and-coming unities of the knowledge society, allowing exploiting the net concern, to connect the local dimension at worldwide toning.

Back to the evident oppositions, the *no-global* position is seriously conditioned by the *negative* policy (*local* vs. *global* priorities) and greatly hindered by the *precaution principle* (the *innovation* is potentially *harmful*; the *conservatism* is *safe* without doubt). The *no-global* mode correctly pays heed on *ecology*, but prospects limited outcomes or palliatives (e.g., the *parsimony* plans), avoiding to devise decisive changes. Even worse. The biology laws are interpreted, distinguishing a *safe* *natural* (spontaneous) evolutionism, from the *noxious* *artificial* (genetic engineering) practices. The agricultural revolution is also regarded as doubtful, being origin of domesticated animal and vegetables and promoter of (existing) species radical mutation (for improved exploitation) or extinction (if thought *noxious* or *useless*).

The *negative* policy, of course, cannot expand up, moving back the man to the original alleged *safe* opportunistic economy. The *cautious headway* accepts exceptions for *well* received products/habits, not easily ranked as *noxious*, in the ordinary understanding. Among the *artificial* practices, besides, some are thought *natural* (spontaneous), so that the (so named) *biological* agriculture becomes ecology-consistent issue. The *innovation* changeover, from potentially *harmful*, to *safe* process, is becoming serious bet, not easily solved, as everything (electrical appliances, chemical transforms, etc.) can be risky and potentially dangerous. At this moment, the border between *safe* and *risky* is fuzzy question, well exemplified by the nuclear power plants: demonised (and forbidden, after democratic referendum) in some countries, or accepted elsewhere as beneficial, allowing no CO₂ emission.

In the opposition series, furthermore, the *global/no-global* overlapping raises bizarre queries, when considering the *global village*. This is overworked term, meaning that the today citizens communicate each other so easily that the old borders do not exist anymore. The fact is influential in establishing the *hyper-market* concept, because of enabled instrumental functions and of started-up interpersonal bonds. The throughout information spreading permits direct democracy controls, so that the in-between political intermediation of parliamentary and governmental institutions might be by-passed. The *web democracy* appears, on such premises, *no-global* claim, allowing constant interventions outside the physical borders.

The *no-global* sceneries, at this point, might suggest some concluding remarks:

- the *cautious headway* does not permit to build-up riches, due to the fear of (risky) *innovation*;
- the *local autarchy* is conflict presage, when the castling leads to real or presumed privileges;
- the *consumption/pollution* ruling is *global village* shared duty, requiring *global* approaches.

These deductions bring to say that the *ecology* concern is real threat, impending on the industry way to obtain spendable riches. This is precisely pointed-out by *no-global* movements, and not properly grasped by *global* views. The solutions, if any, do not appear, when remaining in the *global/no-global* approaches. The assertion leads to look at *post-global* frames. The next section tries to suggest better suited sceneries.

Conjectures by Knowledge Courses

The up now given sketches show that, both, the *global* and the *no-global* approaches are inapt to assure spendable riches by reliable and steady manners. The socio-political stability of the cross-border *hyper-market* is dubious, even taking for granted multinational firms' self-govern viability. The past *autarchy* experiences prove endemic warfare settings, with battles, opposing wealthy to poor districts for wellness protection and resources hoarding. Leaving out the extreme sceneries, also the multi-pole pictures, based on strong nation-states' leadership, either on soft archipelagos' guidance do not promise trustworthy ends. The first repeats at the worldwide range, with players at the sub-continent size level, the situation of the in-between the two world wars of the XX century European countries. The second is blurry concept, as the aggregation of the local districts, into self-sufficient economic clusters, without military hegemonic claims is, conceivably, just utopia [36].

Actually, several analyses already point out that the *global/no-global* quarrel is out-of-date; then, the *post-global* solutions need to be addressed [37,38,39,40,41,42,43]. Basically two prospects need to be addressed:

- the *passive post-global* inter-state agreements, with ecology/economy balances;
- the *active post-global* ruling, under world mandatory sustainable growth bylaws.

The *post-global* period has accepted starting data with the Twin Tower terrorism act, which ends the *short global assent* ruled by the USA. Its *passive* recognition does not mean looking after solutions. The *active* approach requires the combinations of three prerequisites, [44]:

- the acknowledgement that the world stability, imposing rational legality routed in *altruism*;
- the deployment of technology innovation, granting suitable *durable growth* accomplishments;
- the establishment of fitting socio-political frames, providing dependable *global village* ruling.

The engineering viewpoint limits at the second prerequisite: here, innovation looks at robot tools, and outlines technically sounds hypotheses. The goal is challenging, but of little help, without the other two. What is more, the current mind inclines towards financial tricks, when *global* driven, either at methodical conservatism, when *no-global* driven, so that technology *innovation* is mostly outside the standard way of thinking, and the robot centrality cannot be easily understood, unless strong motivations are developed.

The other two prerequisites, thereafter, become qualifying viewpoints, to be scattered as commonly accepted wisdom, to upturn the currently assessed habits, pervading socio-economics and politico-legal institutions, and to motivate the different liking towards technological innovation. In fact, it is not enough to work out effective technical solutions; it is necessary to achieve a broad *appropriateness*, making them to become obvious reference [45].

New trends arise: firms can develop intellectual resources from company-specific skill, to specialised knack (finance, journalism, etc.) that cannot exist when individuals act on their own, out of communities. The *ecologic* dimension is new fact, moving the *political* one, into controversial position. The polluting factory does not face costs from spouting bleak smoke over a town, unless a tax would internalise the damage. The factory owners and the ravaged residents could agree a direct refund; so, the plant will look at emitting less, to improve its return-on-investment. The bargain is equivocal: the productive processes do not come back to initial conditions, but still withdraw resources, and return waste and effluence. The repayments have to concern the directly ravaged residents and the indirectly damaged third people, future generations included [46].

The <nation-state> has the job to rule its citizens, enacting and ratifying taxes. The *new system* of clear transferable rights/duties (in this case, right-to-pollute/refund-tax), has to play roles parallel to the firm's ones. The ensuing activity, negotiating and enforcing contracts, operates by tradable emission permits, out the national borders. In fact, the *ecologic* dimension does not stop at them, and endures along the time to come. This *system* does not meet space and time limitations, and the related *economic* dimension has an improved inner logic, when dealing with the <ecology> mandatory obligations, compared to the split-up *political* one. These are, by now, blurry concepts; a few preliminary guesses are summarised.

Rational Legality and Fair Altruism

The *global* philosophy has confined *fairness* and *altruism* to residual spaces, as the ideas swing towards *short term* efficiency, according to the market *fundamentalism*. The financial corporations are aiming at value generation by *fair value* accounting, where <fair>, here, means instant market appraisal, so to show the (implicit) benefits, in real time. The *mark-to-market* rule is fostered by the welfare policies, doping the growth. At standstill or recession, the stimulation is orderly done by treasury bonds and government securities, in favour of today electors and penalty of future people.

The end of the *short global assent* ruled by the USA is dramatically fixed at September 11, 2001. The beginning

is linked to the URSS collapse, but its inherent frailty is soon evident. The dollar was reference money, tied on the USA internal advantages, because, since Aug. 15, 1971, its fixed *gold* convertibility is suppressed. This way, private *changes* happened with factually public *money*. The earlier Bretton Woods agreements required *public* change up-dating, by respect to the international money (the dollar, with fixed gold conversion). The related economic relationships moved from cross-dependent (among political self-sufficient countries), towards centrally-steered, without political control. The weakness is clear if, instead of Hobbes rule (the *law of the force*), the hegemony should run by Kant rule (the *force of the law*).

By Kant rule, the interstate agreements are enacted by supranational authorities. By Hobbes rule, the countries recuperate independence: they need to be forced by imperialistic orders. If the central steering power gets rid from cross-dependence, instead than by supranational authorities, the ruling is performed by multinational companies (*hyper-market*): the selfishness of short term profit cannot last for long. The credit consumption is damaging future generations (with no poll power) and given national contexts (with local political institutions). The today crisis already shows the inconsistency of the arrangement.

The *altruism* alternative entails considering long term benefits, covering all the mankind wealth. The spendable riches should not be stolen. Instead of using credit consumption, the *altruism* aims at building and storing wealth, to be left in heritage to the generations to come. The different mode to operate clashes against the (Hobbes) selfish pragmatism, and aims at acknowledging the usefulness of the (Kant) rational legality. The *global* way does not look right; still, the *no-global* opposition does not offer betterments.

At local *autarchy* range, the districts' cross-dependence is said to vanish; the self-sufficiency of tiny areas might not allow bursting out huge conflicts, and confined skirmishes could be ignored. The scenery will basically move toward the life-quality dramatic decreasing, possibly, answering to the consumption and to the pollution demands, but leaving the over-population threat unsolved.

The archipelago guess is evocative, but vague. The *multi-polar* market is seen linking separate self-sufficient clusters, each one with a sovereign authority and reference money. The EU is example setting, having established central Commission. Similar institutions might be created to rule far-east Asia, South America, south-west Asia, African peoples, or other assemblies. Each time, the clusters have strict cross-dependence, under rational legality of central organisations (governments, agencies, etc.). The political stability is entrusted to Kant rules within each cluster, and to Hobbes ones at the worldwide archipelago level. The composition steadiness depends on the relative self-sufficiency of the aggregated nations, up to assemblies at comparatively homogeneous level of power. In such situation, also the *ecology* constraints might be the object of special international agreements, negotiated within each cluster and approved at the archipelago range. The EU events, besides, show that the single currency, if the economic fundamentals of the partners are unlike, may transform in poverty and discontent, by higher interest rate penalties. The archipelago itself, then, transforms in a dangerously biasing set-up [47,48].

The *new system* of clear transferable rights/duties needs to get rid of the <sovereignty> over-structures, *inventing* <structured society> settings, fostering <collective order> lawfulness by <big society> authenticity, with no need of <nation-state> sovereign regulations, yet settling the <trade enterprise> business running. It is, perhaps, utopia, but short guesses are hereafter summarised.

Global Village Hyper-Democracy

The *passive post-global* view, mostly, means recognising that the *global* and the *no-global* ways do not bring to stable political issues; moreover, that the riches prospects are illusory or defective. It is useful looking at *active post-global* measures. The <anthropic principle> assumes that each one is author of his chance, i.e., that the wealth is issue of *artificial* changes (not of *spontaneous* findings). Besides, this is lesson coming from the past. The mankind progress has already faced no-ahead ways, needing revolutions in view of further growth. We are approaching the unique up-turn of the *cognitive revolution*, leading to the *knowledge society*, supported by *robot* technologies: the future headway requests it.

Yet, the *technical capital* innovation is necessary, not sufficient requirement. What is more, looking at *global* and *no-global* targets, their weakness is manifest: doping growth credit consumption, or enjoying castled quiet declining are, in unlike form, selfishness mark, aiming at individual chance not receptive of *altruism* benefit. The active *post-global* idea plays with citizen and society responsibility, for long terms achievements, taking today the measures for a sustainable (lasting) growth. The successfulness is not in punctual riches, when it entails transferring the damages on somebody else (other individuals and future generations). The wealth build-up features need incorporating steadiness and solidarity.

Solidarity or altruism is right upshot, prising *rational legality*, instead of *brutish larceny*. The *global*

deregulation (along with the *Washington consensus*) aims at subduing enacted bylaws, to efficacy tests. The *law of the force* brings to instant transfer of riches to temporary rulers (without backing, face to the claim of stronger parts). A realistic pragmatism suggests that *steady* is better than *on the dot* tenure. Thus, the *force* of the *law* gives durable protection, with the safeguard of third people, not even involved in the given matter. The *legality* is a *cost*, directly by back-up deed, and indirectly by forbidding acts.

The economic *global* tactic is based on the *instant value* illusion, mostly, e.g., transferred to financial <derivatives>: to be repaid, if expansion continues; to turn into users' penalty, if contraction turns up. The *regulation* means lowering the *hyper-market* chance, and suppressing *self-administration* effectiveness. The ecologic *no-global* scheme nourishes the *quiet decreasing* illusion, imaginable within the retrenching *autarchy* of not cross-coupled local districts. The <global village> shows the eco-dependence, withholding the (self-centred) castling hopes. The *altruism* alternative looks after a bottom-up authority, enabling what might be named *hyper-democracy*, characterised by [49,50]:

- the <global village> ruling, particularly, for all acts affecting the ecologic regulation;
- the deed durability, notably, concerning the generations to come protected heritage.

Roughly, the model might look at the EU. It gathers countries since centuries in wars: the solidarity is deemed beneficial, taking common interest bylaws. The central authority and single governments relate according to the *subsidiarity* principle. The legitimacy is critical puzzle: the member-states' parliaments respond to voters; the common ruling is done to the Commission, administrative agency, having weighed national representatives. The factual functioning might be figured out by lifestyle elements and related in progress changes [51,52,53]:

- the *hyper-democracy* entrepreneurship: the *relational* corporations cover *inter-personal* interests; the abstraction needs to embed the future generations safeguard, being aware that, in the heritage, the safe life conditions are mandatory obligation;
- the *hyper-democracy* infrastructures: the hierarchy clustering of communal, national, continental and worldwide entities assemble agencies, with explicit administrative functions; the interpersonal control establishes on bottom-up architectures;
- the *hyper-democracy* market: the local autarchy is mitigated by complementary specialisations; the steering agencies are entitled of compulsory regulations, trading solidarity value, because it provides nomadic riches, by fit rational legality.

The current EU model, however, is lacking in *hyper-democracy* economics. The unlike local efficacy creates biased productivity, with the transfer of the wealth, as the *subsidiarity* notion shatters against the sovereignty privileges of the nation-state partners. However, this model is only shelter of more turbulent relationships, at least, until when the regional political cohesion does not break over.

The <global village> ruling, as said, is ecology must: the over-consumption and over-pollution do not have autarchy solutions. The future people's heritage is obligation, whose rationale clashes against today selfishness. The shared agreement in the parliamentary democracies is elusive query, as documented by the NIMBY (not in my backyard) effect, with conflict of interests. The parliamentary democracy defines as <government through discussion>, but active groups can condition the majorities on punctual choices. How the *hyper-democracy* will manage the impending eco-restrictions is big question, maybe, aiming at the subtle split between *discussion* and *approval*: bringing the general principles to direct <approval>, and enacting the mandatory rules through inter-state agencies [54].

The <global village> *hyper-democracy* is political set-up, still to find out, being desirable model, the *altruism* under Kant rule. The scenario is only mentioned, the all exceeding plain engineering jobs. The frame is devised to lower the *cautious headway/hyper-market* intrinsic instability, but to aim at durable growth by robot technology innovation (after *cognitive* revolution). Moving around the <robot age> ideas, a series of statements might be expressed [55]:

- the *industrial* revolution is western style attainment; robots are *scientific* vs. *intelligent* work divide;
- the replacing <knowledge> paradigms address product-service deliveries, fostering *intangible* staples;
- the *artificial intelligence* adds consciousness, to the *artificial energy* natural emergencies' disabling;
- the <robot age> yields *artificial life/intelligence* synthesis, with <to re-materialise> *cognitive* abilities;
- the *bio-mimicry* processes broaden man makings, after *artificial* domestication/manufacture courses.

The listed examples show a mix of technology-driven socio-political options. The economy/ecology interplay remains conditioning factor: if the *artificial* energy/intelligence/life aids permit obtaining safe and plentiful spendable riches, even the quizzical *hyper-democracy* set-up for the unique <global village> will find accepted solutions. The *new system*, grounded on <structured society> setting authenticity (in lieu of assembling <nation-state>

and <trade enterprise> organisations) is, here, raised by the whimsical *hyper-democracy* name: it exceeds the technology views, making the <robot age> (and <cognitive> revolution) a rather challenging prospect, full of socio-political implications.

Authenticity by Cognitive Revolution

The hope is in the <cognitive> revolution, after the <industry> and <agricultural> ones, having staples in the *knowledge* market, next to manufacture and foodstuffs. The revolution success requests huge technology changes, notably, exploiting the *artificial* intelligence, precisely involved in performing, overseeing and controlling new series of man-driven transformations. These, from the inanimate material earth resources, move covering the *artificial life* processes, through *bio-mimicry* or similar other procedures, permitting to (locally) by-pass the entropy decay, by the reordering abilities of the living matter. However, the technical qualification cannot be achieved, unless its appropriateness becomes shared driver at the citizens' concern and companies' notice. Still, the *hyper-democracy* <new system> does not limit to technology innovation. The <cognitive> revolution does develop, without answering to the *global* and *no-global* queries, by apt *post-global* remedial developments [56].

In the chapter, the technology is left in the shadow, face to the *revolution* necessity motivation. The literature [57,58,59,60], expands, showing concern for habits up now believed obvious and incredibility for the lack of assessed remedies. The reviewed sceneries summarise known models, marking the bewilderment face to alternatives, close to amazing visions. The picture of scenery in series would mean that the mankind can only learn after explicit experimentation. The lesson from the history may support such forecast, if we think that the European countries fought two world wars, ultimately destroying the European leadership, before understanding that the local achievements bring to instable truces. The somewhat optimistic wish suggests the present analysis, to show the *altruism* necessity, with a <global village> unified administration [61,62].

The utopia *altruism* is difficult to conceive if the extant <collective orders> are based on parliamentary democracies, where the governments respond to actual voters, while the future generations' interest is, at least, a debatable guess. Country self-centeredness is said following group egoism and *gene* selfishness. The international cooperation exists on condition of fair steering by super-national authorities. The fact is difficult, the sovereignty being thought a must, rather than an option. The harsh tumble originated by the financial illusions is, though, symptom that complete upturns are impending. The international stability obtained by the law of the force presumes the internal unlimited sovereignty (with no *outer* interferences) and the balance of powers (*risky* aggressive policies). The <global village> is image of cross-dependence; the international stability is possible only by the force of the law. This presumes cooperation and steering by super-national authorities. The castling into local precincts is illusory precarious set-up; this truth still lags behind, if short term plans are favoured. Thereafter, the ecology globalisation makes immediate, not future, the necessity of upturns towards the *hyper-democracy* <new system>.

We shall go back at the opening demand <why the men's civilisation exists?> and answer <because its inner organisation is profitable>. There is nothing preconstituted in the human political frames, and linked <collective orders>. They are developed by the <relational intelligence>, once recognised that this way the men improve their life-quality. The <collective order> building is outcome of a singular occurrence, named <relational intelligence>, which happens after the <agentive life> singularity. Life allows building confined <order>, with transfer of the entropy increasing out of the set apart organism. Intelligence permits building mutual <orders>, with formation of complex assemblies, promoting synergy effects. The *political* and the *economic* dimensions offer interpersonal bond examples, entailing fit constitutive acts or duty settlements. The companies would exist, when it is cheaper to coordinate activity within a centrally planned setting, in lieu to spell out contract details for every business step. The countries assemble, when their organisation is useful; to exist (without outer incentives), they need to <invent> a *constitutive law* (a <Constitution>), to settle their <collective orders>. Along this way, the law <authenticity> has bottom-up validation.

The civilians' society enjoys political autonomy, not due to the existence of absolute laws, rather since citizen's rights are real, with the cross-linked duties, binding the leaders and the individuals, according to the common jurisdiction (selected as *founding Constitution*). The construal, replacing <big society> (and <golden rule>), to *political cohesion* (and local *sovereignty*), is too sophisticated, perhaps, aiming at over-evaluating the man (intrinsic) rationality; yet, it can explain the <collective order> formation.

The <golden rule>, <act in such a way that you treat the human fellows, whether in your own person or in the person of another, always in like measure as an end and never simply as means>, only begins the civic commitment, making possible to bypass limited governance institutes. But, a norm without sanction cannot work. The <big society> way has to be completed by institutions, in which the <altruism> is ruled by <settlement councils>, right away

fostering the <universal> utility, replacing from below the nation-state authority and authenticity. Then, the Kant's <the force of the law> turns into the key *rational* demeanour <golden rule>, responsibly and willingly accepted by all the *global village* fellow-citizens. At the end, the vicious circle is always there. By now, it is not thinkable creating a mere *civic* trait concern, omitting the concurrent *social*, *political* and *economic* traits. Also, the ecology targets cannot be imagined with merely conventional *social*, *political* or *economic* records, because the *civic* account is the globalisation outcome, *rationally* using an intended *golden rule*, applied to a mankind's survival hypothesis. The sketched <big society> *altruism* solution, anyhow, poses critical demands on its practicality; also, at a theoretical range, the attainment of the *absolute* and *universal* worth appears to be an arcane query. The question is posed; further deepening is required.

Conclusion

The globalisation represents major feature in the current socio-political world changes. Its effects cannot be neglected, in view of the *economy*-pulled up-grading (*global* viewpoints), and of the *ecology*-pushed regulations (*no-global* viewpoints). The resulting society moves towards high complexity cross-linked political frames, with impending restraints on the life-quality issues. The first surveyed *global* viewpoints have recently shown critical fallouts: the financial instruments do not seem contributing creditable aids to the international stability. The *no-global* viewpoints, the other way, provide suited ecology warning, but the conservatism of the precaution principle does not allow upgrading innovation.

The role of technology is essential to make possible devising sustainable growth; it is the basic way to generate spendable riches, taking the ecology parameters under control. The all is referred as giving rise to the <robot age> tools, an issue properly recognised. The technology appropriateness, nevertheless, is necessary, but not sufficient to support stable international surroundings. The study intends to prospect the somehow imaginative picture of the world to come, where the modelling of the knowledge society features and the annexed robotic aids are weighed against the economy/ecology balanced drivers.

The paper develops questioning looks on the future, imagining three conflicting issues, each based on mutually exclusive socio-political choices:

- the *global* consent, permitting worldwide *hyper-market* effectiveness;
- the *no-global* dissent, looking, along *autarchy*, at ecologism defence;
- the *post-global* approach, devising civic-mind steered *altruism* rules.

The three scenarios differ on many aspects. The first leads to vanishing national authorities, with the power transferred to interstate frameworks and multi-national companies, with possible build-up of biased fortunes of individuals and related personally ruled businesses. The second aims at preserving the existing <nation-states>, retrenched into protected neighbourhoods; when successful, the surrounding peoples need turning to aggressive behaviours. The last is, perhaps, utopia, looking after the worldwide sharing of the natural capital, through resource transparent allocation and bookkeeping, built on supply chains synergies and net concerns. The short remarks are, however, misleading, when reduced to apparent objectives. The *global/no-global* dilemma is notorious fact. The *post-global* choice is necessity, once recognised that it is unavoidable removing the said dilemma; however, the here outlined course just suggestive option.

Indeed, in the present views, the *constitutive laws* are <invented> outcomes, rooted in the citizen's *real* rights. The law and the justice are not due to governments or judges, rather to the citizens shared will and joint loyalty. If this is acknowledged, the relational prospects shall update the <collective order> role:

- the <structured society>, directly ensuing from the relational intelligence;
- the <trade enterprise>, allowing to draw-up binding business agreements;
- the <nation-state>, permitting to sanction overall rights/duties conventions.

The law *authenticity* follows by a bottom-up procedure. From the <nation-state> view, a big drawback entails the supra-national authorities, for managing the *global village* fortune. It, perhaps, requires moving through abstract institutions, such as *hyper-democracy*, valuing rights and duties, via fuzzy <subsidiarity> tenets, having a parallel top-down ruling. In *real* facts, there is no reason to allot special worth, to singled out *split* sovereignty establishments, unless because of existence of the more-or-less big assemblies of the involved fellow citizens. The correct socio-political makeup builds up accordingly, namely, on:

- the *civic* cross-connecting, developing <big society> unflinching trustfulness;
- the *economic* management, maturing <trade company> contractual worth;
- the *political* administration, awarding <nation-state> approved dominance.

The *relational intelligence* is the awkward singularity, backing the mind *culture* and *ethics* artefacts of the human civilisation. The apportioned spans: *civic* range, *economic* running or *political* organisation, are abstract issues of interpersonal sort. In the past, the arrangements settled into *closed assembly* forms (groups, countries): the *selfishness* track was valuable option to exploit the inner enhanced makeup, at the expense of other poorly ordered closed assemblies. The opportunity has noticeable *economic* and *political* evidence. With the *ecologic* globalisation, resource spoil and effluence pollution are shared *global village* disciplining: a castling in safe *closed assemblies* is useless; a *selfishness* track does not anymore exist. The *relational intelligence* shall weight: - the *global* consent, permitting the *hyper-market* setting, with scale-economy effectiveness and the removal of local inefficiencies and position profits; - the *no-global* dissent, aiming at safeguarding sectional achievements, according to *autarchy* ruling, with protection of uncontaminated original (wild) surroundings; against: - the *post-global* approach, accepting the *global village* constraints, and devising *altruism* regulations, so that the generations to come could inherit an *artificially* upgraded surroundings. The *rational* choice should address the *altruism* track, looking at the knowledge society upgrading sceneries.

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