

CENTERIS 2012 - Conference on ENTERprise Information Systems / HCIST 2012 - International
Conference on Health and Social Care Information Systems and Technologies

Entrepreneurial social and organisation inklings

Rinaldo C. Michelini, Roberto P. Razzoli*

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

Abstract

The civilisation is bewildering accomplishment, rooted in voluntary measures that men conceive and apply to the surrounds, aiming at improving their life-quality. The paper gives an overview of how the artificial *mind* worlds coherently prefigure such (actually ascertained) happening, with, nevertheless, emerging construal ambiguities. The pictures are background of increased concern about man civilisation continuation. The sustainability of the growth is impending threat, produced by *ecology* globalisation, viz., the vibrant alarm on bio-sphere (today mistrusted) reliability. The compulsory entrepreneurial and social change is threatening challenge of the mankind to-come.

© 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of CENTERIS/SCIKA - Association for Promotion and Dissemination of Scientific Knowledge. Open access under [CC BY-NC-ND license](#).

Keywords: Man Civilisation; Economy Globalisation; Ecology Globalisation; Social Progress; Sustainable Growth

1. Introduction

The man civilisation is awkward outcome, having man-centred worth, uneasily explained on universe scale. Two oddities occurred in our remote spot: *life*, providing way to local self-sustaining re-ordering processes; *intelligence*, making conceivable autonomous alterations of the intrinsic trends by planned acts. It is hard to evaluate the oddities, and their appraisal is useless, whether communicated at the human range only. So, the civilisation is to be accepted as *artificial* incident, with beneficial marks on life-quality until now

* Corresponding author. Tel.: +39 010 3532844; fax: +39 010 3532834.

E-mail address: razzoli@dimec.unige.it.

appreciated, therefore to be extended and protracted. The statement suggests revising the course of man weird ability to enable his observer/actor mission. The paper shortly follows the track, with stress on the deliberate kind of achievements, even when obtained without explicit perception [1].

The civilisation is identified as apparent consequence of culture and ethics, created by intellectual talents. The joint after-effects bring forth <knowledge> founding, sharing and accrual together with <moral manner> detection, appraisal and enacting. In fact, the civic mindedness is necessary step of the progress, with vital role not less relevant than the know-how. Instruction and education fashion the abstract world of the mind, along with communal learning procedures, yielding <collective orders>, basically tied to the man <relational intelligence>. Thereafter, the human progress is communal accomplishment, in-progress incorporating new features, and unceasingly requiring <modernisation>.

However, several reasons exist for fear about future growth, especially, when considering the *advanced* countries, too much used into undiscerning faith about financial instruments. Ecology comes to be sharp intruder in *economy* globalisation, worsening the already actually serious events. The analysis, without hiding the critical character of the challenge, is somehow comforting. The progress, if organised on merely *a posteriori* rationales, will persist, on condition of ground-breaking discoveries of the man intelligence. The <cognitive revolution> is a devised up-turn, offsetting the current industrialism over-pollution and over-consumption, by means of the <to de-materialise> and the <to re-materialise> routines of the robot age technologies.

2. Progress and Collective Orders

The intangible culture and ethics objects show the man centred roles, along with the progress *invention*. We might list the ownership and tenure institutes or the authority and jurisdictional frames, to exemplify purposeful cognizance and authenticity. Intellectual activity has freedom inventiveness. The knowledge society emerges, once its rational effectiveness is stated; sustainability demands (citizens' imperatives and manufacturers' responsibility) shall follow, with the tied changeovers in (robot age) technology upgrading and (global village) political conversion. We are too much confident in the logic of the primeval <social> breakthrough, perhaps, to suppose that the astonishing <inventions>, such as the conceived languages or the settled bureaucracy, are intrinsic chances [2-5].

Yet, the <intelligence> institutions are invasive preconditions of the civilisation beginning and progression; markets and governments are *artificial* compositions, settled because of recognised <utility>. Their back-up moves through the foundation of <authority>, endowed of accepted <authenticity>. The <king by grace of God> or the <nation by race validity> do not have proofs. Dropped transcendental and immanent backing, governments require *a posteriori* legitimacy, with intended settlements among the involved citizens. The *deliberate* <order imprint> is purposeful alteration, done by <group selection>, as inner co-operation grants synergic advantage. The planned ties tell apart fellow citizens from alien individuals, giving rise to *sovereign* countries and *loyal* nations. The *artificial* lay-out requests resort to lawful conduct: responsive governance and civic mindedness.

The western-style success of the modern <industrial> revolution is greatly affected by the related <nation-state> organisation, creating competition advantage at a governmental form range. The results happen to be impressive, so that some scholars theorised a *gene* motivation, giving rise to the *social* Darwinism. Most likely, the <chosen people> tale just shows that effective social organisations assure contest promotion. The political cohesion effectiveness turns out as a changeful prospect, with striking effects, according to subtle <modernisation> hypotheses, which state that consensus is directly tied to education and income (by cause-effect relationship or by correlation estimates).

Today the effectiveness range moves towards a continental size, at USA, Russia, China or India

consistency. The related <modernisation> required assembling the EU, however, with some odd hesitation in sharing prospects: the devised collective order moves ill-at-ease, joining <common market> and uniformity rules, with independent tax systems and internal revenue running. Citizens (and domestic companies) endure unfair situations, having biased charges, depending on the nation-state inner comfort and efficiency. The political cohesion, so, is encompassing a suitably wide assembly; this grants cross-border effectiveness to bigger companies, with access to international finance market; it marginalises the home entrepreneurship, too much linked to the local nation-state sphere and extant fiscal regime.

The co-existence of cross-border actors and sectional sovereignty is paradox, making the UE ineffective, unless the related political cohesion develops into self-contained collective order. However, the outlined analysis merely deals with economic globalisation constraints. Indeed, the <financial> adequacy is just an element pushing to revise the nation-state size. The growth sustainability brings-in ecologic globalisation restrictions, totally modifying the split-sovereignty course.

The ecology constraints are new requests. CO₂ effluence has worldwide effects; global warming is agreed threat. The local (more or less split) sovereignty cannot decree charge exceptions or privileged withdrawal. The *unfair* <modernisation> stage, face to economy globalisation, replicates with critical effects, involving the *global village*, due to ecology globalisation. If sustainable growth planning makes sense, the aim of *fair* <political cohesion> clashes against the concept of split-sovereignty, because no one is <certainly> safe, face to the earth <natural capital> management, done elsewhere in bio-sphere.

3. Managing the Tangibles

The progress continuance requires consistency of the wealth creation process, viz., steady regularity of the surroundings, from where withdrawing the indispensable resources. The proposition might appear obvious, and it is pleonastic, if we believe in the science models and in the man ability to be actor of his wellbeing. In reality, we may trust the consensus about (timely accepted) <natural laws>, and we can check the effects of their application. But: is scientists' shared accord sufficient for the <laws> (absolute) truth? The question is often by-passed, as irrelevant. Moreover: do outer objects (as independent items) exist, or are they merely concepts, with attached <names>? In biology, do <species> exist (with real diversity among the living beings), or is the classified variety just theoretical construct? In social sciences, do collective assemblies (companies, mutual groups, etc.) have autonomous rights/duties, or are the only individuals responsible entities? The answers go beyond the survey limited purposes, and we move further according to plain <realism>.

The <realists> believe that items exist, because they share the <real> property of the being; the <anti-realists> deem that the concepts that distinguish objects are just mind categories, assigned by the observers (with shared conventions, after educated instruction). The realistic economists care for corporate responsibility; the anti-realistic ones look only after the manager liability. The <semantic realism> is equally complex: is the principled truth <universal>, or does it depend on the shared conventions (recognised culture and accepted ethics)? So, persons of unrelated culture/ethics shall follow their righteous demeanour and cannot be blamed (punished) for that. Can (or cannot) have juridical self-consistency, concepts, such as: multinational corporation, social class, etc.? The plain <realism> simplifies the frames, itemising the <reality>, if useful.

On those assumptions, the <agricultural/industrial> revolution transformations differ on the tied entropy, due to the animate or inanimate main tracks. As already noticed, industrial revolution permits *man-made* creation of prosperity, by <artificial energy>. The conformist source resorts to the earth fossil stocks (and, lately, fissile ones) piled up during the past eras. From these stocks, controlled thermal energy is obtained, and (partially) transformed into (mechanical and) electrical energy; the process downgrades the original stocks into waste/pollution, and (directly/indirectly) raises the world temperature.

With plain <realism>, ground-breaking innovations shall consider:

- Computer tools, to help monitoring, checking and appraising the on-the-go resource handling
- Bio-mimicry tools, to diversify and expand applicable life-based paths, with controlled outcomes

The <realism> aims at inventing artificial agricultural-like procedures, appropriately expanding the biological world in emulation of primeval farmers, and keeping with industry-like effectiveness, combining artificial energy. The innovation practicality is technology challenge, rooted in how: natural laws are <true>; human observers are <trustful>; and human actors operate <reliably>. Plain <realism> enjoys consistency, delivered by civilisation trends. The deployment of fit culture-and-ethics instruments goes beyond mere technology innovation [6-7].

The appraisal of a <real> worth, to be allotted to the *artificial* progress, is a consequence of the man centred bias, which marks our position face to scientific knowledge and governance authenticity. These issues are, perhaps, gobsmacking. We are well aware that our planet is negligible at the cosmic scale. The earth life and intelligence are insignificant, when assessed at universe's calibration; the mind construal (unless God's disclosure) only undergoes human checks; and so forth. Yet, most of us deal with the <nature> laws, classic cosmology or quantum mechanics, as if they were <truth> of a fixed order, out of personal liking. In adjunct, (surely) abstract theories (mathematics, etc.) happen to support models permitting experimental forecasts; our <rationality>, then, feels safe using the <falsification principle> as worthwhile cure-all.

Indeed, the awareness about the successfulness of our mind worlds deserves trust. Even keeping on with factual pragmatism, we are assertive, when preferring anthropic life-quality and rebuffing savagery. Lately, the scientific relies on an <observer> makeup. The investigator is shown looking, e.g., at a chess game; after a while, he understands the rules, and can become player (with useful upshots). The human observer builds <models> and identifies <laws>, empirically assessed by the <falsification principle>. The observation window and acquisition/processing means supply snapshots, with consequent reliability of the inferred forecasts, but dependable on human horizons. In the planning, the handy technology and equipment entail a narrow set of tasks, in line with the detected cause-effect relationships. The position of involved *observers/actors* is restricted to engineer's jobs. The guesswork is complement, for modifying and improving the knowledge, adding discoveries and dropping conflicts.

4. Managing the Intangibles

Usual severance distinguishes inanimate, from animate worlds. The latter is ruled by <evolution>, steered by <natural selection>. Yet, an empirical evidence adds the <mind>, in union with <rationality>, (symbolically) described as *meme* evolution. If we can be dubious about the <real> existence of the material world, the entire <mind> complex surely reduces to concepts, with attached <names>. We, still, need to form general statements, endowed with acknowledged consent, to run a common understanding. Unfortunately, a self-reliant reading is today lacking. Clues may be devised, putting together <mind> and <conscience>, and trying to figure out where the <rationality> develops [8-11].

Where from does <conscience> start? The unconscious aggregation of flexible cortical maps might be first step of brain towards to mind, diffused over the whole neuronal nets. The cluster of extraneous (compared with the brain hardware) facts and events assembles what is perceived, ending in perception by <bubble-up> steps. If individuals communicate with other people, the <conscience> establishes shared <knowledge>, and we are ready to look to culture and to ethics, i.e., to bring forth (man relational) intelligence.

The sketched sequence is rough account: it does not explain the human oddness. It is known that our DNA (viz. brain) does not differ too much, from the one of living beings, which never invented spoken/written languages.

Indeed, the odd man <intelligence> describes with a set of features:

- Ability to obtain, assemble and categorise the images (*inner model*) of the world
- Ability to select and order relationships, choosing and fixing *accepted laws*
- Ability to devise progression forecasts, by *simulation* with the inner model
- Ability to decide suited *discernment patterns*, consistent with models and laws
- Ability to acknowledge the learning progress, exploiting conscious *introspection*
- Ability to check-out theories, through the *co-operative recognition* of scientists

The set of mind features (*inner model, accepted laws, simulation, discernment patterns, introspection, co-operative recognition*) is hard to conceive on merely <bubble-up> sequences, decomposing complex layouts into mute randomness steps; the upshots cumulate, until when preferential strings start repeating; these become <first choice>, and the <replication> turns out as standard routine. The listed features figure-out <trickle-down> schemes, if self-consistent plans allow organising knowledge build-up and deeds cataloguing. The entropy principle opposes to change of randomness into standard routines. Relatedly, <intelligence> generates operation sequences, due to their (invented) consistency. The <trickle-down> standards shape reasoning as if a design project is steering the thinking. The <intelligence> oddness is mostly contained in a mismatch: we cannot predict results, but we organise our actions, as stated by pretended *rational* scopes.

The mysteriousness of the mind is documented by the *invention* of languages. The happening connects with the archaic <social breakthrough>, to supply messaging means within the groups, to organise cohesion and guard. Most animals communicate by sounds, but, so far, no <bubble-up> way endowed them with speech. In truth, the articulation of noises into words is decipherable if it follows a syntax. The <syntax> is ordering prerogative of all human idioms, exploiting conventional patterns, ruled by <trickle-down> way. The coding is puzzling outcome; the <Babel tower> tale shows that intelligible messages need vigilant lucidity. Besides, several *orderings* have been invented: the Indo-European syntax: subject-verb-complements, has different structure in the Chinese idioms (also the speech timber/tune modulation follows unlike forms). All variants are, of course, consistent with the man anatomy (and brain hardware), and the each other understanding is welcomed, after decoded the established guides.

The <relational intelligence> oddness begins yielding stagy changes with the archaic <social breakthrough>, through resort to <collective order> synergies. The effectiveness is reached by crafty setting: co-operation among fellow citizens; rivalry against foreign assemblies. The trend goes on, until <nation-state> formation and split-sovereignty issues. Successful competition could lead to deceptive upshots, if the society enslaves man to vanity, believing to be all-powerful, as if the achievements are total merit of the country superiority. Upright outcomes follow, if the society teaches the citizen to be *rational*. The latter tuition starts from the man's capacity for <empathy>: his ability to feel what another feels. The *rationality* goes together with the appreciation of the <utility> at the individual and at the communal ranges.

Yet, <rationality> requires <empathy squared>: his ability to sense what other men feel about him, putting himself in the shoes of other men putting themselves in his shoes. The *civil* education is complete, when a person chooses the *ideal* shoes in which to put himself: i.e., those of a <fair spectator>, who considers our conduct with the same indifference (impartiality), with which we regard that of other people. The <meme evolution> foreshadows <rationality>, stepwise educating the civic mindedness at the right cohesion.

5. The Altruism Passage

The progress has been said to be critically tied to wellbeing that can be enjoyed. The prosperity, however, is *artificial* construction, carried over altering the natural surroundings. The picture involves the exploitation of natural/human resources by value-added transformations: the agricultural and industrial revolutions are well known backing. It implicates, moreover, the deployment of financial/technical resources, concurrently

employed, to make effective the value-added accomplishments. For sure, the narrative is man-centred: no civilisation is conceivable otherwise; still, we conventionally refer to four assets: *human*, *natural*, *financial* and *technical*, to express the fact that the improvements require balancing the four sources. The statement is obvious, but often disregarded, with grim drawbacks, when waning the *natural* capital by poisoning and spoil, or when misconstruing the <modernisation> lines, especially, by treacherous affluence-and-influence manipulation [12].

If advancements are man success, shortcomings are man failure. For sure, extant outer conditions alter the headway; still, the planning has responsible performers, which ought to attend as recognised *observers* and reliable *actors*. The statement is equivalent to say that changes to better are viable and that operators need programming the business according to suited rules. To sum-up, the given clues advise assuming:

- The growth adventure of the human species, through <modernisation> steps
- The consistent availability of <natural capital>, to be transformed in apt riches
- The wise resort to <human capital>, to help fostering fit socio-political frames

Our *intellectual* bias adds the <financial> and the <technical> capitals, to offer *rational* evidence to the fancy man civilisation, by <trickle-down> schemes. The technology innovation role has clear-cut visibility. The <excelsior> phantasy well describes the faith in technical and scientific knowledge, permeating western life-style. The finance prompting bears similarly convinced discernibility, to express the relational context that support the affluence and influence frames of our <advanced> world.

We have mentioned the languages as human characteristic oddity. The <trade> is not less astonishing: no animal discovered how to organise a market, and to exploit the primary needs within planned <utility> of third operators. The <money>, soon, becomes manifest supplement; the institution of <authenticity> rules is appendage, with the related sovereignty and legitimacy specifications. All measures might look amazing, but it is difficult to imagine factual wellbeing, without those proficient constituents. We conclude that the resources exploitation, with value-added production, is not conceivable out of <authenticity> frames. In our *rational* (cause-effect) schemes, the inference is academic, but cannot be suppressed.

The <collective order> formation is remarkable fact, with the surprising consequence of *social* value-added and *political* organisations, made-up to improve people wellbeing. It is difficult explaining how these wrap up. A transcendental or an immanent motivation are simple clue. The <nation-state> has <authenticity> due to <king by grace of God> sovereignty, or owing to <race homogeneity> of the citizens. The pictures are well-liked, if eminent leadership is in-force glue, or direct exchange fosters close cohesion. No evidence shows the soundness of one or the other assumption, unless as a result of well-timed value of the provisionally gathered executive assemblies. Yet, no inherent or inborn <collective order> pre-exists; the formation is acquired result, subsequent to decision-making procedures.

Today, in fact, we credit the <constitutional> sovereignty, especially, conferred after plebiscite and ruled by (parliamentary) democracy. So, the recent <modernisation> up-turns characterise by a set of quibbles not really entailing ground-breaking changes, more exactly looking after:

- The provisioning profitability, by the resort of advantaged supply chains
- The country competitiveness, by establishing hierarchical dominances
- The industrialism effectiveness, by widening throughput and market share

The industrial revolution avails of <artificial energy> opportunities; the raw materials are supposed to have withdrawal without limits; the manufacture business positively ends at the point-of-sale; tolerable concern affects the scrape and sewage management. Still, ecology entirely modifies the postulations. However, the up-turn needs to be imagined, when also the other two rules are no more operative. Continental size of the country is crucial prerequisite of supremacy; buyer's fullness imposes *scope*-manufacture (in lieu of *scale*-supply). Together, these two facts are handled, recognizing the *economy* globalization effects, but the actual issues happen to be doubtful.

The *ecology* globalization ensues, showing that the earth <natural capital> is limited and that wastes worsen the bio-sphere at global village span. The conflict winners will share contaminated lands: castling is meagre remedy, with no steady prospects. The *planned* (in place of *natural*) <selection> is, possibly, *realistic*, if the winners will successfully enjoy secure progress; this shall double efforts in the fight, as rout entails passing away. Yet, *planned* <selection> is not *rational*, in case of *over-consumption* and *over-pollution*; the obtained <utility> has disputable worth, under way increasing the total of dispossessed people, besides worsening the communal habitat safety.

The *rational* scenarios inevitably aim at *sustainability*, viz., at keeping *stable* source provision and *harmless* environment settings. The shady <utility> of damaging the whole habitat (out of, maybe, castled resorts) is perilous, not judicious. The *ecology* globalization unavoidably requires moving, from struggle, to common security. The <competition-to-altruism> alteration is *meme* evolution stage, once understood that the only harmless policy requires sheltering the entire global village. The wise people need to be world-citizens, rejecting all *planned* <selection> practices, undamaging the communal bio-sphere. The <altruism> *rationality* is thoughtful choice, on condition to enable growth continuance, upholding man wealth and health. The steps to come address the <cognitive revolution>, i.e., robot age technologies, devising the two scopes: <to de-materialise>, with enhanced value-added in intangibles; <to re-materialise>, with safety by bio-mimicry reclamation. The bet is left to *artificial* inventions along with the *meme* evolution path.

6. Global Village Authenticity

The ecology globalisation starts being recognised, with effects that superimpose to other essential changes at world-wide range. The industrial organisation patterns, progressively, are shared outside the initial sites. Now, ecology shows that resource limits exist, and, what is more, that no place on earth is safe to castle in. It follows that a competition-based success is short-term and self-damaging. The <competition> rule alters in destructive policy, when widespread interpersonal ties cannot selectively orient benefits vs. detriments. A *rational* <utility> programme shall amend older customs [13-16]

The *archaic* <social> breakthrough positively began group selection ways, joining inner co-operation synergy and outer competition preponderance. The modes are confirmed with modern nation-states, with clear-cut parting of the fellows-citizens duties and rights. Co-operation benefits mix with competition plusses, so that it is not necessary to distinguish if the <utility> comes from communal expertise or from differential contest. The ecology says that a differential contest does not occur, when over-pollution/over-consumption records are general syndrome: the environment pollution is shared damage. The *novel* <social> breakthrough has to limit to co-operation synergy, when <collective order> opportunities are explored.

The *ecology* <social> breakthrough can only recognise that the yet-to-be <modernisation> ought to be totally different. The entire humanity is the *involved* collective range. In other words, we need to look at <altruism> at global village range. Intermediate set-ups are soothing, doomed to worsen the already critical course. To that aim, we need a <cognitive revolution>. This enables knowledge society convergence of fit computer aids and bio-sciences. The <knowledge>, which does not exist without man, becomes *intangible* extension of the material world, by cognizance additions. The <bio-mimicry> provides *tangible* extension, with resort to genetic codes, and self-reproduction. The <culture> is intentional issue, assuring limitless growth, if eco-consistency ruled. The joint *artificial* life-and-intelligence is robot age technology, consenting suited re-materialise/de-materialise issues, with controlled recovery and revamping targets.

However, the social agreement shall combine culture and ethics: the <legitimacy> builds after peculiar construal, when its *transcendental* and *immanent* origins are left out. The *constitutional* motivation is applicable, on condition to identify empowering communities and in-progress overseeing regulations. The

«global village» is fuzzy body, having «real» consistency tricky to find out. The related «authenticity» ought to deal with series of queries, such as:

- Coherence censure: rights/duties regulation is meaningful, if ruled by balanced sanctions
- Legality censure: the principled rulings are just fore-exhortations, without lawful validity
- Universality censure: culture/ethics cannot be forced, being based on contingent findings

The «authenticity» requests are not easily bypassed, unless entrusting the *global village* with apt power. The lawful deployment moves through the juridical value of factual agreements reached by *globally empowered* «settlement councils», whose resolutions are enacted, endowed with *subsidiary actions* at the single nation-state level. The «altruism» management, this way will trim *global* utility on an universal extent.

7. Conclusion

The human civilisation is difficult to manoeuvre accomplishment, bringing forth prosperity and efficiency by intentional modification of the natural order of the wilderness. A conventional recognition of the changes moves through «culture» formation, i.e., man capacity of creating processing know-how, to transform the surrounding sources and to offer value-added provisions and amenities. We quote the archaic «agricultural» revolution, taming savagery and fostering domestication; and the fresh «industrial» revolution, fashioning energy and controlling manufacture. A (perhaps) less conformist reading looks at «ethics» construal, i.e., the human ability of creating relationships, to assess collective orders and to define principled demeanour. We quote the primeval «social» breakthrough, using the group selection, to arrange sectional political cohesion and in-progress sovereign nation-states, to classify the world over all the citizens.

«Culture» and «ethics» are *artificial* inventions, not included by the primordial background. They establish as oddities, which characterise the man «relational intelligence». We might accept that they are God's gifts, so the civilisation follows as attainment ruled from above. On *a posteriori* facts, the oddness is entangled; the related feats are hard to appraise, unless assuming creative intellectual deployments, in-progress enabled by the humanity. The quality «artificial» means man planned by *intellectual* wherewithal. The progress is appraised with the enjoyed life-quality, viz., the privileged circumstances built by men, yielding intentional prosperity and authenticity, relative to earth original dearth and wilderness [17, 18].

The civilisation is combined issue of political arrangements, establishing cohesion orders, and of economic organisations, with fair balance. The progress is *artificial*, brought forth by *Homo Sapiens*' intelligence, an awkward talent, which discriminates humans from all other living-beings. The paper intends analysing how the combined issue ripens, figuring out hypotheses for future growth. Ecology, showing the industrialism over-consumption and over-pollution, provides impending warning. Progress continuance is bet, making sustainability crucial theme. Technology innovation is crucial, for sure, but together with the other peculiar issues of the «relational intelligence».

References

- [1] Rosner, L., 2004. The technological fix: how people use technology to create and solve problems. Rutledge, New York.
- [2] Micheline, R.C., 2011. Knowledge society engineering: a sustainable growth pledge. Nova Science Pub., New York.
- [3] O'Neill, J., 2001. Ecology, policy and politics. Cambridge Univ. Press, London.
- [4] Zweig, J., 2007. Your money and your brain. Simon & Shuster, New York.
- [5] Noë, A., 2009. Out of our heads, why you are not your brain, and other lessons from the biology of consciousness. Hills & Wang, New York.
- [6] Freedman, M., Jaggi, B., Eds., 2006. Advances in environmental accounting. Emerald Book, Bingley.
- [7] Victor, D., 2011. Global warming gridlock: creating more effective strategies for protecting the planet. Cambridge Uni. Press, New York.
- [8] Dym, C.L., Little P., 2010. Engineering design: a project-based introduction. J. Wiley, Hoboken.

- [9] Nielsen, M., 2012. Reinventing discovery: the new era of networked science. Princeton Uni. Press, Princeton.
- [10] Ridley, M., 2010. The rational optimist: how prosperity evolves. Harper, New York.
- [11] Smith, M.E., Marx, L., Eds., 1994. Does technology drives history? The dilemma of technological determinism. MIT Press, Cambridge.
- [12] Michellini, R.C., 2012. Society progress evolution: sustainability and responsiveness. Nova Science Pub., New York.
- [13] Laqueur, W., 2012. After the fall: the end of the European dream and the decline of a continent. Dunne Books, New York.
- [14] Yergin, D., 2011. The quest: energy, security & the remaking of the modern world. Penguin Press, New York.
- [15] Searle, J.R., 2010. Making the social world: the structure of human civilisation. Oxford Uni. Press, Oxford.
- [16] Quelch, J., Jocz, K., 2012. All business is local: why place matters more than ever in a global virtual world. Portfolio, New York.
- [17] Trenin, D., 2012. Post-imperium: a Eurasian history. Carnegie Endowment for Intl. Peace, Pittsburgh.
- [18] Stiglitz, J., 2010. Freefall: America, free market and the sinking of the world economy. W.W. Norton, New York.